How did concepts of energy security and sustainable security affect British defence policy between 1997 and 2010?

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How Did Concepts of Energy Security and Sustainable Security Affect British Defence Policy Between 1997 and 2010?

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Abstract

The issue of energy security rose in prominence in British political discourse between the years of 1997 and 2010, partly due to diminishing North Sea oil and gas reserves, and partly due to the increasing recognition that significant measures would have to be taken in order to mitigate the effects of man-induced climate change. Indeed, the UK became increasingly reliant on imported fossil fuel supplies for a substantial proportion of its energy needs. Given these facts, and the British armed forces historical requirement for large amounts of fuel in order to conduct effective operations, this thesis asks what impact energy security considerations had on British defence policy during the tenure of the previous Labour government and whether a more sustainable conception of energy security became evident as Labour's time in power progressed. Using a framework for analysis adopted from Ian Bellany's book *Reviewing Britain's Defence*, in addition to explanatory tools adopted from the Oxford Research Group, Graham Allison and Andrew Dorman, this thesis demonstrates that energy security considerations did indeed have a noticeable impact, but this impact varied at each level of defence policy. Where the impact of energy security considerations was evident in British defence policy, it tended to manifest itself as a control paradigm approach, with an emphasis on the securing of energy resources through military action. However, the increased political saliency of environmental issues in the run-up to the 2010 General Election saw the espousal of more sustainable energy security ideas within British defence policy, as the government became eager to demonstrate its 'green' credentials. In addition, there were some positive developments in the field of alternative energy technology for use by the armed forces as Labour's time in power came to an end.

Declaration and Statements

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This thesis is the result of my own investigations, except where otherwise stated. Where correction services have been used, the extent and nature of the correction is clearly marked in a footnote(s).

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Abbreviations

ACM - Air Chief Marshal

BERR – Department for Business, Enterprise and Regulatory Reform

CAAT – Campaign Against the Arms Trade

CDS – Chief of the Defence Staff

CGS - Chief of the General Staff

CJO - Chief of Joint Operations

CSTG – Carrier Strike Task Groups

DCDC – Development, Concepts and Doctrine Centre

DECC – Department for Energy and Climate Change

DEFRA – Department for Environment, Farming and Rural Affairs

DERVs - Diesel Engined Road Vehicles

DFT – Department For Transport

DFID - Department for International Development

DIB – Defence-Industrial Base

DIC - Defence Industries Council

DIP – Defence Industrial Policy

DTI - Department for Trade and Industry

DTS – Defence Technology Strategy

EBAO – Effects Based Approach to Operations

FA&SOC – Future Air and Space Operational Concept

FCO – Foreign and Commonwealth Office

FIST programme – Future Infantry Soldier Technology programme

FLOC – Future Land Operational Concept

FMOC – Future Maritime Operational Concept

FRES – Future Rapid Effects System

FSL - First Sea Lord

GECF – Gas Exporting Countries Forum

GPM - Governmental Politics Model

IEA - International Energy Agency

IEDs – Improvised Explosive Devices

IEPS – Integrated Electrical Propulsion System

IPCC – Intergovernmental Panel on Climate Change

IPTs – Integrated Project Teams

JCA - Joint Combat Aircraft

JDP – Joint Doctrine Publications

JSF - Joint Strike Fighter

LNG - Liquid Natural Gas

NAO – National Audit Office

NATO – North Atlantic Treaty Organisation

NCW – Network Centric Warfare

NDASP – National Defence and Aerospace Systems Panel

NDIC – National Defence Industries Council

NDITS – National Defence Industry and Technology Strategy

NEC – Network Enabled Capability

NGOs - Non-Governmental Organisations

NSS – National Security Strategy

OGD – Other Government Departments

OPEC - Organisation of Petroleum Exporting Countries

ORG - Oxford Research Group

MOD - Ministry Of Defence

OCC – Office on Climate Change

OECD – Organisation for Economic Co-Operation and Development

OBP – Organisational Behaviour Paradigm

PUS - Permanent Under Secretary

RAM – Rational Actor Model

RMA – Revolution in Military Affairs

RUSI – Royal United Services Institute

SDR – Strategic Defence Review

UAV - Unmanned Aerial Vehicle

UCAV – Unmanned Combat Aerial Vehicle

UKNDA – United Kingdom National Defence Association

UNCLOS - United Nations Convention on the Law of the Sea

UORs – Urgent Operational Requirements

WMD – Weapons of Mass Destruction

Introduction

Why study energy security's effect on British defence policy from 1997 to 2010? The first and most pertinent answer to this question is the historical evidence of the importance of energy issues to the British defence establishment since the latter half of the 19th century. For example, the advent of steam-powered warships in the 1860s necessitated the creation of well-stocked and well-protected coaling stations at strategic points around the globe to refuel the Royal Navy. As a War Office report commented at the time 'not until the important coaling stations shall have been made secure can the strength of the British Navy be adequately exerted at sea'.[1] In 1911, the then First Lord of the Admiralty, Winston Churchill, had to decide whether to switch from the use of secure Welsh coal to relatively insecure Persian oil as the main fuel for the ships of the Royal Navy. He chose oil due to its perceived performance benefits but in doing so raised the question of security of supply that has persisted ever since.[2] The creation of the RAF in 1918 and the motorisation of the British Army in the 1930s extended the importance of oil supplies to all three services of the British armed forces. Oil became the lifeblood of effective military operations.[3] Indeed, the British Chiefs of Staff were keen to maintain a military presence in Palestine following the end of the Second World War, as they believed, in part, that it would ensure continued British access to Middle Eastern oil reserves.[4] Since 1979, the British armed forces have operated in the Persian Gulf region on a regular basis, protecting oil tankers in the 'oil tanker' war of the 1980s, removing Iraqi forces from Kuwait in 1991 and invading Iraq in 2003. Continued access to Middle Eastern oil reserves has been mooted by some commentators as one of the major determinants of military intervention, particularly in relation to the latter two events.[5]

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[1] Quote from the Carnarvon Commission report of 1882 in *The Cambridge History of the British Empire, Volume III: The Empire-Commonwealth* (Cambridge; Cambridge University Press, 1959) p.234

[2] Winston Churchill, *The World Crisis Vol. 1* (New York: Scribner's, 1923) pp.134-136.

[3] This reality was highlighted memorably by the American General George S. Patton in 1944, when he commented 'My men can eat their belts, but my tanks have gotta have gas'.

[4] Ritchie Ovendale, *British Defence Policy Since 1945* (Manchester: Manchester University Press, 1994) p.5.

[5] See Paul Rogers, 'Oil and US Security' in Paul Rogers *'Global Security and the War on Terror: Elite Power and the Illusion of Control'* (Abingdon: Routledge, 2008) The Green Party of the United States explicitly stated that they believed that oil was a major factor in the UK and US decision to invade Iraq even before it took place. See *Green Party of the United States Website*, 'US Oil Interests are Driving the Invasion of Iraq, say Greens', (23 February 2003) accessed at http://www.gp.org/press/pr_02_24_03.html on 30 April 2012; Alan Greenspan, former Chairman of the US Federal Reserve, commented in his autobiography *'The Age of Turbulence: Adventures in a New World'* that he believed the invasion of Iraq in 2003 was primarily due to the need to safeguard the large reserves of oil in Iraq for the world economy. In an interview with *The Guardian* newspaper in 2007 he commented, when quizzed on this statement 'From a rational point of view, I cannot understand why we don't name what is evident and indeed a wholly defensible pre-emptive position'. See Richard Adams, 'Invasion of Iraq was driven by oil, says Greenspan', *The Guardian* (17 September 2007).

Therefore, we can see that energy security was a major concern for the armed forces for much of the 20th Century. As such, this thesis will ascertain whether this concern continued into the first decade of the 21st century or whether the British military no longer viewed it as an issue of great significance.

The historical importance of this issue for the operational effectiveness of the British armed forces has recently been mirrored by the rising prominence of energy security considerations within British political discourse. This fact (along with the need to study a specific political time frame in which key decisions in this area were made) is why this thesis concentrates specifically on the period from the inception of the Labour government in 1997 until its demise in 2010. Indeed, during the Labour government's time in office, three key White Papers on energy security were published, the proposed construction of a new series of nuclear power stations was outlined and a new government department for energy matters, the Department for Energy and Climate Change (DECC) was created.[6] Similarly, British defence policy also received greater attention within the media and the minds of the general public than in the immediate post-Cold War period. This enhanced prominence could be ascribed to what the journalist John Kampfner termed 'Blair's Wars' – Tony Blair's decisions as Prime Minister to deploy significant British forces in Kosovo, Sierra Leone, Afghanistan and Iraq from 1999 onwards.[7] Given that the Strategic Defence Review of 1998 was meant to 'fundamentally reshape and modernise Britain's armed forces, sorting out the weaknesses, [and] building on [their] strengths' it would therefore seem appropriate to consider whether defence policy kept pace with developments in energy policy during the Labour administration or took a different course due to other considerations.[8] This indeed is the main question this thesis seeks to address.

The creation of the DECC and the melding of policies towards energy and climate change into a single government department illustrated the increased importance of the latter issue in political debate. Indeed, the potential ramifications of climate change mitigation measures for civilian and military energy use, as well as the threat posed by climate change to

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[6] DTI, *Our Energy Future: Creating a Low Carbon Economy,* Cm 5761 (London: TSO, 2003); DTI, *Meeting the Energy Challenge: a White Paper on Energy,* Cm 7124 (London: TSO, 2007); BERR, *Meeting the Energy Challenge: A White Paper on Nuclear Power,* Cm 7296 (London: TSO, 2008); Martha Linden and Craig Woodhouse, 'Government needs nuclear power, Government insists', *The Independent* (9 November 2009). The DECC was created in October 2008 and brought together energy policy (previously under the remit of the now defunct Department of Business, Enterprise and Regulatory Reform) and climate mitigation policy (previously the responsibility of the Department for Environment, Food and Rural Affairs). See *DECC Website*, 'About Us' (2012) accessed at http://www.decc.gov.uk/en/content/cms/about/about.aspx on 30 April 2012.

[7] John Kampfner, *Blair's Wars* (London: Free Press, 2004).

[8] Quote taken from the then Secretary State for Defence, George Robertson's statement on the 'Strategic Defence Review', *Hansard,* HC Deb Volume 315, Column 1073 (July 8 1998).

future international security, are the reasons for the adoption of the international relations think-tank the Oxford Research Group's (ORG) notion of a sustainable security paradigm as a prism of analysis in this thesis. In brief, this paradigm views climate change and continued competition for key resources as significant global conflict drivers, both presently and in the future. The ORG's ideal response to these drivers entails adopting sustainable energy solutions that reduce the UK's reliance on imported fossil fuels, whilst at the same time mitigating climate change. The response it actually believes the UK has taken historically to energy security is that of a control paradigm approach, effectively using British military power, in alliance with the United States, to preserve access to key fossil fuel reserves and uphold the power of friendly but unpopular regimes.[9] This thesis will use these notions to determine the effect of energy security considerations on British defence policy from 1997 until 2010.

However, before we move onto the main body of the thesis, we must first summarise the purpose and general content of each chapter, so as to make the basis and structure of the argument clear in the reader's mind.

Chapter one defines what we mean when we refer to British defence policy, so that we have a solid understanding of the specific area of policy this thesis seeks to address. This chapter will also outline the framework for analysis that will be used to analyse defence policy, which is adopted from Ian Bellany's book 'Reviewing Britain's Defence'.[10] Here the thesis will explain the decision to analyse British defence policy at the three separate levels that will be scrutinized in succeeding chapters: declaratory policy; operational policy; and defence-industrial policy. This approach will also include an explanation of subsequent modifications of this model and how these will be integrated into the framework for analysis. Graham Allison's well-known methods of analysing government policy (outlined in the book 'Essence of Decision') will also be scrutinized and elements of his ideas similarly incorporated into the analytical framework.[11] Finally, the ORG's conception of a control paradigm and a sustainable security paradigm approach to wider security will then be delineated, and their utility to the analysis of the importance of energy security considerations in defence policy will be established.

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[9] James Kemp, 'Sustainable Peace and Security Today', *Compass Thinkpiece 18* (November 2006) p.2.
[10] Ian Bellany, *Reviewing Britain's Defence* (Aldershot: Dartmouth, 1994).
[11] Graham T. Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis* (New York: Longman, 1999) p.3. This book was first published in 1971 under Allison's sole authorship. Due to the emergence of tape recordings of government proceedings during the Cuban Missile Crisis, the book was rewritten with Philip Zelikow in 1999.

Chapter two will demonstrate the increasing importance of energy security considerations to the United Kingdom as a whole since 1997 and how these considerations could likely have affected defence policy in the period under examination.

Chapters three, four and five (the main body of the thesis) will then analyse the separate levels of defence policy within the framework for analysis provided by Ian Bellany, moving in succession through the declaratory, operational and defence-industrial levels of policy. These chapters will examine key documents, important actions and the statements made by senior actors at each level (or circle) of policy so as to explain the reasons for energy security's relative importance (or unimportance) in each individual sphere. Connections and divergences between each circle of policy will also be outlined so as to assess whether there has been a synergy in outlook between all parts of the British defence establishment in the attitude towards the importance of energy security as a key consideration.

The conclusion will then provide a summation of what has been discovered vis-a-vis defence policy in the analysis of preceding chapters and consider how these findings could be further utilised in future studies of British defence policy. Thus, with the structure of the thesis now clear in the reader's mind we can move on to the next chapter and the question of 'what is defence policy?'.

Chapter One

The Framework for Analysis

What is Defence Policy?

Before embarking on an analysis of energy security's effect on British defence policy it is first necessary to define what in fact we mean by 'defence policy' in this particular instance. The word '*policy*' itself can have a number of different nuances. According to John Baylis, these can include: a flow of decisions; a set of orientations or principles; an overall plan or framework; or a series of actions designed to achieve the objectives of a programme as a whole.[1] All seem to have a degree of validity.

Then there is the question of what we actually mean by '*defence*' in this particular context. Defence has a number of dictionary definitions. Two of the most applicable for this analysis are: 'resistance against danger or attack' and 'a country's military measures or resources'.[2] For the purposes of this thesis we can therefore apply these definitions to the defence of the state; the state being in Gianfranco Poggi's words 'a complex set of institutional arrangements for rule operating through the continuous and regulated activities of individuals acting as occupants of offices'. In Poggi's analysis, the state monopolizes, as far as it can, 'all faculties and facilities pertaining to this business'.[3] If we then use this definition to scrutinize the United Kingdom, we can see that the British state is comprised of all the institutions (such as the UK Parliament, the Police force, County Councils, prisons) that are employed to ensure effective rule of individuals within the territorial boundaries of Great Britain and Northern Ireland.

Thus, we can define defence as being concerned with protecting the state and the people it rules within a defined territorial unit from attack, through the use of military measures and resources. Of course, the attack on the state and its people could originate internally (from individuals or political bodies) or externally (from other states or terrorist organisations). In the UK, internal security has been mainly provided by the various county

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[1] John Baylis ed., *British Defence Policy in a Changing World* (London: Croom Helm, 1977) p.12.
[2] *Collins Dictionary and Thesaurus* (Glasgow: HarperCollins, 2000) p.300.
[3] Gianfranco Pozzi, *The Development of the Modern State: A Sociological Introduction* (Stanford University Press, 1978) p.1.

and borough police forces compulsorily instituted from the mid 19th century onwards.[4] Indeed, the UK has not had to face any major conventional military threat to internal security since the last Jacobite Rebellion was defeated in 1746.[5] Externally, the armed forces are the institutions that have been used to provide international security for the United Kingdom since the 18th Century.[6]

Due to the lack of major internal threats to the security of the state for a significant period of time and the creation of various internal security bodies such as the police, criminal justice and prison services, the term 'defence' in British political discourse has become a euphemism for the British armed forces. For example, the Ministry of Defence (MOD) is the government body that manages the armed forces, not the police, intelligence or prison services. Similarly, annual government statements on defence, as well as defence White Papers, are concerned with the administration of the armed forces and their general efficacy.

In truth, this denomination of 'defence' has often been concerned with far more than purely defensive actions. States can use their armed forces in an aggressive manner as part of what they term their defence policy, in this way seemingly belying the claims of defensive action. Indeed, the United Kingdom had a War Office until as late as 1963, when its responsibilities (along with the Admiralty and Air Ministry) were transferred to a new Ministry of Defence (MOD).[7] Nowadays, if offensive military action is taken by the state

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[4] The *Police (Counties and Boroughs) Bill* of 1856 legislated for the compulsory establishment of police forces in those counties and boroughs in England and Wales that did not already have them. A similar act was passed for Scotland in 1857. This led to the vast majority of internal security duties within the United Kingdom being transferred to the Police forces over time, leading to the present situation, where the armed forces are primarily postured for overseas action.

[5] This discounts military operations conducted in Ireland when it was incorporated into the United Kingdom. Northern Ireland's stability has been affected significantly by 'The Troubles' of the past 40 years, but this issue has arguably never posed the danger of undermining UK internal stability to any significant degree. There was certainly never a major conventional military threat.

[6] The creation of the Royal Navy can be traced back to Henry VIII's reign. The British Army was formed following the Act of Union in 1707 and the subsequent amalgamation of the English and Scottish Armies. One of its responsibilities has always been to maintain a policing role in the event of serious civil disturbance, but this has become less and less prominent as the Police Service has adopted much of the Army's previous duties. More recently, the Army has been used to aid the civilian sector with what CDS General Sir Michael Walker termed the 'four f's' – the fuel crisis, floods, the fire strike and the response to the foot and mouth disease outbreak. See General Sir Michael Walker, 'Delivering Security in a Changing World: Annual Chief of the Defence Staff Lecture', *The RUSI Journal,* Vol. 149, No. 1 (2004) p. 36.

[7] A Ministry of Defence had initially been established in 1946 to co-ordinate the policies of the War Office (the Army), the Admiralty (the Royal Navy) and the Air Ministry (the Royal Air Force) under the terms of the *Ministry of Defence Bill.* The *Defence (Transfer of Functions) Bill* of 1963 created a new unified Ministry of Defence that combined the functions of the previous Minister of Defence, the First Lord of the Admiralty and the separate Secretaries of State for War and Air. In addition, the new Cabinet post of Secretary of State for Defence was created. See MOD, *Central Organization for Defence*, Cmd. 6923 (London: HMSO, 1946) and MOD, *Central Organization for Defence*, Cmnd. 2097 (London: HMSO, 1963). In relation to the word 'defence' often being used as a euphemism for actions that are far from defensive, there is a famous comment attributed to Napoleon Bonaparte that stated that he was never the aggressor when his armies invaded another country, as the opposing soldiers always fired first.

against other states it can have a myriad of justifications including humanitarian intervention, peacekeeping, the enforcement of international law, state-building or self-defence (this offensive-defensive response to a future perceived threat being termed pre-emption). This increased prominence of these justifications can partly be ascribed to the legacy of the UN Charter of 1945 and the Nuremberg Trials of 1946, both of which effectively denoted flagrant wars of aggression as war crimes.[8] However, there has always been a history of these types of justifications from the governments of states, no matter the political system, as no population would be likely to fight a war in which they considered their own cause to be wrong.[9] As John Mearsheimer has commented 'Most people prefer to think of fights between their own state and rival states as clashes between good and evil, where they are on the side of the angels and their opponents are aligned with the devil. Thus, leaders tend to portray war as a moral crusade or an ideological contest, rather than as a struggle for power'.[10] In line with this fact, all the United Kingdom's major military interventions since 1997 have been grounded upon the aforementioned reasons (with the exception of self-defence).[11] Accordingly, we can see that the word 'defence' in British government policy is associated with the armed forces and can pertain to military action that is conducted outside the United

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[8] See *UN Website*, 'Charter of the United Nations' (2012) accessed at http://www.un.org/en/documents/charter/ on 30 April 2012 and *Yale Law School: The Avalon Project*, 'Nuremberg Trial Proceedings Vol 1: Charter of the International Military Tribunal' (1945) accessed at http://avalon.law.yale.edu/imt/imtconst.asp on 30 April 2012. The latter link provides the text of the document that set out the principles for prosecution at the Nuremberg Trials of 1946.

[9] The Nazi regime justified its invasion of Poland in 1939 by staging a mock attack on the Gleiwitz radio station, and then claiming it had been instigated by the Polish government. In 1931, it is believed that the Japanese government had staged a similar attack on a section of Japanese-owned railway in Southern Manchuria as a pretext for the invasion of Manchuria by the Imperial Japanese Army.

[10] John Mearsheimer, *The Tragedy of Great Power Politics* (New York; London: Norton, 2001) p.23.

[11] Kosovo was a war ostensibly conducted for humanitarian reasons, as evidenced by Tony Blair's famous speech on 'The Doctrine of International Community' in Chicago in 1999 where he stated: 'This is a just war, based not on any territorial ambitions but on values. We cannot let the evil of ethnic cleansing stand. We must not rest until it is reversed'. See Tony Blair, 'The Doctrine of International Community', *Speech made to the Economic Club* (24 April 1999) accessed at http://keeptonyblairforpm.wordpress.com/blair-speech-transcripts-from-1997-2007/#chicago on 30 April 2012. As regards the intervention in Sierra Leone, the recent Defence Green Paper states this was conducted to support the government of Sierra Leone, assist the UN force stationed there and train the Sierra Leonean army. See MOD, *Adaptability and Partnership: Issues for the Strategic Defence Review,* Cm. 7794 (London: TSO, 2010). Gordon Brown stated at the Iraq Inquiry that the war with Iraq was conducted primarily to uphold international law 'I believe we made the right decision for the right reasons, because the international community had for years asked Saddam Hussein to abide by international law ... and, at the end of the day, it was impossible to persuade him that he should abide by international law'. See Gordon Brown, *Testimony to the Iraq Inquiry* (5 March 2010) accessed at http://www.iraqinquiry.org.uk/media/45411/100503-brown.pdf on 30 April 2012. The then British Foreign Secretary, David Miliband, commented that the continued British presence in Afghanistan since 2001 was for reasons of state-building and to deny a base for terrorism: '... we're not trying to create a colony [in Afghanistan]. We're trying to support a democratically-elected Afghan government with all the difficulties that that country faces to make itself safe for its own people from the return of the Taliban'. See *Prospect Magazine*, 'Interview: David Miliband' (25 October 2008).

Kingdom's own borders, whether this be in international waters or another state's defined territorial boundaries.

In view of this analysis, what then can we define defence policy as being? We have seen that 'policy' can be viewed as an overall plan or framework aimed at achieving a particular end. At the governmental level, the term 'defence' means anything related to the state's own armed forces, which in Great Britain are considered to be primarily geared towards tackling external threats. In combining these two concepts, we can argue that 'defence policy' is therefore a government framework for action in relation to the armed forces, ultimately aimed at ensuring national security from outside threats. Perhaps the most cogent definition is provided by John Baylis when he comments: '[Defence policy] involves the political direction of a nation's defence resources as a whole with a view to ensuring national security, protecting vital interests and furthering the international aims of the state.'[12] Indeed, this is an effective rationalization and, for the purposes of this thesis, will provide the necessary basis for the resultant analysis of the UK government's decisions on defence from 1997 onwards. Following on from this, the next section will outline in greater depth what factors influence defence policy formulation in the UK and which framework for analysis we can use to best evaluate energy security's effect on British defence policy since 1997.

Effective Analysis of Defence Policy

In a representative democracy such as Britain, the elected government is the key executive decision-maker and should therefore be expected to formulate the overall direction of defence policy. As we saw in the previous section, British defence policy is fundamentally postured towards dealing with external threats to the British state. As such, defence policy for the United Kingdom should be heavily related to foreign policy. Hence, the international aims of the British state and political establishment, usually fostered through diplomacy via the Foreign and Commonwealth Office (FCO) are backed by the potential utilization of force from the British military. This apparent symbiosis between defence policy and foreign policy was clearly outlined in the Strategic Defence Review of 1998 with the statements 'The publication of this White Paper fulfils the Government's manifesto commitment to conduct a foreign policy-led strategic defence review' and 'Defence serves the aims of foreign and

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[12] Baylis ed. (1977) p.14.

security policy'.[13] From this understanding, it would seem justified if we examined defence policy decisions purely through the lens of the foreign policy considerations of the elected government. In this manner, if energy security was a significant issue for British foreign policy we would expect this approach to be reflected in defence policy.

However, this analytical base is not sufficient on its own to explain British defence policy in its entirety. There are still complex processes that operate within defence policy, which can complicate the follow-through of any governmental decision that is taken. For example, as regards procurement of equipment for the armed forces, it is not a simple procedure of a governmental decision being taken to buy a particular weapons system and that particular item being bought for the use of the armed forces. There will be the views of the armed forces to be taken into account, as well as the UK arms industry, both of which have significant lobbying power in the media and amongst certain MPs (who may represent constituencies in which the defence industry is a major employer, as well as perhaps having served with the military). Both these areas can be a significant determinant in what the government decides can be effectively implemented as regards the defence budget.[14]

To continue, it would appear from governmental analysis conducted since 1945 that the traditional top-down explanations of decision-making by governments have proven to be too simplistic to explain the course of complex policies and events. The much lauded book 'Essence of Decision' was a seminal work in understanding the processes of governmental policy and the difficulty of reaching desired outcomes in modern governmental structures. Through an analysis of the Cuban Missile Crisis the book's author, Graham T. Allison, showed that the decision maker in any government is not one calculating individual but 'a conglomerate of large organisations and political actors'.[15] Therefore, in order for the reader to better understand the influence and effects that separate organizations can have on the formulation of government policy, as well as the reasons for the adoption of Ian Bellany's related framework for analysis, we will firstly analyse the models put forward by Graham Allison, before proceeding onto an outline of Bellany's paradigm.

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[13] MOD, *The Strategic Defence Review,* Cm. 3999 (London: TSO, 1998) Chapter One, paragraphs 1 and 13.
[14] Michael D. Hobkirk, *The Politics of Defence Budgeting: a Study of Organisation and Resource Allocation in the United Kingdom and the United States* (London: Macmillan, 1984) p.10.
[15] Graham T. Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis* (New York: Longman, 1999) p.3.

Graham Allison's Models of Government

Three models were put forward for analysis in 'Essence of Decision': The Rational Actor Model; The Organisational Behaviour Paradigm and The Governmental Politics Model. Together, all were considered to be important in explaining the eventual outcomes of governmental policies. They all explained different aspects of the decision-making process. The Rational Actor Model was useful for understanding the objectives and goals set by an administration in a rational manner. To put it simply, based upon a series of factors politicians would determine what was the most propitious course of action in a particular policy area. In essence, decisions were taken based upon cost/benefit calculations of likely outcomes based on the available evidence. The factors for consideration would include: the regime's particular goals and objectives; the alternative decisions that could be made; and the potential consequences of each decision.[16] In relation to British defence policy, we could interpret the decision to invade Iraq in 2003 as following this model. Thus, Tony Blair and the majority of the British Cabinet stated that they saw the failure of the Iraq regime to comply with UN weapons inspections as deliberate flouting of international law and that they believed he had developed a WMD capability that posed a significant threat to international stability.[17] They therefore took a deliberate, rational decision to employ force, along with the United States, to remove Saddam Hussein's regime and destroy any WMDs that were found, thereby preventing the possibility of a further costly inter-state war in the region and the potential for WMDs to fall into the hands of terrorist groups that were intent on attacking the United Kingdom.[18] Thus, the government were the prime decision makers in this particular

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[16] Ibid. p.18.

[17] See *Hansard,* HC Deb Volume 390, Columns 3-5 (24 September 2002) Prime Minister Tony Blair: '[The intelligence picture] concludes that Iraq has chemical and biological weapons, that Saddam has continued to produce them, that he has existing and active military plans for the use of chemical and biological weapons, which could be activated within 45 minutes, including against his own Shia population, and that he is actively trying to acquire nuclear weapons capability' and 'Read the chapter on Saddam and human rights in this dossier. Read not just about the 1 million dead in the war with Iran, not just about the 100,000 Kurds brutally murdered in northern Iraq, not just about the 200,000 Shia Muslims driven from the marshlands in southern Iraq, and not just about the attempt to subjugate and brutalise the Kuwaitis in 1990 that led to the Gulf war. I say, "Read also about the routine butchering of political opponents, the prison 'cleansing' regimes in which thousands die, the torture chambers and the hideous penalties supervised by him and his family and detailed by Amnesty International." Read it all and, again, I defy anyone to say that this cruel and sadistic dictator should be allowed any possibility of getting his hands on chemical, biological and nuclear weapons of mass destruction.' See also *BBC News Online,* 'Blair outlines Iraq evidence' (24 September 2002) accessed at http://news.bbc.co.uk/1/hi/uk_politics/2277352.stm on 30 April 2012.

[18] See *Hansard,* HC Deb Volume 401, Column 768 (18 March 2003) Prime Minister Tony Blair: 'The possibility of the two coming together—of terrorist groups in possession of weapons of mass destruction or even of a so-called dirty radiological bomb—is now, in my judgment, a real and present danger to Britain and its

instance. This model had been so dominant and fundamental to most academic thinking that it was rarely explicitly recognised up until Allison's analysis.[19] Still, it remains an important analytical tool for anyone analysing any form of governmental decision-making.

The Organisational Behaviour Paradigm identifies the fact that a government is, in essence, a vast conglomerate of loosely allied organisations.[20] Each organisation is assigned a particular set of problems to work on and resolve. Due to their large size they have to develop a set of standard operating procedures to ensure efficiency. Consequently, a particular organizational culture develops in each organisation – what could be described as 'a way of doing things'. This affects the way they are likely to respond to certain challenges. For example, one could hypothesise that the Royal Navy's whole ethos has for hundreds of years been based upon the provision of surface ships. Many navy personnel may have joined due to the attraction of these particular weapons systems and the whole of the navy's doctrine may be based upon these particular platforms. Therefore, if a government attempts to restructure an organisation or assign it a task that it collectively believes is not within its remit there is likely to be a degree of resistance. As Michael D. Hobkirk comments 'Any large organisation of a hierarchical nature is likely to be hostile to new ideas, particularly those affecting established procedures.'[21] As regards this, a prime example is the negative response given to the 1981 Defence Review calling for a change in emphasis in the Royal Navy from a surface-based to a more submarine-based naval force.[22] Indeed, despite the experiences of the Falklands Conflict in 1982 and the proven vulnerabilities of surface ships such as destroyers and frigates to enemy air attack (which Nott had recognised), the Royal Navy has persisted in developing the new Type 45 Destroyer and Type 26 Frigate.[23] As the defence commentator and former Royal Navy Officer Lewis Page has postulated, this continued organisational

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national security.' Rational in this context 'refers to consistent value-maximizing choice within specified constraints'. Definition taken from Graham Allison and Philip Zellikow, (1999) p.18.

[19] Allison and Zelikow (1999) pp.15-16.

[20] Ibid. p.143.

[21] Michael D. Hobkirk, *The Politics of Defence Budgeting: a Study of Organisation and Resource Allocation in the United Kingdom and the United States* (London: Macmillan, 1984) p.107.

[22] See Andrew Dorman, 'John Nott and the Royal Navy: the 1981 Defence Review Revisited', *Contemporary British History*, Vol. 15, No. 2 (2001). Andrew Dorman states in the introduction that due to the 1981 Defence Review, the then Minister of Defence, John Nott, still 'remains a figure of scorn within parts of the Royal Navy'. Indeed, the article outlines the fact that, to avoid the proposed cuts in the surface fleet, the Royal Navy put forward proposals to disband the Royal Marines and scrap the navy's amphibious ships.

[23] See *The Falklands Campaign: The Lessons,* Cmnd. 8758 (London:TSO, 1982). The lack of an effective Airborne Early Warning (AEW) capability to defend against Argentine aircraft armed with the Exocet anti-ship missile was emphasised as a significant deficiency in capability. This capability gap has since been filled by Sea King helicopters equipped with long-range radar. However, the point remains that without air cover, surface ships remain vulnerable to air attack, even if they are designed for an air defence role like the Type 45 Destroyers. Indeed, discounting the Exocet, a significant proportion of Argentine *bombs* hit their targets but failed to explode. If they had, the losses to the British fleet may have been unsustainable.

focus on these kinds of ships reflects the fact that the Royal Navy career structure is geared towards promotion of those who have commanded these types of vessels. In his opinion, this has been the reason for their persistent development rather than their perceived utility in military operations.[24]

Finally, there is the Governmental Politics Model. Using this model, governmental behaviour can be understood as a result of bargaining between different political players. This includes political heads of governmental departments, top civil servants and lower level officials in the press, Non-Governmental Organisations (NGOs) and the public arena. Each player represents their particular organisation and will generally feel obliged to fight their corner as well as aiming to further their own personal ambitions, if possible.[25]An illustration of its importance can be provided by the meeting of the First Sea Lord, Sir Henry Leach and Margaret Thatcher when it became clear that Argentine forces were about to invade the Falklands in 1982. Leach was adamant that the UK should send an expeditionary force to retake the islands and it is believed by many that this was a decisive factor in persuading the then Prime Minister to embark on war with Argentina.[26] Both personalities had their own personal reasons for agreeing on this course of action. Leach may have seen it as an opportunity to prove that the navy's surface capability was an essential force and should not face the projected cuts outlined in the 1981 defence review. Thatcher, on her part, saw an opportunity to boost her government's flagging popularity.

Of course, despite the originality of Allison's models there are still valid criticisms that can be made regarding its assumptions. Lawrence Freedman has argued that that the formulation of the Governmental Politics Model focused too heavily on 'those moments when bureaucracy is in greatest control of policy and action ... the most visible stage is taken to be the most important stage'.[27] He also commented that the model failed to take into account the fact that policy formulation would still result in less-than perfect performance even if all actors were pursuing the same goals: 'Even if all key actors are essentially of the same mind coherence is difficult to achieve because of problems endemic to the management

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[24] Lewis Page, *Lions, Donkeys and Dinosaurs: Waste and Blundering in the Military* (London: Arrow, 2007) p.216: 'The command of a frigate or destroyer is ... like a battalion/regiment CO in the army. No frigates or destroyers would mean no credible command slots at this rank, which would, in turn, decrease the supply of admiral material in the future'.

[25] Allison and Zelikow (1999) pp.255-256.

[26] See *The Daily Telegraph,* 'Obituary: Admiral of the Fleet Sir Henry Leach' (26 April 2011) accessed at http://www.telegraph.co.uk/news/obituaries/military-obituaries/naval-obituaries/8474861/Admiral-of-the-Fleet-Sir-Henry-Leach.html on 30 April 2012. Also, see Lawrence Freedman, *The Official History of the Falklands Campaign – Volume II: War and Diplomacy,* (Abingdon: Routledge, 2005) p.3.

[27] Lawrence Freedman, 'Logic, Politics and Foreign Policy Processes: A Critique of the Bureaucratic Politics Model', *International Affairs,* Vol. 52, No. 3 (1976) p.440.

of the governmental apparatus and the design of value-maximising policies'.[28] Jonathan Bendor and Thomas Hammond have also argued that Allison's original models were ambiguous in their assumptions and that their areas of concern often overlapped: 'we find that [the Organizational Behaviour Model] and [the Governmental Politics Model], which have different intellectual pedigrees and which Allison presumably intended to be distinct, apparently share much of the same analytical turf'.[29] They also made the point that the Rational Actor Model was far too simplistic and discounted the uncertainties inherent at this level of policy. As such they argued that the very lack of foundation of the analysis provided by this paradigm undermined the Organizational Behaviour and Governmental Politics Models.[30] These shortfalls in Allison's examination demonstrate the problems with the development of any overarching theory. Nonetheless, his ideas have stimulated much discussion and development in defence policy-making theory as we shall see from the next section.

The Model to be Used: Ian Bellany's Framework for Analysis

Despite the criticisms levelled at Allison's initial hypothesis, as a basis for the examination of governmental decisions it provides a solid grounding and, as such, there was further elaboration on its concepts by academics interested specifically in defence. This elaboration was also due to the fact that Allison's model, although applicable to all areas of government, had mainly been focussed on the formulation of foreign policy. Desmond Ball and Donald M. Snow (writing about nuclear strategy) adapted the Governmental Politics Model to defence policy and, in this manner, separately identified 3 levels of defence policy: declaratory policy, operational policy and development-industrial policy, which relate to Allison's models.[31] Their ideas were then successfully adapted by Ian Bellany as the framework for analysis in his excellent book on the United Kingdom's conventional defence policy *Reviewing Britain's Defence*. Indeed, this framework for analysis will be adopted in this thesis to answer the question of how energy security concepts have affected the formulation of defence policy

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[28] Ibid. p.438.
[29] Jonathan Bendor and Thomas H. Hammond ,'Rethinking Allison's Models', *The American Political Science Review,* Vol. 86, No. 2 (1992) p.304.
[30] Ibid. p.319.
[31] Ian Bellany *'Reviewing Britain's Defence'* (Aldershot: Dartmouth, 1994) pp.5-8.

since 1997.[32] In the first instance, this is because the model neatly divides defence policy into three 'spheres' that are relatively distinct in their institutional makeup.[33] It therefore makes the task of analysing defence policy easier by delineating it into recognisable 'chunks'.

Perhaps the most apt justification for this methodical approach was provided by the then Defence Secretary, Dr Liam Fox, when he stated that, under the new Conservative government, the MOD would see structural reform in which the department would be 'reorganised into three pillars of Policy and Strategy, the Armed Forces, and Procurement and Estates'.[34] In light of this, the subsequent independent review document *Defence Reform – an independent report into the structure and management of the Ministry of Defence*, called for changes in the structure of the MOD whereby the Secretary of State for Defence and his Ministers would have the responsibility of setting 'strategic direction on the military capabilities the country needs and on the types of operations the Armed Forces should undertake'. Their essential task was to direct defence policy.[35] The individual service chiefs would 'be responsible for generating and developing their Service in line with that strategic direction and within the budget set'.[36] The Chief of Joint Operations (CJO) would then ideally be given the required forces by the individual service chiefs and would then conduct operations in liaison with the Chief of the Defence Staff. According to the report, this would fulfil the operational function of defence policy.[37] Finally, the Chief of Defence Material and Defence Equipment and Support (DE&S) would be responsible for acquisition of new defence equipment, with the 2nd Permanent Under Secretary (PUS) responsible for oversight of science and technology development within the MOD.[38]

From this approach (that is analogous to Ian Bellany's three spheres of defence policy) we can see that there has been a recognition at the executive level of government that the effective creation of a clear differentiation of policy areas within the MOD is likely to offer an effective method of managing defence policy as a whole within the United Kingdom. As such, the adoption of a similar delineation in the analysis of defence policy in this thesis

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[32] The term 'development-industrial policy' has been changed to 'defence-industrial policy' so as to provide a clearer connection in the reader's mind between this and the other levels of policy within the overall framework, as well as following the Labour government's definition of this level of defence policy.
[33] The differences between the separate circles of policy will be outlined in greater depth below.
[34] Liam Fox, *Speech made at the Royal Institute of Chartered Surveyors* (13 August 2010) accessed at http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/SofS/20100813TheNeedForDefenceReform.htm on 30 April 2012.
[35] *Defence Reform – an independent report into the structure and management of the Ministry of Defence* (London: TSO, 2011) p.17.
[36] Ibid. p.18.
[37] Ibid. This was given the moniker 'the *operate* function' in the report.
[38] Ibid. p.18, p.75.

would appear justified. Indeed, the essential components of Bellany's framework were adopted by Andrew Dorman, albeit with certain updates and modifications, which will be outlined later in this chapter.[39] Firstly, before we move on to the main body of analysis, it will be necessary to outline each strand of policy and the methods that will be used to effectively scrutinize each level so as to establish the overall aims and purpose of particular actions in the period in question.

Declaratory Policy

Declaratory policy, in this instance, can be defined as the officially stated description of what British defence policy is. This includes Defence White Papers, the language of government ministers in their public speeches, statements to the press on defence matters and any debates on defence that take place in the House of Commons.[40] It is the official line of the government and indicates the direction that it aims to take in all defence matters. For example, in the 20th Century the British government had a history of publishing an annual statement on defence outlining the roles and responsibilities of the armed forces for the coming year, as well as potential threats and the finances of the armed forces. Under the previous Labour government, this policy was discontinued in 1999. Instead, from 1998 onwards there were a number of Defence White Papers outlining all of the issues mentioned in the annual statements on defence but on a more infrequent and irregular basis. As such, the sources outlined above will provide the main body of analysis for the declaratory section of this thesis.

Operational Policy

Operational policy refers to the British armed forces and what they view their role as being, optimally as a servant of aims decided at the declaratory level.[41] There is also the desire amongst the armed forces to maintain a relatively pre-eminent position amongst UK departments and secure future funding and equipment. As mentioned already, all three services (being large organisations) would like to maintain (and strengthen, if possible) their own culture and traditions. This often leads to inter-service rivalry, as the Army, RAF and

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[39] Andrew Dorman, *Defence Under Thatcher* (Basingstoke: Palgrave Macmillan, 2002).
[40] Ibid. p.15.
[41] Ibid. p.2.

Royal Navy lobby the government for vital funding and against potential budgetary cutbacks. This was seen in 2010 with speeches made by the Head of the Royal Navy, First Sea Lord (FSL) Admiral Sir Mark Stanhope and Chief of the General Staff (CGS) General Sir David Richards.[42] These statements were cited in the media as demonstrating a difference in opinion on the future direction of defence policy, as well as illustrating a battle between the services for dwindling resources. This was because budgetary cuts for defence were widely believed to be on the agenda following the 2010 general election.[43] Hence, in order to analyse this level of defence policy and whether its conception of energy security is effectively in line with declaratory policy, we will therefore need to examine any discrepancies between statements made by senior officers at the operational level and the declaratory level, as well as within the operational level itself. We will also need to scrutinize the doctrinal works published by the armed forces, as again, this will give us a clearer view of how the armed services viewed themselves and their purpose in the period in question, as well as whether energy security considerations had any impact on their general outlook.

In addition to the armed forces' view of their designated role, Ian Bellany's framework in relation to operational policy also concerns the actual tasks that the armed forces are called upon to perform by the government, whether these tasks are peacekeeping, humanitarian assistance or the invasion of another country.[44] In this way, we can determine whether declaratory policy's relative emphasis on energy security was reflected in the operations conducted by the British military between 1997 and 2010.

Defence-Industrial Policy

Defence-Industrial policy relates to the defence-contracting industries based within the United Kingdom and what they interpret their role as being for and what they regard themselves as ready to do.[45] For the purposes of this analysis, this does not necessarily mean

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[42] See Admiral Sir Mark Stanhope, 'Defence in a Changing World: Flexible Thinking, Flexible Forces', *Speech made at the Berwin, Leighton and Paisner Defence Breakfast* (19 January 2010) accessed at http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/ChiefStaff/20100119DefenceInAChangedWorldFlexibleThinkingFlexibleForces.htm on 30 April 2012 and General Sir David Richards, 'Future Conflict and Its Prevention: People and the Information Age', *Speech made to the International Institute for Strategic Studies (IISS)* (18 January 2010) accessed at http://www.iiss.org/recent-key-addresses/general-sir-david-richards-address/ on 30 April 2012.

[43] 'UK military chiefs clash over future defence strategy', *The Guardian* (19 January 2010) and Malcolm Chalmers, 'Capability Cost Trends: Implications for the Defence Review', *RUSI Working Paper Number 5* (January 2010).

[44] Bellany (1994) p.45.

[45] Ibid. p.2.

that they have to be British-owned companies. This is because due to a process of consolidation within the global defence market following the end of the Cold War, there are now fewer large companies vying for trade within the UK (the same is true worldwide). BAE Systems has become the largest British defence company (following a series of acquisitions) and there remain smaller British defence companies such as Qinetiq, Cobham and Chemring.[46] However, foreign defence companies such as Thales and General Dynamics have also created a significant industrial presence within the UK. In fact, Thales has been contracted to build the new Queen Elizabeth class aircraft carriers for the Royal Navy and General Dynamics has recently been contracted to build the new light tank for the British Army.[47] This reflected the Labour government's view that the internationalisation of the defence industry now meant that 'The UK defence industry should ... be defined in terms of where the technology is created, where the skills and the intellectual property reside, where jobs are created and sustained, and where the investment is made'.[48] Thus, when we examine this level of policy we are examining the military research, development and manufacture of equipment within the UK conducted by British workers.

In order to determine the effect of energy security considerations on this level of policy we will need to analyse the statements made by senior executives of defence companies that operate within the UK, as well as any policy documents published by defence industry bodies such as the Defence Industries Council (DIC) from 1997 until 2010. We can then ascertain whether developing technology to enhance energy efficiency and combat energy issues such as climate change was an important determinant of action from 1997 onwards. Finally, we will also examine what systems were actually developed (or were in development in the studied period) with energy security considerations in mind.

Possible Criticisms of Bellany's Framework

Like any model, Ian Bellany's is open to criticism. In this manner, the adoption of his framework for analysis for this thesis can also be criticised. Thus, we need to defend its

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[46] For a list of British defence companies within the world's top 100 see *Defense News Website,* 'Defense News Top 100' (2010) accessed at http://special.defensenews.com/top-100/ on 7 May 2012.
[47] See *BBC News Online,* 'General Dynamics beats BAE to win UK tank-making deal' (22 March 2010) accessed at http://news.bbc.co.uk/1/hi/business/8580266.stm on 7 May 2012 and read information on Thales' role in the construction of the new aircraft carriers at *Thales Group Website,* 'Aircraft Carriers – Queen Elizabeth-class aircraft carriers' (2012) accessed at http://www.thalesgroup.com/Portfolio/Defence/naval_productpage_CVF/?pid=6906 on 7 May 2012.
[48] MOD, *Ministry of Defence Policy Paper – Paper No. 5: Defence Industrial Policy* (MOD, 2002) p.9.

adoption if the reader is to feel comfortable with its use. Indeed, Ian Bellany addressed these potential criticisms within the book in question. He accepted the fact that disputes within each circle of defence policy (as there undoubtedly are) could possibly undermine his model. As we have seen above, there is inter-service rivalry within the armed forces, and even the possibility of quarrels within the same service – 'for instance between the sub-surface and surface arms of the navy'.[49] The same fact applied to possible labour disputes and inter-company competition at the defence-industrial level of policy, as well as governmental disagreements at the declaratory level. In response to these potential observations, Bellany stated 'it cannot be denied that there is something arbitrary in settling for three levels of policy; if each level (or circle of actors) is capable of further subdivision, why stop at three, it might be asked'.[50] His response is to argue for a 'suspension of judgement' until the reader has finished reading the book, as well as to argue that due to the complexity of the subject (and the world in general) one could always call for more and more sub-divisions so as to better reflect reality.[51] One's analysis has to stop at some point so as not to be get bogged down in too much detail, hence Bellany's statement that 'The possibility of sub-atomic physics does not preclude the possibility of chemistry'.[52]

In light of these arguments, it is therefore important to note that this framework still remains a simplification of reality and by no means aims to create a comprehensive overview of all the individual factors that have affected government policy in this area. Simplifications are needed so that we can effectively make sense of systems that involve millions of actions and decisions being taken every day, with many competing aims and interests amongst the individuals making these choices.

Thus, Bellany's model effectively delineates defence policy into three constituent parts that are often perceived to have different and competing goals. [53] It provides sound methodological scaffolding for the empirical examination of separate levels of defence policy and allows us to determine whether there were differing conceptions of the importance of energy security within the overall defence establishment during Labour's time in power. In this manner, we can ascertain whether the importance (or lack thereof) of energy security

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[49] Bellany (1994) p.29.
[50] Ibid.
[51] The two philosophical problems of Achilles and the tortoise (in which the pursuer can never catch the front-runner in a race as he must always travel half the distance that the pursued has travelled, thus never catching him) and the paradox of the heap (in which the question is asked: at what point does a heap of sand cease to be a heap of sand as individual grains of sand are removed) perhaps best illustrate this issue.
[52] Ibid. pp.29-30.
[53] See Allison and Zelikow (1999) and Andrew Dorman (2002).

within defence policy has been due to the effective efforts of one, two or all the separate circles of policy. Indeed, we may find that there is a synergy of effort or a misalignment of the separate strands. Still, despite the sound analytical basis that Bellany's model provides through the demarcation of British defence policy into separate 'circles' of policy, there are still modifications that can be made in order to improve its application to the understanding of defence policy. These additions to the framework for analysis are outlined in the next section.

Additions to Bellany's Framework for Analysis: Andrew Dorman's Model

As alluded to earlier in this chapter, Andrew Dorman adopted a similar approach to Ian Bellany in his book *Defence Under Thatcher*. For example, he commented in the introduction to this work that 'The defence policy-making process remains a direct reflection of the interrelationship of declaratory, strategic and procurement policy overseen by the MOD'.[54] However, he updated the Bellany approach by introducing the idea of 'time cycles' in defence policy. In this approach, each level of policy is understood to be working under different time constraints, with the actors at each level of defence policy heavily influenced by these. For the purposes of this thesis, aspects of this model will be integrated into the analysis in each chapter of the successive levels of defence policy. This will then illuminate the reader as to how the separate time cycles at each level of policy (and any attendant interaction between these) may have created any perceived differences between policy formulation and subsequent policy implementation. Dorman's model can then be utilised at the appropriate juncture of each chapter where it is deemed to provide an effective explanation as to why energy security considerations may have increased in importance or been sidelined at the three separate levels of defence policy at certain key points.

The declaratory sphere of policy is considered to be primarily focussed upon short-term considerations, looking ahead up to two years. This is due to the general vicissitudes of parliamentary politics and the fact that defence secretaries and ministers generally only have a short time period in which to make an impression on their department, so as to further their political careers. As Dorman commented about their situation: 'Long-term planning does not

[54] Andrew Dorman (2002) p.9; On the same page, Dorman states 'In summary British defence policy is a combination of several factors. First, the formal declaratory policy line espoused by the government ... Second, the strategic policy indicated by the various military doctrines adopted by Britain's armed services ... Third, the procurement policy reflected in the purchasing policies emanating from the MOD.' From this explanation, we can see that the strategic level of policy is directly analogous to operational policy summarized earlier in this chapter.

produce the results that are likely to be recognized in the short term, and the system of rapid ministerial turnover therefore encourages ministers to take a more short-term approach to the decisions before them'.[55] Thus, any long-term policies on procurement that may have been decided by previous ministers may be subject to change due to operational and political considerations.[56] In relation to this thesis' question, this could potentially mean equipment programmes long in development being adapted by defence ministers so as to provide greater energy-efficiency or alternative energy options, in response to energy concerns raised in British political debate.

In contrast, the operational and defence-industrial policy levels (known as the strategic and procurement policy levels in Dorman's analysis) operate under more extended timelines. The operational sphere is thought to be concerned chiefly with medium-term considerations (from four to ten years) as the individual Service Chiefs aim to preserve their service's share of the defence budget ahead of the immediate three year time period in which the budget has already been allotted. There is also the aim of increasing their individual services' autonomy over policy and procurement decisions and increasing the input they have in any future strategic defence reviews.[57] Similarly, successive Chiefs of the Defence Staff (CDSs) aim to increase their authority over the individual Service Chiefs, as well as aspiring to raise the influence of the Defence Staff in planning defence policy.[58] Thus, we could possibly see individual Service Chiefs alluding to the energy saving benefits provided by certain items of equipment or certain operational procedures, so as to promote or preserve the money and status assigned to their particular branch of the armed forces in the longer term.

Due to the fact that the contemporary procurement process of new weapons platforms and systems can now take as long as thirty years, the defence-industrial sphere operates under the most extended timeframe. Therefore, the British defence industry has to look ahead at the potential weapons projects that are likely to be commissioned by the British government and plan accordingly by preserving core capabilities such as key manufacturing skills. There is also the need to recognise the potential for technological improvements and the need to acquire any core competencies in which the industry is lacking so as to secure British

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[55] Andrew Dorman (2002) p.11.
[56] A recent example of this can be seen with the current Conservative government's decision in the *Strategic Defence and Security Review* of 2010 to build two Queen Elizabeth Class Aircraft Carriers (as outlined in the SDR of 1998) but mothball the second of these. There had never been any indication of this eventuality from the previous Labour government. See MOD, *Securing Britain in an Age of Uncertainty: The Strategic Defence and Security* Review, Cm. 7948 (London: TSO, 2010) p.21.
[57] Dorman (2002) p.12.
[58] Ibid. p.13.

governmental orders for equipment manufactured in the United Kingdom.[59] Consequently, the defence-industrial level may be keen to outline the perceived environmental or logistical benefits of a particular piece of equipment so as to ensure the long development process continues or could alternatively seek to downplay these factors and accentuate others, for the same reason.

In conclusion, Andrew Dorman's model will be used as an explanatory tool to help us understand why energy security considerations may or may not have been deemed important at each of the three policy levels under consideration. It must also be noted here that, based on circumstances, the time cycles can extend or contract and the actors can sometimes also change their cyclical outlook due to difference circumstances.[60] Any situation in which this occurs will be outlined in the appropriate section. The next section of this chapter will now examine how we can integrate Graham Allison's models of government into our analysis of British defence policy.

Additions to Bellany's Framework for Analysis: Graham Allison's Models of Government

As discussed earlier in this chapter, Graham Allison's three models of government can be used as templates to understand the reasons for governmental decisions. Certainly, Andrew Dorman explicitly states in his book that he adopts a 'bureaucratic-elite' model of analysis, akin to Allison's Bureaucratic Politics Model.[61] Therefore, Allison's models will be used in this thesis to help us understand more broadly how British defence policy functions in its approach to energy security considerations. For instance, if energy security is identified as being important at a particular level of defence policy is this because of a rational, top-down decision made by the Labour administration to focus on this issue, an organizational behaviour bias towards energy considerations, or the result of political negotiation and the attempts of different actors within the defence establishment to achieve their goals via an emphasis on energy security considerations? Indeed, could an importance placed on energy security by certain sections of the armed services be merely a manifestation of the desire to procure certain weapons platforms, rather than any interest in energy security per se? The

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[59] Ibid. p.14.
[60] Ibid. For example, Dorman notes that as a general election draws nearer, the short-term cyclical outlook of Defence ministers may contract.
[61] Ibid. p.10.

effective scrutiny of the empirical data collected will indicate which model best suits the understanding of how British defence policy was formulated in the period under examination.

Having now discussed the basic framework for analysis and hopefully made it clear in the reader's mind, it would now be pertinent to outline how this thesis will proceed in measuring the importance of energy security within British defence policy. The ensuing section will address this question.

Measuring the Effect of Energy Security Considerations in British Defence Policy

In order to understand energy security's effect on British defence policy from 1997 to 2010, we need to find an effective means of measuring its impact on each circle of policy in the studied period. In order to do this effectively, this thesis continues in a similar vein to the preceding sections in this chapter by adopting and melding an already espoused approach, in this instance in the form of two analytical prisms provided by the ORG. These can be termed the 'control paradigm' and the 'sustainable security' approaches to energy security. These paradigms will be used as twin axioms in the analysis; that is, the assumption is made that the 'control paradigm' and its attendant approach to energy security had a significant effect on British defence policy from 1945 until 1997 and that there is therefore the possibility that this way of thinking continued to exert influence on the British defence establishment from 1997 until 2010. In opposition to the 'control paradigm' archetype is the ORG's 'sustainable security' notion that provides a normative idea of the approach that could be taken to energy security by the British government, with a potential concomitant effect on the way defence policy is formulated. By outlining these two models of possible energy security approaches, we can then use their key features to measure energy security's effect on British defence policy formulation and implementation, at each of the three levels already outlined.

For example, if it is observable that UK defence policy in the examined period placed much emphasis on the ability to intervene militarily in a region that was essential in producing vital energy resources, with no significant parallel movement towards the adoption of sustainable energy sources, then the effect of energy security considerations on defence policy would have changed little from preceding governments and there would be no discontinuity with past approaches. Thus, we can deduce that a 'control paradigm' approach remained the default position and energy security remained an important factor in the

formulation of British defence policy. If alternatively, it is discernible that defence policy became more focussed on developing sustainable energy sources for military use, as well as greater cooperation with other government departments in security matters, we can infer that a 'sustainable security' paradigm was in vogue, creating a novel effect on defence policy. Ultimately, we may even find evidence of each approach at different points in the time period under examination or none at all. Energy security may prove to be an issue of little importance to the defence establishment. With these things in mind, the main tenets of the two paradigms will now be outlined.

The Control Paradigm

The ORG believes that since the end of the Cold War, the dominant idea that has been utilised to maintain global security has been what is termed the 'control paradigm'. This is an attempt to control security issues merely through the use of military force, whilst taking no real steps to address the deeper-seated causes of global instability. The main instigator of this paradigm is considered to be the United States, currently by far the most powerful global economic and military power. It is thought that it has aimed to maintain the status quo and its current hegemonic position through 'the control of access to fossil fuels, [by maintaining] its global military supremacy, [by protecting] US dominance of global financial institutions and [by maintaining] the military advantages enjoyed by key regional allies.'[62] This approach can alternatively be expressed as 'liddism' – the desire to keep the 'lid on insecurity' without addressing the root causes.[63] As regards energy resources, Paul Rogers, Global Security Consultant to the ORG and Professor of Peace Studies at Bradford University, has identified secure access to Persian Gulf oil as one of the prime US motivations for the invasion of Iraq.[64] The invasion of Iraq is cited as a prime example of this idea, with the UK also playing a major role in its execution.[65] Indeed, it is argued that these conflicts may have stimulated higher levels of recruitment into the ranks of Al-Qaeda and could have led to the increased radicalisation of Muslims in the United Kingdom.[66] Some have argued that these conflicts

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[62] James Kemp, 'Sustainable Peace and Security', *Compass Thinkpiece 18*, p.2.
[63] Paul Rogers, *Losing Control: Global Security in the Twenty-First Century* (London: Pluto Press, 2002) p.10.
[64] Paul Rogers, 'Iraq: the Path of War', *openDemocracy Website* (December 2009) accessed at http://sustainablesecurity.org/article/iraq-path-war on 6 May 2012.
[65] Ibid.
[66] Chris Abbot, Paul Rogers and John Sloboda, 'Global Responses to Global Threats: Sustainable Security for the 21st Century', *Oxford Research Group Briefing Paper* (ORG, 2006) p.19.

and the perceived attack on the Muslim Umma (global community) led directly to the July 2005 bombings in London.[67]

In essence, a control paradigm approach to security can be defined as 'an approach based on the false premise that insecurity can be controlled through military force or balance of power politics and containment, thus maintaining the status quo'.[68] In terms of energy security the ORG has outlined two related global conflict drivers: competition for resources and climate change. At the present time and in the recent past, the ORG contends that the control paradigm response to these has been to '[secure] control of, or access to, key resources such as Persian Gulf oil'.[69]

In reference to the United Kingdom, it is this thesis' contention that this 'control paradigm' approach was a significant determinant in the formulation of and implementation of defence policy from 1945 to 1997 (and even before this period). There is much evidence to support this point of view and the British government's desire to maintain access to the oil and gas resources of the region. As mentioned in the introduction, in 1946 the British Chiefs of Staff believed that the need to safeguard access to oil reserves from the Middle East was an important *raison d'etre* for a continued British military presence in Palestine.[70] In 1955, the British government signed the Baghdad pact with Iran, Iraq and Pakistan and Turkey in order to contribute to 'the defence of the Middle East against aggression' and 'maintain and develop continuity in defence planning and to promote political and economic co-operation within the area'.[71] The 1962 'Statement on the Defence Estimates' stated 'Peace and stability in the oil producing States of Arabia and the Persian Gulf are vital for the Western world', again stressing the importance of the energy resources of the area. The supposed withdrawal 'East of Suez' of British forces mooted in the 1967 'Statement on the Defence Estimates' was soon reneged upon, with the 1972 'Statement on the Defence Estimates' outlining 'new treaties of friendship signed with Bahrain, Qatar and the United Arab Emirates' with 'ships of the Royal Navy and ... Royal Air Force aircraft [visiting] the Gulf regularly' as well as 'the

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[67] Mark Townsend, 'Official: Iraq war led to London bombings', *The Observer* (April 2 2006).

[68] Chris Abbot and Thomas Phipps, 'Beyond Dependence and Legacy: Sustainable Security in Sub-Saharan Africa', *Oxford Research Group Briefing Paper* (May 2009) p.1, accessed at http://www.oxfordresearchgroup.org.uk/publications/briefing_papers/beyond_dependence_and_legacy_sustainable_security_sub_saharan_africa on 30 April 2012.

[69] Chris Abbot, Paul Rogers and John Sloboda, 'Global Responses to Global Threats: Sustainable Security for the 21st Century', p.28.

[70] Ritchie Ovendale, *British Defence Policy Since 1945* (Manchester: Manchester University Press, 1994) p.5.

[71] MOD, *Statement on Defence 1956*, Cmd. 9691 (London: HMSO, 1956) p.22.

loan of British military personnel to local defence forces...'.[72] In 1975, the significance of Arabian oil supplies was again emphasised, and the importance of maintaining secure oil supplies and transport routes continued to be mentioned in the 1980s and 1990s by the Conservative governments in power at the time.[73]

Indeed, the perceived strategic importance of the region (primarily due to its energy importance) saw British troops deployed to protect Kuwait from possible Iraqi invasion in 1961, British soldiers involved in conflict in Aden from 1963 until 1967 and in the Gulf war of 1990-1991. There has also been a constant British naval presence in the Persian Gulf since 1980 (the so-called Armilla patrol).[74] The planned withdrawal of British forces from 'East of Suez' in the 1967 'Statement on the Defence Estimates' demonstrated the importance of aircraft carriers in terms of their power projection capabilities in the Middle East and further afield, as both the planned replacements for the extant Royal Navy fleet carriers were cancelled as a result of this policy decision.[75] Arms exports to the region were also not insignificant with Oman purchasing all its military equipment from the UK until the end of the 1950s and continuing to be a major customer for the UK arms industry with the purchase of 38 Challenger 2 tanks in the 1990s.[76] Saudi Arabia was also a major importer of British military equipment with some of the biggest arms deals in history concluded between the two countries.[77] With this information in mind, we must now examine how we can use the control paradigm's manifest effects to interpret whether this was the general approach taken to energy security in defence policy from 1997 to 2010.

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[72] See MOD, *Statement on the Defence Estimates 1967,* Cmnd. 3203 (London: HMSO, 1967) pp.6-9 and MOD, *Statement on the Defence Estimates 1972*, Cmnd. 4891 (London: HMSO, 1972) p.4. In addition, the United Kingdom established a Five Power defence arrangement with Australia, New Zealand, Malaysia and Singapore in April 1971, which was designed to guarantee the security of the latter two states. See MOD, *Statement on the Defence Estimates 1971,* Cmnd. 4592 (London: HMSO, 1971) p.5 and MOD, *Statement on the Defence Estimates 1972,* Cmnd. 4891 (London: HMSO, 1972) p.4. Also, see Carlyle A. Thayer, 'The Five Power Defence Arrangements: The Quiet Achiever', *Security Challenges,* Vol. 3, No. 1 (2007).

[73] MOD, *Statement on the Defence Estimates 1975*, Cmnd. 5976 (London: HMSO, 1975) pp.14-15; MOD, *Statement on the Defence Estimates 1985*, Cmnd. 9430-I (London: TSO, 1985) p.11 and MOD, *Statement on the Defence Estimates 1996*, Cm. 3223 (London: TSO, 1996) p.3.

[74] MOD, *Statement on the Defence Estimates 1989 - Volume* I, Cm. 675 (London: TSO, 1989) p.19.

[75] See Paul Rogers, 'Big Boats and Bigger Skimmers: Determining Britain's Role in the Long War', *International Affairs,* Vol. 82, No. 4 (2006) pp. 656-657.

[76] See Mark Phythian, *The Politics of British Arms Sales Since 1964* (Manchester: Manchester University Press, 2000) p.240.

[77] Ibid. pp.213-225.

Using the Control Paradigm's Tenets to Measure Energy Security's Effect on Defence Policy

As the 'control paradigm' has represented the default defence position on energy security since 1945, the effect of this approach on British defence policy in the studied period would present a continuity of action with the examples given above. As such, if energy security was a key issue for British defence policy from 1997 onwards, and elements of a control paradigm approach were adopted, the first thing we would expect to see at the declaratory level of policy are statements that outlined the importance of maintaining the security of global supply routes, as well as the security significance of key fossil-fuel producing regions. We should also see the recognition that military action may have needed to be taken in order to ensure continued supplies of essential energy resources. Given the focus on fossil-fuels there should have been little discussion of the development of alternative energy technologies. All of the above will be examined in greater depth in Chapter Three of this thesis.

In Chapter Four, we will examine the operational sphere of British defence policy. If a control paradigm approach was taken, British armed forces doctrine should have stated energy security as a relevant issue for overall planning. The significance of fossil-fuels to the operational effectiveness of the armed forces should also have been outlined, as well as the importance of maintaining an expeditionary capability that could intervene in key areas such as the Middle East, as well as areas of emerging importance to British energy security considerations. For example, we may find that the two mooted Queen Elizabeth class aircraft-carriers were put forward in Royal Navy doctrine as key enablers of the ability to protect important lines of communication and project power in important fossil-fuel producing regions.

As in the declaratory sphere of policy, the operational sphere should also have displayed little mention of the potential need to develop alternative energy technologies. Where this was mooted we would expect to see protests that it could undermine essential combat capability. In the same manner, the statements of serving officers in each of the services should have echoed these sentiments. Similarly, in Chapter Four we will see whether the actual operations they were engaged upon and their conduct during these operations reflected the above considerations. As such we would expect to have seen the use of military force to maintain security in areas of importance to UK energy supplies.

In terms of the defence-industrial base, Chapter Five will analyse whether senior figures within the defence industry outlined the role the British Defence Industrial Base

(DIB) played in producing military equipment and weapons platforms that could be used to protect British interests in regions important to British energy security considerations. Chapter Five will also ascertain whether there was continued development of conventional energy technologies that utilised fossil fuels for power between 1997 and 2010. Also, in line with the aforementioned ORG's notion that a control paradigm seeks to maintain 'the military advantages of key regional allies' we will observe whether there were significant weapons sales to regimes that had significant energy reserves, as mentioned earlier in this chapter with the instances of weapons sales to Oman and Saudi Arabia in the 1980s and 1990s.

Sustainable Security

In opposition to the control paradigm approach to energy security is the ORG's stated alternative; this is the sustainable security approach. The term 'sustainable security' was coined relatively recently by Paul Rogers and the Oxford Research Group (ORG), seemingly to create a security paradigm that mirrored the well-known idea of 'sustainable development'. Indeed, the articulation of this notion has become a focal point for much of their work. Paul Rogers has been developing many of the ideas that are propounded by the think-tank in his work over the past twenty years.[78] Still, the idea of sustainable security has also been suggested by other academics and policy-makers who generally tend to have an interest in the related idea of sustainable development.[79] But, before we outline its applicability to the analysis of energy security within British defence policy, it is important to scrutinize the concept of sustainability itself so the reader can gather a greater understanding of its theoretical roots.

The Concept of Sustainability and the Sustainable Security Paradigm

Sustainability is a term that is much used in the modern media and much discussed in relation to environmental issues. The Collins Dictionary and Thesaurus defines the word sustainable as meaning: 'capable of being sustained' and '(of economic development, energy sources

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[78] See Paul Rogers, *Global Security and the War On Terror: Elite Power and the Illusion of Control* (London and New York: Routledge, 2008). This provides a definitive survey of his thoughts on international security, with published journal articles from the past twenty years.

[79] See Sanjeev Khagram, William C. Clark and Dana Firas Raad, 'From the Environment and Human Security to Sustainable Security and Development', *Journal of Human Development,* Vol. 4, No. 2 (2003).

etc.) capable of being maintained at a steady level without exhausting natural resources or causing severe ecological damage'.[80] This was further elaborated on by the previous Labour government when it defined the goal of sustainable development as: 'to enable all people throughout the world to satisfy their basic needs and enjoy a good quality of life without compromising the quality of life of future generations.'[81]

Thus, sustainability indicates progression in all human activities without this progression or improvement jeopardising future generations' basic living standards. But how can this idea be applied to security? Of course it could be applied to all aspects of human security, whether this be at international, national, local or individual levels. But this runs the risk of providing too broad a definition, which then serves no use to academics, military chiefs or government policy-makers. As Stephen E. Sachs comments in his article 'The Changing Definition of Security', 'there is the danger of defining security as everything that's good or 'necessary' in life.'[82] But how do we then decide what is 'necessary' or even good?

To make things more cogent we need to focus on those issues that are conflict drivers, whether within or between recognised states. Within this remit would fall international terrorism and, in certain cases, crime in circumstances where it threatens to lead to the breakdown of law and order within a given society.[83] Seismic events, such as volcanoes and earthquakes, which have the potential to cause massive destruction and disruption to modern societies, will not be included within this analysis. The reason being that they are 'acts of god' and there is nothing that can be done, as yet, to prevent their precise occurrence. However, the broad international consensus that climate change is increasing the incidence of such meteorological phenomena as hurricanes, as well as causing rapid changes in regional climates, is something that has entered the security agenda in the past few years and is now considered to have the potential to be a major conflict driver by the ORG, Paul Rogers and the British armed forces.[84] Therefore, man's understood contribution to climate change would

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[80] *Collins Dictionary & Thesaurus,* (Glasgow:HarperCollins, 2000) p.1203.
[81] FCO, *UK International Priorities: The FCO Sustainable Development Plan* (FCO, 2007) p.4.
[82] Stephen E. Sachs, 'The Changing Definition of Security', *stevesachs.com* (2003) accessed at http://www.stevesachs.com/papers/paper_security.html on 30 April 2012.
[83] The situation in Panama before US involvement in 1989 is a good example of the latter point.
[84] Mark Henderson, 'Global warming linked to increase of hurricanes', *The Times* (16 September 2005). The Intergovernmental Panel on Climate Change (IPCC) reports outlining the effects of human-induced climate change can be accessed at *IPCC Website,* 'Publication and Data' (2012) accessed at http://www.ipcc.ch/publications_and_data/publications_and_data_reports.htm on 30 April 2012. ORG reports on sustainable security and the importance of climate change mitigation within this concept can be accessed at the *ORG Website*, 'Briefing Papers and Reports' (2012) http://www.oxfordresearchgroup.org.uk/publications/briefing_papers?term=51&field_pub_date_value%5Bvalue%5D%5Byear%5D=&field_pub_date_value%5Bvalue%5D%5Bmonth%5D= on 30 April 2012. Also, see DCDC, *The DCDC Global Strategic Trends Programme 2007-2036* (Shrivenham: DCDC, 2007).

need to be an important consideration in the formulation of any acceptable sustainable security strategy.

According to the ORG, there are currently 4 major global conflict drivers that need to be addressed if global security is to be ensured in the near future. These are: climate change; competition over resources; marginalisation of the majority world; and global militarisation.[85] The issue of the economic marginalisation of the majority of the world's population ties in with the problems created by rapid man-induced climate change, as well as the potential for increased human competition over finite natural resources. For example, whilst overall global wealth has increased in the past century, the benefits of this growth have not been equally shared. In the year 2000, the richest 10 percent of the world owned 85 percent of household wealth whereas the poorest 50 percent owned barely 1 percent of the total amount.[86] According to UN statistics published in 2005, one billion people were forced to survive on less than $1 a day and it was estimated that 815 million people in developing countries were suffering from acute hunger despite the fact there is enough food produced every year to feed the world's entire population.[87] In addition, half of the world's population of 2.2 billion children were then considered to be living in poverty.[88] Unfortunately, these problems are likely to be exacerbated as the effects of climate change are increasingly felt.[89] Thus, a substantial proportion of the world has reason (and will have reason) to feel marginalised.

This situation is not aided by calls for free trade by Western countries when free trade policies are often inimical to the economies of those poor states where subsistence agriculture remains a key employer. For example, the state of Haiti has been heavily indebted to various creditors since it declared independence in 1804.[90] In return for IMF and World Bank loans in the 1980s (following the US-enforced exile of the notorious dictator Baby Doc) the Haitian economy had to remove tariffs on agricultural produce, thus allowing the influx of subsidised American food. The effect was devastating for a country in which two-thirds of the populace

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[85] Chris Abbot, Paul Rogers and John Sloboda, 'Global Responses to Global Threats: Sustainable Security for the 21st Century', *Oxford Research Group Briefing Paper* (ORG, 2006) p.4.

[86] James Davies, Susanna Sandstrom, Anthony Shorrocks and Edward N. Wolff, 'The World Distribution of Household Wealth', *World Institute for Development Economics Research, Helsinki*, (2006) p.26, accessed at http://www.iariw.org/papers/2006/davies.pdf on 30 April 2012.

[87] United Nations Development Programme, *United Nations Human Development Report 2005* (UN, 2005) accessed at http://hdr.undp.org/repports/global/2005 on 30 April 2012.

[88] UNICEF, 'Childhood Under Threat: The State of the World's Children 2005', *UNICEF Annual Report* (UN, 2006) p.15, accessed at http://www.unicef.org/publications/index_24433.html on 30 April 2012.

[89] See Stephan Harrison, 'Climate change and Regional Security: Assessing the Scientific Uncertainties', *The RUSI Journal*, Vol. 153, No. 3 (2008) pp. 88-91.

[90] Alex Von Tunzelmann, 'Haiti: the land where children eat mud', *The Sunday Times* (May 17 2009). The French demanded 150 million Francs in reparations following Haitian independence. These reparations were finally paid off (including interest) in 1947. Since then Haiti has continued to rely on loans from international organizations.

relied on subsistence agriculture to make a living. In 2002, more than half of all children were malnourished and 80% of the rural population lived below the poverty line.[91] In turn, this contributed to widespread corruption and a low-level of security in the country with drug-trafficking providing one of the few real business opportunities and criminal gangs holding sway in many areas of the country.[92] This then deterred further investment and potential income that may have been generated from industries such as tourism.[93]

Additionally, despite the hardship prevalent in developing countries, their populations are able to see the lives of those lived in developed countries due to the rapid spread of communications technology such as televisions and radios. More than 30 years ago, Alberto Quiros Corradi, in an article on the importance of secure energy resources, was stating that 'The have-nots now know there is a show to be enjoyed'.[94] Indeed, the increased threat of terrorism worldwide can be ascribed, to a significant degree, to the concept of 'a revolt from the margins' – a phrase coined by Paul Rogers. This idea recognizes that terrorism does not necessarily consist of involvement from the poorest of the poor. Rather those that have received a relatively good education in countries that have significant disparities in wealth between rich and poor often feel compelled to resort to political and religious violence when they 'do not share in the fruits of economic growth'.[95] Thus, the phenomenon of Al-Qaeda (whilst there are undoubtedly varied reasons in its formulation), as well as many more localised terrorist groups, can be seen as part of a wider global movement fighting against perceived inequalities that are believed to be perpetuated by those countries that wish to maintain the global status quo.[96] In this way, parallels can be drawn with the anti-colonial movements that surfaced throughout the world following the end of the Second World War.[97]

In addition to global marginalisation, the ORG believes that global militarisation threatens to destabilise the international system, mainly through the increased proliferation of WMDs. The Cold War saw a massive stockpiling of nuclear weapons by the two major

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[91] Charlotte Denny, 'Haiti: proof of hypocrisy', *guardian.co.uk* (11 April 2002) accessed at http://www.guardian.co.uk/world/2002/apr/11/globalisation.charlottedenny on 7 May 2012. The import tariff on rice in Haiti was cut from 50% to 3%. There were similar tariff cuts on other essential foodstuffs.

[92] *The Economist*, 'Weighed down by disasters' (12 February 2009).

[93] Britain does not currently have an embassy in Haiti, in part due to security concerns. See *FCO Website*, 'Haiti' (23 April 2012) accessed at http://www.fco.gov.uk/en/travel-and-living-abroad/travel-advice-by-country/north-central-america/haiti/ on 30 April 2012.

[94] Alberto Quiros Corradi, 'Energy and the Exercise of Power', *Foreign Affairs*, Vol. 57, Iss. 5 (1979) p. 1154.

[95] Paul Rogers, *Why We're Losing the War on Terror*, (Cambridge: Polity Press, 2008) p.152.

[96] See Alan B. Krueger and Jitka Maleckova, 'Education, Poverty and Terrorism: Is There a Causal Connection', *Journal of Economic Perspectives*, Vol. 17, No. 4 (2003) pp. 119-144. This posits the explanation that terrorists are more likely to be well-educated people who inhabit countries where there are significant restrictions on civil liberties by the State.

[97] Ibid.

powers – the US and USSR – as well as the United Kingdom, France, Israel and China. The years since the end of this period have seen some positive steps towards nuclear disarmament. The global numbers of active nuclear weapons have fallen (from US and Russian combined figures of 70,000 to around 20,000) and a Chemical Weapons Convention reduced the global stockpiles of chemical weapons significantly.[98]

However, these encouraging signs have been counteracted by renewed proliferation in other regions of the world. India and Pakistan have both developed nuclear weapons capabilities in the past 15 years and given the poor relations between these countries (exacerbated by the continuing dispute over partitioned Kashmir and sporadic terrorist attacks on India by Pakistani extremists) there exists a potent threat of nuclear war.[99] There is also the fear that Pakistani nuclear weapons could fall into the hands of terrorists given the recent insurgency in the Federally Administered Tribal Areas (FATA) that border Afghanistan, as well as similar problems in the western provinces of Baluchistan.[100] North Korea is also believed to have tested nuclear weapons and has managed to develop a ballistic missile capability that could ultimately have a range of up to 10,000 kilometres.[101] Moreover, although the 1972 Biological Weapons Convention (BWC) became the first multilateral weapons treaty to ban an entire category of weapons, the lack of any formal verification regime to ensure compliance is a serious handicap preventing the effective enforcement of the accord.[102] Subsequently, it is widely believed that North Korea has breached the terms of the convention by conducting biological weapons research and perhaps weaponising one or

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[98] See *Stockholm International Peace Research Institute Website,* 'World Nuclear Forces' (2011) accessed at http://www.sipri.org/yearbook/2011/07 on 30 April 2012.The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction was signed in January 1993 (coming into effect in 1997) and now has 188 signatories who have committed to eradicating their chemical weapons stockpiles by 2012. For more information, see the *Organization for the Prohibition of Chemical Weapons Website,* 'Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on their Destruction (Chemical Weapons Convention)' (2012) accessed at http://www.opcw.org/chemical-weapons-convention/ on 30 April 2012.

[99] Rahul Bedi, '12 die in raid on India parliament', *The Daily Telegraph* (14 December 2001) and Peter Walker, 'Mumbai terror attacks: Rice Arrives in Delhi to try and salve India-Pakistan relations', *guardian.co.uk* (3 December 2008).

[100] Nathan Busch, 'Risks of Nuclear Terror: Vulnerabilities to Theft and Sabotage at Nuclear Weapons Facilities', *Contemporary Security Policy*, Vol. 23, No.3 (2002) pp. 39-42.

[101] *BBC News Online,* 'North Korea's missile programme' (27 May 2009) accessed at http://news.bbc.co.uk/1/hi/world/asia-pacific/2564241.stm on 30 April 2012.

[102] For the full text of the agreement see *United Nations Office at Geneva Website,* 'Disarmament: The Biological Weapons Convention (BWC)' (2012) accessed at http://www.unog.ch/80256EE600585943/(httpPages)/04FBBDD6315AC720C1257180004B1B2F?OpenDocument on 30 April 2012.

two biological agents.[103] Iran is also believed to have a burgeoning nuclear weapons programme.[104]

These are all trans-national security threats that have the potential to affect every state within the global system and are likely to be the major underlying causes of conflict throughout the globe in the forthcoming years. However, the twin drivers of climate change and resource competition are particularly applicable to energy security considerations and, as such, will be the two that are focussed on within this thesis. Accordingly, in broad terms, a 'sustainable security' paradigm as outlined by the work of the ORG and Paul Rogers, would be based upon addressing these conflict drivers. This paradigm should ultimately be considered a synergy of what the ORG term Common Security and Human Security approaches to international relations.[105] In this way it combines a Common Security agenda, which would consist of greater levels of inter-state co-operation in addressing global issues, and the human security agenda, which calls for a prioritization of the rights of the individual and communities worldwide as an end in itself, as well as an effective means for the creation of greater stability within the international system. This paradigm also builds in 'a capacity for long-term resilience' by addressing the aforementioned environmental and socio-economic issues.[106] Consequently, there is both a 'top-down' and 'bottom-up' conception of the causes of global instability, providing a coherent model for the understanding and alleviation of conflict worldwide. A neat summation of this is provided by Chris Abbot and Sophie Marsden when they say a '[sustainable security framework] must be based on an integrative analysis of security threats and a preventative approach to responses'.[107]

In adopting a sustainable security objectives, defence policy would need to embrace a more holistic approach to security rather than focussing purely on military means, although of course the ability to project 'hard power' (in common military parlance) would remain an important basis for the British armed forces. Hard power (the 'ability to coerce' using military force) must be integrated with 'soft power' (the ability to *persuade* through attraction

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[103] See *IISS Website,* 'North Korea's Chemical and Biological (CBW) Programmes' (2004) accessed at http://www.iiss.org/publications/strategic-dossiers/north-korean-dossier/north-koreas-weapons-programmes-a-net-asses/north-koreas-chemical-and-weapons-cbw-prog/ on 30 April 2012.

[104] See IAEA, 'Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council Resolutions 1737 (2006), 1747 (2007), 1803 (2008) and 1835 (2008) in the Islamic Republic of Iran', *IAEA Report* (5 June 2009) accessed at http://isis-online.org/publications/iran/IAEA_Iran_Report_5June2009.pdf on 30 April 2012.

[105] Paul Rogers (2008) pp.157-158.

[106] Ibid. p.158.

[107] Chris Abbot and Sophie Marsden, 'From Within and Without: Sustainable Security in the Middle East and North Africa', *Oxford Research Group Briefing Paper* (ORG, 2009) p. 2.

using political, economic and cultural policies).[108] This necessitates greater cooperation with other government departments as well other governments. As the ORG states 'this approach does not attempt to unilaterally control threats through the use of force ('attack the symptoms'), but rather it aims to cooperatively resolve the root causes of those threats using the most effective means available ('cure the disease').'[109] We would therefore expect to see a recognition of the long-term threats to security posed by climate change and competition for resources. There should also be an appreciation that prevention of conflict is important but that the military may need to make judicious interventions globally in cases where regional security is threatened. This prevention of conflict would require greater inter-departmental cooperation between governmental departments that have significant foreign interests. Thus, the FCO, DFID, DECC and MOD would need to implement similar measures to combat climate change and enhance stability in states key to UK energy security. Similarly, as security should be dependent upon international institutions and the rule of law, all efforts should be made to achieve as wide a consensus as possible through the United Nations before any intervention is embarked upon.[110] Arms sales to 'regional allies' would also be significantly reduced or stopped as these enhance global militarisation and are recognised as a key conflict driver through their creation of mistrust between neighbouring countries.[111] In terms of a sustainable security response to climate change, the ORG outlines the greater adoption and development of renewable energy sources worldwide.

Similarly, to alleviate and prevent potential conflict over competition for energy resources, the ORG emphasises the imposition of greater energy efficiency measures and energy conservation measures within overall government policy.[112] In addition, there should also be a focus on the development of an integrated security strategy that recognises the need to enhance cooperation between government departments to address these particular issues.[113] In this way, these measures would aid in the prevention of conflict rather than trying to cure conflict through the application of military force, as in a control paradigm approach.

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[108] These definitions are taken from Joseph S. Nye, Jr., 'Soft Power and European-American Affairs' p.26 in Thomas Ilgen ed., *Hard Power, Soft Power and the Future of Transatlantic Relations* (Aldershot: Ashgate Publishing, 2006).

[109] Chris Abbot, Paul Rogers and John Sloboda, 'Global Responses to Global Threats: Sustainable Security For The 21st Century', *Oxford Research Group Briefing Paper* (ORG, 2006) p.29.

[110] Interview with Paul Rogers conducted via telephone. 19 March 2009. See Chris Abbot and Sophie Marsden, 'From Within and Without: Sustainable Security in the Middle East and North Africa', *Oxford Research Group Briefing Paper* (ORG, 2009) p. 2.

[111] James Kemp, '*Sustainable Peace and Security*', *Compass Thinkpiece* 18, p.2.

[112] Chris Abbot, Paul Rogers and John Sloboda, 'Global Responses to Global Threats: Sustainable Security For The 21st Century', *Oxford Research Group Briefing Paper* (ORG, 2006) p.28.

[113] James Kemp, '*Sustainable Peace and Security*', *Compass Thinkpiece* 18, p.2.

Using the Sustainable Security Tenets to Measure Energy Security's Effect on Defence Policy

If a fully sustainable security approach to energy security within defence policy was adopted then what essential steps would have been taken? As outlined already, a sustainable security approach would attempt to settle these issues in the long-term through measures that addressed the foundational aspects of energy insecurity. In essence, there would need to be a preventative approach to these energy security issues, with an emphasis on the need for the armed forces to address energy insecurity through a reduction in greenhouse gas emissions, greater energy efficiency, the adoption of alternative energy technologies and more inter-governmental and inter-departmental cooperation on energy issues.

Consequently, at the declaratory level (outlined in Chapter Three) we should expect to have seen an articulation of the importance of competition over energy resources and climate change as potential international conflict drivers, allied with the subsequent need for the armed forces to move towards greater development of alternative energy sources, as well as increased energy efficiency so as to combat these issues. Most importantly, there would be a movement away from emphasising the importance of being able to deploy British armed forces to key fossil-fuel producing regions as wider governmental measures should have made the UK's energy requirements more diverse and secure. There should also have been the acknowledgement that developments in energy technology had the potential to enhance military capability through increased operational range and durability and front-line units reduced need for fuel resupply and was therefore in the long-term interests of the military.[114] Similarly, the requirement for greater cooperation with other government departments in terms of energy issues should have been acknowledged and the appropriate changes in policy and governmental structure implemented so as to facilitate this.

At the operational level of defence policy, the twin drivers of climate change and competition for resources should have been regarded as issues that needed to be addressed by the British armed forces. This could be done most propitiously through liaison with other government departments and states and through the recognition of the advantages of alternative and energy efficient technologies for alleviation of these drivers. Indeed, the effect

[114] For example, Qinetiq's Zephyr programme has developed an Unmanned Aerial Vehicle (UAV) that can remain airborne for up to two weeks through the combined use of solar panels and lithium-sulphur batteries installed on its wings. This presents the possibility of an aircraft that can provide surveillance for ground forces around the clock. See *Qinetiq Website,* 'High altitude long endurance UAV – Zephyr' (2012) accessed at http://www2.qinetiq.com/home/defence/defence_solutions/aerospace/unmanned_air_systems/uav.html on 30 April 2012.

of sustainable security notions on operational policy should be seen through the use of these twin drivers as justification for the adoption of any sustainable security measures. With the focus moving away from securing access to fossil-fuel producing regions, there should also have been the acknowledgement that past procurement had been too heavily focussed on hard power capabilities, when a more multi-role capability for the armed forces could be developed. Paul Rogers' conception of a British military establishment geared towards sustainable security principles would see a more doctrinal emphasis on peace support operations (with soldiers geared towards restoring civilian rule in areas of conflict) as well as the avoidance of the manufacture of large capital ships and weapons platforms whose sole aim is to project military force. More multi-role vessels providing greater versatility would be preferable.[115] All these aspects of the paradigm should have been demonstrated both at the doctrinal level and within the statements of senior officers from each of the three services.

Similarly, the level of defence-industrial policy should also have demonstrated the desire to address the twin drivers of climate change and energy resource competition by using these as a justification for research and development into alternative energy technologies. Added to this, this level of policy would not have engaged in selling arms in energy-rich regions where their sale may potentially increase inter and intra-state tensions. The political importance of using weapons exports to forge close links with energy-rich states would also have diminished, making these actions less prevalent.

Caveats in Measuring Energy Security's Effect on British Defence Policy

Before we can proceed to the next chapter, this section will call to attention a number of considerations that need to be taken into account before we begin to use the two models that have been outlined previously. The first point to note is that the use of the control and sustainable security paradigms as analytical prisms does not suggest that energy security's effect on defence policy can only be viewed in binary terms or as an either/or in relation to these two approaches to ensuring energy security for the UK. In reality, the two paradigms should be understood as constituting the two opposing sides of an energy security continuum. As such, it is likely that we will see aspects of both paradigms evident in the military's approach to energy security in this period, rather than a fundamentally pure control paradigm or sustainable security approach. However, given the fact that the control paradigm was the

[115] Interview with Paul Rogers conducted via telephone, 19 March 2009.

default approach to energy security until 1997, any noticeable adoption of sustainable security tenets will be denoted as a movement towards a sustainable energy ideal.

Secondly, we may find that in the examined period that there was the development and adoption of technologies that were amenable to sustainable security principles, but without the attendant espousal of sustainable security tenets as justification for the technologies' promotion. For instance, we may observe the promotion of solar panels for use by the British armed forces in this period. However, the benefits of their use may be couched purely in terms of their operational advantages (less need for fuel resupply, less vulnerability to attack etc) rather than in the attendant desire for the military to cut greenhouse gas emissions or contribute to Britain's energy security through improved energy efficiency. Ultimately, if this approach is observed in the succeeding analysis it is important for the reader to bear in mind that this *does* represent a movement towards a sustainable security approach (due to the mitigating effects of such technologies on the drivers of climate change and energy resource competition) but does not demonstrate the impact of sustainable energy security considerations on British defence policy in this period.

The final point to take into account is that the British government would almost certainly never publicly highlight the need to ensure continued access to oil reserves as the prime reasoning for any military action. This is because the British public would be unlikely to back military action on the cynical grounds of *Realpolitik.* As John Mearsheimer has noted in reference to the United States, 'Realism is a hard sell ... Because Americans dislike realpolitik, public discourse in the United States is couched in the language of liberalism.'[116] This same view can be applied to the British public with polls showing that the invasion of Iraq would not have been supported if fought for oil (indeed without the second UN resolution in 2003 most people opposed the invasion of Iraq) and the massive London protests before the Iraq war with many banners decrying the potential conflict as a war for oil.[117] Indeed, the Labour government saw fit to describe the conflicts that involved British forces during their time in government as examples of 'Liberal Interventionism', as well as denying in Parliament that the Iraq War was in any way motivated by the desire for access to

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[116] John Mearsheimer, *The Tragedy of Great Power Politics* (New York: W.W. Norton, 2001) p.23, p.24.

[117] See *Ipsos MORI Website*, 'War with Iraq' (5 March 2003) accessed at http://www.ipsos-mori.com/researchpublications/researcharchive/poll.aspx?oItemId=830 on 30 April 2012. This poll indicated that only 25% of the British public would support British involvement in the invasion of Iraq if inspectors failed to find WMDs and there was a failure to gain a second UN resolution in favour of the war. If both conditions were met the figure would have been 75% in favour of the war. The UK's biggest ever demonstration took place against the war in London on 16 February 2003. Numbers were estimated to have been between 750,000 and 2 million. See *BBC News Online*, ''Million' march against Iraq war' (16 February 2003) accessed at http://news.bbc.co.uk/1/hi/2765041.stm on 30 April 2012.

he country's significant oil reserves.[118] Similarly, the operational and defence-industrial evels would be unlikely to espouse opinions on energy security that would be likely to draw negative media and public opinion.[119]

Of course, the fact that there is likely to be little mention given to the term 'energy security' in the government defence literature or Ministerial statements on defence does not mean that this issue will not be prominent, nor at the same time important at the declaratory level of policy. Instead, due to the public relations reasons outlined above, rather than explicitly stating the importance of 'energy security' and the military means to ensure the maintenance of this, each circle of defence policy is more likely to use implicit language that indicates a British interest in the resources and economic benefits that a particular country or region provides to the United Kingdom and the world as a whole.[120] For example, the 1985 *Statement on the Defence Estimates* commented: 'We ... have a strong interest in seeing peace and stability maintained in the countries constituting our trading partners; in securing the supplies of oil and strategic minerals that are vital to our and other Western economies; and in keeping open key trade routes.'[121] Thus, we are likely to see this kind of language used in reference to any regions or countries that are deemed important in ensuring energy security for the United Kingdom.

Essentially, what the preceding paragraphs have outlined is the fact that military action or posturing that is predicated upon the acquisition or safeguarding of key energy resources is likely to be highly unpalatable to the general public and media at large. Thus, if a control paradigm approach to energy security proves to be important in defence policy we will observe language that emphasises the importance of peace and stability in key regions

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[118] See David Miliband, 'Foundations of Freedom: the Promise of the New Multilateralism', *William Wilberforce Lecture* (2008), accessed at http://www.wilberforcelecturetrust.co.uk/index.php/lectures/lecture-detail/2008-lecture-from-rt-hon-david-miliband-mp/ on 30 April 2012. This speech effectively outlined the Labour government's idea of a paradigm of liberal interventionism. Also, see *Hansard,* HC Deb Volume 397, Column 675 (15 January 2003). Tony Blair commented: 'Let me first deal with the conspiracy theory that this is somehow to do with oil. There is no way whatever, if oil were the issue, that it would not be infinitely simpler to cut a deal with Saddam, who, I am sure, would be delighted to give us access to as much oil as we wanted if he could carry on building weapons of mass destruction. The very reason why we are taking the action that we are taking is nothing to do with oil or any of the other conspiracy theories put forward'.

[119] In an interview with Lord Walker of Aldringham (CDS from 2003 to 2006) he advised that it was his belief that the UK identified the Persian Gulf region as a core area due to political and historical links that had been forged throughout the twentieth century. Interview with Lord Walker of Aldringham, March 17, 2011. The interview was conducted via telephone.

[120] This is not to say that there will never be explicit mention of the need to secure energy resources through military coercion, but rather its incidence will almost certainly be less likely than that of implicit terminology, due to the public relations reasons mentioned already and the attendant desire, outlined by Mearsheimer, to portray one's actions as being motivated by noble ideals rather than purely 'realist' considerations.

[121] MOD, *Statement on the Defence Estimates 1985*, Cmnd. 9430-1 (London: TSO, 1985) p.11.

that provide important energy resources, rather than a focus on Britain's need to acquire these resources at all costs. In contrast, more sustainable sources of energy in military use are likely to be highlighted by the defence establishment as they are unlikely to have the same negative connotations in the public mind. The potential discrepancy between stated policy and the measures that are actually implemented will aid in highlighting which policy focus has been considered more important.

Conclusion

In sum, this chapter has set out the framework of analysis to be used in succeeding chapters to determine the effect of energy security considerations on British defence policy from 1997 to 2010. It began by outlining what the term 'defence policy' actually means in the context of this thesis and demonstrated that the effective analysis of defence policy requires effective analytical tools due to the complex processes that can affect policy decisions within any nation's defence establishment. In view of this, after briefly scrutinizing Graham Allison's renowned three models of government, Ian Bellany's notion of analysing the three separate strands of British defence policy was examined and adopted as a model for analysis for succeeding chapters. In addition, ideas from Andrew Dorman (time cycles) and Graham Allison (three models of government) were also adopted for use in later chapters. The latter two models will prove particularly useful as explanatory tools to account for the reasons why a particular course of action was taken at each level of defence policy. Finally, the ORG's two paradigms of security were scrutinized and appropriated to be used as prisms (one historical, one normative) through which we can measure the effect of energy security considerations on British defence policy. This will be done through the comparison of what actually happened in the period under scrutiny and what *should* have happened if key points of the two paradigms were to be adhered to by the British government. Certainly, we may find evidence of both paradigms at work at different points in the studied period, or even (to greater and lesser degrees) at the same time.

However, before we can begin to use the framework to analyse defence policy it would first be pertinent to assess how the UK supplied its energy needs in the examined period. In this way, we can then fathom the wider governmental policy towards energy issues, which global regions would have been important to UK energy security (if any) and apply the resultant information so as to understand whether a control paradigm or sustainable security paradigm was at work. As such, Chapter Two will outline the UK's energy needs, as

well as UK government energy policy, from 1997 to 2010. The thesis will then proceed to the main body of analysis regarding energy security considerations' effect on British defence policy during the Labour administration.

Chapter Two

Ensuring Energy Security For The United Kingdom

During the tenure of the previous Labour administration, 'energy security' became a subject of increasing importance within British political discourse. Large energy price rises led to governmental claims that 'the age of cheap energy is over'.[1] The steep rise in oil and domestic energy prices in the United Kingdom pushed the issue of 'energy security' increasingly to the forefront of the British political agenda. Indeed, in 2008, Prime Minister Gordon Brown was moved to write an article in *The Guardian* newspaper recognising the effect energy price rises were having on the citizens of Britain and how the Government was aiming to deal with the problem.[2] In addition, the British government called for the creation of a new series of nuclear and 'clean-coal' power stations to address the future energy needs of the United Kingdom.[3]A report by Ofgem, the UK's independent energy regulator (published in 2010), raised concerns over the future energy security of the United Kingdom and called for greater state intervention to ensure adequate levels of power generation.[4] Indeed, the importance of energy resources to the UK was cited by some as the main reason for the invasion of Iraq in 2003, although

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[1] The then UK Energy Minister, Malcolm Wicks, said 'I agree with the person who said that the age of cheap energy is over' when interviewed by Channel 4 News on 17 July 2008. He was responding to a comment made by Duncan Sedgwick, the Chief Executive of the Energy Retail Association (ERA), who had made the original claim to BBC News. See *BBC News Online*, 'Gas bills 'to top £1000 a year'' (18 July 2008) accessed at http://news.bbc.co.uk/1/hi/business/7512971.stm on 30 April 2012. According to energy price statistics published by the DECC, UK domestic energy prices rose in real terms by 29.5 % between 1999 and 2010. Similarly, premium unleaded petrol increased from a price of 61 pence per litre (ppl) in January 1997 to 111 ppl by January 2010. In addition, diesel increased from a price of 62 ppl to 113 ppl in the same period. See Tables QEP 2.1.1 and QEP 4.1.3 at *DECC Website*, 'Energy Price Statistics' (2012) accessed at http://www.decc.gov.uk/en/content/cms/statistics/energy_stats/prices/prices.aspx on 30 April 2012.

[2] Gordon Brown, 'Gordon Brown: We Must All Act Together', *The Guardian* (28 May 2008).

[3] See *Meeting the Energy Challenge: a White Paper on* Energy, Cm. 7124 (London: TSO, 2007) and BBC News Online, 'Clean Coal Plants Get Go Ahead', (23 April 2009) accessed at http://news.bbc.co.uk/1/hi/8014295.stm on 30 April 2012.

[4] Ofgem, 'Project Discovery: Options for delivering secure and sustainable energy supplies', *Ofgem Consultation Paper* (3 February 2010) accessed at http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=73&refer=Markets/WhlMkts/monitoring-energy-security/Discovery on 30 April 2012.

the official rationale provided by the American and British governments was the belief that Saddam Hussein's regime was developing a significant WMD capability.[5]
The purpose of this chapter is to create a frame of reference for the analysis of energy security's effect on the formulation of British defence policy from 1997 until 2010. By outlining and understanding the energy requirements of the United Kingdom in this period we can surmise what issues defence policy makers would have had to take into account if they were to view energy security as a legitimate factor in the formulation of British defence policy. In later chapters we can then determine how important these issues were at the separate levels of defence policy by scrutinizing the relevant documents, speeches and actions of the actors involved. Ultimately, this will allow us to establish the significance of energy security as a factor in British defence policy during the time that Labour were in office.

For example, the potential for future British exploitation of large fossil fuel reserves in and around the Falkland Islands may have affected defence policy planners notions of the military equipment that would need to be maintained or procured to protect British interests in this region, as well as the deployments required to protect the Falkland Islands from any potential Argentine aggression. Similarly, the continued importance of the Middle East region to global oil and gas supplies and the possible need for armed intervention in this area may have necessitated the procurement of equipment that could operate adequately in hot, desert conditions, as well as the organization of preparatory desert exercises so UK forces could adapt to this hostile environment.

In addition, the information garnered in this chapter can also be used for comparative purposes. For example, by inspecting the evolution of motive fuels and power generation technology in the civilian sector and from 1997 onwards we can

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[5] See Greg Muttit, 'Crude Designs: The rip-off of Iraq's oil wealth', *PLATFORM paper* (2005) accessed at http://www.carbonweb.org/showitem.asp?article=57&parent=4&link=Y&gp=3 on 30 April 2012. PLATFORM is, in its own words, 'an interdisciplinary organisation working on issues of environmental and social justice. Founded in 1984, it specialises in addressing the impacts of British oil corporations on development, environment and human rights.' See the *PLATFORM Website*, 'Unravelling the Carbon Web' (2012) accessed at http://www.carbonweb.org/ on 30 April 2012. Also, see Mark Curtis, *Web of Deceit: Britain's Real Role in the World*' (London: Vintage, 2003) *Hansard,* HC Deb Volume 400, Column 265 (26 February 2003) Secretary of State for Foreign and Commonwealth Affairs, Jack Straw: 'First, why Iraq? The best answer to that question is to be found in the 42 pages of text of the 13 Security Council resolutions that form the first section of the Command Paper. There we see, paragraph by paragraph, the exceptional danger posed by Iraq, and its continued defiance of the United Nations'.

ascertain in later chapters whether the British armed forces were moving ahead or behind civilian energy technology developments of the time. This correlation (or lack thereof) can then be used to determine whether the military was arguably more or less aware of its environmental footprint than other sections of British civilian society and whether this demonstrated a movement towards or away from notions of sustainable security within the defence establishment.

To aid clarity, the main body of this chapter will proceed by initially summarizing what we mean when we use the term 'energy', along with a description of its various uses within modern societies. Following on from this, it will then outline the UK's energy needs within the examined period, the potential threats to the security of supply of important energy resources (and what this could mean for the British military) and finally the Labour government's notion of what constituted energy security for the United Kingdom. The conclusions garnered from this analysis will then be used in succeeding chapters to evaluate whether concepts of energy security were deemed important factors in defence policy formulation from 1997 onwards.[6]

What Do We Mean By Energy?

Energy can, in physical terms, be defined as 'the capacity of a body or system to do work' and 'a measure of this capacity, measured in joules.'[7] Put more simply by Dave Watson '*Energy is a property or characteristic ... of matter that makes things happen, or, in the case of stored or potential energy, has the potential to make things happen.*'[8] Thus, it can come in many forms including kinetic, chemical, electrical, electromagnetic, nuclear and thermal types. Energy can be converted from one form to another but is never created or destroyed. As shall be seen, the conversion from chemical energy (fossil fuels) to kinetic and electrical energy (transportation and electrical power generation) remains the most important use in contemporary human activity.

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[6] Many of the energy issues outlined in this chapter currently remain extant. For reasons of clarity, they are discussed in the past tense so the reader is left in no doubt that we are examining the period that the Labour government were in power and not any current progressions in government policy.

[7] *Collins Dictionary & Thesaurus, (*Glasgow: HarperCollins, 2000) p.387.

[8] Dave Watson quoted in *FT Exploring Website,* 'What is the Definition of Energy' (2012) accessed at http://www.ftexploring.com/energy/definition.html on 30 April 2012.

How Is Energy Used?

In modern society, different forms of energy are essential in the residential, transportation and industrial sectors. Energy supplies are used to produce electricity which then powers various residential appliances such as computers, televisions and refrigerators as well as myriad industrial machines. Power stations conventionally use turbines driven by a fluid to generate electricity. This fluid can simply be water, as in the case of hydroelectric power, or steam that is created by heat from the burning of fossil fuels (oil, coal, gas), from uranium fuel (nuclear power stations) or from geothermal energy.[9] Wind-powered turbines are also increasingly popular, as they do not need to be supplied with any particular fuel and do not emit greenhouse gases, merely relying on wind strength. However, as the electricity generation in this case is dependent on meteorological factors it can often be intermittent. Large numbers of turbines are also needed to produce the same amount of electricity as conventional fossil-fuel or nuclear powered stations.[10] Other 'Clean Energy' (or renewable energy) alternatives include solar panels (utilising photovoltaic cells), tidal and wave power. Although constituting a small percentage of world electrical generation, their role in the future is expected to increase due to government subsidies, fears over greenhouse gas-induced climate change, higher oil prices and increased investment in research and development.[11] Once generated, electricity is routed along a grid system (in the UK termed 'The National Grid') and supplied directly to residential, business or industrial properties through power lines.

As regards transportation from a global perspective, by the late twentieth century crude oil became by far the most important resource in powering vehicles on land, on sea and by air. Refined into petroleum and diesel these fuels are used in internal-combustion engines to power various vehicles, whether civilian or military. Bio-fuels have also been developed, especially in the United States and Brazil, as an alternative to oil-based fuels. Agricultural products such as corn or sugar-cane are distilled to create ethanol, which can then be used in automobiles specially converted to utilize this type of

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[9] *H2G2 Website,* 'How Power Stations Work' (19 June 2002) accessed at http://www.h2g2.com/approved_entry/A715637 on 7 May 2012.
[10] Michael McCarthy, 'Britain will need 12,500 wind farms to satisfy EU targets', *The Independent* (24 January 2008).
[11] *The Economist,* 'Green Dreams' (18 November 2006).

fuel.[12] Indeed, Henry Ford's first car and Rudolf Diesel's first engine both ran on bio-fuels.[13] Despite this, it is important to bear in mind that bio-fuels are not generally seen as a replacement for crude oil-derived fuels. Indeed, even the much-lauded Brazilian ethanol-based fuel is mixed with standard gasoline, with the ethanol component often consisting of no more than 15% of the total fuel mix.[14] Indeed, according to IEA figures, the 3% of bio-fuels used for road transport fuel worldwide in 2008 would have increased to only 8% globally by 2035.[15] We can see from this that continued supplies of petroleum will remain important even when these alternatives are available.

Finally, there were hopes in the first decade of the twenty-first century that hydrogen could be developed as a clean and reliable fuel for the future, with three major car companies investing $2 billion in hydrogen fuel-cell technology by the end of 2003.[16] However, as yet there has only been one hydrogen-powered vehicle produced for the commercial market, the Honda FCX Clarity. Only 200 units have been produced and there remains the problem of a lack of hydrogen refuelling infrastructure that will allow these vehicles to refuel throughout any country where they are to be used. Only California has the necessary infrastructure to allow their effective use.[17] Again, this demonstrates that, internationally, a large degree of further development is required for any alternative to oil-derived fuels to become viable as a fuel for mass transportation

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[12] Robert Clark, 'Green Dreams', *National Geographic Magazine* (October 2007).
[13] Ibid.
[14] For more information see *BioFuel.org.uk*, 'Types of Biofuel' (2012) accessed at http://www.biofuel.org.uk/types-of-biofuel.html on 30 April 2012.
[15] IEA, *World Energy Outlook 2010: Executive Summary* (OECD/IEA publication, 2010) p.9.
[16] Maggie Shiels, 'Is hydrogen the fuel of the future?', *BBC News Online* (27 March 2003) accessed at http://news.bbc.co.uk/1/hi/business/2880975.stm on 7 May 2012.
[17] See Andrew English, 'Honda FCX Clarity: Car of the century?', *The Daily Telegraph'* (17 November 2007). These cars cannot be bought and so far have only been available for hire on a monthly basis. For more information see: *Honda Website,* 'FCX Clarity: Fuel Cell Electric Vehicle (FCEV) Zero-Emission Hydrogen Powered', accessed at http://automobiles.honda.com/fcx-clarity/ on 6 May 2012.

The UK's Energy Needs 1997-2010

Before addressing the issue of potential threats to UK energy security and the British defence establishment's response to this, it will first be necessary to comprehend the overall structure of the UK energy sector in the examined period. It then becomes easier to define where the UK was vulnerable to an interruption of energy supplies and to elucidate the reasons for the particular responses taken by the British government.

Historically, the UK was largely self-sufficient in energy in the first half of the 20th Century (mainly using wood and coal), before becoming ever more reliant on imported energy, mainly oil, for the immediate 25 years following the end of the Second World War. The discovery of North Sea oil and gas in the late 1960s led to Britain becoming a net exporter of energy for most of the 1980s and 1990s. More recently, the UK has become a net importer of energy as North Sea oil and gas production peaked in 1999. Britain became a net importer of gas in 2004 and by 2008, net imports of energy (mainly coal and gas) accounted for 26.5% of the UK's primary energy consumption.[18] It is also important to note here that even in the periods when the UK produced more energy than it consumed, it was still reliant on imports of energy types of which demand could not be met indigenously and remained exposed to changes in international energy prices.[19]

As regards energy consumption in the UK, this increased by 15% between 1970 and 2001.[20] Thus, we can observe that energy supplies became increasingly important to the UK population as a whole. Secondly, as of 2009, total electricity generation percentages were: Coal 28%; Oil 1%; Natural Gas 45%; Nuclear 17%; Other sources (including renewables) 8%; Imports 1%.[21] This compared to 1990 figures of: Coal 67%; Oil 7%; Natural Gas 0.5%; Nuclear 19%; Other sources (including renewables) 2.5%;

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[18] See Malcolm Wicks, '*Energy Security: A national challenge in a changing world*' (DECC, 2009) pp.11-18. Malcolm Wicks was the government's Special Representative on International Energy from October 2008 until May 2010.

[19] Ibid. p.18.

[20] DTI, *Energy Consumption in the United Kingdom* (DTI, 2002) p.8. According to *The Guardian* newspaper, energy use in 2009 had increased by 32% since 1970. See Vidal, John, 'Budget 2009: Energy efficiency spend will barely reduce emissions, say green groups', *guardian.co.uk* (22 April 2009) accessed at http://www.guardian.co.uk/uk/2009/apr/22/budget-energy-efficiency on 6 May 2012.

[21] This shows that oil has not proven to be as important as other fuels in electricity generation. See DECC, *UK Energy in Brief 2010* (London: TSO, 2010) p.26.

Imports 4%.[22] From these statistics we can see the massive growth in the UK's reliance on natural gas as a power generator as well as an associated decline in the importance of coal.

In terms of motive fuels, as in all developed countries, oil-derived fuels remained essential to the transportation sector in the UK. An indication of their increased importance is provided by the statistic that consumption of diesel fuel for Diesel Engined Road Vehicles (DERVs) increased from 10.7 million tonnes per annum in 1990 to 21 million tonnes per annum in 2007.[23]

We can see from this that fossil fuels such as coal, gas and oil were (and remain) essential to the effective functioning of the UK economy, with the former two currently providing three-quarters of all electricity generation and the latter energy resource being the most important factor in fuelling the transport sector. However, it was recognised by the Labour government that Britain would become more and more reliant on imports of oil and gas in the future as North Sea reserves diminished.[24] For example, in June 2004, the United Kingdom became an overall net importer of crude oil for the first time since 1985.[25] Indeed, the UK (which was a net exporter of fuels throughout the 1980s and 1990s) became a net importer of all fuels (Coal, Oil and Natural Gas) from 2004 onwards.[26]

The importance of fossil fuels to the British economy was further illustrated by the detrimental impact of high oil and gas prices on the UK economy and public opinion since the turn of the century. For example, average prices for all forms of primary energy rose in 2008 and, according to the BP Statistical Review of World Energy 2009, annual oil prices rose for the seventh consecutive year, the first instance of this in the history of

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[22] DECC, *UK Energy in Brief 2008* (London: TSO, 2008) p.24.

[23] Ibid. p.18.This is in contrast to the decline in petroleum consumption by motor vehicles using roads, which dropped from 24.3 million tonnes in 1990 to 17.6 million tonnes in 2007. This noticeable drop in petroleum use was ascribed to the growing popularity of diesel cars in general due to the perceived cost benefits. Also, smaller vans such as the Ford Transit had generally switched from petrol-power to diesel-power in the preceding years. For more information on this see Kyle MacDonald-Wallis and Martin Young, 'The UK oil industry over the past 100 years', *BERR Paper* (2007) accessed at http://webarchive.nationalarchives.gov.uk/+/http://www.berr.gov.uk/files/file43853.pdf on 7 May 2012.

[24] Ibid.

[25] See Kevin Morrison and Steve Johnson, 'UK net oil importer for first time in decade', *Energy Bulletin Website* (11 August 2004) accessed at http://www.energybulletin.net/node/1604 on 4 May 2012. It must be stated here that this consisted of net imports for only that particular month.

[26] See DECC, *Digest of UK Energy Statistics 2008* (London: TSO, 2008) p.12.

the 150-year old oil industry. However, prices maintained their tendency towards volatility, with oil prices reaching $140 a barrel in July 2008 but then collapsing by more than 70% by the end of the year.[27] This caused much consternation in the press and amongst politicians with Prime Minister Gordon Brown calling for improved regulation of oil markets to prevent damage to the world economy.[28] There was also a call for a ban on oil speculation from certain commentators and politicians around the globe, with the German government being amongst the most notable critics of this particular practice.[29]

The oil protests of 2000 further illustrated how the UK economy could be brought to a standstill by disruption of petrol and diesel supplies. In this instance, farmers and hauliers unhappy with the price of petrol and diesel fuel blockaded oil refineries throughout Britain and managed to cause significant disruption to the economy for a week. The price of the blockade to the economy was estimated at around £1 billion.[30] Thus, violent fluctuations in oil prices certainly had the potential to cause social and economic unrest and therefore influence governmental attitudes towards energy prices.

As regards transportation, there remained much to do in the creation of a transport infrastructure that did not rely almost exclusively on oil-derived fuels. For example, bio-fuels accounted for merely2.9% of road fuel consumption in 2009.[31] The British government attempted to increase this figure through the imposition of a Renewable Transport Fuels Obligation (RTFO). From April 2008 this placed an obligation on fuel suppliers to ensure that a certain percentage of their fuel sales were made up of bio-fuels. The original target was for 5% of all forecourt sales in the UK to be of bio-fuels by 2010.

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[27] BP, *BP Statistical Review of World Energy 2009* (BP, 2009) p.3.

[28] *BBC News Online,* 'Brown warns on volatile oil price' (December 19 2008) accessed at http://news.bbc.co.uk/1/hi/uk_politics/7791269.stm on 7 May 2012.

[29] Ambrose Evans-Pritchard, 'Germany in call for ban on oil speculation', *The Daily Telegraph* (26 May 2008).

[30] Public Safety and Emergency Preparedness Canada (PSEPC), **'Impact of September 2000 Fuel Price Protests on UK Critical Infrastructure',** *Incident Analysis: IA05-001* (January 2005) accessed at http://www.iwar.org.uk/cip/resources/PSEPC/fuel-price-protests.htm on 4 May 2012. There were further attempts to initiate blockades but none achieved the results of 2000, at least in the UK. See *BBC News Online,* 'Q&A: Europe fuel protests', (May 30 2008) accessed at http://news.bbc.co.uk/1/hi/world/europe/7427543.stm on 7 May 2012.

[31] DECC, *Digest of UK Energy Statistics 2010* (London: TSO, 2010) p.72. Admittedly, this figure was a large increase from the 0% of British road fuel consumption consisting of bio-fuels in 2003. Still, these fuels still had to be blended with conventional diesel and petrol as outlined earlier in this chapter.

This was then amended in 2009 to 3.4% by 2010 and 5% by 2013/2014. Failure to reach these targets by fuel companies would lead to substantial fines.[32]

Of course, this meant that even if the target was met 95% of fuel sold in the UK would continue to be derived from refined oil. The enormity of the task facing any British administration wishing to convert from the monopoly of fossil-fuel powered transportation to alternative sources was perhaps best illustrated by the following figures: in 2010, the amount of newly registered road vehicles in the UK defined by the Society of Motor Manufacturers and Traders (SMMT) as 'alternatively-fuelled' was just over 22, 865. This compared to the figure of 2,030,846 new cars registered in the same year which were conventionally-powered by petroleum or diesel fuel, as well as the figure of 34, 100,000 conventionally-powered vehicles registered in the UK as a whole.[3334]

This importance of fossil fuels for transportation purposes was mirrored in the British armed forces. All manned vehicles in all of the three services relied (and continue to rely) on oil-derived fuels for power, the only exceptions being the nuclear-powered Trident submarines, the Trafalgar-class Ship Submersible Nuclear (SSN) attack submarines and the new Astute-class fleet submarines of the Royal Navy. MOD figures for 2009 show that nearly one billion litres of fuel and lubricants were supplied to front-line units alone. The last few years of the Labour administration saw an average of £700 million spent annually by the military on fuelling these front line units.[35] In fact, the RUSI Alternative Energy and Sustainability conference report of 2009 noted that it took the equivalent of 7 litres of fuel to supply one litre of fuel to British front line units. Indeed, fuel convoys were a persistent target of attack for enemy forces in Iraq and Afghanistan. In 2006 attacks on fuel tankers resulted in the loss of 139 personnel and 89

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[32] Ibid. Also, see more detailed information on this at the *Department for Transport Website*, 'Renewable Transport Fuels Obligation' (2012) accessed at http://dft.gov.uk/topics/sustainable/biofuels/rtfo/ on 4 May 2012. The Renewable Fuels Agency (RFA) that administered the RTFO was disbanded in March 2011.

[33] See *Society of Motor Manufacturers and Traders Website,* 'Motor Industry Facts 2011' (2011) accessed at http://www.smmt.co.uk/wp-content/uploads/Motor-Industry-Facts-2011.pdf on 6 May 2012. 'Alternatively-fuelled vehicles' referred to vehicles that were powered by a combination of petrol and alcohol, petrol and electric, by petrol and gas or by electric means alone. For more information on new types of vehicles that do not require petrol or diesel to function see http://www.whatgreencar.com/

[34] DFT, *Vehicle Licensing Statistics 2010* (National Statistics Publication, 2011).

[35] Figures taken from Lieutenant Commander Susie Thompson, 'Fuelling the Front Line', *MOD Defence News Website* (11 April 2009) accessed at http://webarchive.nationalarchives.gov.uk/+/mod.uk/defenceinternet/defencenews/equipmentandlogistics/fuellingthefrontline.htm on 6 May 2012.

tankers.[36] Given this information, one would expect the military to have had as much of an interest in this particular aspect of energy security as those in the civilian sector. Hence, we would expect there to be recognition of this issue amongst the British defence establishment when we peruse the defence literature and statements in later chapters.

In response to this reliance on fossil fuels (as well as climate change concerns) in the sphere of power generation, renewable energy supplies such as wind, solar and tidal power were being increasingly emphasised by the Labour government as the future of electricity generation in the UK. Nevertheless, these remained highly unlikely to make up any shortfall in the short to medium-term as they only consisted of 5% of total electricity generation in 2007.[37] As a result, the British government continued to emphasise that whilst renewable energy sources would come to play an increasingly important part in the UK's energy infrastructure they would remain insufficient in regards to ensuring secure energy supplies for the United Kingdom: 'The need to reduce carbon emissions whilst ensuring secure energy supplies means that we cannot rely on renewables alone. This is because we need a diverse electricity generation mix. Moreover, some of the most cost-effective renewable technologies, such as wind, are intermittent and cannot produce electricity on demand.'[38]

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[36] Elizabeth Quintana and Amanda Sinden, 'Alternative Energy and Sustainability in the Military 2009', *RUSI Conference Report* (27 February 2009) accessed at http://www.rusi.org/downloads/assets/Alternative_Energy_and_Sustainability_Conference_Report_-_FINAL.pdf on 4 May 2012.

[37] See DECC, *UK Energy in Brief 2008* (London: TSO, 2008) p.29. The stated European Union aim is to cut carbon emissions by 20% by 2020. This is to be done by aiming for 20% of electricity generation to be made up of renewable sources by this target period. The UK is aiming to reach the target of 15% of energy generation to be from renewable sources by 2020 as it is starting from a much lower base than the current EU mean average of 8.5%. See *BBC News Online*, 'EU Climate Change Package Explained' (9 April 2010) accessed at http://news.bbc.co.uk/1/hi/world/europe/7765094.stm on 7 May 2012.

[38] See *Meeting the Energy Challenge: a White Paper on Energy,* Cm. 7124 (London: TSO, 2007) p.16. In reality, Labour government spending was very low on research, development and demonstration (RD&D) budgets for renewable energy resources. As a report by the Center for Strategic and International Studies (CSIS) and the Atlantic Council of the United States mentioned, the United States and Europe had reduced their renewable RD&D budgets over the previous 15 years and, according to the International Energy Agency (IEA), the total spending in 2005 remained below 0.06 percent of GDP. This compared to total private sector spending in these areas being estimated at around 4 to 6 times more than total government expenditure annually. See Franklin Kramer and John Lyman, 'Transatlantic Cooperation for Sustainable Energy Security: A Report of the Global Dialogue Between the European Union and the United States', *Center for Strategic and International Studies and The Atlantic Council of the United States* (February 2009) accessed at http://www.acus.org/files/publication_pdfs/523/EnergySecurityReport.pdf on 4 May 2012.

The UK would need around 30-35 gigawatts of new electricity generation capacity by 2027 and two-thirds of this requirement by 2020. This is mainly due to the closure of many coal-fired power stations over the next two decades.[39] In order to supplant this loss of capacity, the government announced in 2008 that measures would be taken to facilitate the construction of a new generation of nuclear power stations. It was envisaged that these would be built solely by private investment and allow the UK to achieve its targets on cutting CO2 emissions, whilst helping to maintain energy security.[40] In addition, the Labour government also announced plans to allow the creation of 4 new coal-fired power plants using carbon-capture and storage technology. These 'demonstration' plants would test the viability of this technology in cutting carbon emissions.[41] It was hoped that, following effective trialling of this technology, it would allow the UK to continue to use a natural resource that remains in abundance throughout the globe.[42]

Therefore, as the Labour administration demonstrated its future intention to utilise Britain's large reserves of coal these through the development of carbon capture and storage technology, and the UK also has the technical expertise to construct new nuclear power stations along with reliable overseas suppliers of uranium ore, it appeared that the potential shortfall in power generation from these areas was not one that would necessitate any real consideration in the formulation of defence policy. However, as gas had become a proportionally more significant fuel in terms of power generation and oil remained, to all intents and purposes, the only viable fuel for the vast majority of vehicles in the United Kingdom, it is important to now consider what threats to the supply of these resources emerged between 1997 and 2010. In view of this, the next section will outline these potential threats in more detail.

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[39] *Meeting The Energy Challenge: A White Paper on Energy,* p.7.
[40] *Meeting the Energy Challenge: A White Paper on Nuclear Power,* Cm. 7296 (London: TSO, 2008).
[41] See Ed Crooks, 'Britain bets on clean coal', *ft.com* (23 April 2009) accessed at http://blogs.ft.com/energy-source/2009/04/23/britain-commits-to-clean-coal/ on 30 April 2012.
[42] Proven reserves of UK coal have been estimated at 3196 million tonnes. See *UK Coal Website*, 'World Coal Statistics' (2012) accessed at http://www.ukcoal.com/why-coal/need-for-coal/the-need-for-coal#world-coal-statistics on 7 May 2012. Despite these reserves the UK imported the vast majority of its coal with 44 million tonnes being imported in 2007. Russia provided the majority of this with 48% of total imports. South Africa was second with 18%. The UK exported a total of 0.8 million tonnes in the same year with the majority of exports going to the Republic of Ireland. See *Digest of UK Energy Statistics 2008,* pp.293-294.

Potential International Threats to the Security of Supply of Fossil Fuels to the United Kingdom

Gas Supplies

The need to ensure reliable supplies of gas to the United Kingdom had the potential to affect defence policy makers from 1997 onwards given (as outlined earlier in this chapter) its massively increased importance in terms of UK electrical generation. Although there were no immediate threats to UK energy security in terms of the supply of essential fossil fuels (due to large reserves still present in the North Sea) the UK became more and more dependent on imported oil and gas, and this dependency was only likely to increase in the future.[43] It was estimated by virtually all sources that the United Kingdom would become more dependent on imported oil and gas in the future. For example, according to the BP Statistical Review of World Energy 2009, in 2008 Britain produced 2.3% of the world's gas but was responsible for 3.1% of consumption.[44] This disparity was almost certain to increase as time progressed, given known reserves.

This consideration was already beginning to become a factor in UK energy policy as shown by the decision to construct three new Liquid Natural Gas (LNG) facilities at the Isle of Grain on the Thames Estuary and two at Milford Haven, South Wales.[45] LNG terminals were increasingly important from an energy security perspective as they allowed large quantities of gas to be transported over long distances without the need for pipelines and the requisite security that was often required in the regions that these pipelines traversed. LNG transported from countries such as Qatar and Indonesia, was likely to be crucial to Britain in the coming years as the UK's consumption of natural gas

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[43] See Oil and Gas UK, *2010 Oil and Gas UK Activity Survey* (2010) accessed at http://www.oilandgasuk.co.uk/cmsfiles/modules/publications/pdfs/EC020.pdf on 6 May 2012. There were still believed to be the equivalent of 25 billion barrels of oil left in the North Sea for future exploitation in 2008. In any emergency these would be able to sustain UK oil for a short time. Around 36 billion barrels had been exploited already at this time. As regards gas reserves, there were a proven 2, 857 billion cubic metres (bcm) of natural gas available in for exploitation at the end of 2010, with 55 bcm extracted that year. See DECC, *UK Gas Reserves and Estimated Ultimate Recovery 2011* (2011) accessed at http://og.decc.gov.uk/assets/og/data-maps/docs/3184-uk-gas-res-and-eur-2011.pdf on 6 May 2012

[44] *BP Statistical Review of World Energy 2009,* p.24, p.27.

[45] Parliamentary Office of Science and Technology, 'The Future of UK Gas Supplies', *Parliamentary Office of Science and Technology Postnote* (October 2004).

was projected to increase by 16% by 2011/2012.[46] Indeed, LNG's share of total British gas imports rose from 2% in 2005 to 25% in 2009.[47] Certainly, many countries without the requisite technology to import and/or export their gas via LNG were endeavouring to construct the capability in this period, indicating its perceived importance.[48] Therefore, from a defence perspective, potential protection of the transit routes of LNG tankers would be expected to be a policy consideration if energy security was to be taken into account in the examined period from 1997 to 2010.

Russia also seemingly began to use its large reserves of oil and gas to flex its muscles in seeming attempts to regain its lost 'great power' status. Between 2005 and 2010, there were a number of examples of Russia using what one could label 'energy blackmail' in order to put pressure on neighbouring governments. For example, in 2006 the Russian government purposefully diminished the flow of gas to the Ukraine in a row over prices. This was seen by many as an attempt by the then President of Russia Vladimir Putin to show his disapproval of the Ukrainian regime of Viktor Yushchenko.[49] This incident and further confrontations with Belarus and Lithuania (not to mention the war with Georgia in August 2008) were of particular concern to European Union countries as the vast majority of gas consumed in the EU was supplied by Russia and its major gas company (in which the Russian government owns a controlling stake) Gazprom. Certainly, the Russian government proved itself to have a strong predisposition to use oil and gas supplies as a political weapon to ensure compliance with neighbouring countries in recent years, the most recent example being an embargo on oil exports to Belarus in January 2010.[50] This was a concern as Russia had the largest proven gas reserves in the world and all its exports went to Europe.[51] Indeed, taken together, Russia, Qatar and Iran had 60% of the world's proven gas reserves. Given that two of these

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[46] See *Dragon LNG: Energy for Wales Website,* 'HomePage' (2012) at http://www.dragonlng.co.uk/whyislngneededin.cfm#1 accessed on 4 May 2012.
[47] *Digest of UK Energy Statistics 2010,* p.100.
[48] See *Energy Information Administration Website,* 'The Global Liquefied Natural Gas Market: Status and Outlook' (December 2003) at http://www.eia.gov/oiaf/analysispaper/global/worldlng.html accessed on 6 May 2012.
[49] See Jonathan Stern, 'The Russian-Ukrainian gas crisis of January 2006', *Oxford Institute for Energy Studies* (2006) pp.10-11 for evidence of the general world response to this incident.
[50] Tim Webb, 'Dispute looms as Russia disputes Belarus energy supplies', *The Guardian* (4 January 2010).
[51] *BP Statistical Review of World Energy 2009,* p.22. Russia had 23.4% of proven global natural gas reserves at this time.

regimes would not have been considered 'friendly' to the West, there was the fear that there could be an interruption in gas flows from these areas. There were even mooted claims that Russia was looking to create an international gas cartel with other gas exporting countries, with OPEC as the model. This followed a meeting of the Gas Exporting Countries Forum (GECF) in Qatar on April 9th 2007 where Russia joined other gas producers to discuss the above possibility, and offered to lead a study into gas pricing.[52] Indeed, fears of a resurgent Russia prepared to use energy as a political and economic weapon led to a Defence Select Committee report analysing the potential dangers posed to UK security (published in July 2009) and the former NATO Secretary General, Jaap De Hoop Scheffer, highlighting the importance of good relations with Russia in an article published in 2008.[53]

Rising Chinese and Indian Demand for Energy

Potential conflicts over scarcer energy resources seemed to loom large when one considered the increasing energy demands of the emerging economies of China and India in the first decade of the twenty-first century. According to figures published in 2005, these two countries combined had around one-third of the global human population, yet the Asia-Pacific region had the world's smallest oil reserves and the third-smallest gas reserves.[54] Certainly, some observers saw the makings of a new struggle for energy

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[52] *The Economist,* 'A Bear at the Throat' (14 April 2007). There was much discussion amongst experts in this field on whether the GECF, founded in 2001 and meeting once a year, was likely to become a cartel in the manner of OPEC. The majority opinion seemed to be that it was improbable but not impossible . For a range of opinions on this topic see the following articles: Hadi Hallouche, 'The Gas Exporting Countries Forum: Is it really a Gas OPEC in the making?', *Oxford Institute for Energy Studies,* (2006); Ronald Soligo and Amy Myers Jaffe, 'Market Structure in the New Gas Economy: Is Cartelization Possible?' *Geopolitics of Gas Working Paper Series* (May 2004) accessed at http://iis-;hydb.stanford.edu/pubs/20705/Gas_OPEC_final.pdf on 4 May 2012. Matthew Hulbert and Tariq Akbar, 'Why a Gas Troika and cartel will prove to be hot air...', *Datamonitor Website* (November 2008) accessed at http://www.europeanenergyreview.eu/index.php?id=368 on 4 May 2012.

[53] See House of Commons Defence Committee, *Tenth Report - Russia – a new confrontation?,* HC 276, session 2008- 2009 (London: TSO, 2009) Also, see Jaap De Hoop Scheffer, 'NATO and the Challenge of Energy Security', *The RUSI Journal,* Vol. 153, Iss. 6 (2008). *The Sunday Times* reported on 28 March 2010 that GAZPROM, Russia's state-owned gas company, was expected to put in a bid for 800 petrol stations and an oil refinery in the UK. See Danny Fortson, 'Russians prepare £1bn grab for UK fuel supplies', *The Sunday Times* (27 March 2010).

[54] Gawdat Bahgat, 'Energy Partnership: Pacific Asia and the Middle East', *Middle East Economic Survey,* Volume XLVIII, No. 33 (2005).

resources between the US and these two countries, perhaps leading to open conflict, or at least a new 'Great Game' in Asia.[55] A good indicator of the increased affluence of China and the corresponding potential for expansion of energy consumption were the figures given in The Economist in 2009 regarding agricultural consumption. According to the Australian investment-advisory firm Caiani & Company, in the previous decade China had seen sales of milk increase seven-fold and that of olive oil six-fold. The Chinese were eating 60% more poultry, 30% more beef and 25% more wheat.[56] With increased standards of living in China and India (the world's two most populous countries) and the concomitant demands for power to fuel electrical appliances and fuel to power newly purchased cars, it would not have been imprudent to surmise that the world's two most populous countries could feasibly have entered into direct competition with the West for fossil fuel resources. For example, IEA figures indicated that between 2005 and 2030, China and India would account for nearly half of the increase in the world's energy demand with India becoming the world's largest oil importer by 2030.[57] China actually overtook the USA as the world's largest consumer of energy in 2010.[58] From this perspective, British defence policy may have had to take into account the potential for military confrontations with China or India, an 'east of Suez' out-of-area intervention capability that was meant to have been abandoned following the 1967 Labour Defence White Paper.

The Importance of the Middle East to Energy Security

During the tenure of the Labour government, the Middle East Region, and Saudi Arabia in particular, remained extremely important in considerations of the security of oil supply, as these areas had the world's largest proven oil reserves.[59] In many ways Saudi

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[55] Mathew Burrows and Gregory F. Treverton, 'A Strategic View of Energy Futures', *Survival,* Vol. 49, Iss. 3 (2007) p.87.
[56] *The Economist,* 'Green Shoots' (19 March 2009).
[57] IEA, *World Energy Outlook 2007* (OECD/IEA Publication, 2007) p.3.
[58] *IEA Website,* 'China overtakes the United States to become world's largest energy consumer' (20 July 2010) accessed at http://www.iea.org/index_info.asp?id=1479 on 7 May 2012.
[59] *BP Statistical Review of World Energy 2009,* Saudi Arabia had 21% of global proven oil reserves. OPEC as a whole had 76% of proven oil reserves. P.6 The Middle East had 59.9 % of proven oil reserves and 41 % of gas reserves. P.6, p.22.

Arabia acted as a microcosm of many of the world's oil supply problems. Firstly, despite having the largest oil reserves Saudi Arabia was not the world's largest producer. This was of course partly down to the production limits that OPEC set to keep oil at the desired price, but this fact may have obscured other problems within the oil-producing infra-structure of Saudi Arabia and other countries with large oil reserves. Indeed, all of Saudi Arabia's oil reserves remain state-controlled via the oil company Saudi Aramco. This followed a trend of nationalisation of oil resources in resource rich countries.[60] In essence, this meant that the Saudi Arabian government maintained total policy control of how its oil fields were developed, and what further exploration was likely to be conducted. This fact, combined with the world's largest oil reserves, made Saudi Arabia an important swing producer, able to affect global oil prices in the long-term by increasing drilling capacity and exploration activities, or in the short-term by reducing daily production quotas.[61] Thus, the importance of Saudi Arabia to a country as heavily-reliant on oil as Great Britain was in the effect its domestic oil production could have on global prices. From a security perspective, Saudi Arabia's domestic stability was therefore significant to the British economy, as disruption to production was likely to result in higher oil prices worldwide, leading to more money spent on transportation fuel

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[60] Nationalisation was often driven by the feeling that a country's resources are being exploited by multi-national companies that provide little benefit to the majority of people. It could often appear that the national patrimony was being flogged on the cheap. See *The Economist,* 'Barking louder, biting less' (10 March 2007). The nationalisation of oil resources in many Persian Gulf countries actually led to a loss of expertise in the exploitation of proven reserves as the technical know-how of international oil companies such as BP and ExxonMobil, developed through their vast experience of oil exploration and development, was lost. In fact, it was estimated that national oil companies now have control of three-quarters of proven world oil reserves. See Carola Hoyas, 'The new Seven Sisters: oil and gas giants dwarf western rivals', *The Financial Times* (11 March 2007). Consequently, there was a lack of spare production capacity in the first decade of the 21st Century which meant any disruptions in supply were keenly felt around the world. A perfect example of this was that of Hurricane Katrina in 2005 and the damage it caused to many oil installations in the Gulf of Mexico. This caused global oil prices to rise dramatically in the aftermath of the natural disaster. However, it must also be noted that this lack of spare production capacity was also due to the under-investment in exploration due to the low oil prices of the 1990s. See Leonardo Maugeni, 'Two Cheers for Expensive Oil', *Foreign Affairs*, Vol. 85, Iss. 2 (2006) pp.152-153; Mathew Burrows and Gregory F. Treverton, 'A Strategic View of Energy Futures', *Survival,* Vol. 49, Iss. 3 (2007) p.80. It is estimated that OPEC, in 2006, was operating at 99% of oil production capacity. Joe Barnes and Amy Myers Jaffe, 'The Persian Gulf and the Geopolitics of Oil', *Survival,* Vol. 48, Iss. 1 (2006) p.145; Carl Mortished, 'Hurricane Katrina Whips Oil Price To A New High', *The Times* (30 August 2005) and Gawdat Bahgat, 'Energy Partnership: Pacific Asia and the Middle East' *Middle East Economic Survey*, Volume XLVIII, No. 33 (2005)

[61] See Michael Klare, 'Saudi Arabia: the sands run out', *Le Monde diplomatique (English edition)* (March 2006).

that could be utilised in other areas, and increased potential (given recent history) for oil protests that could adversely affect the economy.

Saudi Arabia also provided a good example of the threats that internal instability and terrorism could pose to energy infrastructure. Following increased terrorist attacks on foreign nationals within Saudi Arabia, by 2006 there were 25,000-30,000 security personnel defending oil installations within the country and the annual security budget for this was estimated at around $8 billion. Joe Barnes and Amy Myers Jaffe argued that a large reason for the political instability within the country could be ascribed to reduced oil revenues per capita since 1982. For example, in 1982 oil revenues represented $30,000 per capita. This had declined to $9,300 per capita by 2003, the main reason for this being the massive increase of population from seven million to twenty-two million within the same period of time.[62] Whether this level of security spending and wealth distribution was sustainable was a moot point. What was clear was that the internal security of energy-rich states remained important to the effective supply of energy resources and global market confidence in the period under examination.

Terrorist and insurgent attacks on oil installations also had the potential to disrupt global supply in key oil producers. The most consistent and sustained attacks took place in Iraq and Nigeria, the former due to the continued insurgency following the Anglo-American invasion of 2003 and the latter due to tensions between foreign oil corporations and a number of ethnic minority groups in the Niger Delta, where the majority of the oil is situated. For instance, oil prices rose 2.6% in February 2006 following attacks by militants in Nigeria that led to a shutdown of nearly a fifth of the country's oil production.[63] Furthermore, it was believed that due to sustained insurgent attack oil production in Iraq had fallen around 40% below pre-war levels in 2006.[64]

Indeed, there were initially large question marks over the involvement of Western oil companies in Iraq due to the persistent lack of security and the perceived hard bargains the Iraqi government was willing to drive in its auctions for the right to drill for oil and gas in the country. Auctions on 30th June 2009 (the same day US soldiers began

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[62] Joe Barnes and Amy Myers Jaffe, 'The Persian Gulf and the Geopolitics of Oil', *Survival,* Vol. 48, Iss. 1 (2006) p.149.
[63] Mouawad, Jad, 'Oil Prices Leap After Attacks In Nigeria', *The New York Times* (20 February 2006).
[64] Daniel Yergin, 'Ensuring Energy Security', *Foreign Affairs*, Vol. 85, Iss. 2 (2006) p.72.

withdrawing from Iraqi cities) yielded only one contract for the eight biggest oilfields. This was in the country with the third largest proven oil reserves in the world. Still, BP and the China National Petroleum Corporation (CNPC), who came to an agreement to develop the Rumaila oilfield, would be paid only $2 per barrel, half of what BP initially asked for and a fraction of what other oil companies wanted. It seems Asian oil companies were much more prepared to accept these harsh terms in the search for new energy supplies, with Sinopec (another Chinese state-controlled company) buying an oil company operating in Iraqi Kurdistan for $7 billion in June 2009. As Derek Brower commented in 2009 '... if the Iraq war was a quest to secure reserves for western consumers, the plan is failing. In fact it might turn out that the US and its allies have liberated Iraq – and handed its oil to China.'[65]

Accordingly, from the preceding analysis we can ascertain that there was a significant degree of potential for Saudi Arabia and other oil-rich states to have their production affected by internal instability during Labour's time in government. This instability could have adversely affected global oil prices and the wider world economy and was therefore likely to be an important security consideration for the Labour administration. Actors at the declaratory and operational levels may have been prepared for possible intervention to ensure the continued security of important oil-rich states and the defence-industrial level of policy may have been eager to export equipment that could be used in internal security matters within the same states. The analysis conducted in later chapters will ascertain whether this possibility became a reality.

Transit Routes

In addition to the aforementioned considerations, the increasing potential for disruption of supply via incidents of piracy in international waters and the potential for terrorist attacks on oil and gas tankers was not something that could be easily overlooked. Perhaps the first major example of this threat between 1997 and 2010 was the attack on the USS Cole off the coast of Yemen in 2000, when 17 US sailors were killed by a small boat bomb, believed to have been driven by terrorists affiliated to Al-Qaeda. This incident

[65] Derek Brower, 'Crude Politics', *Prospect Magazine* (August 2009).

brought the renewed possibility of attacks on oil tankers and transit routes into policy-makers minds. In addition, piracy off the coast of Somalia increased in the latter half of the decade, in part due to the continued civil war in this 'failed' state. Notable incidents included the hijacking of the Saudi oil tanker 'Sirius Star' in November 2008 and the capture of the Ukrainian cargo ship 'MV Faina' in September of the same year. Both ships were released once substantial ransoms had been paid by the owners.[66] and the incidences of piracy led to an international naval presence in the area, including the despatch of a ship from the Royal Navy to head an international naval task force.[67]

These events appear to have denoted a significant alteration in the manner of attacks on global shipping. Such incidents had occurred during the Iran-Iraq war in the 1980s but had been conducted by states and had failed to produce much disruption to international oil supplies. A view began to be propounded by certain commentators that there were a number of 'chokepoints' in world shipping lanes that could easily be attacked, and in the process disrupt world oil prices significantly.[68] These included the Strait of Hormuz, the Suez Canal, the Bab-el-Mandeb Strait, the Bosporus Strait and the Strait of Malacca. With an expected increase in oil transported in tankers from 40 million barrels per day (bpd) to 67 million bpd by 2020 the threat of an ecological disaster from an attack on or hijacking of a super-tanker appeared to be increasing.[69] Indeed, according to 2010 figures from the US Energy Information Administration, an average of 15 crude oil tankers pass through the Strait of Hormuz every day, representing roughly 20% of oil traded globally.[70] Combined with these dangers, there was the increasing fear that an oil tanker could be used by terrorists as a floating bomb or as a delivery vehicle for a concealed nuclear weapon. In many ways this would be the ideal 'Trojan horse' as any

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[66] Chris Smyth, 'Somali pirates release hijacked supertanker Sirius Star and crew', *The Times* (January 9 2009); Sam Jones and Chris McGreal, 'Somali pirates release Ukrainian arms ship', *guardian.co.uk* (6 February 2009) accessed at http://www.guardian.co.uk/world/2009/feb/05/somali-pirates-free-military-ship on 7 May 2012.

[67] David Charter, 'Royal Navy admiral Phillip Jones heads EU Somali pirate task force', *The Times* (9 November 2008).

[68] See Carlos Pascual, 'The Geopolitics of Energy: From Security to Survival', *Brookings Institute* (January 2008) accessed at http://www.brookings.edu/papers/2008/01_energy_pascual.aspx on 4 May 2012 and Lehman Brothers Global Equity Research, 'Global Oil Chokepoints: How Vulnerable is the Global Oil Market?', *Lehman Brothers Report* (January 18, 2008) accessed at http://www.deepgreencrystals.com/images/GlobalOilChokePoints.pdf on 4 May 2012.

[69] Daniel Yergin, 'Ensuring Energy Security', *Foreign Affairs*, Vol. 85, Iss. 2 (2006) pp.78-79.

[70] *Energy Information Administration Website*, 'World Oil Transit Chokepoints' (30 December 2011) accessed at http://www.eia.gov/cabs/world_oil_transit_chokepoints/Full.html on 7 May 2012.

nuclear device contained within such a massive structure as an oil tanker would be difficult to uncover and suspect in the first place.[71]

Thus, the ability to effectively police important sea routes and protect against the possibility of terrorist and pirate attacks on ocean-going oil and gas tankers certainly had the potential to influence British defence policy given the aforementioned dangers. The evidence analysed in succeeding chapters will demonstrate whether this proved to be the case.

Unexploited Energy Resources

Declining reserves and the desire for new sources of oil and gas created an increased possibility of conflict in areas that had hitherto been of little interest to the United Kingdom in terms of energy resources. The British-declared two-hundred mile 'economic zone' surrounding the Falkland Islands may contain around 60 billion barrels of oil – equivalent to the North Sea's original estimated reserves – and exploratory drilling resumed in 2010 following a12 year hiatus. This strained relations with the Argentinean government, who claimed that the British government reneged on an agreement made in 1995 to co-operate in the exploration of offshore reserves.[72] Indeed, in 2007 they scrapped a deal with the UK regarding cooperation on exploration, as they believed that Britain was using the deal to justify 'illegitimate' claims for ownership of the Falklands Islands.[73] Therefore, the seeds of a future conflict in this region were present, based on the desire to exploit a potentially massive oil and gas resource. Consequently, the importance of this region may have entered into defence policy formulation and, despite a UK presence in the area since the 1982 Falklands War, there was a risk that British forces could be called into action in the region again.

The Arctic area also had the growing potential to develop into an area of real competition for energy resources. One of the more optimistic analyses conducted by the

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[71] Jonathan Medalia ,'Port and Maritime Security: Potential for Terrorist Nuclear Attack Using Oil Tankers.' *CRS Report for Congress* (7 December 2004) accessed at http://www.fas.org/irp/crs/RS21997.pdf on 4 May 2012.
[72] Jasper Copping, 'Drilling for oil to start in Falklands Islands', *The Daily Telegraph* (9 March 2009).
[73] *BBC News Online,* 'Argentina ends Falklands Oil deal' (28 March 2007) accessed at http://news.bbc.co.uk/1/hi/world/americas/6501693.stm on 7 May 2012.

US Geological Survey and the Norwegian company Statoil believed that the Arctic Circle held 25 percent of global undiscovered hydrocarbon reserves.[74] It was estimated that Russia could lay claim to 69 percent of this figure and although currently difficult to exploit, this would only become easier as climate change was expected to lead to increased melting of the Arctic icecap and the concurrent opening of the Northern Sea Route and the North-West Passage.[75]

Despite Russia's large claim to these resources there remained the potential for conflict with the other four countries that claimed sovereign territory within the Arctic Circle – the USA, Canada, Denmark and Norway. Under the terms of the United Nations Convention on the Law of the Sea (UNCLOS) states are entitled to an exclusive economic zone (EEZ) 200 nautical miles beyond their coastline. This gives the state the right to exploit all natural resources within the economic zone. If the state can then prove to the UN commission on the Limits of the Continental Shelf that its undersea shelf extends beyond the EEZ, it has the right to exploit the resources of the seabed. With this in mind, Russia claimed that the Arctic seabed was a projection of the Siberian continental platform. These claims were rejected by the aforementioned UN commission.[76] In its 2009 National Security Strategy, the Russian government did not rule out that, in future, it may have to use military forces to safeguard its natural resources. In an earlier document, the Kremlin had declared the Arctic a strategic resource for Russia and set out plans to establish army bases along the Arctic frontier.[77] In response to the Russian posturing in this area, the Canadian government were to submit a claim of ownership of portions of the seabed to the UN commission by 2013 and the new US administration were looking to ratify the UNCLOS in the near future so they could do likewise.[78]

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[74] Kristin Rønning and Geirr Harr 'Exploring the Basins of the Arctic', *Statoil ASA Paper* (2005) accessed at http://www.cge.uevora.pt/aspo2005/abscom/Abstract_Lisbon_Ronning.pdf on 4 May 2012.

[75] Shamil Midkhatovich Yenikeyeff and Timothy Fenton Krysiek, 'The Battle for the Next Energy Frontier: The Russian Polar Expedition and the Future of Arctic Hydrocarbons', *Oxford Institute for Energy Studies* (August 2007) p.2, p.9.The Northern Sea Route is a shipping passage stretching from the Northern Atlantic, along the Siberian coast to the Russian Far East and the Pacific Ocean.

[76] Ibid. p.4.

[77] Tony Halpin, 'Russia warns of war within a decade over Arctic oil and gas riches', *The Times* (14 May 2009).

[78] *The Economist,* 'Not a Barren Country' (18 July 2009) and *Council on Foreign Relations Website*, 'Transcript of Hillary Clinton's Confirmation Hearing' (13 January 2009) accessed at

Given that the UK did not have any territorial interests in the Arctic Circle, this unexploited area would appear to have been of little importance in terms of UK security and defence policy. However, the potential for disputes between fellow NATO members and Russia over likely access to resources, as well as the possibility of new energy transit routes (through the possible melting of the polar icecap) made it an issue that defence policy makers may have needed to bear in mind, especially in regards to possible areas of deployment.[79]

Security of Demand for Net Oil Producers

As well as the importance of security of supply for the UK there was also the often overlooked issue of security of demand. This became a prime concern for OPEC countries in particular, as their economies were heavily reliant on oil exports for large proportions of their national income. Certainly, there was the feeling, prior to the creation of OPEC in 1960, that net oil-exporting countries were being exploited by the West. Believing that exporting countries were, in effect, subsidising the economies of the OECD nations via low oil prices, OPEC was created to provide security of demand and price.[80] This it was able to do, but arguably for the price of a lack of economic diversification, which meant many of these countries were more dependent on oil than the OECD nations that were so often believed to be vulnerable to variability in world energy prices. Indeed, according to Dr Robert Skinner and Dr Robert Arnott of the

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http://www.cfr.org/publication/18225/transcript_of_hillary_clintons_confirmation_hearing.html on 4 May 2012.

[79] The Canadian government decided to establish an armed naval presence in Arctic waters in 2007 with the announcement of the construction of a naval docking and refuelling facility at Nanisivik. See Captain Phil Webster, 'Arctic Sovereignty, Submarine Operations and Water Space Management', *Canadian Naval Review*, Vol. 3, No. 3 (2007) and *Canadian Navy Website*, 'Domestic Stories: Arctic Deep Water Port', accessed at http://www.navy.forces.gc.ca/cms/3/3-a_eng.asp?category=7&id=623 on 4 May 2012.

[80] Alberto Quiros Corradi, 'Energy and the Exercise of Power', *Foreign Affairs*, Vol. 57, Iss. 5 (1979) pp.1144-1160. Mohammed Barkindo of OPEC was eager to emphasise the mutual interdependence of those countries requiring security of supply and those requiring security of demand in a speech given in 2006. See Mohammed Barkindo, 'OPEC's View on the Outlook for Oil/Supply Demand', *Speech given to the 7th International Oil Summit* (7 April 2006) accessed at http://www.opec.org/opec_web/en/press_room/1093.htm on 2 October 2011.

Oxford Institute for Energy Studies, the so called 'oil weapon' had been used more readily by net consumers than producers of oil in the thirty years preceding 2008.[81]

Why should this have concerned the United Kingdom? The main reason for this to be considered as an important security issue was the importance of oil to the economies of most net oil producing countries. If oil prices dropped drastically or oil consumption became less important to the global economy due to any move towards alternative sources of energy, those countries excessively reliant on income from exploitation of their domestic fossil-fuel resources were likely to see significant drops in income. This could lead to less capital for investment in infrastructure projects and less money for social projects; in effect, the same amount of people fighting over a smaller slice of the economic pie. Instability could result, especially in countries with weak institutions, high corruption and heterogeneous ethnic make-ups.[82]

Hence, there was still likely to be the threat of regional instability in a situation in which the UK as a whole became less reliant on fossil fuels. Again, this scenario may have caused such disruption to the British and world economy that the issue of security of demand for states reliant on oil and gas production certainly had the potential to become an important consideration for British defence policy makers, as well as the wider defence community.

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[81] Dr Robert Skinner and Dr Robert Arnott, 'The Oil Supply and Demand Context for Security of Supply to the EU from the GCC Countries', *Oxford Institute for Energy Studies* (2005) p.3.

[82] Paul Rogers acknowledged that increased use of alternative energy technologies by the West had the potential to cause instability in countries reliant on fossil-fuel exports for revenue. However, he saw this as being an unfortunate consequence resulting from the greater need to address the more pressing issue of climate change. Interview with Paul Rogers via telephone, 19 March 2009. Of course, ample resources are often considered to be an impediment to the development of states with weak institutions. This condition has been termed 'the resource curse'. See Nicholas Shaxson 'Oil, corruption and the resource curse' *International Affairs,* Vol. 83, Iss. 6 (2007) pp.1123-1124. Thus, a counter-argument could be that lack of security of demand could be a good thing for countries that have failed to develop internally whilst having significant resources to call on.

Energy Security: The British Government's Conception

Of course, energy security was not a concept that could be considered from a purely military perspective, especially in the increasingly globalised world and in a time when the United Kingdom no longer enjoyed imperial pre-eminence on the international stage. Thus, before we can determine the likely effect of British energy security concepts on defence policy we need to understand what policies the Labour government believed would ensure energy security for the United Kingdom during its period in power. Firstly, it would be pertinent to look at varying definitions of energy security.

Most definitions of 'energy security' have addressed the concerns of countries that are expected to be net importers of fossil fuels for the foreseeable future and thus reliant on the effective supply of these resources. As this thesis is essentially dealing with the role of the UK armed forces in relation to energy security these definitions are helpful in deciding what context the UK government views the security of its energy supply. Perhaps the simplest and most effective definition was provided by Daniel Yergin in his article 'Energy Security in the 1990s': 'The objective of energy security is to assure adequate, reliable supplies of energy at reasonable prices and in ways that do not jeopardise national values and objectives'.[83] Another valid definition was produced by Barton, Redgwell, Ronne and Zillman in their book 'Energy Security: Managing Risk in a Dynamic and Regulatory Environment': '[Energy security is] a condition in which a nation and all, or most, of its citizens and businesses have access to sufficient energy resources at reasonable prices for the foreseeable future, free from serious risk of major disruption of services'.[84]

Pierre Noel, a Cambridge University energy expert, believed that there was too much emphasis on availability, affordability and environmental sustainability when defining energy security. He advocated that, in reality, energy insecurity occurred when energy markets did not function properly. Thus, energy security policies should be aimed

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[83] Daniel Yergin, 'Energy Security in the 1990s', *Foreign Affairs,* Vol. 67, Iss. 1 (1988) p.11.
[84] Barry Barton, Catherine Redgwell, Anita Ronne and Donald N. Zillman, *'Energy Security: Managing Risk in a Dynamic Legal and Regulatory Environment'*, (London: Oxford University Press, 2004) p.5.

at '*making markets work*'.[85] He advocated the 'liberalisation' of energy markets through the removal of state interference and the elimination of artificial price distortions, such as 'green' energy subsidies. In this way, he believed that any elements that did cause energy insecurity could be more easily identified and addressed accordingly by affected governments.

Perhaps the most effective summation of what would provide energy security for any country (although the United Kingdom was the main emphasis of the study) was the one provided by the then Chief Executive of BP, Tony Hayward, in 2010. His analysis, echoing some of Pierre Noel's thoughts, focused on three main components in drafting any effective energy policy: diversity, competition and efficiency. This meant diversity of supply by using the widest range of energy sources, increased competition in global markets to allow the greater technological expertise of international oil companies to extract resources more efficiently, along with greater energy efficiency within the UK meaning diminished demand for supplies from abroad and consequently less reliance on them.[86]

With these ideas in mind, what was the Labour government's approach to the issue of energy security throughout its time in government? From a declaratory policy perspective, we can see that it essentially utilised the tenets that Tony Hayward outlined in his analysis of energy security. These precepts were essentially economic policies and there was little mention of the potential for military action to preserve access to important energy sources. At the beginning of Labour's administration in 1997, the then president of the Board of Trade Margaret Beckett stated that the 'Government's broad energy policy is to ensure secure, diverse and sustainable energy'.[87] This policy was reiterated in 2000 with the extra addition of the importance of a competitive market for energy.[88] Certainly, the liberalisation of energy markets was a key policy aim of the UK

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[85] Pierre Noel, 'Is Energy Security A Political, Military or Market Problem', *The Financial Times* (17 January 2008).

[86] Chief Executive of BP Tony Hayward, 'The Challenge of Energy Security', *Speech at London Business School* (4 February 2010) accessed at http://www.bp.com/genericarticle.do?categoryId=98&contentId=7059562 on 4 May 2012.

[87] *Hansard,* HC Deb Volume 302, Column 531W (9 December 1997).

[88] *Hansard,* HC Deb Volume 355, Column 576W (2 November 2000). Helen Liddell MP stated in a written answer: 'The Government are committed to competition and to an energy policy based on secure, diverse and sustainable energy supplies at competitive prices'.

government and was made explicit in the 2007 Energy White Paper *Meeting the Energy Challenge* with one of the key elements of the strategy being to 'secure reliable energy supplies at prices set in competitive markets.'[89] Indeed, the UK tried to facilitate more competitive energy markets through energy 'unbundling': in essence, the separation of energy companies' production and transmission assets. This resulted in foreign energy companies such as EDF of France and E.ON of Germany being given permission to purchase UK energy firms.[90] As a result of these changes some argued that, under Labour, the UK developed the most market-orientated energy generation sector within the European Union, which often left it a disadvantage in purchasing energy in a European energy market that remained far from achieving the ideals of free market economics.[91]

Other important elements of the strategy included energy conservation and the development of cleaner energy supplies to combat climate change.[92] In this way, despite moving considerably towards a market-based approach to energy generation, the UK government placed much more emphasis on certain policies aimed at the promotion of green energy sources. The creation of the Department of Energy and Climate Change in October 2008 perhaps best illustrated the increasing political importance of environmental issues within energy policy as Labour's period in power progressed.[93] This was after the three Energy White Papers of 2003, 2006 and 2007 had all stressed the

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[89] *Meeting The Energy Challenge: A White Paper on Energy,* p.8.

[90] *BBC News Online,* 'EDF agrees to buy British Energy' (24 September 2008) accessed at http://news.bbc.co.uk/1/hi/business/7632853.stm on 7 May 2012 and *E.ON UK Website*, 'E.ON buys Midlands-based energy services company CHN Group' (17 January 2008) accessed at http://pressreleases.eon-uk.com/blogs/eonukpressreleases/archive/2008/01/17/1169.aspx on 7 May 2012.

[91] See Michael Pollitt, 'The arguments for and against ownership unbundling of energy transmission networks', *ESRC Electricity Policy Research Group* (7 August 2007) accessed at http://www.electricitypolicy.org.uk/pubs/wp/eprg0714.pdf on 4 May 2012. Also, see *The Economist,* 'Britain's Energy Crisis: How long till the lights go out?' (6 August 2009).

[92] Ibid.

[93] This new department brought together energy policy (previously under the remit of the now defunct BERR -Department for Business, Enterprise and Regulatory Reform) and climate change mitigation policy (previously formulated by DEFRA – the Department for Environment, Food and Rural Affairs). To further its environmental goals the government also introduced the Renewables Obligation Certificate (ROC) and the Carbon Reduction Commitment (CRC). The ROC placed an obligation on UK suppliers of electricity to source a certain proportion of their electricity from renewable sources. Failure to do this would result in a financial penalty being applied to the company concerned. The CRC was a UK-wide emissions trading scheme that aimed to cut carbon dioxide emissions through promotion of energy-efficiency measures in many large organizations. As with the ROC, failure to comply with the obligations of the scheme would result in financial penalties.

increasing desire and need for government energy policy to focus on mitigating climate change, in addition to supplying secure and diverse supplies of energy.[94] Diversity of supply, as outlined by Tony Hayward, was also much emphasised in the government literature.[95]

As regards any specific focus on the issue of energy security, a paper entitled *UK International Priorities: The Energy Strategy* was published by the FCO, DTI and DEFRA in 2004. There was no input from the MOD, reinforcing the notion that the armed forces did not have a role to play in this issue. This document reiterated many of the policies outlined in 2003's Energy White Paper, with an emphasis on the importance of improved international collaboration on climate change mitigation, the need to increase energy market liberalisation in the EU and the desire to increase uptake of renewable sources of energy.[96] There was no direct mention of any need for military intervention in the document, although the importance of 'hard security' in ensuring the security of international energy supplies was cited. Attacks against oil installations and personnel in Iraq and Nigeria were mentioned as aspects of 'hard security' that needed to be anticipated in the overall energy security picture.[97] There was also a call for 'better governance of natural resource wealth in producer countries'.[98] From this we can see that there were allusions towards possible military involvement in energy security issues, with 'hard security' seemingly being analogous to the notion of 'hard power' in diplomacy.

Malcolm Wicks' 2009 paper *Energy Security: a national challenge in a changing world*, in many ways provided the most comprehensive summary of the evolution in the Labour government's appreciation of energy issues.[99] In essence, energy efficiency was

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[94] DTI, *Our Energy Future: Creating a Low Carbon Economy,* Cm. 5761 (London: TSO, 2003) p.3; DTI, *The Energy Challenge: Energy Review Report 2006,* Cm. 6887 (London: TSO, 2006) p.4 and DTI, *Meeting the Energy Challenge: a White Paper on Energy,* Cm. 7124 (London: TSO, 2007) p.4.

[95] The importance of diversity of supply was mentioned on numerous occasions in all of the Energy White Papers published between 2003 and 2008: *Our Energy Future: Creating a Low Carbon Economy*: 'diversity is the best way of protecting ourselves against interruptions of supply, sudden price rises, terrorism or other threats to reliability of supply' p.16; *The Energy Challenge: Energy Review Report 2006*: '... the Government believes that the best way to maintain energy reliability is through energy diversity' p.19; *Meeting the Energy Challenge: a White Paper on Energy, '*... diversity helps avoid over-dependence on a single fuel type, contributing to security of supply', p.13.

[96] FCO, *UK International Priorities: The Energy Strategy* (London: TSO, 2004) p.12, p.16.

[97] Ibid. p.16.

[98] Ibid. p.22.

[99] Malcolm Wicks, *Energy Security: a national challenge in a changing world* (DECC, 2009). In October 2008 he was appointed by the Prime Minister as his Special Representative on International Energy Issues.

considered to be the most important means of achieving energy security for the UK, both domestically and in pushing this agenda in relations with other states. Alternative sources of energy were also considered a priority with the caveat that the UK would continue to rely on large supplies of gas and oil from abroad. Importantly, it was mentioned that this reliance could pose risks to the UK, in terms of reliable gas supply, and also the danger of significant fluctuation in global oil prices. The importance of liaison with multi-lateral institutions was also emphasised although their utility in resolving energy questions was questioned due to overlapping responsibilities and the continued lack of clear demarcation of responsibility in the international system.[100]

Thus, despite moves towards energy efficiency and renewable energy, by the end of Labour's time in power there remained the recognition amongst government officials that security of supply issues would continue to be of importance to the UK for the foreseeable future. The importance of multilateral institutions in forging energy agreements was mentioned but, in Malcolm Wicks' analysis at least, there is a belief that the government should recognise their limitations.[101] This seemed to point towards the potential for UK unilateral action in forging agreements regarding energy although the possibility of military involvement was never mentioned.

Ultimately, it is important to note here that all governmental policy papers on energy failed to refer to any British defence establishment involvement in energy security issues. As outlined in Chapter One, this was likely to be due, in part, to the negative public connotations attached to any military intervention to secure energy resources, as we have seen from this chapter that there were threats to the security of supply of important fossil fuels that could have necessitated prior military planning and possible intervention. Thus, in order to effectively analyse whether this issue was significant for defence policy planners in Britain we must solely scrutinize the defence establishment's

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[100] Ibid. 'The effectiveness of multilateral institutions depends a lot on the membership list and their willingness to cooperate with one another and translate multilateral agreement into multilateral action a challenge when you get a number of countries around a table all with different needs, aims and objectives' p.86.

[101] Ibid. 'the UK needs constantly to evaluate which of the multilateral organisations has the best chance of making a direct and practical impact on delivering one or more of the desired outcomes'. See DECC, *Government Response to Malcolm Wicks's Review of International Energy Security, 'Energy Security: a national challenge in a changing world'* (DECC, 2010). This official government document provided an overall positive response to the recommendations of Malcolm Wicks's paper.

actions and statements between 1997 and 2010, using the methodology outlined in Chapter One.

Conclusion

In conclusion, we have observed the major importance of fossil fuels to the UK economy as a whole during Labour's tenure in government. We have also observed the significance of particular regions of the world, in particular the Middle East, in supplying the global oil and gas markets, as well as the emerging importance of areas such as the Arctic and the Falkland Islands. There was also the likelihood of increased competition for energy resources between developed countries and the emerging economies of China and India, as well as possible asymmetric threats to important energy transit routes. All these were issues of major economic and political interest to the United Kingdom that had the potential to necessitate military intervention.

Still, the British government's articulation of how to maintain energy security for the UK did not directly espouse or discuss any need for military involvement despite the understanding that energy imports (and the concomitant need to ensure their continued supply) would increase in importance in the foreseeable future. Instead, they preferred to concentrate on the subject of increasing diversification of supply and the promotion of more competitive energy markets, with energy security policy being the responsibility of civilian departments. The only insinuation of the armed forces potential utility in this area was seen in the discussion of 'hard security' in 'UK International Priorities: The Energy Strategy' of 2004. Thus, with the findings of this chapter in mind, it is now time to use the information we have seen on the possible areas of intervention for energy security purposes to gauge the effect of energy security considerations within British defence policy in the succeeding chapters.

Chapter Three

Declaratory Policy

Defence policy as a whole under the Labour administration became a prominent issue of discussion in the nation's media, as deployments in Sierra Leone, Kosovo, Iraq and Afghanistan hit the headlines and, in the case of Iraq, resulted in large-scale public opposition and demonstrations.[1] The justification for these actions, particularly the British involvement in Iraq, was questioned by many, resulting in the Iraq Inquiry, which was set up to ascertain publicly why the war took place and how governmental decisions were made in the run-up to the conflict.[2] Indeed, British military involvement in Afghanistan from 2001 onwards became increasingly controversial, with some commentators calling for a prompt withdrawal of British forces.[3] Towards the end of Labour's time in power, there were also calls from military analysts and Members of Parliament for a new Strategic Defence Review, following the White Paper published in 1998.[4] This indicated that the *Strategic Defence Review* (*SDR*) failed to deliver the coherent approach to defence policy that it was meant to have heralded

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[1] See *Ipsos MORI Website*, 'War with Iraq' (5 March 2003) accessed at http://www.ipsos-mori.com/researchpublications/researcharchive/poll.aspx?oItemId=830 on 30 April 2012. This poll indicated that only 25% of the British public would support British involvement in the invasion of Iraq if inspectors failed to find WMDs and there was a failure to gain a second UN resolution in favour of the war. If both conditions were met the figure would have been 75% in favour of the war. The UK's largest demonstration took place against the war in London on 16 February 2003. Numbers were estimated to have been between 750,000 and 2 million. See ''Million' march against Iraq war', *BBC News Website* (16 February 2003) accessed at http://news.bbc.co.uk/1/hi/2765041.stm on 15 February 2010.

[2] See *Iraq Inquiry Website*, 'Homepage' (2012) accessed at http://www.iraqinquiry.org.uk/ on 7 May 2012.The Chair of the Inquiry is Sir John Chilcot, leading much of the media to label it as 'The Chilcot Inquiry'.

[3] Kim Howells, former Minister of State at the FCO and then Chairman of the Parliamentary Intelligence and Security Committee, called for British troops to be withdrawn early from Afghanistan following the deaths of 5 British soldiers in November 2009. See James Kirkup, 'Kim Howells: Afghan killings 'blow to the heart of British strategy'', *telegraph.co.uk* (4 November 2009) accessed at http://www.telegraph.co.uk/news/politics/6501898/Kim-Howells-Afghan-killings-blow-to-the-heart-of-British-strategy.html on 7 May 2012. Also, see *The New Statesman*, 'Leader: Why Britain must abort mission in Afghanistan' (October 22 2009). An Ipsos MORI poll conducted between 17-19 July 2009 illustrated that 52% of the public opposed Britain's continued involvement in the campaign. See *Ipsos MORI Website,* 'Attitudes to Afghanistan Campaign' (24 July 2009) accessed at http://www.ipsos-mori.com/researchpublications/researcharchive/poll.aspx?oItemId=2414 on 6 May 2012.

[4] See Michael Clarke, 'The Overdue Defence Review: Old Questions, New Answers', *The RUSI Journal*, Vol. 153, No. 6 (2008); IPPR Committee on National Security in the 21st Century, 'Shared Responsibilities: A National Security Strategy for the United Kingdom', *Institute for Public Policy Research (IPPR) Report* (30 June 2009) and 'Liam Fox: The way we treat our armed forces is a national disgrace', *The Independent* (28 January 2009).

upon its publication.[5] However, this was by no means the only important government paper concerning defence between 1997 and 2010, so any belief that defence declaratory policy was wholly neglected during the intervening period would be misplaced.

In view of the aforementioned controversy over many aspects of British defence policy, this chapter will seek to establish whether there was any consistent and coherent recognition of the importance of energy security in defence declaratory policy during the examined period, and if so, whether this followed a control paradigm or a sustainable security paradigm. The chapter will then seek to explain the reasons for the eventual policy outcomes through the use of Allison's and Dorman's models of government that were previously outlined in Chapter One. However, before the main body of analysis is embarked upon it would first be pertinent to revisit the findings of the last chapter.

In Chapter Two we saw that the British energy sector and wider economy remained heavily reliant upon fossil fuels from 1997 to 2010, with this reliance becoming arguably more precarious in terms of energy security as North Sea oil and gas reserves began to diminish. The resulting regression from oil and gas autarky for the United Kingdom (which had, in any case, always been prone to price disruptions due to international market fluctuations) led to an increasing reliance on fossil-fuel imports, particularly LNG, as natural gas replaced coal as the energy source of choice for power-generation. Similarly, oil-derived fuels remained of paramount importance within the transportation sector and there was little movement nationally towards uptake of alternatively-powered vehicles such as those utilising bio-fuels, hydrogen or mains electricity. In terms of potential threats to UK energy security, instability in the Middle East, Russia's potential use of its 'energy weapon', the rising demand for oil and gas emanating from China and India, the danger of energy 'bottlenecks' at key transit routes and the potential for conflict in regions where there could be large unexploited energy reserves were all outlined as areas of possible concern for the British government. Still, the government's stated energy policy remained remarkably unchanged throughout its time in power, with the emphasis placed upon 'secure, diverse and sustainable energy at competitive prices'.

This chapter will examine the declaratory circle of defence policy. As already demonstrated in the introduction, when we refer to declaratory policy we mean simply, in Ian

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[5] *Hansard,* HC DebVolume 315, Column 1073 (8 July 1998) Secretary of State for Defence, George Robertson: 'The review will fundamentally reshape and modernise Britain's armed forces, sorting out the weaknesses, building on our strengths and providing a structure to deal with tomorrow's threats, not yesterday's enemies. Our forces will be more mobile, better manned, better supported and equipped, and better able to act as a force for good in the world, where we can and when we choose.'

Bellany's words, 'what government states defence policy to be'.[6] For the purposes of this thesis we will therefore scrutinize the Labour government's conception of what the role of the armed forces was during its period in power. This will mean outlining the threats that were deemed important at the time and the associated roles that were assigned to the armed forces in order to counter these threats.

Important government papers concerning defence policy published during Labour's time in government will be utilised as key junctures in declaratory policy, as these were meant to espouse the then government's overall vision of British defence policy. Additional source material will then be employed to enlighten the reader further as to what was said in intervening periods between their publication and any themes highlighted will be elaborated upon. These additional sources include the MOD's annual defence plans, Hansard, National Audit Office (NAO) Reports, Ministerial statements, various journal articles and an interview conducted with former Defence Minister Kevan Jones.

Using the above methodology, this chapter will proceed chronologically through the abovementioned source material and outline where energy security considerations were given specific policy emphasis. We can then ascertain whether declaratory policy fitted more closely to a control paradigm or sustainable security conception of security as earlier outlined with reference to the ORG's ideas. In the former case, we would expect to see continued emphasis on the importance of key fossil-fuel producing regions to UK security (along with the requisite ability to intervene in these regions), the importance of maintaining the security and integrity of global shipping routes highlighted (with ships remaining the key transporters of the majority of the world's energy supplies) as well as little discussion of the need for the development of alternative energy technologies for use by the British armed forces. In the latter case, we should expect to see an articulation of the importance of competition over energy resources and climate change as potential international conflict drivers, along with the subsequent need for the British armed forces to move towards development of alternative energy sources, as well as increased energy efficiency so as to combat these issues. A sustainable security approach would also de-emphasise the ability to intervene in fossil fuel producing areas such as the Middle East as the wider governmental energy strategy should have made the UK's energy mix more diverse and less reliant on this region. Similarly, the possible operational benefits of alternative energy technologies to the military should be propounded, as well as the importance of inter-departmental cooperation on energy issues. In

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[6] Ian Bellany '*Reviewing Britain's Defence*' (Aldershot: Dartmouth, 1994) p.2.

essence, a sustainable energy security paradigm would see a more preventative approach adopted to energy security issues, with defence declaratory policy articulating a greater need for the military to address issues of energy security via renewable energy technologies and the imposition of greater energy efficiency measures across the armed forces.

Given these parameters, this chapter will demonstrate that the Labour government displayed a clear control paradigm approach to energy security considerations within defence policy until 2008, at which time environmental issues became more salient in overall British political discourse and sustainable security approaches began to be espoused more fervently in advance of the 2010 General Election. Despite this, the desire to have a military ability to intervene in the Middle East and secure key fossil fuel resources remained a significant factor in defence policy throughout this period. Indeed, the Defence White Papers and statements from government ministers in the period under examination show a continuity with all post-1945 British governments in seeing the Middle East as a vital region for UK interests. In turn, this approach helped to justify the expeditionary stance that the armed forces increasingly moved towards during the Labour administration. Nevertheless, this does not mean that the government could not have put forward definite plans to revolutionise military logistical support by concerted research and development into this area. In reality, this potential was not properly articulated until the publication of the Ministry of Defence's *Sustainable Procurement Strategy* and the MOD paper *Defence in a Changing Climate* three months before the general election of 2010.[7]

Why was this control paradigm approach to energy security within defence policy taken in the early years of the Labour government? Ultimately, it can be ascribed to what the Labour government believed to be rational considerations because, as we saw from the previous chapter, British energy needs remained heavily reliant on fossil-fuels throughout the examined period. If there had been any desire for radical change in the logistical support or transportation technologies of the British armed forces this would have been hamstrung by the fact that there were no real alternatives to fossil fuels within the civilian sector, nor were there any real foreign technological alternatives that could have been adopted or imitated by the British defence establishment in order to enhance any sustainable energy security ideals.[8]

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[7] Ministry of Defence, *Sustainable Procurement Strategy* (MOD, 2010) and Ministry of Defence, *Defence in a Changing Climate* (MOD, 2010).

[8] For example, despite the increasing recognition by the American armed forces that heavy reliance on fossil fuels was economically costly (not to mention logistically difficult to sustain and tactically dangerous) it was reported in 2011by an ex-chief logistician in the US Army that the United States had been spending an approximate figure of $20 billion annually on fuel and fuel infrastructure in the conflicts in Iraq and Afghanistan. Much of this was believed to have been spent on providing fuel for air-conditioned tents and

For these reasons, Allison's Rational Actor Model (RAM) best explains the control paradigm approach taken in British defence policy within the examined period, as shall be explained in more depth in the main body of this chapter.

Of course, the control paradigm approach to energy considerations within defence policy was not purely due to continued reliance on fossil fuels. The desire of the Labour government for Britain to be a key player in international affairs and to maintain or enhance British global influence must also be given as a reason for this approach to defence policy. Thus, Labour's foreign policy ideals also played an important role in shaping the defence establishment's stance towards energy issues. Tony Blair stated (and continues to believe) that Britain's armed forces were essential in advancing Britain's international interests and influence.[9] In 2007, in a speech made to RUSI aboard HMS Albion, Blair was eager to point out that the military required both 'hard' and 'soft' power capabilities. Only by possessing both of these abilities could Britain continue to 'protect [its] security and advance [its] interests and values in the modern world'.[10]

Thus, the control paradigm approach within British defence policy was not only a result of the need to secure energy resources but was also related to the Labour government's desire to maintain British international influence through the 'hard' power capabilities of the armed forces. Therefore, these two aims mutually reinforced each other. Consequently, this policy line followed the ORG definition of a control paradigm outlined in Chapter One 'as an approach based on the false premise that insecurity can be controlled through military force ... thus maintaining the status quo'.[11] It appears that it did not countenance any move towards a sustainable security paradigm in defence policy, with its attendant focus on developing green energy technologies in the military and conflict prevention rather than conflict intervention, as this could have potentially led to declining international influence for the United Kingdom. Accordingly, concepts of energy security within defence policy followed the same course as previous governments. They were affected in large part by a British desire to still be seen as a state with significant global influence. Thus, the United Kingdom retained the same default approach towards energy security that every British government had

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temporary structures. *National Public Radio Website*, 'Among the Costs of War: Billions a Year in A.C.?' (25 June 2011) accessed at http://www.npr.org/2011/06/25/137414737/among-the-costs-of-war-20b-in-air-conditioning on 6 May 2012.

[9] '... the armed forces [are a] significant part of what gives Britain influence, reach and power.' Tony Blair, *A Journey* (London: Arrow, 2011) p.647.

[10] Tony Blair 'Defence Perspectives: Defending the United Kingdom and its Interests' *The RUSI Journal,* Vol. 152, No. 1 (2007) pp. 15-16.

[11] Chris Abbot and Thomas Phipps, 'Beyond Dependence and Legacy: Sustainable Security in Sub-Saharan Africa', *Oxford Research Group Briefing Paper* (ORG, 2009) p.1.

displayed since 1945 (which we saw outlined in Chapter One). The main body of this chapter will further elaborate on this point.

This chapter will also demonstrate how the emergence of international terrorism and Weapons of Mass Destruction (WMD) proliferation as key security issues diverted much of the government's focus on defence policy away from other potential concerns between 2001 and 2010. With these twin threats to contend with it was somewhat understandable that defence policy continued with its default attitude towards energy security considerations rather than any concerted attempt towards sustainable security notions. This was because the control paradigm approach remained an enabler for the conduct of overseas operations against terrorist states as well as for any need to secure essential energy resources.

In terms of technological research and development, the MOD was focussed upon the so-called Revolution in Military Affairs (RMA) throughout the examined period. This meant a concentration on advances in Information Technology and its military applications, encompassed in what the British defence establishment termed Network Enabled Capability (NEC).[12] In terms of new technology, this appeared to herald a real change in the way wars could be fought, in contrast to the benefits that could be provided to the military through the development of new energy technologies. NEC's foundation was based upon established and proven systems whereas any focus on new energy sources for transportation would have been starting with largely unproven technology whose military benefits had not been clearly demonstrated in the civilian or military sectors.[13] With this in mind, it is understandable to a certain extent that sustainable energy ideas were not investigated thoroughly or given the conceptual attention that they perhaps could have been.

Despite the aforementioned explanations as to the reasons for the continued use of a control paradigm approach, there were movements towards sustainable security principles within declaratory policy from 2003 onwards. The first *Ministry of Defence Sustainable Development Report* was published in 2005 and there were 3 subsequent Sustainable Development Reports published after this.[14] Similarly, the MOD's first *Climate Change*

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[12] See MOD, *Network Enabled Capability: JSP 777* (MOD, 2005). The American term for this concept (although with arguably different emphases) is Network-Centric Warfare (NCW).

[13] See John Luddy, 'The Challenge and Promise of Network-Centric Warfare', *Lexington Institute Paper,* (February 2005) pp. 4-5. According to John Luddy, a US Special Forces soldier was able to send targeting data from a laptop computer to a B-52 bomber which then proceeded to bomb the intended target within 20 minutes of the data being received. A similar story is recounted in *Network Enabled Capability: JSP 777,* p. 5.

[14] MOD, *Ministry of Defence Sustainable Development Report: October 2003 - October 2004* (MOD, 2005); MOD, *Ministry of Defence Sustainable Development: Annual Report 2005* (MOD, 2005); MOD, *Ministry of Defence Sustainable Development Report and Action Plan 2008* (MOD, 2008); MOD, *Ministry of Defence Sustainable Development Report 2009* (MOD, 2009).

Strategy was published in 2008 and in 2010 there were MOD papers addressing sustainable procurement and the possible future effects of climate change on defence policy.[15] All these examples indicated that the declaratory sphere of defence policy was certainly not ignorant of the issues of climate change and energy security and was beginning to address them in a serious manner through the adoption of carbon emissions reduction targets for the armed forces in terms of its operational use of fuel.[16] Indeed, the publication of *The National Security Strategy of the United Kingdom* in 2008 addressed competition for energy resources as a key future driver of conflict as well as emphasising the need for greater inter-departmental cooperation in addressing future security threats to the UK.[17]

As regards *The National Security Strategy of the United Kingdom,* (hereafter referred to as the *NSS*) its formulation could be deemed as evidence of a positive aspiration from the government to integrate UK security strategy and move towards aspects of a sustainable security approach. However (as we shall see outlined later in this chapter) the competing security ideas and perceived responsibilities of separate governmental departments resulted in a vague outline of what the actual inter-departmental responses to threats would be.[18] As such, the governmental recognition of the need to integrate the visions of different departments was hamstrung by a lack of specificity. This could be ascribed to inter-departmental compromise and, due to this fact, Allison's Governmental Politics Model (GPM) provides the best explanation as to the content of the *NSS*.

Certainly, from 2008 onwards, the publication of MOD papers such as the *Climate Change Strategy* could be seen as a governmental response to the increased saliency of the issue of climate change within British political discourse and the need to address these issues within defence policy in the face of the upcoming general election. Indeed, the appointment of David Cameron as leader of the Conservative Party in December 2005 and his desire to change the public perception of the Conservatives through a greater focus on environmental issues meant that Gordon Brown recognised that 'he needed to strengthen his environmental

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[15] MOD, *Climate Change Strategy* (MOD, 2008); MOD, *Sustainable Procurement Strategy* (MOD, 2010); MOD, *Defence in a Changing Climate* (MOD, 2010).

[16] '... under the Climate Change Act 2008, the Ministry of Defence (MOD) now has its own Carbon Budget which we must stay within, covering both emissions from our estate and business travel, as well as those from our vehicles, ships and aircraft'. MOD, *MOD Climate Change Strategy 2010* (MOD, 2010) p.2.

[17] Cabinet Office, *The National Security Strategy of the United Kingdom: Security in an interdependent world,* Cm. 7291 (London: TSO, 2008) pp.18-19, p.8.

[18] James Gow, 'The United Kingdom National Security Strategy: the Need for New Bearings in Security Policy', *The Political Quarterly,* Vol. 80, No. 1 (2009) p.129.

reputation in readiness for his future leadership confrontation with Cameron'.[19] As such, Andrew Dorman's time cycle model serves as the key explanatory tool for the increased espousal of sustainable security tenets in defence policy in the last two years of the Labour administration. With environmental issues more prominent on the political agenda than in previous general elections, Gordon Brown's government was eager to prove that it was properly addressing these issues in all areas of government policy in the two years leading up to the 2010 General Election. Thus, the Climate Change Act of 2008 (which placed legally binding emissions reduction targets on the British government) had ramifications for defence policy, along with all other areas of government policy.[20]

Still, regardless of the positive steps that were made towards sustainable security notions at the declaratory level of defence policy (with various statements on the need to cut emissions to address climate change, as well as the need to 'develop and introduce technologies, particularly those around renewable and sustainable energy') these documents cannot entirely be seen as believable statements of an ultimate intention to transform the armed forces operational outlook as alternative energy technologies were developed (such as the description of NEC in *Delivering Security in a Changing World: Future Capabilities*) but rather the recognition that the military and defence estates would have to play some part in reducing their emissions along with all other government departments' targets following the stipulations of Energy White Papers from 2003 onwards, the findings of the Stern Review of 2006 and the Climate Change Act of 2008.[21] Certainly, Kevan Jones, Parliamentary Under-Secretary of State for Defence from October 2008 until May 2010, commented that changes to energy use during his time at the MOD were more focussed upon improving energy efficiency and introducing green energy technologies to bases and barracks, as opposed to any concentration on front-line units.[22] He also noted that energy policy issues were not considered one of the defence establishment's main concerns during his time as a Defence Minister.[23] With this in mind, we will now proceed to the main body of this chapter.

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[19] Neil Carter, 'Combating Climate Change in the UK: Challenges and Obstacles', *The Political Quarterly,* Vol. 79, No. 2 (2008) p.198.
[20] HM Government, *The Climate Change Act* (2008), accessed at http://www.legislation.gov.uk/ukpga/2008/27/contents on 3 October 2011.
[21] MOD, *Delivering Security in a Changing World: Future Capabilities*, Cm. 6269 (London: TSO, 2004) and Nicholas Stern, *The Stern Review Report on the Economics of Climate Change* (HM Treasury, 2006).
[22] Interview with Kevan Jones MP, 12 May 2011.
[23] Ibid.

The *Strategic Defence Review* (1998)

The first document to examine in respect of the question in the title is the *Strategic Defence Review* (*SDR*) of 1998. The *SDR* was intended as a 'comprehensive' overview of British military capabilities and intent, and aimed to frame the context for the British armed forces under the Labour government. There was a widespread consultation with foreign policy and defence academics and the FCO and it was stated clearly that the document was to be a policy review, not a budgetary or organizational review as the mini-reviews of the Conservatives in the 1990s had been.[24] In many ways it presented continuity with previous Conservative policy. This continuity was shown in statements that emphasised the UK as having a leading role in the international community and the continued importance of NATO in the defence thinking of Great Britain. For example, the *SDR* stated that 'Britain's place in the world is determined by our interests as a nation and as a leading member of the international community' and 'Membership of NATO will continue to provide the UK with its best insurance against all ... risks'.[25] These statements differed little compared to those in the Statement on the Defence Estimates of 1996 which said 'we believe that we derive benefit from being a major participant in world affairs ... we have assets on which we can draw for our benefit and the international community...' and 'NATO is, and will remain, the lynchpin of European defence arrangements.'[26]

As regards explicit mention of the need to obtain safe access to energy resources in the *SDR*, the Persian Gulf area was referred to as being the area of most importance to British security outside Europe, and the need for secure supplies of oil was also emphasised: 'Outside Europe our interests are most likely to be affected by events in the Gulf ... Instability in these areas also carries wider risks. We have particularly important national interests and close friendships in the Gulf. Oil supplies from the Gulf are crucial to the world economy. Confrontation in the Middle East carries the risk of escalation and since the region borders on

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[24] Colin McInnes, 'Labour's Strategic Defence Review', *International Affairs,* Vol. 47, Iss. 4, (1998) p.830 and Lawrence Freedman, '*Defence'* in Anthony Seldon ed., *Blair's Britain* (Cambridge: Cambridge University Press, 2007) p.619. Freedman comments that the consultation process prior to the publication of the document was unusually open (Freedman was one of those consulted). The Conservatives mini-reviews include 'Options for Change' of 1990, which was a defence organization study whose initial findings were presented to the House of Commons 23 July 1990 and subsequent policy changes outlined in annual *Statements on the Defence Estimates* throughout the 1990s. MOD, *Front Line First: The Defence Costs Study* (London: TSO, 1995) also outlined changes in defence organisation, with cuts aimed at the support sections of the armed services.

[25] MOD, *The Strategic Defence Review*, Cm. 3999 (London: TSO, 1998) Chapter II, Paragraphs 17 and 37. Hereafter, this document will be referred to as the SDR. There are no page numbers hence the need to specify references with the chapter and paragraph number.

[26] *Statement on the Defence Estimates 1996*, Cm. 3223 (London: TSO, 1996) pp.3-5, p.9.

NATO, in some circumstances crises could involve the Alliance directly.'[27] Indeed, the Middle East was specifically mentioned in the introduction as an area where there was 'a complex mix of uncertainty and instability' that could 'pose a real threat to our security'.[28] The threat of instability caused by the regime in Iraq was also alluded to on a number of occasions in the paper: 'There are still dangerous regimes in the world ... As Iraq has amply demonstrated, such regimes threaten not only their neighbours but vital economic interests and even international stability' and 'There are already significant sources of instability in [the Middle East and North Africa] - including the continuing threat represented by Saddam Hussein's Iraq'.[29] Thus, although Iraq was not specifically mentioned as a threat to energy security it was singled out as a cause of instability in an important economic area that had been highlighted as crucial to global oil supplies and the wider world economy. In comparison to the previous Defence White Papers of the 1990s, where there was no precise mention of any threat from the Middle East, there is therefore a real importance placed upon security in the Persian Gulf region, and the danger of Iraq in particular.[30] In light of the subsequent invasion of Iraq in 2003, this emphasis showed that the incoming Labour government already perceived Saddam Hussein's regime to be a menace in an area of vital economic interest. Thus, energy security (and the importance of the Persian Gulf region to this) was an issue that was explicitly recognised by the Labour Party upon being elected to power and we can see its definite impact on defence policy in the aforementioned policy statements.

Issues of energy efficiency within the armed forces were barely mentioned in the *SDR*. This remained consistent with a control paradigm approach to energy concerns. A short paragraph stated 'In implementing the Review, we will take environmental factors into account, including environmental appraisal wherever appropriate, and we will also continue to take part in wider Government initiatives such as green transport and energy efficiency'.[31] Therefore, the importance of energy efficiency in a military establishment that continued to rely on large amounts of fossil fuels was not something that warranted any great deal of consideration. Additionally, the phrasing also highlights that defence was not likely to initiate

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[27] *SDR,* Chapter 2, Paragraph 40.
[28] SDR, Introduction, Paragraph 2.
[29] *SDR,* Chapter 1, Paragraph 6 and Chapter 2, Paragraph 41.
[30] *Statement on the Defence Estimates 1992,* Cm. 1981 (London: TSO, 1992) has a substantial section outlining the work of weapons inspectors in Iraq and patrol of the no-fly zones following the 1990-91 Gulf War but does not outline in any depth the perception of any future danger from Saddam Hussein's government.
[31] *SDR,* Chapter 9, Paragraph 192.

any energy policy changes itself but merely 'as part [of] wider Government initiatives'.[32] Undeniably, this approach was consistent with wider governmental policies on energy as there were no major policy statements on the need to develop renewable energy technologies in 1997 or 1998.[33]

Further evidence of the impact of the government's control paradigm approach to energy issues within defence was provided by Ministerial statements made between 1997 and 1999, which demonstrated a clear concentration on the importance of the Persian Gulf, as well as areas that were deemed to be important producers of crude oil. For instance, in oral evidence given to the Defence Select Committee in 1997, Defence Secretary George Robertson commented that 'Beyond Europe, risks to our interests are likely to be greatest in the Gulf and the Near East. We must be ready to respond appropriately, in combination with others, to support stability in that region'.[34] In evidence given to a Parliamentary Joint Committee in 1999, Foreign Secretary Robin Cook believed that naval exports to Indonesia were justified as 'Indonesia does have a legitimate requirement for a navy. This is a country which consists of 1,600 inhabited islands and a lot more uninhabited islands. It does have one other power in the region seeking to encroach upon its oil fields which are offshore and in which we also have a national interest'.[35] The Permanent Under-Secretary for Defence, Sir Kevin Tebbit, also commented in 1999 that one of the key measures of the efficacy of the Joint Rapid Reaction Force (JRRF) was to see whether it would be able to deploy in an area of crisis such as the Middle East in a short time-frame.[36]

In continuance of this theme, the MOD Defence Plans of 1999 and 2000 made no mention of energy efficiency or alternative energy targets within broader departmental objectives. This was despite the desire 'to produce a defence strategy, policy and programme matched to our security needs now and in the future' and 'To deliver appropriately motivated,

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[32] Ibid.

[33] DECC, *Digest of UK Energy Statistics 2011 annex D: Major Events in the Energy Industry* (London: TSO, 2011) pp. 266-268.

[34] House of Commons Defence Committee, *Eighth Report – The Strategic Defence Review: Volume II, Minutes of Evidence and Memoranda taken on 30 July 1997*, HC. 138-II, session 1997-1998 (London: TSO, 1998) answer to question 101.

[35] House of Commons Joint Committee on Defence, Foreign Affairs, International Development and Trade and Industry, *Minutes of Evidence: 3 November 1999*, HC. 541-I, session 1998-1999 (London: TSO, 1999) answer to question 54.

[36] 'One of the key goals we have set ourselves is to exercise of the [sic] Joint Rapid Reaction Force by October 2001: the ability to show that we can indeed conduct expeditionary action beyond the immediate European boundary—for example, into the Middle East—moving a brigade with significant naval and associated air elements. That will be a real test of whether we have achieved what we say we have achieved in the SDR: of moving to a much more expeditionary force and going to the crisis rather than waiting for it to come to us.' House of Commons Defence Committee, *Minutes of Evidence: 10 February 1999,* HC. 241-I, session 1998-1999 (London: TSO, 1999) answer to question 7.

armed, trained and equipped forces ... with the necessary support, *sustainability* (author's italics) and deployability'.[37] The *Defence Corporate Plan* of 2000 noted that the MOD wanted to 'make sure we can match revolutionary changes in technology with revolutionary changes in military doctrine'.[38] Thus, there was either a deep ignorance of the future potential of green energy technologies when these views were propounded or there was an informed recognition that there were no viable alternatives available (or the need for any viable alternatives) that had the capacity to effect significant change in departmental and military operations for a significant period of time. As we shall see from succeeding paragraphs the latter view was essentially correct between 1997 and 2000.

So why was there this apparent control paradigm approach to energy issues within defence policy in this period? Firstly, as already mentioned in this chapter, there were no real alternatives to fossil fuels as the main energy source during this period of Labour's time in government. Oil-derived fuels remained essential to the civilian transportation sector, as well as in the military, with the only non-fossil fuel powered vehicles within the armed forces at this time being the Trident nuclear submarine fleet.[39] Gas was also becoming increasingly important for electricity generation as the United Kingdom moved away from coal-powered power stations towards the former energy type so as to cut carbon dioxide emissions.[40] At the time of Labour's election to power worldwide energy prices were exceptionally low in historical terms. The dominant global supposition was that these low prices would continue for years. As Ian Rutledge has observed 'the popular phrase among many oil market experts was that the world was not 'running out of oil' – on the contrary, it was 'running into it''.[41] This market position did not last, with oil and gas prices effectively doubling in price from the beginning of 1999 until the end of the year.[42] Indeed, the concomitant increase in fuel prices for civilian consumers of oil-derived fuels presaged the fuel protests of September 2000, which had a dramatic effect on the functioning of the UK economy.

In view of these facts, there was no real imperative for the Labour government to move away from the default position of the control paradigm that, as we saw from Chapter

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[37] MOD, *The Departmental Plan 1999* (MOD, 1999) p.1-3.
[38] MOD, *Defence Corporate Plan 2000/1 – 2003/4: Volume 1* (MOD, 2000) p.23.
[39] See Chapter Two.
[40] Andrew Jordan and Irene Lorenzoni, 'Reviews and Surveys: Is There Now a Political Climate for Policy Change? Policy and Politics after the Stern Review', *The Political Quarterly*, Vol. 78, No. 2 (2007) p. 312.
[41] Ian Rutledge, 'New Labour, energy policy and 'competitive markets'', *Cambridge Journal of Economics,* Vol. 31, Iss. 6 (2007) p.902. For example, in 1998 the world oil price fell to $12.72/barrel, in real terms the lowest level since 1972. Gas prices had also reached an unprecedented global low in the summer of 1997, according to Rutledge.
[42] Ibid. p.908.

One, had been government policy since at least 1945. Fossil fuels remained extremely important to the UK economy and whilst they remained so the UK government may have deemed that the UK's armed forces would need to have the capability and readiness to intervene in key energy extraction regions to safeguard any major disruption to world energy supplies. This was also at a time when Iraq was still considered to pose a viable threat to regional stability in the Middle East.[43] Accordingly, although the United Kingdom was not yet a net importer of oil and gas, its economy was still likely to be affected adversely by any world oil price volatility as, as mentioned in Chapter Two, oil continued to be traded on international markets with Saudi Arabia remaining *the* important global swing producer.[44]

In addition to this factor, there was an attendant desire for Britain to exhibit continued global influence and prestige, which a control paradigm approach to energy issues helped to demonstrate through the British influence that could be brought to bear on a key world region such as the Middle East. For example, the *SDR* stated that the key defence mission of 'Support to Wider British Interests' consisted of providing forces to 'conduct activities to promote British interests, influence and standing abroad'.[45] As with previous governments, British armed forces personnel continued to be stationed in various Gulf States in this period with the expressed intention of 'building bridges' with the respective governments whilst also training military forces to deter would be aggressors in the region.[46] Certainly, in 1998 the Defence Select Committee saw the continuance of the UK's worldwide military role as having the potential to have benefits in terms of the United Kingdom's 'power and prestige' as well as economic gains. In the same report, the significance of Persian Gulf oil to UK interests was similarly outlined.[47] Thus, a control paradigm approach not only helped to secure security of oil supplies, but also had the associated effect of displaying British military and diplomatic power. A move towards a sustainable security paradigm and less reliance on fossil fuels would likely entail the loss of this influence and Britain's historical links with the region.[48]

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[43] 'The UK's commitment and that of many other countries, most notably the United States, to uphold the security of the region was demonstrated in the Gulf War. This determination to preserve stability and guarantee the West's oil supplies remains a key issue. Iraq has remained the main threat to regional stability since the Gulf War and the operations to enforce the no-fly zones are part of a policy aimed at containing Iraq'. House of Commons Defence Committee, *Thirteenth Report – Iraqi No-Fly* Zones, HC. 453, session 1999-2000 (London: TSO, 2000) paragraph 8.

[44] House of Commons Defence Committee, *Eighth Report – The Strategic Defence Review: Volume I - Report*, HC. 138-I, Session 1997-1998 (London: TSO, 1998) paragraph 115.

[45] *SDR*, paragraph A2.

[46] *Eighth Report – The Strategic Defence Review: Volume I - Report*, Paragraphs 60-69.

[47] Ibid. Paragraph 115.

[48] Interview with Kevan Jones MP, 12 May 2011.

In relation to the aforementioned comments of the Defence Select Committee in 1998, the RAM explanation for the continued control paradigm approach within declaratory policy can be further demonstrated by the fact that the control paradigm approach appeared to be self-evident to the wider political establishment within the United Kingdom throughout the Labour Party's time in government. For example, there was no real questioning of this approach within British defence policy by the Defence Select Committee in any of the reports they produced throughout Labour's time in power. Certainly, there were never any serious concerns raised as to whether the British armed forces should be researching more actively the possibilities and operational benefits of alternative energy technologies, the need for the military to take seriously its contribution to climate change by imposing more stringent energy efficiency standards or the prospect that the armed forces could actually aid in the prevention of conflict by adopting the above measures. Where there were concerns raised over the direction of defence policy in the examined period, these tended to concentrate on resource issues and the fact that it often appeared that policy was being led by the equipment and operational structures available to the armed forces, rather than the political effects that the British military were trying to achieve in their deployments. These concerns could be seen in the Defence Select Committee's responses to the *Strategic Defence Review: A New Chapter* and *Delivering Security in a Changing World.*[49] Indeed, the Defence Select Committee were (as should be expected) quite prepared to question those aspects of defence policy that it deemed poorly thought-out or implemented.[50] However, the belief that the UK should continue to exert a sizeable influence within the Middle East region was not something that was ever queried. Certainly, the Defence Select Committee considered

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[49] 'It is far from clear whether the [*Delivering Security in a Changing World*] White Paper has been effects-led, or rather resource-driven.' House of Commons Defence Committee, *Fifth Report - Defence White Paper 2003: Volume 1,* HC. 465-I, session 2003-2004 (London: TSO, 2004) p.3 and 'We have the impression that too often the practical implications of the policy developments set out in the New Chapter have not been properly thought through. To date virtually all the equipment programmes which have been linked with the New Chapter have been existing programmes, which in a few cases the department has said are being accelerated. We are concerned that this suggests the policy making process and the ability to deliver the implementation of that process quickly enough are out of step with each other, or that the MoD has scaled back its practical ambition from the vision set out by the early stages of the New Chapter work'. House of Commons Defence Committee, *Sixth Report – A New Chapter to the Strategic Defence Review,* HC. 93-I, session 2002-2003 (London: TSO, 2003) p.48.

[50] 'It is in this context that the MoD's overarching personnel strategy for the Armed Forces must be evaluated ... it may be that they are guilty of a lack of imagination: particularly in a 'one size fits all' approach to the three Services ... The evidence that we have seen so far has not convinced us that the right prescription is more of the same'. House of Commons Defence Committee, *Second Report - The Strategic Defence Review: Report and Proceedings of the Committee,* HC. 29-I, session 2000-2001 (London: TSO, 2001) Paragraph 174 and 'Given that the original target date for Main Gate approval on the CVF programme was two years ago, it seems to us extraordinary that there is now no target date at all'. House of Commons Defence Committee, *Second Report - Future Carrier and Joint Combat Aircraft Programmes,* HC. 554, session 2005-2006 (London: TSO, 2005) p.11.

Britain's continued military deployment in Iraq in 2008 to be a positive aspect of defence policy as it was believed it would greatly enhance the ability of the United Kingdom to influence the government within Iraq, as well as the region as a whole.[51]

In addition, the importance of maintaining an expeditionary strategy and the emphasis on the Middle East within defence policy failed to be questioned by the major opposition parties throughout Labour's tenure in government. There was a similar failure to call for the development of alternative energy technologies within the British armed forces by the Conservatives and Liberal Democrats. This indicated that there was little chance to make political capital out of this approach as there were no other major military powers that had adopted such sustainable security measures within their respective defence policies. Certainly, following the appointment of David Cameron as Leader of the Conservative Party in December 2005 and the subsequent Conservative emphasis upon environmental issues as a 'rebranding' exercise for the party, one would have expected them to question energy policy within defence if other nations' armed forces had been forging ahead in this particular technological area. They were certainly prepared to question such issues as the lack of helicopters for front-line forces deployed in Afghanistan.[52]

Further evidence for the view that there was no viable alternative to Labour's energy approach is provided by the following examples: In 2002, the then Liberal Democrat Spokesman on Defence Paul Keetch stated in *The RUSI Journal* that 'We agree that the primary task of the UK's Armed Forces is to ...defend our vital interest at home and abroad ... We agree that this requires a strategy of forward defence – the expeditionary strategy ... The Afghan deployment, as with our deployments in Kosovo and Bosnia, and the operations undertaken in Sierra Leone and East Timor, are concrete examples of our troops being a 'force for good''.[53] In the same issue, Conservative MP Bernard Jenkin, the then Shadow Defence Secretary, said that 'The expeditionary nature of our military capabilities set out in

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[51] 'The larger the military training commitment we can maintain, the greater will be UK influence in Iraq, and in the region as a whole, as Iraq recovers its position as a wealthy and powerful Middle East nation. The UK has an opportunity to maintain a substantial position of influence for the common good in southern Iraq, if we can commit the military capacity to do so.' House of Commons Defence Committee, '*Fifteenth Report - UK operations in Iraq and the Gulf*' HC 982, session 2007-2008 (London: TSO, 2008) p.11.

[52] Iain McLean, 'Climate Change and UK Politics: From Brynle Williams to Sir Nicholas Stern', *The Political Quarterly*, Vol. 78, No. 2 (2008) p. 187; *Conservative Party Website,* 'David Cameron: One World Conservatism' (13 July 2009) accessed at http://www.conservatives.com/News/Speeches/2009/07/David_Cameron_One_World_Conservatism.aspx on 4 May 2012; See also The Conservative Party, *Invitation to Join the Government of Britain: The Conservative Manifesto 2010* (Uckfield: Pureprint, 2010) pp. 104-105.

[53] Paul Keetch, 'The Future of British Defence: The Liberal Democrat View', *The RUSI Journal*, Vol. 147, No. 4, (2002) p.24.

the SDR is ... vital'.[54] Indeed, in 2010 pre-election statements on defence, David Cameron and Nick Clegg did mention energy issues as being of importance to national security but neither of the parties they represented put forward any concerted proposals in their election manifestos to suggest that they considered the British armed forces would need to do more to incorporate energy efficiency measures or green energy technologies in order to mitigate the chances of future conflict caused by climate change. Instead, a similar control paradigm approach to the Labour government persisted with Baroness Neville-Jones, Conservative Shadow Security Minister, stating that 'British strategic energy interests and security of supply should be at the heart of ... Ministry of Defence (MoD) priorities and decisions; ... for the MoD in the tasking of our armed forces, especially the Royal Navy, concerning the security of the sea lanes and the safety of maritime traffic'.[55] Thus, the evidence from opposing political parties adds further weight to the RAM argument by displaying that there appeared to be no real alternatives when it came to the military's use of fossil fuels for front line transportation and power generation, or at the very least there were no alternatives that were considered politically viable in terms of creating the opportunity for an attack on the ruling party's strategy on energy use within the defence establishment. There had been no gross oversights in this technological area.

***The Future Strategic Context for Defence* (2001) and *The Strategic Defence Review: A New Chapter* (2002)**

The Defence White Paper *The Strategic Defence Review: A New Chapter* emerged in the wake of the September 11 attacks on the World Trade Center and the Pentagon. Thus, the policy emphasis within the document was squarely on the potential responses to what seemed a changed global security situation. In some ways it was ironic that the assumption of the preceding MOD strategy document *The Future Strategic Context for Defence* (published in 2001) that 'Accurately predicting the future course of military events is a tricky business' had been proven correct.[56]

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[54] Bernard Jenkin, 'The Future of British Defence: The Opposition View', *The RUSI Journal*, Vol. 147, No. 4, (2002) p.19.

[55] Baroness Neville-Jones, 'Moving towards a low-carbon economy: the national security rationale' in Thomas Lingard and Ben Caldecott eds., 'Conservatism in a changing climate: security, prosperity and a low carbon future' (London: Green Alliance, 2010) p.15.

[56] MOD, *The Future Strategic Context For Defence* (MOD, 2001) and MOD, *The Strategic Defence Review: A New Chapter,* Cm. 5566 (London: TSO, 2002).

With regard to *The Future Strategic Context for* Defence, its purpose was to outline the government's analysis of the long-term trends in international security up until 2030. It demonstrated that energy security issues continued to have an impact on governmental defence thinking with its analysis of the likely world energy situation in 2030. For instance, it was considered that oil supplies from the Persian Gulf were likely to increase in importance and that alternative energy technologies would not begin to challenge fossil fuel dominance in power generation and transportation until the end of the period under examination.[57] The prospect of likely conflict for offshore oil resources was also delineated.[58] Thus, we can see here a definite governmental opinion that alternative energy sources would continue to be of lesser importance than fossil fuels until at least 2030. Again, given the fact that in 2011 alternative energy continues to play only a small role in the UK's overall energy mix this opinion appears to have been prescient and displayed a rational appreciation of the energy challenges facing Britain. Indeed, Professor Sir Keith O'Nions, the Chief Scientific Adviser (CSA) to the MOD commented in 2000 that he had not seen any significant oversights in the direction or funding of the MOD's research and development unit, again indicating that there was no up-and-coming fuel technology that the British defence establishment were remiss to neglect.[59]

The publication of *The Strategic Defence Review: A New Chapter* (henceforth termed the *SDR: New Chapter*) and its concentration on the threats of terrorism and WMD proliferation indicated the importance of time cycles within defence policy and how unforeseen events can affect government policy. British defence policy had had a clearly articulated expeditionary posture since the SDR was published but this was focussed on possible military involvement in Europe, the Mediterranean and the Middle East. The *SDR: New Chapter* gave a clearer focus to this interventionist approach. The capability to intervene militarily in areas further afield than to combat these twin threats was now considered an important requirement for the armed forces.[60] The reason for the White Paper's publication (the response to the apparent 'strategic effect' of terrorism) meant that there were no references to energy security issues in this document and it dealt specifically with the new

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[57] *The Future Strategic Context For Defence*, paragraph 13.
[58] Ibid. paragraph 15.
[59] House of Commons Defence Committee, *Sixth Report – The Appointment of the New Chief Scientific Adviser: Minutes of evidence, 19 April 2000,* HC. 138, session 1999-2000 (London: TSO, 2000) paragraph 46. Also, see NAO, *Ministry of Defence Major Projects Report 2001 – Report by the Comptroller and Auditor General,* HC. 330, session 2001-2002 (London: TSO, 2001) and NAO, *Ministry of Defence Major Projects Report 2002 – Report by the Comptroller and Auditor General,* HC. 91, session 2002-2003 (London: TSO, 2002). None of the major equipment projects at this concerned or contained alternative energy technologies.
[60] *The Strategic Defence Review: A New Chapter*, pp.12-13.

challenges that international terrorism was considered to pose to international security. As such, any small possibility that a more sustainable approach to energy security could have been articulated within defence declaratory policy from 2001 onwards was affected adversely by the events of 9/11 and the subsequent involvement of British armed forces personnel in the conflicts in Afghanistan and Iraq. Certainly, what were both expected to be relatively short campaigns became protracted affairs as comments from Geoff Hoon in March 2002 seem to indicate, as well as those from Tony Blair in his account of his time as Prime Minister.[61] Understandably, government defence policy became heavily focussed upon these two conflicts as British casualties mounted and the British media began to criticise what often appeared to be inadequate provision of equipment.[62] Indeed, Kevan Jones observed that the government and MOD's main concern during his tenure as Defence Minister (October 2008 to April 2010) was on providing ballistic protection to soldiers in theatre as well as fulfilling Urgent Operational Requirements (UORs) for the provision of vehicles with greater protection against Improvised Explosive Devices (IEDs).[63] Hence, the chance for any sustainable security doctrine to be properly investigated and propounded drastically diminished once the government's main focus became the day-to-day fighting of these two conflicts. Of course, the possible operational benefits of alternative energy technologies were eventually grasped to a certain degree with the publication of the *Ministry of Defence Sustainable Procurement Strategy* in 2010.[64] However, the more immediate concerns of Iraq and Afghanistan took precedence in this period and may go some way to explaining why there were no major reappraisals of defence policy following the publication of *Delivering Security in a Changing World* in 2003.

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[61] *Hansard,* HC Deb Volume 382, Column 37 (18 March 2002) Secretary of State for Defence, Geoff Hoon: 'Five months later, it is clear that that action has been remarkably successful. Afghanistan is now a very different country. The Taliban Government, who harboured the al-Qaeda terrorists, are no more. Terrorist training camps have been put out of action. The first steps towards creating a functioning state have been taken.' Tony Blair: 'That the planning for the aftermath was inadequate is well documented ... The military campaign of conquest was a brilliant success. The civilian campaign of reconstruction wasn't ... We in the British sector could have done better ...'. Tony Blair, *A Journey* (London: Arrow, 2011) p.441.

[62] Michael Smith, 'Colonel quits as troops are denied armoured land rovers in Iraq', *The Sunday Times* (23 October 2005); Richard Norton-Taylor, 'Iraq equipment shortages 'beggared belief' – ex-Basra commander', *The Guardian* (12 January 2010); *The Daily Telegraph*, 'Ministers were warned that troops would die in Snatch Land Rovers' (27 July 2010).

[63] Interview with Kevan Jones MP, 12 May 2011.

[64] MOD, *Sustainable Procurement Strategy* (MOD, 2010).

Delivering Security in a Changing World (2003) and *Delivering Security in a Changing World: Future Capabilities* (2004)

Delivering Security in a Changing World maintained the government's focus on terrorism as a prime security issue, along with the added security concerns of the proliferation of WMDs and the instability caused by failed states. The White Paper stated that 'International terrorism and the proliferation of WMD represent the most direct threats to our peace and security' and 'Weak and failing states are an increasing problem for the stability of several regions ...'.[65] The importance of expeditionary capabilities also continued to be emphasised, so that the United Kingdom had the ability to counter threats before they directly affected the UK: 'Priority must be given to meeting a wider range of expeditionary tasks, at greater range from the United Kingdom and with ever-increasing strategic, operational and tactical tempo ...'.[66]

Still, the importance of the armed forces in maintaining the capability to secure important overseas energy resources remained a key consideration for defence policy planners. Consequently, there was a reassertion of the importance of energy resources similar to that seen in the SDR. Firstly, the opening paragraph of chapter two stated 'More widely the UK has a range of global interests including economic well-being based around ... the continuing free flow of natural resources'.[67] Failed or failing states were also outlined as acting as having the potential to be havens for 'terrorist groups and criminal networks involved in drugs production or the plundering of natural resources'.[68] Thus, the British government viewed instability in certain states as having the potential to disrupt the free flow of important natural resources (such as oil and gas) to the United Kingdom. Also, the emergence of non-state threats from terrorist groups and criminal gangs was seen, seemingly for the first time in British defence policy, as a potential impediment to the economic well-being of Britain. Consequently, in this analysis, terrorists and criminals did not simply have the potential to undermine the social fabric of the UK through drug trafficking and terrorist attacks that could engender fear amongst the British population. They also had the ability to undermine the flow of vital resources to the UK. Therefore, the shift in emphasis towards the combating of the threats of terrorism and WMD proliferation did not see any attendant alteration in the importance of energy security issues within defence policy. Non-state actors

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[65] MOD, *Delivering Security in a Changing World: Defence White Paper*, Cm. 6041-I (London: TSO, 2003) p.4, p.5.
[66] Ibid. p.11.
[67] *Delivering Security in a Changing World,* p.4.
[68] Ibid. p.5.

were now considered to pose the same threat to security of energy supply as 'rogue states' such as Iraq had in the SDR. The default control paradigm approach to energy security, with its associated need to ensure the security of fossil fuel resources through military force, had merely assimilated these new threats into the government's overall energy security approach.

As in the SDR, the importance of the Middle East to national security was again emphasised. Demographic pressures and competition for increasingly limited resources were outlined as having the potential to affect this region (along with North Africa, Latin America and much of Asia).[69] The Middle East was given major policy emphasis with the statement 'The Middle East presents the most significant security challenges within this broad area.'[70] The significance of the Persian Gulf area to global oil supplies was also outlined with the sentence 'The Gulf will remain a region of considerable strategic importance, with its energy supplies being crucial to the world economy'.[71] Overall, the importance of the Middle East to energy security was mentioned in a similar manner to the SDR demonstrating the control paradigm outlook we saw in the analysis of that White Paper. There was still no outline of any desire for a preventative approach to energy security through research into alternative energy technologies.

Along with the policy attention given to terrorism and WMD proliferation and the lack of viable technological alternatives to fossil-fuels, a further reason for the continued failure to contemplate sustainable energy options can be ascribed to the emphasis placed upon NEC in *Delivering Security in a Changing World* and the follow-up White Paper *Delivering Security in a Changing World: Future Capabilities*. The concept had initially been termed 'Network Centric Capability' in *The Strategic Defence Review: A New Chapter*. In essence, NEC referred to the potential to rapidly transfer information between units on the battlefield using newly developed information technology systems. A 'virtual' picture of the battlefield could then be obtained by commanders and military force subsequently applied with precise effect on any enemy targets.[72] In this way, the doctrine fitted in neatly with the likely conduct of operations against the asymmetric threats outlined in *Delivering Security in a Changing World* and the newly coined expression of Effects-Based Operations (EBOs). As

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[69] Ibid.
[70] Ibid.
[71] Ibid.
[72] 'At the heart of this transformation is Network Enabled Capability (NEC). NEC is about the coherent integration of sensors, decision-makers and weapon systems along with support capabilities. NEC will enable us to operate more effectively in the future strategic environment through the more efficient sharing and exploitation of information within the UK Armed Forces and with our coalition partners'. MOD, *Delivering Security in a Changing World: Future Capabilities*, Cm. 6269 (London: TSO, 2004) p.5.

the 2003 White Paper put it 'Effects-Based Operations is a new phrase, but it describes an approach to the use of force that is well established – that military force exists to serve political or strategic ends'.[73]

Essentially, the increased likelihood of the British armed forces being involved in conflicts involving terrorist groups and various non-state actors placed a premium on the ability to target and attack likely threats with precision so as not to cause unnecessary civilian casualties and to enhance the military effect of the smaller numbers of units that were likely to be deployed due to operational constraints.[74] In a time of apparent overstretch (with lengthy operational deployments in Afghanistan and Iraq), this doctrine was understandably appealing for the government and had the added bonus of offering the continued prospect of inter-operability with the United States armed forces, who had their own information technology doctrine known as Network Centric Warfare (NCW).[75] Thus, this remained the chief technological and doctrinal development area in defence policy during Labour's tenure in government. Indeed, it was believed that NEC's contribution to logistics through the monitoring of supplies in storage and transit could significantly enhance the planning and overall conduct of overseas operations.[76] The lack of any reference to the possibilities of alternative energy technologies in augmenting the capabilities of expeditionary forces can therefore be partly attributed to the belief that NEC was almost a panacea to many of the problems that the military were likely to face in the course of future and existing operational commitments.

***The Future of the United Kingdom's Nuclear Deterrent* (2006)**

The Future of the United Kingdom's Nuclear Deterrent (published in 2006) was primarily concerned with justifying the continued existence of the UK's nuclear-armed submarines and the policy reasons for the development of a new breed of ballistic-missile armed nuclear submarines beyond 2020. As such, there was an explanation of existing and emerging threats that were meant to substantiate the need for an independent British nuclear deterrent. The threat analysis here mirrored that of *Delivering Security in a Changing World* with failing

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[73] *Delivering Security in a Changing World,* p. 10.
[74] MOD, *Understanding Network Enabled Capability,* (London: Newsdesk, 2009) p.24 and *Delivering Security in a Changing World,* p.11.
[75] For more information see Erik J. Dahl, 'Network centric warfare and the death of operational art', *Defence Studies*, Vol. 2, Iss.1 (2002).
[76] *Understanding Network Enabled Capability*, pp.56-57.

states expected to contribute to interstate tension by providing terrorist safe havens: 'Weak and failing states will continue to offer safe havens for international terrorists and potentially create wider instability'.[77] Within this framework, competition for energy resources was highlighted as a possible driver of global tension: 'Increasing pressure on key resources such as energy ... may increase interstate tension'.[78] In this instance, energy competition was seen as a driver of conflict rather than a reason for (nuclear) intervention. Consequently, there was a reiteration of certain themes underlined in *Delivering Security in a Changing World*, with competition over energy resources in unstable parts of the world contributing to instability, which could then necessitate a military response.

The Future of the United Kingdom's Nuclear Deterrent used the issue of the threat of WMD proliferation as an important justification for the need to maintain a minimal nuclear deterrent for the foreseeable future: 'In view of the continued existence of large nuclear arsenals, the possibility of further proliferation of nuclear weapons in combination with the risk of increased international instability and tension, we believe that a nuclear deterrent is likely to remain an important element of our national security in the 2020s and beyond.'[79] The need to provide a potential nuclear response to state-sponsored nuclear terrorism was also stated as continued justification for the renewal of Trident: 'While our nuclear deterrent is not designed to deter non-state actors, it should influence the decision-making of any state that might consider transferring nuclear weapons or nuclear technology to terrorists ... Any state that we can hold responsible for assisting a nuclear attack on our vital interests can expect that this would lead to a proportionate response.'[80] Thus, the twin security themes of terrorism and WMD proliferation (along with the perception of an increasingly uncertain future that has been evident in defence policy since the SDR) had affected British nuclear defence policy in a similar manner to their effect on conventional defence policy.[81]

From this evidence, we can see that the national security concerns precipitated by the 9/11 and 7/7 terrorist attacks on New York, Washington and London and first outlined in depth in the *SDR: New Chapter* had become the main axis upon which defence policy pivoted in this period. A speech concerning national security made in 2006 by the then Chancellor of the Exchequer Gordon Brown adds further credence to this contention. The speech focussed purely on the threat of terrorism and presaged the *National Security Strategy*

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[77] MOD, *The Future of the United Kingdom's Nuclear Deterrent* Cm. 6994 (London: TSO, 2006) p.18.
[78] Ibid.
[79] Ibid. p.19.
[80] Ibid.
[81] Ibid. See p.18 of the White Paper for the section entitled 'Insuring Against an Uncertain Future'.

of 2008 with its call for greater inter-departmental cooperation in security matters. Certainly, Gordon Brown stated 'It is not just the Treasury that is a department of security. So too is almost every other department'.[82] Brown also said that 'coordinating the way we address international terrorism will be a central feature of the coming spending review. The reason is clear: addressing the reality, causes and roots of international terrorism are some of the greatest new challenges of our times'.[83] Energy concerns were alluded to merely in passing, with energy mentioned as one of a myriad of national and international security concerns, along with transport, immigration and even health and social security.[84] Hence, as we have seen demonstrated throughout this chapter, there continued to be no articulation of any need or desire to move away from the default control paradigm approach to energy security issues within defence policy. Terrorism and WMD proliferation were considered more pertinent threats to British security and, as we saw from the previous section, NEC had taken up much of the doctrinal space within the declaratory policy. Still, there remained no viable front-line military (or civilian) vehicles that could utilise alternative energy technologies and, as such, the control paradigm approach continued to be a rational appraisal of the energy environment.

Returning to the 2006 Defence White Paper, we can observe that, interestingly, there was no mention of any danger of confrontation with Russia over the issue of gas supplies. Indeed, more is made of the desire for cooperation with Russia than the potential for conflict over any issue, let alone the supply of essential energy resources: 'The UK ... currently supports projects to help dismantle old Russian nuclear submarines, dispose of 34 tonnes of plutonium in Russia, destroy Russia's stocks of chemical weapons (a total of 40,000 tonnes) and create new employment for former Soviet weapons scientists.' Still, the re-emergence of a major nuclear threat from one of the existing nuclear weapons states is identified as a reason for maintaining the nuclear deterrent: 'There are risks that, over the next 20 to 50 years, a major direct nuclear threat to the UK or our NATO Allies might re-emerge.'[85]

Certainly, the Defence Select Committee was moved to publish a report entitled *Russia: a new confrontation?* in 2009, in order to address concerns regarding the potential for future conflict with the old Cold War adversary. Russia's continued use of its 'energy weapon' was scrutinized and seen as a cause for concern. Diversity of energy supply was ultimately seen as the best way to counter any uncertainty over energy imports from Russia,

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[82] Gordon Brown, 'Securing the Future' *The RUSI Journal*, Vol. 151, No. 2 (2006) p.12.
[83] Ibid.
[84] Ibid.
[85] Ibid.

thus mirroring the government's own analysis that we saw demonstrated in Chapter Two.[86] Sustainable energy security movements towards greater energy efficiency and alternative energy technologies were again overlooked in the analysis. Thus, we see a further demonstration of the RAM as an apt explanation for the government's approach to energy security issues throughout this period. If there had been feasible alternatives to reliance on gas and oil it is likely that the Defence Committee would have raised some concerns that these were not being investigated or developed in an adequate manner.

The continued control paradigm desire to secure oil resources and British influence in the Middle East through the use or threat of military force was further demonstrated by other Ministerial statements made towards the end of Labour's time in government. Margaret Beckett, the then Foreign Secretary, stated in 2006 that the Middle East region was 'a classic hard security issue' and that despite the fact that the FCO were looking to address the deep-rooted causes of insecurity in the region it attached 'no less importance to the hard security agenda.'[87] Here we can see an implicit recognition that the application of military force would still possibly be needed in this area, despite the apparent purpose of the statement being to outline the government's appreciation of the importance of climate security and the associated desire to prevent conflict through a reduction in greenhouse gas emissions, increasing energy efficiency and the use of greener energy technologies.[88]

Similarly, Defence Secretary John Hutton indicated in October 2008 that the UK government would seek to further the interests of British companies in Iraq as the security situation improved: 'I would like more British companies to get interested in Iraq and the opportunities for development there. As the Foreign Secretary said, the potential is enormous ... As our military mission changes, and it is changing, we have to focus on this new aspect of our relationship with Iraq ... The recent agreement that Shell made with the Iraqi Government on gas flow is a harbinger, I hope, of similar deals, *particularly around the energy sector* [author's italics]. We should be and we are resolved to focus on this in the months and years ahead. We should try to maximise the opportunities for British companies to do good business in Iraq, for the mutual benefit of themselves and, not least important, Iraqi citizens.'[89] Here again we see can see the impact of energy security considerations on British defence policy. A control paradigm approach to energy security in the Persian Gulf was

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[86] House of Commons Defence Committee, *Tenth Report - Russia a new confrontation?,* HC. 276, session 2008-2009 (London: TSO, 2009) p.79.
[87] Margaret Beckett, 'The Case for Climate Security', *The RUSI Journal*, Vol. 152, No. 3 (2007) p.55.
[88] Ibid. p.57.
[89] House of Commons Joint Committee on Defence and Foreign Affairs, *Iraq and Afghanistan: Minutes of Evidence 28 October 2008*, HC. 1145-I, session 2007-2008 (London: TSO, 2008) answer to question 33.

followed, not just because of the need to safeguard energy resources from this area, but, as explained in the introduction, also to demonstrate British power by extending and maintaining the influence of British companies in a strategically vital region. As we shall see in the next two sections of this chapter, this approach remained the default position in defence policy despite movements towards elements of sustainable security in the latter part of the Labour administration.

***The National Security Strategy of the United Kingdom: Security in an interdependent world* (2008)**

Despite the impact that energy security issues had on defence policy through the continued use of the control paradigm approach, there were movements towards elements of a sustainable security approach to energy security as Labour's time in government progressed. A sustainable security approach, as explained by the ORG, must 'go beyond military intervention and take into account the other social, environmental and economic issues that are vital to national stability'.[90] For Britain, this required greater cooperation between the FCO, DFID, DECC and the MOD in addressing security threats: what came to be known as the 'Comprehensive Approach'.[91] This meant, in Des Browne's words, 'the inter-weaving of different elements – security, reconstruction, law and order, and governance – reinforcing each other 'like the strands of a rope'.'[92] Essentially, post-conflict reconstruction and stabilisation required a full comprehension between different government departments of their respective roles and duties and this could ultimately also lead to understanding and unified efforts towards conflict prevention. In this regard, there was a gradual move towards this sustainable security aspect in declaratory policy from 1997 onwards, with this approach eventually being enshrined in the Cabinet Office Paper of 2008 *The National Security Strategy of the United Kingdom: Security in an interdependent world* (hereafter referred to as The National Security Strategy) and its successor of 2009, *Security for the Next Generation.*[93]

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[90] Chris Abbot and Sophie Marsden, 'From Within and Without: Sustainable Security in the Middle East and North Africa', *Oxford Research Group Briefing Paper* (ORG, 2009) p.2.

[91] See House of Commons Defence Committee, *Seventh Report – The Comprehensive Approach: the point of war is not just to win but to make a better peace,* HC. 224, session 2009-2010 (London: TSO, 2010) for a detailed exposition of this.

[92] Des Browne, 'Afghanistan: A Comprehensive Approach to Current Challenges', *The RUSI Journal,* Vol. 151, No. 5 (2006) p. 12.

[93] Cabinet Office, *The National Security Strategy of the United Kingdom: Security in an Interdependent World,* Cm. 7291 (London: TSO, 2008) and Cabinet Office, *The National Security Strategy for the United Kingdom: Update 2009. Security for the Next Generation,* Cm. 7590 (London: TSO, 2009).

Before the publication of these two documents the SDR had made little mention of any desire for greater inter-departmental cooperation, merely emphasising the need for the go-ahead from the FCO or DFID before embarking on humanitarian operations: 'When appropriate, and at the request of the Foreign and Commonwealth Office or Department for International Development, the Armed Forces contribute to humanitarian and disaster relief operations...'.[94] However, the *SDR: New Chapter* described the importance of inter-departmental cooperation in the prevention of terrorism: 'The Government has committed significant additional resources to improved conflict prevention, management and resolution, and has established cross-Departmental budgets to enable a more joined-up approach.'[95] This followed the creation of the Global Conflict Prevention Pool and the Africa Conflict Prevention Pool in 2001, which saw the FCO, DFID and MOD jointly administering a budget that was used to enhance conflict prevention measures (such as small arms control, land mine clearance and educational efforts) in countries deemed prone to instability.[96] Following on from this, we can see that *Delivering Security in a Changing World* made the statement that '...working with Other Government Departments, we need also to consider and address the underlying causes of ... threats.'[97] Indeed, *Delivering Security in a Changing World* was published simultaneously with the FCO White Paper *UK International Priorities: A Strategy for the FCO.*[98]

These initiatives can be seen as displaying a degree of understanding as to the nature of modern conflict and the increased likelihood of what General Rupert Smith has termed 'war amongst the people'.[99] The joint publication of the FCO and MOD White Papers also reflected the challenges presented by the continuing deployments in Iraq and Afghanistan, which would require greater cooperation and coordination between the separate government departments to help secure lasting stability in the two countries.[100]

These movements towards greater cooperation between government departments culminated in the publication of a comprehensive national security strategy paper in 2008. Entitled *The National Security Strategy of the United Kingdom: Security in an interdependent*

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[94] *SDR*, Annex A to Future Military Capabilities Supporting Essay, Paragraph A24.
[95] *The Strategic Defence Review: A New Chapter*, p.10.
[96] See DFID, FCO and MOD, *The Global Conflict Prevention Pool: A Joint UK Government Approach to Reducing Conflict* (FCO, 2003).
[97] *Delivering Security in a Changing World,* p.4.
[98] FCO, *UK International Priorities: A Strategy for the FCO,* Cm. 6052 (London: TSO, 2003) .
[99] Rupert Smith, *The Utility of Force: The Art of War in the Modern World* (London: Penguin, 2006) pp. 327-331.
[100] See Daniel Korski ,'British Civil-Military Integration: The History And Next Steps', *The RUSI Journal*, Vol. 154, No. 6 (2009) for an interesting assessment of recent British efforts in this area.

world (hereafter referred to as the *NSS*) this document was published on behalf of the Cabinet office and aimed to create a synthesis of policies from various branches of government, so as to reach a consensus on the pressing concerns facing the UK in the future. The paper continued to place primacy on the threats of terrorism, proliferation of WMDs, and failed states but also gave space to the concerns of energy competition and climate change. However, there was no explicit military response provided for the energy security threats. Rather, as already enunciated in government energy policy, the remedy was given as the encouragement of diversification and competition within international energy markets, as well as the development of domestic energy efficient and renewable energy technology.[101] Concerns over competition for resources were reiterated in *Security for the Next Generation* (an update of the *NSS*) published in 2009.[102]

Thus, despite the positive call for a more 'joined-up' approach to national security considerations, there was still no articulation of any aspiration for the armed forces to specifically move towards conflict prevention through the adoption of new energy technologies and also no deviation from the primacy of the Middle East as a key area of interest for British national security.[103] Certainly, the *NSS* was criticised by James Gow, who believed it displayed weak understanding of the likely future security *threats* facing the United Kingdom and was also lacking in a contemporaneous grasp of the appropriate security *responses* to any challenges posed by these so-called threats.[104] Indeed, despite the suggestion of apparent advances in inter-departmental cooperation he believed the document bore the hallmarks of inter-departmental compromise, rather than a more rational approach to perceived threats. This compromise could be identified in the aforementioned failure of the *NSS* to be specific about the nature of the threats and the appropriate responses. Any disagreements over either of these issues were obscured by the vagueness of the national security concerns outlined.[105] These views on the lack of synthesis between separate departmental objectives had been echoed a year earlier by Ann FitzGerald and, as such, nothing appeared to have changed with the publication of the *NSS*.[106]

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[101] *The National Security Strategy of the United Kingdom: Security in an Interdependent World,* pp. 51-52. Gordon Brown's speech to RUSI in 2006 can be seen as a precursor to many of the views propounded in this document.
[102] *National Security Strategy of the United Kingdom: Update 2009. Security for the Next Generation,* p.9.
[103] *The National Security Strategy of the United Kingdom: Security in an Interdependent World,* p.40.
[104] James Gow, 'The United Kingdom National Security Strategy: the Need for New Bearings in Security Policy', *The Political Quarterly,* Vol. 80, No. 1 (2009) p.128.
[105] Ibid. p.129.
[106] Ann M. FitzGerald, 'A UK National Security Strategy: Institutional and Cultural Challenges', *Defence Studies,* Vol. 8, Iss. 1(2008) pp. 7-8.

Consequently, there remained no cogent enunciation of any desire to see a transformation in the defence establishment's attitudes towards energy security considerations.[107] In this instance, Allison's Governmental Politics Model (GPM) could be ascribed as providing a cogent explanation, with the governmental recognition that a more integrated national security approach was required being tempered by the need to ensure agreement between the separate government departments affected by its conclusions.

***MOD Climate Change Strategy* (2008)**

As outlined in the introduction to this chapter, the need to reduce carbon emissions within the MOD was an issue that began to be addressed more robustly from 2003 onwards. This followed the publication of the DTI's 2003 White Paper on energy *Our energy future: creating a low carbon* economy, which for the first time put environmental concerns at the heart of government energy policy, with a call for a 60% reduction in UK CO2 emissions by 2050. With these stated (but not, as yet, legally binding) targets the government had to show that it was taking the issue seriously through appropriate departmental action plans to cut emissions. Following governmental targets set out in the DEFRA White Paper *Securing the Future: the UK Government Sustainable Development Strategy* the MOD therefore published its first sustainable development report in 2005, examining measures to improve environmental sustainability and cut greenhouse gas emissions from buildings within the defence estate.[108] However, it was not until the *MOD Sustainable Development Annual Report 2005* was published later in the same year that targets were also set for fuel use and travel and planning for climate change.[109] Further sustainable development reports were published in 2008 and 2009 showing excellent reduction in emissions and improvements in sustainability in line with the overall targets that had been set by the government.[110] Similarly, the MOD's annual Defence Plans also began to outline the importance of

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[107] *National Security Strategy of the United Kingdom: Update 2009. Security for the Next Generation,* p.67 indicates armed forces could possibly be used if key energy resources were threatened.
[108] MOD, *Ministry of Defence Sustainable Development Report: October 2003 - October 2004* (MOD, 2005); DEFRA, *Securing the Future: the UK Government Sustainable Development Strategy,* Cm. 6467 (London: TSO, 2005) pp.146-151.
[109] MOD, *Ministry of Defence Sustainable Development: Annual Report 2005* (MOD, 2005) p.6.
[110] MOD, *Ministry of Defence Sustainable Development Report and Action Plan 2008* (MOD, 2008) pp.26-27; MOD, *Ministry of Defence Sustainable Development Report 2009* (MOD, 2009) p.5.

sustainability and the need to address climate change and prevent conflict through emissions reduction targets from 2007 onwards.[111]

As already seen earlier in this chapter, the *SDR* had mentioned that energy efficiency targets would be pursued as part of 'wider Government initiatives'. We can see that the government had been nothing but consistent in this policy area.[112] But there remained no sole focus on the MOD's contribution to global emissions in any defence policy paper until 2008, with the publication of the MOD's *Climate Change Strategy.*[113]

This document, for the first time, addressed in depth the potential impact of climate change on international security and the need for the MOD to adapt its energy requirements and procurement strategies in response to this challenge. The MOD's stated climate vision in the document was 'Effective delivery of defence capability that is robust to climate change and does not substantially contribute to its causes.'[114] The link with energy security was also acknowledged with a section noting that attempts to mitigate climate change through energy diversification could also have an associated positive effect on competition for energy resources: 'Commentators have noted the potential benefits that could arise from efforts to mitigate climate change. Greater use of a diverse energy mix, particularly renewable energy could have beneficial implications for global politics'.[115] Finally, there was recognition of the importance of cooperation with other government departments in addressing climate change: '[the desired outcome is] to contribute with the FCO, DEFRA, DECC and DFID, to wider Government efforts to articulate the risks of climate security.' We can see from this that the term 'climate security' had been added to British defence's lexicon and was seen as an issue requiring new methods of thinking within the MOD.

There were further positive developments in the recognition of the issue of climate change following the publication of the *Climate Change Strategy.* The then International Defence and Security Minister, Baroness Ann Taylor, outlined the security threat that climate change posed to NATO as a whole in a speech made in January 2009: 'Climate change is not a traditional security threat: we cannot deter it, nor can we easily contain its consequences and so we must also focus on tackling its causes head on'.[116] Indeed, the MOD published no

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[111] See MOD, *Defence Plan 2007 (*MOD, 2007); MOD, *Defence Plan: Including the Government's Expenditure Plans 2008-2012*, Cm. 7385 (London: TSO, 2008); MOD, *Defence Plan 2009-2013* (MOD, 2009); Ministry of Defence, *Defence Plan 2010-2014* (MOD, 2010).
[112] *SDR,* Chapter 9, Paragraph 192.
[113] MOD, *Climate Change Strategy* (MOD, 2008).
[114] *Climate Change Strategy,* p.12.
[115] Ibid. p.35.
[116] Defence Minister Baroness Ann Taylor, *Speech delivered at the Joint NATO/Icelandic Government conference, Reykjavik* (29 January 2009) accessed at

less than three interconnected papers on climate change in April 2010 and these were, in effect, real game changers in terms of the Labour government's appreciation of sustainable security notions in relation to energy issues. *Defence in a Changing Climate*'s purpose was to set out the context for the possible effect of climate change on national and international security and, in turn, pose a number of questions that the papers *MOD Climate Change Strategy 2010* and the *MOD Climate Change Delivery Plan* would seek to answer.[117] In this manner, these papers displayed a real recognition of the potential to enhance the armed forces logistical capabilities whilst also mitigating the energy security concerns of the UK. As such, this was the first real articulation of the possible advantages of a sustainable security approach to energy security as outlined by the ORG. For example, the *MOD Climate Change Strategy 2010* stated 'Defence in a Changing Climate recognises the need to reduce the amount of fossil fuel consumed by ... vehicles, in order not only to reduce GHG emissions, but also to seek the benefits this may bring in terms of a reduction in the cost and logistical burden of delivering fuel to point of use and an increase in energy security'.[118] There was also the comment in the *MOD Climate Change Delivery Plan* that 'An Operational Energy Roadmap (OER) will be developed that will provide a programme of activity to investigate the deployment of alternative and synthetic fuels and clean energy technologies within the whole spectrum of Defence platforms and equipments ... [this will] maximise the opportunities that arise to reduce energy and fuel use and ultimately how MOD [sic] may transition away from hydrocarbon use'.[119]

In addition to the abovementioned documents, there was also the publication of the *Sustainable Procurement Strategy* in the same month. In a similar manner to the *MOD Climate Change Strategy* it set out the need to develop synthetic and alternative fuels for front-line vehicle use, as well as the desire to embed sustainable environmental practices at all levels of the procurement process. The paper was keen to point out that these measures would not only aid the wider environment but would also offer positive operational benefits by cutting 'the number of supply convoys required in theatre, thereby reducing operational vulnerability, improving security, and bringing down through-life costs.'[120] With these facts

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http://webarchive.nationalarchives.gov.uk/+/http:/www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/MinISD/20090129JointNatoicelandicGovernmentConferencesecurityProspectsInHighNorthReykjavicIceland.htm on 4 May 2012.

[117] MOD, *Defence in a Changing Climate* (MOD, 2010); MOD, *MOD Climate Change Strategy 2010* (MOD, 2010); MOD, *MOD Climate Change Delivery Plan* (MOD, 2010).

[118] *MOD Climate Change Strategy 2010,* p.7.

[119] *MOD Climate Change Delivery Plan,* p.3.

[120] *Sustainable Procurement Strategy*, p.1.

in mind, it would appear that if the Labour government had been re-elected in the 2010 general election we may have seen a continuation of this articulation of sustainable security notions and perhaps an adoption of many of the ORG's sustainable security tenets.

Still, this development in thinking on energy security and climate change was only clearly stated nearly 12 years after the Labour government was elected to power. Climate change did not suddenly become a topic of concern from 2008 onwards. This issue was on the government's policy radar as early as 1997 and efforts to mitigate climate change were explicitly articulated in government White Papers from 2003 onwards.[121] Why then did the government address the potential for a sustainable security notion of energy security and its attendant implications for defence policy as late as 2008 onwards? It cannot be ascribed solely to the fact that formulation of policy on energy issues had been in the realm of other government departments as the MOD had produced emissions reductions targets since 2005 and the aforementioned government targets for this outlined in *Securing the Future*. There appear to be two main explanations. Firstly, climate change had become an increasingly salient economic and political issue following the publication of the *Stern Review on the Economics of Climate Change* in 2006 and the subsequent *2007 Intergovernmental Panel on Climate Change (IPCC) 4th assessment report.* The reports had stated respectively that the evidence for climate change was now 'overwhelming' and 'unequivocal'.[122] Certainly, Andrew Jordan and Irene Lorenzoni saw it as being a very real attempt by Gordon Brown (who commissioned the Stern Report) to 'reinforce the message that climate change is a high economic priority for the UK and the world [and] to establish a political climate for significant policy change in the UK ...'[123] The Climate Change Act of 2008 added additional credibility to this opinion with its legally-binding targets to cut CO2 emissions by 80% by 2050. In this way, the UK government became the first in the world to enshrine such a long-term carbon emissions reduction target into law.[124] Indeed, the *MOD Climate Change*

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[121] The Labour Party, *Labour Party Manifesto 1997* (London: Labour Party, 1997). 'A Labour government will strengthen co-operation in the European Union on environmental issues, including climate change and ozone depletion. We will lead the fight against global warming, through our target of a 20 per cent reduction in carbon dioxide emissions by the year 2010', accessed at http://www.labour-party.org.uk/manifestos/1997/1997-labour-manifesto.shtml on 3 October 2011. See the Energy White Paper, *Our Energy Future: Creating a Low Carbon Economy,* Cm. 5761 (London: TSO, 2003) for the government's earliest thoughts on climate change's effect on energy security.

[122] *The Stern Review,* p.1; UN IPCC, *2007 IPCC 4th assessment report* (UN, 2007) accessed at http://www.ipcc.ch/publications_and_data/publications_and_data_reports.shtml#1 on 4 May 2012.

[123] Andrew Jordan and Irene Lorenzoni, 'Reviews and Surveys: Is There Now a Political Climate for Policy Change? Policy and Politics after the Stern Review', *The Political Quarterly*, Vol. 78, No. 2 (2007) p. 312.

[124] *DECC Website*, 'Climate Change Act 2008' (2012): 'The UK has passed legislation that introduces the world's first long-term legally binding framework to tackle the dangers of climate change'. Accessed at http://www.decc.gov.uk/en/content/cms/legislation/cc_act_08/cc_act_08.aspx on 7 May 2012.

Strategy 2010 mentioned the fact that, following the Climate Change Act, the MOD (along with all departments of government) now had its own Carbon Budget (which took into account the emissions from front-line military vehicles) that it had to remain within.[125] Thus, the government had imposed a strong legal requirement for the MOD and armed forces to adopt a sustainable security approach to energy issues, with a greater focus on the contribution of the British defence establishment to climate change. These wider governmental policies on the mitigation of man-induced climate change demonstrated a real commitment from Labour to cut British greenhouse gas emissions. They also had the additional benefit of offering the potential for positive cost savings that were likely to result from improving energy efficiency standards within the defence estate.

However, the vagaries of party politics in the United Kingdom seem to have had the most significant role to play in the eventual espousal of sustainable energy security tenets. As already mentioned in this chapter, David Cameron's election as leader of the Conservative Party saw a concerted effort to paint the Conservatives as a more 'friendly' party through a sharper awareness of environmental issues than in previous years.[126] This attempt at 'rebranding' the Conservatives certainly appears to have borne fruit as early as 2007 with an Ipsos Mori poll indicating that the public were broadly in favour of many of the environmental and emissions tax proposals suggested at the September party conference.[127] These positive beginnings gained momentum in August 2008 with a further poll showing that the Conservative Party were considered to be more appealing to Labour as regards their policies on the environment at a time when this issue ranked as the seventh most important election issue for voters, ahead of other possible concerns such as Defence, unemployment and the continuing Iraq conflict.[128] These results may help to explain the publication of the MOD's *Climate Change Strategy* of 2008, as Labour attempted to demonstrate that environmental issues would be considered in all areas of government policy. Indeed, in the

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[125] *MOD Climate Change Strategy 2010,* p.2; DECC and DEFRA, *Climate Change: Taking Action – delivering the Low Carbon Transition Plan and preparing for a changing climate* (London: TSO, 2010): 'All departments have conducted a high-level assessment of the potential implications of climate change for their policy objectives, key services and operations'. p.43.

[126] Michael McCarthy, 'Michael McCarthy: Cameron is sticking to his green guns despite the risks', *The Independent* (19 January 2010).

[127] *Ipsos MORI·Website,* 'Public Finds Much To Support in Conservatives New Green Agenda' (1 October 2007) accessed at http://www.ipsos-mori.com/researchpublications/researcharchive/187/Public-Finds-Much-To-Support-in-Conservatives-New-Green-Agenda.aspx on 6 May 2012.

[128] *Ipsos MORI Website,* 'Poll - Headline Concern about Climate Change' (15-17 August 2008) pp.27-28, accessed at http://www.ipsos-mori.com/Assets/Docs/Publications/sri_environment_climate%20clinic%20slides_2008.PDF on 6 May 2012.

months prior to the 2010 General Election, pollution and environmental issues remained of greater importance to voters than Defence.[129]

Given these details, a time cycle explanation can be proposed as a key reason for the declaratory policy statements within defence proposing sustainable security notions in the two years prior to the election. This was because the Labour government was keen to display its green credentials as the general election drew nearer. Although environmental issues were unlikely to significantly affect the overall election result they had become of increasing salience within the overall election discourse. The prospect of any policy weakness within government departmental goals regarding emission reductions was something that could have been used by opposition politicians to question Labour's commitment to environmental issues. This questioning would have been particularly embarrassing if political opponents had been able to focus on weaknesses within the MOD's emissions targets, given that it in 2008 it was responsible for approximately 70% of all emissions from the Central Government Estate, as well as 1% of UK-wide Carbon Dioxide emissions.[130]

Certainly, the increased importance of environmental issues in the 2010 General Election was evidenced by such actions as the publication of respective Labour and Liberal Democrat 'green' manifestos, a Conservative 'quality of life' manifesto (that included discussion of their prospective environmental policies), a so-called 'green election debate' between the major political parties' environmental representatives, not to mention significant air time being devoted to the issue of climate change in the second prime ministerial debate that was broadcast on television in the run up to the election.[131] Indeed, the Green Party gained its first Member of Parliament when Caroline Lucas was elected as representative for Brighton.

Undoubtedly, other statements within the declaratory sphere of defence policy did not indicate that there had been any real shift in attitude away from a control paradigm conception of energy security. This lends further weight to the argument that short-term political considerations may have been at work in the apparent promotion of sustainable

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[129] *Ipsos MORI Website,* 'Importance of Key Issues to Voting' (24 March 2010) accessed at http://mori-ireland.com/researchpublications/researcharchive/poll.aspx?oItemId=54&view=wide on 6 May 2012.
[130] *Climate Change Strategy* p.4.
[131] The Labour Party, *A green future fair for all* (London: Labour, 2010); The Liberal Democrats, *Liberal Democrat policies for the environment,* (London: Liberal Democrats, 2010); The Conservative Party, *Modern Conservatism: Our Modern Quality of Life Agenda – The Conservative Quality Of Life Manifesto 2010,* (London: Conservative Party, 2010); *BBC News Online,* 'Election 2010: parties do battle over climate change', (26 April 2010) accessed at http://news.bbc.co.uk/1/hi/uk_politics/election_2010/8644192.stm on 7 May 2012; *BBC News Online,* 'Second prime ministerial debate 22 April 2010 Transcript' (22 April 2010) accessed at http://news.bbc.co.uk/1/shared/bsp/hi/pdfs/23_04_10_seconddebate.pdf on 7 May 2012.

security ideas in defence policy that went further than mere emissions reductions targets. For example, in a defence debate in the House of Commons in June 2009, Defence Secretary John Hutton put forward the view that the government had five main priorities in combating new and emerging threats to UK security. The fifth priority of developing future capabilities made no mention of the promotion or research of new fuel and energy technologies or any change in the operational outlook of the armed forces due to potential advances in these research areas. Instead, NEC and cyber-security were highlighted as vital focus areas for the future.[132] In the same session, John Hutton also mentioned the intention to develop a 'close, bilateral defence relationship' with Iraq as British forces would continue to help protect 'Iraq's oil platforms in the Northern Gulf' into the future.[133] Thus, ministerial statements continued to reflect the control paradigm concerns of control of access to fossil fuels and the maintenance of the military advantages of key regional allies. This was despite the publication of the *Climate Change Strategy* in December 2008 and the apparent signification that the approach to energy security issues within defence policy may have changed.

In continuance of this theme, we can see that Bob Ainsworth (the last MP to hold the position of Defence Secretary during Labour's time in power) continued to emphasise the importance of the armed forces in maintaining British international influence in 2010.[134] Further to this, he also alluded to the fact that the type of equipment that the armed forces procured would be, to some degree, dependent on the need to intervene to secure imported energy supplies.[135] Indeed, the Green Paper *Adaptability and Partnership: Issues for the Strategic Defence Review* (published February 2010) did not see fit to call for any major change in the operational outlook of the armed forces towards sustainable security notions despite the fact that the three MOD papers addressing climate change were published at the same time and the Green Paper was a document apparently seeking to shape the direction of the new Strategic Defence Review that was due to follow the general election of that year.[136]

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[132] *Hansard,* HC Deb Volume 493, Columns 437-438 (4 June 2009): 'As for our capability, I would mention just two emerging priorities. We will need to build and maintain an advantage over our adversaries in information and decision making ... We will also need to develop capabilities that protect our information networks from increasingly sophisticated attacks. Such non-kinetic attacks on our vital infrastructure from cyberspace are clearly attractive to our adversaries, and we have got to counter them'.

[133] *Hansard,* HC Deb Volume 493, Column 428 (4 June 2009). John Hutton also outlined plans for the British armed forces to aid in the training of Iraqi soldiers.

[134] House of Commons Defence Committee, *Afghanistan and the Green Paper: Minutes of Evidence,* HC. 223-I, session 2009-2010 (London: TSO, 2010) answer to question 71: 'We have to be important players in the architecture of security that exists in the wider world. If we are not, then we will not have the influence that will be necessary to protect our national interests and our national security'.

[135] Ibid.

[136] MOD, *Adaptability and Partnership: Issues for the Strategic Defence Review,* Cm. 7794 (London: TSO, 2010)

Additionally, Kevan Jones commented that during his time as a Defence Minister (from October 2008 until May 2010) climate change was recognised as a future conflict driver within the MOD but (as already mentioned earlier in this chapter) the main technological focus was on developing ballistic protection for soldiers and ensuring that any UORs were met in good time. It was certainly his opinion that, in his experience, the development of military technology was increasingly driven by short-term operational considerations and was likely to remain so in the future.[137]

This evidence shows us that the apparent implementation of a genuine sustainable security outlook within defence declaratory policy that was apparently heralded by the 2008 *Climate Change Strategy* and the three MOD climate papers of 2010 was due to wider governmental targets that affected defence policy, as well as the desire to demonstrate a positive environmental approach to policy shortly before the 2010 General Election. Therefore, sustainable security aspects were adopted in the declaratory sphere to a certain degree but the underlying defence posture was still that of a control paradigm approach, with the attendant desire for Britain to have the continuing ability to influence and foster relationships with Middle Eastern countries due to their still important hydrocarbon reserves, in addition to the impression of power that these relationships gave the British government on the international stage. If Labour had remained in power we may ultimately have seen an approach to energy security issues in defence policy that seemed to meld the control and sustainable security paradigms of the ORG. This could have entailed a continued governmental focus on the ability to intervene and influence regions with large fossil fuel reserves, whilst at the same time attempting to reduce emissions and simultaneously improve the logistical support capabilities of the armed forces through development of alternative powered vehicles. Labour's so-called 'Third Way' may therefore have manifested itself in defence policy in this respect.

[137] Interview with Kevan Jones MP, 12 May 2011.

Conclusion

In sum, we have seen that the Labour government's conception of the importance of energy security certainly had a significant impact on defence declaratory policy from 1997 to 2010. This impact was demonstrated in a clear control paradigm approach to energy security within defence policy until 2008, with Allison's RAM providing the most cogent explanatory tool for this particular outlook. The RAM could be demonstrated by the fact that throughout the examined period there remained no feasible alternatives to fossil-fuels in terms of the UK economy's reliance on these (as shown in the previous chapter) and there were no other armed forces developing an operational advantage through research and development into alternative energy technologies. The overall rational approach of the government to the issue of energy security within defence policy was also demonstrated by the fact that the government's defence research programmes were not criticised for their failure to research energy alternatives by the Defence Select Committee, either of the main opposition parties or any of the Chief Scientific Advisers to the MOD.

Other reasons for the continued use of a control paradigm approach included the effect of the 9/11 terrorist attacks on the overall security perceptions of the British government. The perceived importance of combating terrorism, the prevention of the global spread of WMDs and the associated operational deployments to counter these threats in Afghanistan and Iraq therefore put paid to any possibility that there would be a reappraisal of the default control paradigm model to energy security, at least whilst these long-term operations continued. This was because short-term operational equipment needs needed to be addressed urgently to deal with the exigencies of these twin conflicts and the focus of the government turned to reaching a successful outcome in these operations. In addition, the main technological programme of the time was that of NEC, which offered the very real potential to deliver military force with greater precision than had been seen before within any given battle-space. In contrast to the financial risks of any potential investment into alternative energy technologies or preventative approaches to war, this technological and doctrinal approach appeared more applicable and relevant to the conflicts that British soldiers were engaged in, as well as having the added benefit of being based upon information technology systems derived from the civilian sphere.

As regards evidence of a control paradigm approach, this was revealed through Defence White papers and Ministerial statements and speeches throughout Labour's tenure in government. The *SDR* of 1998 saw a real concentration on the importance of the Middle

East's oil reserves and the danger that Iraq was deemed to pose to the stability of a region that was important due to these reserves of fossil fuels. The significance of fossil fuels to UK security, and the possible need to secure their safe passage to Britain through military action, was again referenced in *The Future Strategic Context for Defence*, *Delivering Security in a Changing World* and continued government statements up until 2010.

Sustainable security notions began to be articulated from 2008 onwards with the publication of the *NSS,* the *Climate Change Strategy* and further papers that sustained this approach, such as *Defence in a Changing Climate*. However, the sustainable security notions outlined within these documents must be viewed within the context of wider governmental emissions reduction targets and the desire to not portray any weakness in the increasingly important environmental area of policy prior to the 2010 General Election. As such, Dorman's time cycle model provides a coherent explanation as to the greater adoption of sustainable security principles at the declaratory level of policy from 2008 onwards, with Allison's GPM elucidating the reasons for the positive but ultimately elusive calls for greater inter-departmental cooperation that were enshrined in the *NSS.* Certainly, ministerial statements and interviews did not portray any major change in the government's control paradigm approach within the period of these documents' publication.

With the above evidence in mind, we must now turn our attention to the next 'circle' in Ian Bellany's model: the operational sphere of defence policy. The next chapter will scrutinize the impact of energy security considerations on the British armed forces operational outlook during Labour's time in government. This will be done by examining the doctrine published by and for the separate branches of the armed services during the examined period, as well as the statements of senior officers at the time. We can then ascertain whether the armed forces saw energy security as being a relevant issue for them and, if so, what their subsequent approach to this matter was. We will also analyse the actual operations the armed forces were engaged in from 1997 to 2010 and whether these point towards a continuity or discontinuity to the approach we have seen demonstrated towards energy security at the declaratory level of defence policy. Finally, we will then be able to ascertain whether British defence policy remained aligned in terms of its approach to energy security issues at the separate constituent levels.

Chapter Four

Operational Policy

As Labour's time in government progressed, Britain's armed forces were increasingly called upon to perform a variety of tasks by the Blair and Brown administrations. These included overseas operations in Bosnia, Kosovo, Sierra Leone, Afghanistan and Iraq; the continued military presence in Northern Ireland; Royal Navy patrols in the Persian Gulf and off the Horn of Africa; as well as helping to deal domestically with what were termed colloquially by the armed forces as the 'four Fs': flooding, the fuel crisis, the outbreak of foot-and-mouth disease and the fire-fighter's strikes.[1] This exacting operational tempo saw allusions to the danger of overstretch from senior officers within the armed forces from as early as 2000.[2] Indeed, as the scale of overseas commitments increased with the invasion (and subsequent occupation) of Iraq in 2003 and burgeoning deployments in Afghanistan from 2001 onwards, serving and retired senior officers of the armed forces were moved to state their opinions on the perceived overstretch in a more public and opinionated manner than had been seen previously in British politics.[3] Certainly, such was the depth of feeling regarding this issue amongst many retired servicemen that a new UK-wide defence lobbying group, known as the United Kingdom National Defence Association (UKNDA), was founded in 2007.[4] The idea of a 'military covenant' that the government and wider public had a duty to respect was also

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[1] General Sir Michael Walker, 'Delivering Security in a Changing World: Annual Chief of the Defence Staff Lecture', *The RUSI Journal,* Vol. 149, No. 1 (2004) p. 36 and Rob Crilly and Michael Evans, 'Royal Navy in firefight with Somali pirates', *The Times* (12 November 2008).

[2] General Sir Charles Guthrie, 'Bringing The Armed Forces Into A New Millennium', *The RUSI Journal,* Vol. 145, No. 1 (2000) p.1: 'Overstretch is a much used word in the MoD these days, particularly with each of the three Services suffering a degree of under-manning ... But I am very hopeful that over the coming weeks and months we can continue to draw the numbers down'.

[3] Andrew Dorman, 'Britain and its Armed Forces Today', *The Political Quarterly,* Vol. 78, No. 2 (2007) p. 321: '... the armed forces have found themselves stretched to breaking point. In response we have witnessed an unprecedented series of frank interviews and lectures from both retired and serving officers'. Michael D. Hobkirk mentioned in his study of resource allocation in defence policy that, in contrast to the US, senior military officers in the UK were generally discouraged from engaging in overt questioning of government policy. See Michael D. Hobkirk, *The Politics of Defence Budgeting: A Study of Organisation and Resource Allocation in the United Kingdom and the United States* (Washington D.C: National Defense University Press, 1983) pp.58-59. Tony Blair has commented that he was extremely annoyed with General Sir Richard Dannatt's remarks to the media in October 2006 that apparently called for Britain's involvement in Iraq to be brought to an early conclusion. See Tony Blair, *A Journey* (London: Arrow, 2011) p. 470

[4] See the *UKNDA Website* at http://www.uknda.org/ and for more in-depth opinions on their views on defence police see UKNDA, *Overcoming the Defence Crisis* (UKNDA, 2008).

promoted heavily by Chief of the General Staff (CGS) Sir Richard Dannatt following his appointment to the position in 2006 with the Conservative Party setting up a Military Covenant Commission to examine the issue.[5] All this apparent discontent in the operational sphere of defence policy took place within an environment of increasing public opposition to the continuing British military deployments in Iraq and Afghanistan.[6] Certainly, as we saw outlined briefly in the previous chapter, there was a feeling amongst certain sections of the public (as well as elected members of the House of Commons) that the former war had been embarked upon to ensure Western access to Iraq's copious oil reserves, with the attendant beneficial effect on global crude oil prices that this could potentially bring about.[7]

Thus, it is within this overall context that we will seek to study the impact of energy security considerations on the armed forces between 1997 and 2010. We will examine whether the operational circle of defence policy remained in line with the declaratory sphere in displaying an appreciation of the importance of energy security issues within wider defence policy; this perhaps taking the form (as we saw in the previous chapter) of a control paradigm approach, with its associated stress on the importance of bringing 'hard power' capabilities to bear to secure access to key fossil fuel reserves or, alternatively, a sustainable security approach that highlighted the preventative contribution the military could make in providing energy security to the UK through the development of alternative energy technologies (thus addressing the conflict drivers of climate change and resource competition) and through liaison with other government agencies on this particular issue. Still, we may find that ultimately neither of these paradigms is applicable to the operational sphere, as energy security considerations failed to have any impact at all. Whatever the

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[5] See Sarah Sands, 'Richard Dannatt: A very honest general', *Daily Mail* (12 October 2006) and Military Covenant Commission, *The Leader of the Opposition's Military Covenant Commission: Launch Document* (The Conservative Party, 2008). The idea of the need for a new 'civil-military compact' or 'Military Covenant' was effectively highlighted in a 2007 report by Timothy Edmunds and Anthony Forster on behalf of the think-tank Demos. See Timothy Edmunds and Anthony Forster, *Out of step: the case for change in the British armed forces* (London: Demos, 2007).

[6] Julian Glover, Richard Norton-Taylor and Patrick Wintour, 'Iraq: voters want British troops home by end of the year', *The Guardian* (24 October 2006) and 'Britons believe 'Afghan war is failing'', *Channel 4 News Website* (24 October 2009) accessed at http://www.channel4.com/news/articles/uk/britons+believe+aposafghan+war+is+failingapos/3397902.html on 4 October 2011.

[7] *Hansard,* HC Deb Volume 401, Columns 862-863 (18 March 2003) Ronnie Campbell: 'I wonder whether we would be having this debate if Iraq had no oil wells ... I know that I am being anti-American, but other Members have had a good bash at the French this evening, and I am going to have a go at the Americans. I wonder whether it is all for the oil. I am sure that, by this time next year, it will have been proved that oil was the issue. I honestly believe that we would not be discussing the motion and the resolutions were there no oil in Iraq' and Richard Younger-Ross: 'Does the hon. Gentleman accept that the often heard argument that America intends to take all the oil for itself is simplistic and wrong? The real argument is that by ensuring a continuous supply from a compliant country, America can keep the price of oil down. That is where its interest lies'.

evidence indicates, Allison's models of government and Dorman's time cycle approach will be used as explanatory tools to shed light on the reasons for the impact or non-impact of energy security issues at this level of defence policy. However, before we embark upon the main body of analysis, we must firstly summarise the arguments of the previous chapter so that any apparent differences between the operational and declaratory spheres of policy will be easily perceptible to the reader as the chapter progresses.

Chapter Three demonstrated that concepts of energy security did have a verifiable impact upon the declaratory level of defence policy during Labour's time in power. This was evidenced by the continued mention of the importance of oil from the Middle East, as well as the fact that significant security concerns over competition for energy resources were raised in Defence White Papers and in statements from key government ministers. The governmental attitude displayed towards energy security issues was shown to be consistent with a control paradigm approach up until 2008, due to an emphasis on the use of 'hard power' from the military in order to secure access to these resources. The fact that the UK continued to rely upon fossil fuels for the vast majority of its energy needs, that there were no viable alternatives to fossil fuels in mass use anywhere in the world and that there was no criticism of the lack of innovation in this area from the Defence Select Committee or opposition political parties indicated that this governmental stance was a rational attitude to the unremitting requirement to ensure British imports of hydrocarbons and maintain a steady worldwide oil commodity price. Thus, Graham Allison's RAM proved to be the best explanatory tool for understanding energy security considerations' impact on UK defence policy until 2008. However, from 2008 onwards one could see significant changes in the approach from the British government towards this issue. The importance of reducing greenhouse gas emissions in order to address the conflict driver of climate change was highlighted in MOD Defence Plans and the Climate Change Act of 2008 meant that all government departments now had a legal requirement to cut their carbon emissions. Indeed, the MOD's first *Climate Change Strategy* was produced in December 2008, outlining the measures that would be needed to mitigate the MOD and the armed forces' wider contribution to climate change. All these measures occurred under the backdrop of an increasing saliency of environmental issues within British political discourse and the concomitant desire of the Labour government to avoid appearing weak on these issues prior to the 2010 General Election. Certainly, even after the publication of the aforementioned documents there continued to be statements from Defence Ministers that indicated the underlying control paradigm approach to energy security had not been completely

abandoned. Thus, Dorman's time cycle analysis provided the best explanation as to this apparent movement towards sustainable energy security notions within defence policy, with short-term political considerations ultimately contributing to the adoption of sustainable security tenets prior to the 2010 General Election.

With the above information in mind, this chapter will analyse the operational sphere of British defence policy. Operational policy is the area of defence policy 'which corresponds to what the armed services actually think of themselves as being held in readiness to do and being prepared for'.[8] Thus, following this definition, we will need to analyse the doctrine produced by and for the armed forces in the examined period, as well as statements made by serving officers, so as to see if energy security considerations were an important justification for the operational roles and procurement preferences that the military exhibited during Labour's time in government between 1997 and 2010. As outlined in the introduction, the prominence of energy security within each circle of defence policy can then be ascertained by examining whether it was used as a justification by the armed services for any roles that they expected themselves to undertake, as well as the equipment that was to be procured for them. This will be done by scrutinising the doctrine produced by the armed forces as well as statements of senior officers in each service.[9] We must also examine the operations that the military were tasked to perform during the examined period so as to determine whether energy security considerations informed any of these interventions. This will then aid us in identifying whether the dominant control paradigm approach at the declaratory sphere of policy translated itself into a concurrent posture at the operational level and whether the two circles of defence policy were in line in this particular aspect.

As outlined in Chapter One, we will be using the ORG's notions of a control paradigm and a sustainable security paradigm to measure the impact of energy security issues on British defence policy. If there was a control paradigm approach displayed at the operational level of policy we would see British armed forces doctrine stating energy security and resource issues as relevant factors in overall planning. Similarly, the statements of senior

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[8] Similarly, defence-industrial policy corresponds to what the defence-contracting industries within the UK economy think of themselves as being for and holding themselves ready to do. This will be outlined in the next chapter. See Ian Bellany, *Reviewing Britain's Defence* (Aldershot: Dartmouth, 1994) pp.1-2.

[9] It is important to mention at the beginning of this section that, according to Bellany's framework for analysis, senior officer's statements whilst still in military service are technically part of the declaratory sphere of defence policy. However, as Bellany commented himself, we can still acquire their operational beliefs through the use of 'coded' language (p.45). Thus, we will scrutinize their statements to see any evidence of divergent views in comparison to the declaratory sphere or operational doctrine. Military doctrine can be defined as 'fundamental principles by which military forces guide their actions in support of objectives. It is authoritative, but requires judgement in application'. JDCC, *British Defence Doctrine: Second Edition*, JWP 0-01 (Shrivenham: JDCC, 2001) p.1-1.

officers within the armed forces should use energy security factors as justification for the structures and procurement programmes they had or were aiming to acquire within the armed forces as a whole or for their individual service. For example, the Royal Navy could stress the importance of acquiring a particular type of ship due to its perceived effectiveness in patrolling and protecting important transit routes for energy resources. Equally, the RAF could oppose the abandonment of a particular airbase that could be used to provide air cover for British forces operating in a hydrocarbon-rich area and the Army could call for the development of a particular type of Armoured Fighting Vehicle (AFV) due to its enhanced capability to operate in desert conditions and thus provide a 'hard power' capability in an area vital in providing continued energy security for the United Kingdom. Finally, a study of the invasion of Iraq in 2003 can shed further light on whether this operation was embarked upon primarily to secure access to Iraq's vast fossil fuel reserves.

In opposition to the control paradigm we may find that there has been a progression towards a sustainable security approach to energy considerations within the military. In essence, this is a preventative approach to national security matters that would see the armed forces attempting to mitigate the potential for conflict by addressing the ORG's conflict drivers of climate change and global resource competition. If we were to see a movement towards this approach we would observe doctrinal and officer statements outlining the importance of alleviating these twin drivers of conflict wherever possible (rather than merely referencing them and articulating a control paradigm response). This could take the form of the enunciation of the desire for greater cooperation in addressing these matters with other government departments (such as the FCO, DEFRA or the DECC) or the recommendation of the need to develop alternative and green energy technologies for the military so that the armed forces were contributing to the assuagement of man-induced climate change and, in the same manner, also making the need to secure overseas energy resources less pressing. Certainly, with the armed forces' focus moving away from the need to secure access to fossil-fuel producing regions, another parameter with which to measure a sustainable security notion's effect on British defence policy would be an acknowledgment amongst the military that past procurement had been too heavily focussed on hard power capabilities, when a more multi-role capability for the armed forces could be developed. Finally, if military deployments were made for energy security reasons they would primarily be peace support and humanitarian interventions with the aim of returning stability to the area concerned. Of course, any flagrant aggression to secure energy resources by another state would be

combated with military action but ideally whilst embracing multilateralism and with the backing of international law.

It must be stated that the use of these paradigms does not mean that energy security ideas definitely did have an impact on the operational circle of defence policy in the examined period. Indeed, we may find that concepts of energy security had no impact on the operational level of defence policy between 1997 and 2010. Energy security factors may have provided no justification for any of the views espoused in doctrine or by senior officers, thus demonstrating a lack of influence on the structural or procurement deliberations of the British armed forces. Similarly, the 2003 invasion of Iraq may be proven to have had nothing to do with energy security considerations. The aforementioned models of Allison and Dorman will aid in providing a sufficient explanation if this does prove to be the case. In addition, it must be reiterated that we may see a situation in which the armed forces adopt certain aspects of a sustainable security approach (such as calling for the adoption of alternative energy technologies) whilst remaining predominantly geared towards securing access to energy resources through the use of military force. As outlined in Chapter One, this would be classified as a progression *towards* sustainable security notions as it would ultimately be a movement away from the default control paradigm approach towards a possible fossil-fuel free military in the future, with the attendant beneficial effect on the conflict drivers of climate change and competition for resources through reduced greenhouse gas emissions and less need to ensure access to overseas hydrocarbon reserves. Thus, there would be a progression along an energy security continuum towards the ideal of a sustainable energy security approach.

In light of these parameters, this chapter will demonstrate that, due to different service proclivities, concepts of energy security had a varying impact on the operational level of defence policy during Labour's time in government and, as such, there were major inconsistencies between the declaratory and operational levels of policy in their approach to this particular issue. As such Allison's GPM proves to be an excellent explanatory tool in accounting for the differences in appreciation of energy issues between the different branches of the armed forces, who were willing or unwilling to use energy considerations to further their individual service goals as the situation demanded. For example, throughout this period the Royal Navy saw energy security considerations and their attendant economic implications as an important justification for its approach to military operations, as well as its procurement preferences. This manifested itself in a control paradigm approach, with a focus on securing access to these energy resources through the use of 'hard power'. In contrast, the Army was

not impacted by energy security considerations to any significant degree, with the structural and organisational challenges posed by the operations it embarked upon being the main topics of concern as it moved towards what became known as the 'Comprehensive Approach' to operations.[10] There were therefore definite sustainable security tendencies espoused in senior officer and doctrinal statements, with an appreciation of the need for greater inter-agency cooperation in the course of military operations. However, Army officers did not show any interest in energy matters, either in terms of the need to secure access to energy resources or in a desire to develop alternative energy technologies, so this movement towards sustainable security notions cannot be attributed to an appreciation of energy security considerations within the Army. As we shall see outlined in the main body of this chapter, the Development Concepts and Doctrine Centre (DCDC) (the body that produced strategic and operational doctrine for the Army) was responsible for any appreciation of energy issues in the period under examination.[11]

Similarly, the RAF began this time period with a considerable interest in maintaining its extant capabilities in the face of possible change and ultimately articulated the importance of the 'Comprehensive Approach', in line with the Army. Energy considerations were largely ignored, perhaps in part due to an understanding of the large consumption of fuel the RAF were responsible for on operations. However, the need to secure access to overseas energy resources became a pertinent justification for the continued funding of the RAF in the face of likely cuts following the 2010 General Election, with Dorman's time cycle model again providing an explanation in the form of a contraction of the armed forces' time cycles in the lead-up to the election. Thus, when the RAF chose to address energy issues, it displayed a control paradigm approach.

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[10] The 'Comprehensive Approach' can be defined as an approach to military operations that 'combines all levers of power – economic, developmental, diplomatic and military' to achieve a desired political objective. As such, there is the recognition that the 'armed forces do not work in isolation. We must use effectively all the levers available to Government: reconstruction and development, foreign diplomacy and the military. That has become known as a "comprehensive approach". Crucially – because it is these other efforts that will eventually bring lasting peace – the strategic military effort should be driven by political and economic needs, not the other way round'. See *Hansard,* HC Deb Volume 456, Column 398 (1 February 2007) and *Hansard,* HC Deb Volume 464, Column 709 (16 October 2007) for these statements from Secretary of State for Defence Des Browne. The 'Comprehensive Approach' was closely connected to the notion of an Effects-Based Approach to Operations (EBAO), which focussed on the precise application of force to achieve a desired effect rather than an apparently more traditional focus on 'a destruction-centric, attrition-based and linear approach to warfare'. An 'effects-based approach to operations seeks to marry the means with the ends by identifying the outcomes or strategic objectives desired in a campaign and then deriving the means required to achieve these outcomes'. Thus, the 'breakthrough in thinking comes in recognising that destruction is not an end in itself but a means to an end'. See Joshua Ho, 'The Dimensions of Effects Based Operations', *Defence Studies*, Vol. 5, No. 2 (2005) p.170 and for more information on the 'Comprehensive Approach' see JDCC, *The Comprehensive Approach Joint Discussion Note 4/05* (Shrivenham: JDCC 2006).

[11] See next page

The establishment of the DCDC in 1998 also contributed to discrepancies between approaches to energy security issues at the doctrinal level and in the statements of serving officers, and in such a way, again emphasises the utility of the GPM and the time cycle model in understanding developments at this level of defence policy. The DCDC was founded to produce joint doctrine that could be used by all three services in the course of operations.[12] Despite this, each service still had its own specific Warfare Centre responsible for developing independent service doctrine.[13] Thus, the DCDC often emphasised the importance of climate change and energy resource competition as conflict drivers within the doctrine it produced, in contrast to the general lack of emphasis on these from individual service publications. In terms of its relationship to declaratory policy, it dismissed the potential of alternative energy technologies in the near future in its *Strategic Trends* papers, contravening the governmental line in 2010, which, as we have seen, began to place much more emphasis on this. As we shall see, this can be accounted for by the longer term outlook of the DCDC (the particular time cycle it operated in), its relative independence and the fact it consisted of mainly military personnel who were likely to be inimical to any reduction in combat capability hastened by new energy technologies.

Another point to be taken into consideration was the fact that the DCDC was (and is) a constituent part of the MOD and therefore contained civilian as well as military personnel.[14] This was another factor that led to an earlier understanding of the twin conflict drivers of climate change and resource competition, as the civilian members of the DCDC had an input that was likely to offer a different perspective and appreciation of the security threats facing the United Kingdom that drew on information and experiences from other departments of government. Thus, the DCDC, in some respects, blurred the distinction between the declaratory and operational spheres of policy (certainly in its composition) and this accounted, in part, for its earlier appreciation of the twin conflict drivers of climate change

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[12] The DCDC was originally known as the Joint Doctrine and Concepts Centre (JDCC), which had been created following the 1998 Strategic Defence Review (SDR) as the department within the MoD responsible for the development of defence doctrine. The JDCC then became the DCDC in April 2006 with the stated role of becoming the 'Defence authority for doctrinal, conceptual and futures work'. The DCDC is an inter-service, Joint establishment headed by a two-star Serviceman with staff drawn from all three Armed Services and the Civil Service. For more information see *DCDC Website,* 'What We Do' (2012) accessed at http://www.mod.uk/DefenceInternet/MicroSite/DCDC/WhatWeDo on 4 May 2012.

[13] The Land Warfare Centre for the Army, the Air Warfare Centre for the RAF and the Maritime Warfare Centre for the Royal Navy.

[14] 'My staff numbers just over 50: 32 military, when we reach full strength ... and some 20 civilians ... We've also got a number of civilians: an Assistant Director with a policy background in the MoD who will have important links into the policy area and into other government departments across Whitehall: an Assistant Director Science and Technology; as well as a number of specialist civilians ...'. Interview with Major General Tony Milton, 'My Job: Director General Joint Doctrine And Concepts', *The RUSI Journal,* Vol. 145, No. 2 (2000) pp.15-16.

and resource competition, along with the concomitant military proclivity to address these issues through the application or deterrent effect of military force.

Finally, the reasons for Britain's involvement in the war in Iraq are studied to see whether the desire to secure energy resources was the most *significant* factor in the decision to invade Iraq and overthrow Saddam Hussein's regime. From this analysis we will see that access to Iraq's vast oil reserves was not the *main* reason for the decision to invade. However, it is inconceivable that the access provided to this important strategic resource that would be permitted through the ousting of Saddam Hussein was not countenanced in the decision to invade.

Operational Policy from 1997 to 2002

As outlined in the introduction to this chapter, we would expect to see energy security factors mentioned as justifications for the armed forces doctrinal, structural and procurement choices if the operational level of defence policy was effectively in line with declaratory policy. As regards the Royal Navy, we will see that its understanding of its likely roles did include the need to ensure energy security for the United Kingdom. As such, the Royal Navy remained in line with declaratory policy on the issue of energy security. In contrast, between 1997 and 2002, energy security issues proved to be of little concern to the British Army and the RAF and were effectively ignored as an issue for discussion. Why did this prove to be the case? Overall, we can see that Allison's GPM proves to be the best explanatory tool in this instance, with each service looking to put forward their own organizational and procurement concerns to government, as best they could. As such, energy security issues were of little importance to the Army and RAF as they did not provide sufficient justification for their desire to retain their hard power capabilities. There was also the assumption that expeditionary operations were likely to pose similar challenges wherever they took place geographically. In contrast, the Royal Navy was willing to emphasise the importance of energy security considerations as these highlighted the efficacy of the Royal Navy in upholding British economic interests abroad, and in turn the importance of the Royal Navy within defence policy as a whole. There were certainly sustainable security aspects contained within Royal Navy statements at this time (such as the Royal Navy's role in providing humanitarian assistance and Peace Support Operations) but these were not directly

attributable to energy security concerns.[15] As such there was a default control paradigm approach in line with that espoused at the declaratory level of policy, with no mention of the need to address the root causes of conflict drivers through Royal Navy activity.

Looking first at the reasons for the lack of impact of energy security concerns on the Army and RAF, we can see that one of the main points of contention for both services during the early part of Labour's time in power was over their likely future role in military operations. There appears to have been a fear amongst the British armed forces that Labour's desire for the military to be 'a force for good in the world' had the potential to relegate them to the status of a 'gendarmerie' – that is, a force 'designed exclusively for peace support operations ... crippled through an inability to dominate escalation or to apply military force decisively'.[16] In the same issue of *The RUSI Journal* as the above quotation was taken from, Brigadier A. C. I. Gadsby was keen to point out the utility of the tank in all the differing types of operations that the Army may be tasked with, stating that 'To use a slogan: 'Train High and you can Fight Low'. The opposite is patently not true'.[17] Similarly, in 1999 Air Chief Marshal (ACM) Sir John Allison was eager to highlight the need for an offensive war-fighting capability that would not be jeopardised by an errant focus on humanitarian and peace-keeping operations: 'Many of today's operations focus upon humanitarian and peace-keeping operations, for which air forces have great utility. But we need to continue to expect the unexpected and ensure our capabilities cover the entire spectrum of conflict'.[18] Writing in 2001, Air Vice Marshal Glenn Torpy continued this argument. He recognised that peace-keeping tasks were likely to follow an 'offensive war fighting posture' but that 'The importance of possessing an effective offensive capability is obvious in military terms, but it also has broader implications. At the end of the day, it is offensive action – or the threat of it – that ultimately changes the course of events. As a consequence, those nations that demonstrate a willingness to participate in offensive operations ... generally have a louder say as to how the crisis should be handled, politically and militarily'.[19] Finally, Brigadier Mungo Melvin drew attention to his belief that tanks would remain an important component of any future balanced military force, again signifying the desire to maintain this type of weapon

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[15] MOD, *BR 1806: British Maritime Doctrine – Second Edition* (London: TSO, 1999) pp.67-68.
[16] Richard Cobbold, 'A joint maritime-based expeditionary capability' *The RUSI Journal*, Vol. 142, No. 4 (1997).
[17] A. C. I. Gadsby, 'Do we still need tanks?', *The RUSI Journal*, Vol. 142, No. 4 (1997).
[18] Air Chief Marshal Sir John Allison, '*The Royal Air Force In An Era Of Change*', *The RUSI Journal,* Vol. 144, No. 1 (1999) p.43.
[19] Air Vice-Marshal G. L. Torpy, 'Future British Operations', *The RUSI Journal,* Vol. 146, No. 1 (2001) p.9, p.11.

system as peace support operations became more prevalent: 'Our armoured forces still represent a very powerful and flexible asset in war. They are the principal means of achieving overmatch against an adversary in open terrain'.[20]

From this evidence, we can see that the RAF and Army were keen to put forward the requirement to retain a high-end war fighting capability in the context of the increasing likelihood of humanitarian and stabilisation missions.[21] This could be seen as a desire to maintain the inherent organizational structure and ethos of the armed services in the face of seemingly novel operational challenges. As such, Allison's GPM can be best used as an explanatory tool to account for this particular concern. Both services were interested in retaining the essential weapons systems that gave them their individual service identities, as has often been the case historically, and this led to a failure to recognise the important role that the declaratory level of policy had envisaged the military playing in terms of maintaining energy security for the United Kingdom.

Following on from this, the significant overseas military deployments in this period in Bosnia, Kosovo and Sierra Leone certainly had little to do with energy security. Therefore, there was the apparent assumption that expeditionary operations were likely to pose similar challenges no matter where they took place geographically. Certainly, Lord Guthrie (CGS from 1994 to 1997 and CDS from 1997 to 2001) commented that the Infantry regiments of the British Army were used to operating in many different environments post-1945 with operations in such diverse geographical areas as Palestine, Malaya, Borneo, Aden, Korea, the Falkland Islands, Kuwait and Iraq. There was therefore an assumption, drawn from previous operational experiences, that the Army could adapt to any conditions that it was sent to operate in.[22] As such, there was certainly no mention in any statements or publications from serving officers from the Army or RAF at the time of the need to ensure that the military had equipment that was geared towards different environments, including the desert conditions that the military would likely be operating in if they were to be used to secure energy resources for the UK. Indeed, the 2001 Saif Sareea exercise demonstrated that certain weapons platforms were ill-suited to desert warfare.[23] In particular, the Challenger 2 tanks

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[20] Brigadier R. A. M. S. Melvin, 'Continuity and Change: How British Army Doctrine is Evolving to Match the Balanced Force', *The RUSI Journal,* Vol. 147, No. 4 (2002) p.43.

[21] Major General J. P. Kiszely, 'Seizing The Advantage, Seizing The Initiative – New Opportunities, New Challenges' *The RUSI Journal*, Vol. 145, No. 4 (2000) p.4: 'An increasing proportion of these deployments is also likely to be for peace support operations rather than warfighting. Each is likely to be unique in character and circumstances, and to demand a unique approach to seizing and holding the initiative'.

[22] Interview with Lord Guthrie of Craigiebank, 15 September 2011.

[23] *Hansard,* HC Deb Volume 374, Columns 376-7W (8 November 2001) Defence Minister Adam Ingram: 'The average rate of helicopter serviceability achieved during the whole period of Exercise Saif Sareea was 54.5 per

deployed in the exercise had reliability problems with the air filters they employed, with these having to be replaced every four hours, rather than the fourteen hour replacement rate that was originally envisaged.[24] Certainly, as late as 2009, CGS Sir Richard Dannatt commented that in 2003 'the Army had changed little in terms of structure, training focus and ethos from that which had stood ready to face the 3rd Shock Army on the plains of Westphalia during the Cold War'.[25] His explanation for this was the continued importance that was placed by the Army on the ability to fight a high-intensity conflict following the end of the Cold War, despite the peace support operations they had been deployed on in this period.[26] As such, we can see again the significance to the Army of maintaining their 'hard power' capabilities, with apparently little credence attached to which theatres of conflict they would be used in.

Another factor in the lack of reference to energy security issues as a justification for the Army's procurement and organizational preferences was the prevalence of Urgent Operational Requirements (UORs) to fill any capability gap. The fact that these were used in Kosovo showed that the military did not always have the sufficient equipment necessary to operate in areas that were identified as key areas of responsibility in the *SDR* and had no relation to energy security concerns.[27] Thus, there seemed to be the expectation that any operations in desert conditions would lead to the standard equipment being supplemented by UORs. Indeed, Lord Guthrie remarked that, whilst there had always been the need for UORs

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cent'. See National Audit Office, *Ministry of Defence Exercise Saif Sareea II: Report By The Comptroller and Auditor General*, HC 1097, Session 2001-2001 (London: TSO, 2002) pp.15-20.

[24] *Hansard,* HC Deb Volume 374, Columns 25-6W (5 November 2001) Secretary of State for Defence Geoff Hoon: 'The designed life of the Challenger 2 Main Battle Tank air filter was 14 hours when used in extreme desert conditions' and *Hansard,* HC Deb Volume 375, Columns 907-8W (28 November 2001) Defence Minister Adam Ingram: 'During the first phase of Exercise Saif Sareea 2, the life of the Challenger 2 Main Battle Tank air filter reported away from theatre was in the region of four hours'.

[25] CGS General Sir Richard Dannatt, *Address to the Institute of Public Policy Research* (19 January 2009) accessed at http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/ChiefStaff/20090119AddressToTheInstituteForPublicPolicyResearch.htm on 4 May 2012.

[26] Ibid. 'Our training depots, Staff Colleges, and research and development assets were all focussed on further developing the physical, moral and conceptual components that make up what we term as our 'fighting power', and doing so in the context of a possible future requirement to fight a large scale battle of this nature'.

[27] Vice Admiral Sir Jeremy Blackham: [obtained through UORs were] ... temporary field accommodation ... [a] tactical navigation target location system for the air reconnaissance combat vehicle; some additional GPS handsets; snow and ice clearance equipment; the improved tented camp ... some quarrying equipment ... a range of tactical radios ... mobility water vehicles because we envisaged having to have a large number of people in place for quite a long period of time and we had to supply that'. House of Commons Defence Committee, *Fourteenth Report – Lessons of Kosovo: Minutes of Evidence, 12 April 2000,* HC. 347-II, session 1999-2000 (London: TSO, 2000) answer to question 566.

to cater for unexpected operational requirements, these did certainly become more of a norm for the military as Labour's time in government progressed.[28]

Given this evidence, we can perceive problems of policy formulation and policy implementation in overall British defence policy consistent with Dorman's time cycle model. The declaratory level may have wished to embark upon a more marked expeditionary approach but this did not mean that the military would necessarily have the equipment necessary to fulfil the roles they had been tasked to perform. Hence, the shorter-term defence aspirations outlined by the government did not always match up with the equipment capabilities of the armed forces. This also translated into issues regarding the pace of overseas deployments for the armed forces. As early as 2000, CDS Sir Charles Guthrie was alluding to the possibility of overstretch affecting future military capability.[29] This concern was again highlighted by his successor, CDS Sir Michael Boyce, in 2002 and First Sea Lord (FSL) Admiral Sir Alan West in 2004.[30]

In contrast to the aforementioned failure to address energy security as an appropriate issue for concern, the Royal Navy certainly did see it as a matter of interest in this time period. For example, the second edition of the Royal Navy's *British Maritime Doctrine* outlined the economic importance of overseas oil and gas resources in understanding the overall strategic context that the Royal Navy was operating in: 'Oil is a diminishing resource and will continue to be a highly attractive commodity of which states will wish to take full advantage'.[31] The Armilla patrol that maintained a constant British naval presence in the Persian Gulf was also outlined as 'an indication of wider British interests'.[32] Similarly, in the year 2000, Commander Michael Evans highlighted the growing importance of the Caucasus' large hydrocarbon reserves and the concomitant strategic importance of the area for Europe as a whole: 'For reasons of security, coupled with the impact that oil and natural gas will have for the future global economy, the Black Sea and the Caucasus will become important

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[28] Interview with Lord Guthrie of Craigiebank, 15 September 2011.

[29] General Sir Charles Guthrie, 'Bringing The Armed Forces Into A New Millennium', *The RUSI Journal,* Vol. 145, No. 1 (2000) p. 1.

[30] CDS Sir Michael Boyce: '[in answer to question whether budgetary, quality of life and operational pressures on military have increased whilst he was CDS] Yes, they have. It has been an extraordinarily busy 18 months. We have had a variety of operations to undertake both outside this country ... as well as domestic pressures ... So it has been a very busy time for our people ...'. House of Commons Defence Committee, *Minutes of Evidence, 6 November 2002,* HC 1232-ii, session 2001-2002 (London: TSO, 2002) answer to question 135 and FSL Admiral Sir Alan West: 'The pressure we kept putting on the number in our ships I have not been able to maintain ... Out of my total trained strength of 37,370 whatever it is, I have got about 1,290 short, which is still a reasonable percentage. It is close enough not to worry too much but it masks some really serious gaps'. House of Commons Defence Committee, *Fifth Report – Defence White Paper 2003: Minutes of Evidence, 24 March 2004*, HC. 465-II, session 2003-2004 (London: TSO, 2004) answer to question 35.

[31] *BR1806: British Maritime Doctrine – Second Edition*, p.16.

[32] Ibid. p.49.

concerns. An attendant disregard for the risks which instability poses in this region will have a negative impact on Europe'.[33] This highlighting of energy security issues can be attributed to the fact that the need to secure access to overseas energy resources helped to bolster the perceived importance of the Royal Navy to the government. Certainly, despite claims to the contrary, the fact that the economic dimension of the maritime environment (with the attendant importance of maritime trade) was addressed as the first strategic dimension in the second edition of *British Maritime Doctrine* shows that the Royal Navy was eager to underline its importance to Britain in this respect.[34] As Ian Bellany commented in *Reviewing Britain's Defence*, the Navy had been successful in arguing its particular strategic case in the 1980s and early 1990s due to the fact that it effectively 'paid its way' economically.[35] Hence, we can see a continuation of this Royal Navy approach in the first five years of the Labour administration.

In addition, in contrast to the RAF and Army, the Royal Navy appeared to be better prepared for the apparent movement towards humanitarian and peace support tasks. For example, the second edition of *British Maritime Doctrine* outlined three main applications of maritime power. These were the military, constabulary and benign dimensions of operations, with the latter two aspects including peacekeeping, disaster relief and peace-building operations within their spheres of activity.[36] Indeed, the theoretical demarcation of naval operations into these three separate dimensions had previously been outlined in *The Fundamentals of British Maritime Doctrine* in 1995, before Labour had come to power.[37] Thus, it would appear that the Royal Navy was eager to show the full range of capabilities its forces could provide in the full spectrum of likely operations. This was likely to be due to the consideration that greater involvement in 'benign' and 'constabulary' operations did not necessarily preclude the Royal Navy from procuring the types of ships it desired, as it had performed these types of operations with ships designed to possess high-end war-fighting capabilities in the past.[38] Thus, despite the greater acceptance of the future need to be involved in these types of operations there was still no articulation of the need to combat the

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[33] Commander Michael C. Evans, 'The Caucasus And The Black Sea: A Strategic Challenge For Europe', *The RUSI Journal*, Vol. 145, No. 2 (2000) p.60.
[34] *BR1806: British Maritime Doctrine – Second Edition,* p.14.
[35] *Reviewing Britain's Defence,* pp.77-78.
[36] *BR1806: British Maritime Doctrine – Second Edition,* p.75.
[37] MOD, *The Fundamentals of British Maritime Doctrine: BR 1806* (London: HMSO, 1995) p.105
[38] Examples include the evacuation of British nationals from Yemen in 1986, disaster relief operations in response to Hurricane Mitch in Central America in November 1998 and peace support operations during the break-up of Yugoslavia in the mid-1990s. See *BR1806: British Maritime Doctrine – Second Edition*, p.59, p.66, p.69.

drivers of climate change and resources competition through preventative measures such as the adoption of more energy-efficient fuels. As such, a control paradigm approach to energy security remained the default attitude within the Royal Navy.

Operational Policy from 2003 to 2010

The Development, Concepts and Doctrine Centre (DCDC) *Strategic Trends* Programme

The DCDC (known as the JDCC until 2006) played a vital role in formulating British military doctrine following its creation in 1998. As mentioned in the introduction to this chapter, it published the myriad of JDPs that aimed to meld the differing concerns of the three branches of the armed forces into a coherent body of doctrine for use by military commanders when planning for operations. Also, an important point to note was the fact that it contained both military and civilian personnel and consequently blurred the lines between the declaratory and operational sphere of policy to some degree, despite the fact its stated aim was to produce doctrine specifically for the armed forces.

In view of these factors, this section will analyse the DCDC papers that provided the overall strategic context for operational defence policy from 2003 onwards. From this examination we can then establish the impact that energy security considerations had on the long-term operational outlook of the armed forces in this period. We will see that energy security considerations in the form of the recognition of the twin drivers of climate change and competition for resources became increasingly important topics for the DCDC's *Strategic Trends* programme between 2003 and 2010. This was due to the fact that this programme was given the scope to be able to look from twenty to thirty years ahead at the likely future global security challenges and, in the process, liaise with key independent strategic thinkers from the civilian sphere (as well as already having input from civil servants who made up a significant proportion of its complement of staff).[39] Thus, it operated with different concerns to those demonstrated at other levels of doctrine produced by the DCDC, with a degree of independence to the contemporaneous concerns of the government and armed forces at the time and in an ultimately different time cycle for the government of the day, being free from the need to address immediate political concerns (at least in comparison

[39] DCDC, *The DCDC Global Strategic Trends Programme 2007-2036* (Shrivenham: DCDC, 2007) p.i and JDCC, *Strategic Trends – Methodology, Key Findings and Shocks* (Shrivenham: JDCC, 2003) p.1-4.

to party politics in the United Kingdom).[40] However, the preferred response to these drivers was not preventative, instead reflecting the default control paradigm approach in all versions of the document. This was consistent with declaratory policy until 2010 when the lack of weight attached to preventative responses to the challenges posed by climate change and energy resource competition in the 2010 document highlighted the fact that the declaratory and operational levels of defence policy were beginning to diverge in their appreciation of energy security issues. As outlined in Chapter Three, the contraction of the declaratory sphere's time cycle in the run-up to the 2010 general election appears to have led it to highlight the ways in which it would cut carbon emissions in defence. In opposition to this, the DCDC's *Strategic Trends – Out to 2040* and *Future Character of Conflict* did not see an alternative technology or energy efficient response to these drivers as being feasible in the near future and noted that the prevention of future conflicts would remain difficult to measure in any meaningful way.[41] Thus, Dorman's time cycle model accounts firstly for the appreciation of longer-term strategic trends amongst the DCDC in comparison to the armed forces in general as well as the ultimate differences between the 2010 DCDC papers and the trinity of *Climate Change Strategy* papers published at the declaratory level of policy.[42]

The first key document to mention is *Strategic Trends – Methodology, Key Findings and Shocks*, published by the then JDCC in 2003.[43] This was a pivotal paper in the formulation of British operational defence doctrine in many ways, outlining the 'long-term conceptual underpinning' for doctrine by analysing the potential long-term trends and drivers in the international security environment. The overall analysis was consistent with some of the theoretical tenets of the ORG's sustainable security paradigm with climate change and energy resource competition seen as important physical conflict drivers in the period from

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[40] *The DCDC Global Strategic Trends Programme 2007-2036,* p.x. Of course, military doctrine can never be totally understood without a degree of insight into the political context in which it has been formulated. Andrew Dorman has pointed this out, as referenced in Oliver J. Daddow, 'British Military Doctrine in the 1980s and 1990s', *Defence Studies,* Vol. 3, Issue 3 (2003) p.108.

[41] 'Energy efficient technologies *will* become available, although a breakthrough in alternative forms of energy that reduces dependency on hydrocarbons is *unlikely'* and 'Technology *will* provide partial solutions for both adapting to, and mitigating the effects of, climate change. However, it is *unlikely* that, by 2040, technology will have produced low emission energy sources capable of providing the majority of the energy demanded'. DCDC, *Global Strategic Trends – Out to 2040* (Shrivenham: DCDC, 2010) p.13, p.33 and '... prevention has practical limits. It is also difficult to quantify and investment here does not guarantee that we will be able to avoid conflict altogether. Indeed, soft power is at its most convincing when underpinned by hard power. Prevention requires timely, informed decision making (optimised through frequent practice) and the ability to act and react faster than the situation is unfolding. However, experience indicates that none of these can be assumed'. DCDC, *Future Character of Conflict* (Shrivenham: DCDC, 2010) p.36.

[42] MOD, *Defence in a Changing Climate* (MOD, 2010); MOD, *MOD Climate Change Strategy 2010* (MOD, 2010); MOD, *MOD Climate Change Delivery Plan* (MOD, 2010).

[43] JDCC, *Strategic Trends – Methodology, Key Findings and Shocks* (Shrivenham: JDCC, 2003).

publication up until 2030. Still, the response to these drivers was not preventative, but rather alluded to a control paradigm response whereby access to these resources would need to be secured through military action. For example, the document stated that: '... it is probable that global warming will increase the vulnerability of those fragile states that are not able to manage the consequences of the change. This is likely to increase the demands for UK military participation in humanitarian assistance and humanitarian disaster relief operations' and 'Global demand for energy resources will increase significantly due primarily to development and industrialisation in South and East Asia. There is little prospect of revolutionary breakthroughs in alternative supplies. Renewable and nuclear energy sources will remain of moderate importance but fossil fuels, and particularly oil and gas, will remain dominant. These will stay the key strategic resources as the main areas of supply and demand are separate. Their location and transport routes will therefore be security drivers for the developed and developing nations alike'.[44]

It is appropriate to mention here the *Strategic Trends* publication date of 2003 and the fact that it took 5 years for the JDCC to publish a document of this kind. The reasons for the time lag between the JDCC's creation in 1998 and this publication may be ascribed to the fact that work of this kind was classified up until 2003 as the paper states '**Strategic Trends** is the first publicly available product of the Strategic Analysis Programme'.[45] The document was meant to have informed the MOD in a follow-up to the 2001 paper *The Future Strategic Context for Defence* and explained why the doctrinal appreciation of the underlying roots of international conflict in *Strategic Trends* mirrors much of that displayed in that document.[46] This is likely to be due, in large part, to the fact that the JDCC and larger MOD (of which the DCDC is a part) were able to liaise whilst in the process of formulating each document as both contain civilian and military personnel. Thus, we can see that the declaratory and operational levels of policy had remained in line with one another up until this point, at least in regard to the articulation of likely causes of global insecurity and the potential response to these threats.[47]

The next document to be published under the strategic trends moniker was *The DCDC Global Strategic Trends Programme 2007-2036*. This examined in greater depth the future strategic environment outlined in the previous document and was referenced by Paul Rogers

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[44] Ibid. p.1-11.
[45] Ibid. 'Conditions of release' section.
[46] *Strategic Trends – Methodology, Key Findings and Shocks,* p.1-1.
[47] See Chapter Three.

as a possible indication of changes in the military approach to security issues.[48] Climate change was given even greater prominence in this document, in response to the increased attention from 2003 devoted to this issue in the overall governmental literature on energy policy as well as the effect of the 2006 Stern Review on the prominence of climate change within British political discourse.[49] Indeed, climate change was defined as a 'ring road' issue (along with globalisation and global economic inequality).[50] This meant this issue was considered to have the capability to engender pervasive problems in the global strategic environment for approximately the next thirty years. Similarly, competition for energy resources such as oil and gas was given a great deal of attention and was consistently outlined as a likely cause of tension in the future: 'Economic growth and increased consumption ***will*** result in greater demand and competition for essential resources. Demand for energy is ***likely*** to grow by more than half again by 2035 and fossil fuels ***will*** have to meet more than 80% of this increase'.[51] As in the declaratory sphere, the Middle East was given a great deal of emphasis due to its large fossil fuel reserves, with the proviso that 'substantial operational commitments' would be probable so as to bolster access to key reserves and *contain* instability.[52] This suggested a control paradigm approach to energy security in the military and echoed the words of the ORG's James Kemp when he stated that the UK has recently been greatly influenced by the US policy of maintaining US economic, military and political dominance through controlling access to key fossil fuel resources.[53]

Interestingly, it was expected that alternative sources of energy would need to be exploited in the civilian sphere so as to alleviate the increased energy competition of the future: 'At some stage, choices ***will*** need to be made in developed societies about the economic viability of vehicles and systems that are reliant on oil at a time when other sources of energy, such as liquefied coal or generated electricity, ***may*** be more cost effective and environmentally acceptable. This consideration would have significant implications across Defence, although some platforms and systems ***may*** have to be specifically designated as prioritized oil users until technology allows a practical alternative'.[54] We can see from this

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[48] Paul Rogers, *Why We're Losing the War on Terror* (London: Polity Press, 2008) p.150.
[49] See DTI, *Our Energy Future: Creating a Low Carbon Economy,* Cm. 5761 (London: TSO, 2003) p.3; DTI, *The Energy Challenge: Energy Review Report 2006,* Cm. 6887 (London: TSO, 2006) p.4 and DTI, *Meeting the Energy Challenge: a White Paper on Energy,* Cm. 7124 (London: TSO, 2007) p.4 and Nicholas Stern, *The Stern Review Report on the Economics of Climate Change* (HM Treasury, 2006)
[50] *The DCDC Global Strategic Trends Programme 2007-2036,* p.xiii.
[51] Ibid. p.7.
[52] Ibid. p.53.
[53] James Kemp, 'Sustainable Peace and Security', *Compass Thinkpiece 18* (November 2006) p.2.
[54] *The DCDC Global Strategic Trends Programme 2007-2036,* p.30.

comment that the DCDC did not expect the military to have to gravitate towards greater use of alternative energy sources in the near future, particularly in regard to vehicles, mainly because of the lack of viable options for that course of action at the time. This was consistent with government policy at the time of publication, with a recognition that departmental hydrocarbon usage would need to be reduced over time but still no major emphasis placed on any desire for the armed forces in the course of operations to adopt preventative responses to the drivers of climate change and competition for energy resources.[55]

The last two *Strategic Trends* papers from the DCDC were published in 2010. These were *Global Strategic Trends – Out to 2040* and *Future Character of Conflict*. Both documents continued to give prominence to climate change and competition for energy resources and outlined the belief that both issues would potentially lead to conflict in hitherto unexplored areas: 'The search for alternative sources of energy ... *will* become more urgent ... Consequently the exploration of extreme environments such as: space; the Polar regions; the deep ocean; and deep underground regions is *likely* to increase'. The likelihood that the move towards alternative energy sources could lead to conflict in new areas, as well as presaging the economic collapse of certain fossil-fuel exporting states, was also outlined in depth in *Global Strategic Trends – Out to 2040.*[56] Also, it was surmised that developments in alternative energy technologies would not be enough to replace reliance on fossil fuels.[57]

Similarly, the Middle East continued to be referenced as being of central importance to global energy security and Iran was outlined as an emerging threat to security in the region. The 2010 DCDC paper commented that Iran was likely to 'use economic levers to achieve geopolitical ends more frequently' as energy resources became more scarce.[58] In this situation, economic pressure was considered unlikely to have the same utility as in previous years, indicating that other measures, such as military force, may need to be used in response to this particular situation.[59] This line of thought was continued in *Future Character of Conflict* when it stated that by 2029 'The UK will be critically dependent upon energy imports and securing them will be non-discretionary'.[60] Still, a preventative approach to conflict was examined in detail in this document and outlined as being an important tool in

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[55] See MOD, *Defence Plan 2007 (*MOD, 2007) p.17: 'reduce non-operational carbon (CO2) emissions by 9% by April 2007'.
[56] *Global Strategic Trends – Out to 2040*, p.92.
[57] Ibid. P.13 and p.33.
[58] Ibid. p.123.
[59] Ibid.
[60] *Future Character of Conflict,* p.6.

achieving the UK's strategic ends.[61] Nevertheless, deterrence (not a sustainable security tenet) was seen as being a key sub-set of conflict prevention, there was no mention of the development of alternative energy technologies to alleviate climate change or resource competition issues and a balance of power approach was highlighted as a means of maintaining energy security goals.[62] Therefore, one can ascertain from this that the DCDC perceived that the United Kingdom would adopt a control paradigm approach in order to ensure energy security in the future.

In sum, we can see that the recognition of energy security and climate change as key issues for the military remained constant in the *Strategic Trends* documentation from 2003 onwards, with more detail being outlined to the potential effects of these conflict drivers in the latter two DCDC papers.[63] Also, as already mentioned in the introduction to this section, the differences between the declaratory and DCDC *Strategic Trends* line in the relevant 2010 papers can be attributed to the increasing importance of environmental issues to the Labour government as opposed to the DCDC's alternate opinion that climate change and resource competition were important drivers but not issues that could ultimately be prevented through the application of new energy technologies, at least in the near future. Thus, Allison's GPM explains the evidence of the previous chapter that saw the declaratory level of policy wishing to emphasise its environmental credentials close to an election, whilst the operational level wished to put forward an approach that was more akin to the types of (military) responses the British armed forces could provide.

Views of the Chiefs of the Defence Staff (CDS) from 2003 to 2010

Regarding the published views of the two Chiefs of the Defence Staff (the professional heads of the UK armed forces and senior military advisers to the government) from 2003 onwards, we can see that the need to maintain access to key energy resources became an increasingly important aspect of discussion for each incumbent CDS. For example, in 2003 General Sir Michael Walker commented on the continued importance of the Middle East for the UK due to its energy resources.[64] However, (the now) Lord Walker has emphasised that energy

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[61] Ibid. p.27.
[62] Ibid. pp.27-28 and p.A-2.
[63] 2003's 'Strategic Trends' is only 32 pages in length, in comparison to the 106 pages of the 2007 Strategic Trends paper and the 169 pages of the 2010 paper.
[64] General Sir Michael Walker, 'Delivering Security in a Changing World: Annual Chief of the Defence Staff Lecture', *The RUSI Journal,* Vol. 149, No. 1 (2004) p.37: 'The Gulf will remain a region of considerable strategic importance, with its energy supplies being crucial to the world economy'.

security considerations were not seen as an important issue for the military during his time as CDS. Energy issues were always of some interest due to logistical considerations but the armed forces were never put under pressure from the government to address the issue of the development of alternative energy technologies or indeed pay any great attention to planning operations to secure energy resources. Certainly, the issue of climate change was not an issue of concern or a 'driving force' and was only addressed as legislation was passed by the government.[65] This detail aids us in elucidating why ACM Sir Jock Stirrup increasingly referred to these issues following his appointment as CDS in 2006. The publication of the Stern Report, the attendant creation of the Office of Climate Change (OCC) and the increased discussion of climate change in British political discourse in 2006 had made energy issues generally more prominent. As such, the government would have been eager for its senior military adviser to show an appreciation of this. Therefore, in the annual CDS lecture given to the Royal United Service Institute (RUSI) in 2006 he outlined the dangers of competition for ever scarcer energy resources and the likely security effects of climate change: 'Climate change and growing competition for scarce resources are together likely to increase the incidence of humanitarian crises ... The areas most at risk – the Middle East, South Asia and the Sahara belt – are already prone to instability; and they are strategically important to the UK ... we must also consider our response should prevention fail'.[66] Indeed, Jock Stirrup became the first officer of seniority within the British military establishment to address the issue of climate change in depth in 2007 when he addressed its potential as a conflict driver in a speech at Chatham House. He envisaged that energy security concerns could be alleviated by the development of a new generation of nuclear power plants in the UK: 'We can promote energy independence while at the same time reducing carbon footprint by increasing the reliance on civil nuclear power generation. The non-proliferation treaty enshrines the right to the necessary technology. But current experience shows us how difficult it can be to separate civil nuclear programmes unequivocally from the pursuit of nuclear weapons so one of the responses to climate change may itself add to the security risks that we face'[67] In contrast to the approach in the operational doctrine (as we shall see later in

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[65] Interview with Lord Walker of Aldringham, 17 March 2011. The interview was conducted via telephone. He was CGS between 2000 and 2003 and CDS between 2003 and 2006.

[66] Air Chief Marshal Sir Jock Stirrup, 'British Defence In A Changing World', *The RUSI Journal*, Vol. 152, No. 1 (2007) p.22.

[67] Air Chief Marshal Sir Jock Stirrup, 'Climate Change – Politics Vs Economics', *Speech made at Chatham House* (25 June 2007) accessed at http://webarchive.nationalarchives.gov.uk/20081120170436/http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/ChiefStaff/20070625ClimateChangePoliticsVsEconomics.htm on 4 May 2012.

this chapter), he also foresaw that the development of renewable sources of energy to combat climate change and the reliance on fossil fuels would also be in the military's interest as it had the potential to alleviate supply issues: 'And let me take one other example, finding alternative and renewable sources of power for the armed forces is clearly attractive from an environmental standpoint but it could also significantly reduce our reliance on vulnerable supply chains'.[68] Thus, there was a recognition from the last incumbent CDS under Labour of the potential efficacy of alternative energy technology in combating climate change, as well as in improving military logistics. This tallied with the increased emphasis on emissions reduction targets within the MOD's *Defence Plans* at this time and presaged the *Climate Change Strategy* of 2008. However, this policy line was not to be translated into the individual outlooks of each of the three services, again showing the efficacy of Allison's GPM in the analysis of energy security's impact at this level of defence policy.

The Effect of Energy Security Considerations on the Royal Navy from 2003 to 2010

When analysing the doctrine produced by and for the Royal Navy between 2003 and 2010, as well as statements from senior serving officers, we can see that energy security continued to act as an important justification for the Royal Navy's preferred procurement options. As already mentioned in this chapter, the use of energy security examples helped the Royal Navy demonstrate its importance to the British economy in general and this factor became of even more significance as energy and climate change issues began to grow in political importance following the 2003 White Paper on energy, the 2006 Stern Review on climate change and the creation of the DECC in 2008. For example, the third edition of *British Maritime Doctrine* (published in 2004) continued in the vein of the second edition of the same document by again alluding to the importance of the Royal Navy in ensuring Britain's continued access to overseas oil supplies.[69] Similarly, 2005's *The importance of maritime trade* alluded to the role the Royal Navy continued to play in 'Keeping the sea lanes open' and in particular outlined the increasing importance of imported oil and gas to the United Kingdom.[70]

The *Future Maritime Operational Concept* (FMOC) of 2007 displayed the fact that the issue of energy security received greater prominence in Royal Navy doctrine at this time, in comparison to the British Army or the Royal Air Force. Competition for energy resources

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[68] Ibid.
[69] MOD, *BR1806: British Maritime Doctrine – Third Edition* (London: TSO, 2004) p.20.
[70] MOD, *The importance of maritime trade* (Royal Navy, 2005).

was mentioned as a potential key determinant of conflict in the future, with reference to other potential conflict drivers: 'The intensifying competition for resources, particularly energy, raw materials and possibly food, as well as rapid population growth and demographic imbalances, especially in littoral areas, have the capacity to threaten prosperity, stability and security at global, regional and national levels'.[71] Similarly, there was a recognition of the likely impact of climate change on the global security situation: 'Owing to climate change and the increasing exploitation of marginal areas for human settlement and exploitation, the impact of natural events will be progressively magnified'.[72] Thus, in line with DCDC's strategic trends analysis, there was the increasing recognition that these drivers of conflict (climate change and competition for resources) would create new challenges for the military.

However, the responses to these security challenges adhered primarily to control paradigm tenets. The FMOC outlined the belief that there would be greater oceanic competition as offshore oil and gas reserves are exploited, which could potentially lead to greater incidence of conflict: 'The high seas, the deep ocean and the Polar regions are likely to become areas of increased competition as advanced technology, increased accessibility and resource pressure encourage more intensive exploitation by states and commercial interests. Competition will centre on fishing, deep sea mining and the extraction of oil and gas'.[73] The deduction from this was that the UK could potentially be involved in state-on-state warfare and therefore required significant power projection capabilities to deter and defeat potential enemies: 'The risk of state-on-state confrontation and conflict from 2015-18 will require UK maritime forces to remain benchmarked at the war-fighting level, with a readiness profile and balanced force structure that can deter, counter and defeat a substantial enemy at sea, probably as part of an alliance or coalition'.[74]

The need for continued protection of important maritime transit routes was also noted: 'Increased perceived and actual threats to Sea Lines of Communication (SLOCs) will require constant vigilance and dedicated protection for essential infrastructure, ports and anchorages and shipping cargoes. Most of the world's trade, by bulk (particularly energy), will continue to transit sea areas adjacent to unstable countries and through choke points such as the Suez and Panama Canals and the Straits of Hormuz and the Malacca straits'. Hence, as we have seen throughout this chapter, the naval level of operational policy remained predisposed to a control paradigm approach to securing access to key fossil fuel resources through purely

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[71] MOD, *Future Maritime Operational Concept 2007* (Shrivenham: DCDC, 2007) p.1-3.
[72] Ibid. p.1-5.
[73] Ibid. p.1-4.
[74] Ibid.

military means. This would require ships primed for hard power projection, such as the two new Queen Elizabeth class aircraft carriers that (at the time) were due to enter service in 2014 and 2016 respectively. Indeed, much emphasis was placed on the importance of what were termed 'Carrier Strike Task Groups' (CSTGs) and it was considered that these would be important for 'controlling and exploiting every dimension of the Maritime environment and for projecting power against the Land'.[75] Therefore, it seemed the arguments outlined above helped to justify the Carriers continued development despite the then rising costs and continued delays in construction.[76] Indeed, their development was considered by Paul Rogers to be an important indicator of the fact that the Navy was still wedded to notions of a control paradigm.[77]

Despite the dominant control paradigm approach to energy security concerns, there was a movement towards sustainable security tenets in terms of the recognition of the importance of what were termed Other Government Departments (OGD), as well as international cooperation in maintaining Maritime Security: 'the principal objectives of Maritime Security Operations (MSO), coordinated with OGD and international partners, are to deter and prevent illegal acts, contribute to the provision of a safe maritime environment, and hence reduce the threat of harm to the UK by dealing with risks at range from the UK'. Thus, this was a positive step that was also to be outlined by the two other branches of the armed forces and in this particular instance was related to energy security considerations.[78] Its adoption indicated the emerging importance of the idea of the 'Comprehensive Approach' to military operations, garnered from British operational experiences in a variety of conflicts since 1997.[79]

Still, despite this, the response to climate change outlined in the FMOC did not mention any desire to move towards energy efficient or renewable energy solutions within the navy. It merely highlighted the possibilities that climate change could create for action in

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[75] Ibid.p.1-18.

[76] 'MoD halts production of aircraft carriers in new blow for Royal Navy', *Times Online* (December 11 2008) accessed at http://www.timesonline.co.uk/tol/news/uk/article5324649.ece on 4 October 2011. The Secretary of State for Defence John Hutton announced that after a delay of two years in construction of the aircraft carriers, there would be a further two year postponement.

[77] See Paul Rogers, 'Big boats and bigger skimmers: determining Britain's role in the Long War', *International Affairs*, Vol. 82, Iss. 4 (2006).

[78] *Future Maritime Operational Concept 2007*, page 1-7: '**Comprehensive and Effects-Based Approaches.** The interdependence of the global economy and community, the emergence of serious trans-national issues (including terrorism, migration, climate change and resource competition) ... will continue to make it impossible to ignore a wide range of challenging, interrelated problems and contingencies'.

[79] Ibid. page 1-8: '*Maritime forces require the means to inter-operate with OGDs, Non-Governmental Organisations (NGOs) and other civilian agencies, as well as with potential multi-national partners and ad-hoc coalitions, including those that have not adopted an EBA'.*

Polar regions: 'The progressive thawing of the North polar ice-cap, the opening of the North-East and North-West Passages and increased accessibility across the top of the world will introduce new sources of risk and opportunity, as the topography of the region alters'.[80] Thus, the twin energy security drivers were recognised but military solutions were the primary actions proposed, notwithstanding the adoption of the sustainable security principle of increased engagement with OGDs and NGOs so as to 'exploit a harmonised coordination of effort'.[81]

In addition to the impact of energy security issues at the doctrinal level, we can also see its impact in statements made by senior officers within this period. For instance, FSL Sir Jonathon Band highlighted his appreciation of the continued supply of energy resources to the UK in a speech made in 2006, and mentioned the future need to protect the UK's offshore wind farms from attack.[82] The speech made no real attempt to call for sustainable security solutions to these issues and was, in essence, a justification of the continued need to have a Royal Navy with the ability to project power to secure British interests. This slant was continued in 2008 with an article published in the 'Defence Studies' journal. In 'Naval Ethos – the Challenge in the New World', Admiral Band demonstrated an appreciation of the conflict drivers of climate change and resource competition. However, he envisaged the main focus for the Royal Navy to remain 'the delivery of maximum violence in the battle-space and the killing of the Queen's enemies'.[83] This control paradigm approach to issues of energy security was continued by the new FSL , Admiral Sir Mark Stanhope, in a speech made in January of 2010, as he put much weight upon the need to have forces that could respond to 'strategic shocks'.[84] The Middle East's importance to UK energy interests was a prominent feature of the speech and the Falklands conflict was iterated as an example of how the UK still needed 'flexible' capability.[85] Indeed, the whole perspective of the speech could be seen

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[80] Ibid. p.1-5.
[81] Ibid. p.1-8.
[82] FSL Admiral Sir Jonathon Band, 'UK Maritime Power in a Global Context', *Edinburgh University – Annual Mountbatten Lecture* (23 February 2006) accessed at http://webarchive.nationalarchives.gov.uk/+/http://www.royalnavy.mod.uk/training-and-people/the-rn-today/why-do-we-need-the-royal-navy/strategic-plan/uk-maritime-power-in-a-global/ on 4 May 2012.
[83] Ibid.
[84] Admiral Sir Mark Stanhope, 'Defence in a Changing World: Flexible Thinking, Flexible Forces', *Speech made at the Berwin, Leighton and Paisner Defence Breakfast* (19 January 2010) accessed at http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/ChiefStaff/20100119DefenceInAChangedWorldFlexibleThinkingFlexibleForces.htm on 4 October 2011.
[85] Ibid.

as putting forward this viewpoint and the continued need for 'hard power'.[86] In this manner, we can see senior officers continuing the approach seen in the FMOC, with a clear manifestation of a desire to highlight the continued importance to the navy of weapons platforms such as the mooted aircraft carriers by using energy security considerations.

Still, we can see that the issue of climate change was prominent enough within British defence discourse to merit detailed analysis from one senior officer in the Royal Navy, Commander J.J. Bailey. In his 2009 article 'Is it Practical for Defence to Reduce its Carbon Emissions Without Affecting its Effectiveness?' he scrutinized whether any major steps could be made to address this issue without compromising operational capabilities. Although in the short term it was concluded that this could prove to be difficult Bailey believed in general that 'not only is it practical for Defence to pursue lower carbon emissions, it is impractical for it not to do so if it wishes to remain effective in the face of the future threat environment'.[87] Thus, this document demonstrated that there was a knowledge of the growing importance of this issue within the Royal Navy. To be sure, this was to be expected given the rising prominence of climate change at the declaratory level of defence policy at the time. Yet, it offered the prospect of greater attention being given to the subject in future years and a possible further movement towards sustainable security notions as carbon emissions targets became more ingrained in defence policy.

The Effect of Energy Security Considerations on the British Army from 2003 to 2010

In scrutinizing the effect of energy security considerations on the Army's approach to operations from 2003 onwards, we can perceive a clear difference between the views espoused in written doctrine and the statements made by senior Army officers. This can be credited to the fact that the operational and strategic doctrine for the Army in this period was produced by the DCDC, which (as we have seen) had a greater interest in the long-term conflict drivers of climate change and energy resource competition than the Army alone.[88] Overall, the armed forces experiences in the operations it had been tasked to perform by the Labour government in this period saw a noticeable shift (evidenced in doctrine and senior

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[86] Ibid. 'But, and I hope it goes without saying, these soft power activities and the benefits that accrue from them, depend on the underpinning credibility of our Armed Forces through success on operations and their ability to fight and wage and win wars. This is measured in our ability to deliver 'hard power''.

[87] Commander J.J. Bailey, 'Is it Practical for Defence to Reduce its Carbon Emissions Without Affecting its Effectiveness?', *Defence Studies,* Vol. 9, Iss. 1 (2009) p.50.

[88] Army, *Army Doctrine Publication: 'Land Operations'* (Army Doctrine Publication, 2005) p.i: 'It concentrates on land tactical operations, since strategic and operational doctrine are described in Joint publications'.

officer's statements) towards the sustainable security tenets of increased inter-governmental, inter-state and NGO cooperation in military operations. This was an adoption of what came to be termed the 'Comprehensive approach' to military operations.[89] When evaluating the Joint Doctrine Publications (JDPs) produced by the DCDC for the Army in this period we can observe evidence that an evaluation of energy security was considered as a reason for this approach.[90] Also, there were allusions to the possible adoption of alternative energy technologies in the future and (as outlined in the introduction to this chapter) this did represent a degree of movement towards sustainable security notions in relation to energy. However, these references were never particularly strident and merely noted the operational possibilities of these technologies, rather than the preventative effect they could have on climate change. In contrast, senior Army officers were not concerned with energy security justifications when putting forward their opinions on the Army's role in any of the operations it would be tasked with. Instead, the need for the Army to adapt its structures and approach to warfare in response to its experiences in Kosovo, Iraq and Afghanistan was the key topic of concern. Energy security justifications were evidently not seen as providing a good case for their particular procurement proclivities.

This difference in focus on energy security issues can be best explained using Allison's GPM, as well as Dorman's time cycle model. For instance, in addition to inter-service differences within the British armed forces, there are also ever-present differences between the separate units that make up each individual service.[91] The DCDC, as an apparently independent department of the MOD, consisted of personnel from all three branches of the armed services, in addition to civilian personnel.[92] This allowed a degree of cross-fertilisation of ideas between the individual members of the separate services, as well as between separate programme strands within the DCDC.[93] Thus, the JDPs published in the

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[89] See introduction to this chapter. Also, see House of Commons Defence Committee, *Seventh Report – The Comprehensive Approach: the point of war is not just to win but to make a better peace*, HC. 224, session 2009-2010 (London: TSO, 2010).

[90] JDPs were termed Joint Warfare Publications (JWPs) until 2007. For purposes of clarity all JWPs will be termed JDPs in this main body of this thesis. See Ministry of Defence, *Joint Doctrine Development Handbook*, JDP 0-00 (Shrivenham: DCDC, 2007) p.iii, p.v.

[91] See Hew Strachan, *The Politics of the British Army* (Oxford: Clarendon Press, 1997) for a more detailed exposition of this factor. Also, John Keegan has commented that 'The British Army is tribal to an extreme degree'. See John Keegan, *A History of Warfare* (London: Pimlico, 1994) p.xvi.

[92] See Interview with Major General Tony Milton, 'My Job: Director General Joint Doctrine And Concepts', *The RUSI Journal*, Vol. 145, No. 2 (2000).

[93] '[The DCDC] is a truly Joint establishment, with staff drawn from all three Armed Services and the Civil Service. Desk officers come from a wide variety of specialised backgrounds and combine their skills in project teams allocated through a system of matrix management - a collegiate approach designed to ensure a wide input into all projects'. *DCDC Website*, 'What We Do' (2012) accessed at http://www.mod.uk/DefenceInternet/MicroSite/DCDC/WhatWeDo/ on 4 May 2012.

examined period were likely to be influenced to a greater degree by the DCDC's *Strategic Trends* documents (with their sustained recognition of the increasing importance of energy security issues) than senior Army officers, who were more concerned with the immediate operational obstacles that faced them in a situation of potential overstretch. Indeed, the Army's 'time cycle' (normally more extended than that at the declaratory level) contracted in this period as it looked to acquire the equipment that would allow it to effectively conduct operations in Iraq and Afghanistan.[94] Hence, the difference in appreciation of energy security factors can be partly ascribed to the difference in the appreciation of time between those formulating the doctrine that would guide the Army and the more immediate operational concerns of senior officers.

If we firstly examine the JDPs applicable to Army operations in this period we can see that the 'Comprehensive Approach' was underpinned in the 2004 JDP *Joint Operations*. This was a document that attempted to 'explain the principles that underpin the planning and conduct of campaigns and operations by the UK's Armed Forces' and certainly saw the potential for conflict over key energy resources in the future: 'Competition for scarcer resources is likely to continue, and global demand for energy resources, in particular, will increase significantly. Although oil and gas reserves will still be plentiful in the near future, the location of these reserves, and transport routes from them, will be major security factors for developed and developing nations alike'.[95] It approached these security considerations with a recognition that military force would need to be part of an integrated approach to security, embracing cooperation with other departments and in coalitions with a significant civilian component, as well as recognizing that security and stabilisation operations were likely to be *as* important as strike operations in the future: 'Solutions to threats to

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[94] Francis Elliott and Raymond Whitaker, 'MoD forced to hire civilian helicopters in Afghanistan', *The Independent* (15 October 2006) and Thomas Harding, 'Army denied 'vital equipment' in Iraq and Afghanistan claims former SAS head', *The Daily Telegraph* (4 March 2010). The Iraq Inquiry website provides good information on the pressing need of commanders to address operational difficulties (particularly IEDs) with UORs. For example, see *Iraq Inquiry Website*, 'Memo from CJO to PS Min (DP) Protected Patrol Vehicles – 7 July 2006' (2010) accessed at http://www.iraqinquiry.org.uk/transcripts/oralevidence-bydate/100727.aspx on 4 May 2012. Secretary of State for Defence John Hutton's written statement to Parliament on 11 December 2008 provides some indication of the equipment requirements occasioned by the British involvement in Afghanistan and Iraq: 'Among the top priorities of our operational commanders are the provision of the right mix of protected patrol vehicles and additional helicopter capability. The recent announcement of nearly 700 more protected patrol vehicles for Afghanistan, at a cost of over £700 million, is evidence of our commitment to meet their requirements. In addition to our core budget, the Government will continue to fund the net additional costs of operations from the Treasury reserve. Since 2001, we have received nearly £10 billion, over and above the core defence budget. As well as the protected mobility package, we have agreed with the Treasury, a budget of a further £635 million in 2009-10 for other urgent operational requirements, with any expenditure over and above that being met initially by the reserve, but repaid by the defence budget after two years'. *Hansard*, HC Deb Volume 485, Columns 65-6WS (11 December 2008).

[95] JDCC, *Joint Operations,* JDP-01 (Shrivenham: JDCC) 2004, p.1-2.

international security will not be exclusively, or even primarily, military and this underscores the need for a properly integrated political/military response at all levels. Success will be achieved through a close partnership of both civil and military actors' and 'Stabilisation operations will seek to prevent further instability and to provide security for local security forces, non-governmental organisations (NGOs) or civilian contractors. They will be as complex as strike operations, but in a different way, and will require close co-operation with organisations outside the normal military domain'.[96] Thus, we can see that energy security had become a key issue for discussion by 2004 and the responses outlined in the 'Comprehensive Approach' were in accord with sustainable security tenets of civil-military cooperation and an emphasis on peace support missions, rather than any control paradigm approach that sought to ensure energy security through seizure of key assets: 'It is clear that there are better ways for nations to enrich their own economy than by conquest. Although a credible and usable military capability remains a strong political card, diplomatic and economic power is a more powerful influence on the international system'.[97] Given that *Joint Operations* was published in 2004, we can fathom that these conclusions were made in the light of operational experiences in Iraq and Afghanistan. The responses outlined were also in accord with the experiences on the ground in both conflicts, where purely military solutions had proven to be ineffective in imparting long-term stability and security.

There was also the recognition in the Future Land Operational Concept (FLOC) of 2008 that the existing force structure was not well-calibrated to meet the demands of these types of operations and would need to be changed: 'Stabilisation will be no less demanding in its own way, and the Land forces response will see military personnel employed across a range of tasks which they are not currently structured to deliver'.[98] Again, there was also the understanding that land forces would need to cooperate more often with other government agencies and NGOs and that there was likely to be more multi-national cooperation between different nation's ground forces in the course of operations. This understanding had led to the creation of what was termed the 'Comprehensive Approach' (CA) to security operations.[99] The adoption of new energy technologies was mentioned but these were not seen as a key

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[96] Ibid. p.1-8.
[97] Ibid. p.1-10.
[98] MOD, *Future Land Operational Concept 2008* (Shrivenham: DCDC, 2008) pt. 2-19.
[99] The 'Comprehensive Approach' is outlined thus: 'Success in complex stabilisation tasks, humanitarian and disaster relief operations will require a coordinated interagency approach, coordinating the 3 critical instruments of power: diplomatic, economic and military. Integrated approaches are further complicated in multinational responses, where national agendas and caveats, and the absence of a single overall authority for a CA impacts on delivering the campaign plan and objectives' Ibid. pt.1-4.

way to combat climate change, rather being perceived as an effective way to increase operational effectiveness: 'Power and energy will be an area of significant technological advance with reduced volume and weight. Major advances in battery systems, hybrid fuels and energy management techniques, will increase mobility, aid concealment and power tomorrow's battlefield'.[100] Still, this represented an appreciation of their potential usefulness and therefore under the parameters set in Chapter One did represent a movement towards a sustainable security approach within the Army's doctrinal assumptions.

Finally, *Support Network* aimed to outline the methods that would be used to sustain and supply British forces engaged on expeditionary operations. As well as recognising the operational benefits that alternative fuels would possibly bestow in future it also referred to the fact that their successful adoption could also have important environmental effects: 'The SN will need to minimise wastage, recycle/reuse where appropriate, including reducing water and energy consumption. Reduction in the use of fossil fuels would not simply be beneficial to the environment, but has the potential to reduce the overheads on the SN. With the implications of climate change, it will be necessary to adopt sustainable development technologies to reduce the dependence on fossil fuels; this will include pursuing more effective power and water generation facilities to reduce reliance on transportation, which is both vulnerable to enemy interference and burdensome on the SN'.[101] Thus, we can infer from this a recognition of the role that renewable and energy-efficient solutions could play within the support networks of the British military. Interestingly, the perceived advantages of these technologies was not applied to fuels for vehicles. Instead it was considered that uses of these 'sustainable development technologies' within the military infrastructure would lead to less requirement for supply of fossil fuels from military vehicles. At this time the military had no vehicles that ran on non-hydrocarbon based fuels. This factor, along with the potentially lengthy development period required to create military capable vehicles that could run on alternative or renewable energy sources, as well as the lack of alternatively fuelled vehicles to buy 'off –the-shelf', went some way to explaining this particular approach to the use of energy within the military.

Hence, the JDP doctrine applicable to the Army articulated a response more attuned to the ORG's idea of a sustainable security paradigm, which contrasted starkly with that of the Royal Navy. As already alluded to previously, this contrast can be attributed to the formative experiences of deployments in Iraq and Afghanistan, the relatively high number of casualties

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[100] Ibid. pt.1-2.
[101] MOD, *Support Network* (Shrivenham: DCDC, 2010) p.7-2.

the Army took in comparison to other conflicts it was involved in in the past 50 years, and the recognition that the military could not act alone whilst attempting to achieve successful outcomes in the stabilisation operations that followed conventional military action.[102] As regards the impact of energy security considerations, we can see that the potential of alternative energy technologies for future military operations was certainly recognised, although their value in reducing carbon emissions and the concomitant impact on climate change was not something that was considered. Thus, this estimation remained much in line with that displayed in the DCDC's *Strategic Trends* papers.

When examining the views of senior officers we can see a continuation of the importance placed upon stabilisation operations seen in the JDPs, but no attendant appreciation of energy security concerns or the potential advantages afforded by new and emerging energy technologies. As summarised in the introduction to this section, the asymmetric operations that the Army was engaged in and the appropriate structural and procurement responses to these were the paramount concern of Army officers at this time. For example, beginning in 2003, we can see that it was the perception of E.J.R. Chamberlain that the Army was the only service that had accepted the view that the conflicts that the UK were likely to be involved in would tend to involve asymmetric warfare rather than conventional operations: 'The majority of scenarios driving MoD policy appear to be based on View 1, and current guidance is that Defence Planning Scenarios should focus on asymmetric threats exceptionally, as they are seen as 'abnormalities — a severe distortion rather than the norm. This is at variance with the Army's opinion that asymmetry is fundamental to most forms of warfighting [sic]'. This approach was echoed by the then CDS General Sir Michael Walker in 2004 when he proposed the concept of strategic first aid. That is, that the military's job upon deployment would be to pave the way for other agencies to rebuild broken states and societies. As he commented: 'Treatment, convalescence and cure lie in the gift of politicians, civil servants, humanitarians, policemen, judges, businessmen and the people themselves. Our operations are increasingly conducted in a multifunctional environment and cannot be disconnected from it. Integration with the efforts of others is

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[102] There were 179 fatalities of British armed forces personnel in the conflict in Iraq. Also, as of 4 May 2012, there had been 412 British fatalities in Afghanistan since operations began there in November 2001. Figures taken from *MOD Website*, 'Operations in Iraq: British Fatalities' (2012) accessed at http://www.mod.uk/DefenceInternet/FactSheets/OperationsFactsheets/OperationsInIraqBritishFatalities.htm and *MOD Website*, 'Operations in Afghanistan: British Fatalities' (6 May 2012) accessed at http://www.mod.uk/DefenceInternet/FactSheets/OperationsFactsheets/OperationsInAfghanistanBritishFatalities.htm on 6 May 2012.

key.'[103] Indeed, upon interviewing Lord Walker it was made clear that energy security considerations were not of any real importance to the Army (or indeed any of the armed services) whilst he was the incumbent CDS. Any initiatives in this area were expected to originate from the declaratory level of policy.[104] Thus, the observed discrepancy between the views of senior officers and the views espoused in the JDPs on energy security considerations can be credited to the fact that the DCDC was allowed a degree of independent thinking on security matters, as it indeed claimed.[105]

Continuing the theme of senior officer's desire to embrace a 'Comprehensive Approach' to security, the Army's experiences in Iraq were defined by the then CGS General Sir Richard Dannatt in 2009 as a key factor in the movement towards a change in structure and approach for the Army. He also stated that the difficulties of changing from high-intensity operations to aiding the administration of Iraq often proved too much for the military: 'Once the Major Combat Operation element was complete, the campaign entered what we now term a Stabilisation Operation, which involved several different lines of operation – ensuring security, rebuilding essential services, promoting good governance and facilitating economic regeneration. These have been, at times, a difficult six years.' But this was finally balanced with the fact that in Richard Dannatt's eyes 'we learned many important lessons during this period which themselves have been a catalyst for the transformation of our Army.'[106] Here again we can see the formative experience operations in Iraq proved to be for the Army in this period.

Finally, Richard Dannatt's successor as CGS, General Sir David Richards, continued these arguments in his speech to the International Institute for Strategic Studies (IISS) in January of 2010. In this lecture he called for the restructuring of the armed forces to better fight the types of operations they have been involved in Afghanistan and Iraq and to actually prevent conflict in a sustainable security manner: 'If one equips more for this type of conflict while significantly reducing investment in higher-end war-fighting capability, suddenly one can buy an impressive amount of 'kit ' and 'We must put much more emphasis on preventing conflict, on ensuring fragile states do not become the Afghanistan of tomorrow. Whilst this is

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[103] General Sir Michael Walker, 'Transforming UK Armed Forces', *The RUSI Journal,* Vol. 150, No. 1 (2005) p.47.
[104] Interview with Lord Walker of Aldringham, 17 March 2011.
[105] *The DCDC Global Strategic Trends Programme 2007-2036,* p.x: 'One of the strengths of the ***Strategic Trends*** assessment is its independence from routine staffing and wider Defence decision-making'.
[106] CGS General Sir Richard Dannatt, *Address to the Institute for Public Policy Research* (19 January 2009) accessed at http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/ChiefStaff/20090119AddressToTheInstituteForPublicPolicyResearch.htm on 4 October 2011.

much more than a military role, we must be structured and resourced to play what can often be a key part'.[107] As we have already seen, this approach contrasted with that of the Royal Navy that continued to emphasise the need to invest in 'higher-end war-fighting capability' (i.e. Destroyers, Aircraft Carriers and Jet Fighters) and did not articulate a broadening of its personnel's roles to address the demand of stabilisation operations in the same way that the Army did. Again, there was no mention of the importance of energy security as a key driver of future conflict in this speech. Consequently, we can see demonstrated again the fact that the Army command was adopting sustainable security tenets of inter-agency cooperation and the need to focus less on traditional weapons systems as a result of its operational experiences post-2003 rather than due to any acceptance of the overall importance of climate change or resource competition as conflict drivers. Thus, we can see that the GPM acts as an effectual analytical tool in this instance, as it helps to account for the differences within and between services based on their individual experiences of conflict, as well as their specific concerns. Similarly, the time cycle model helps to explain the fact that the more pressing concerns of changing the Army's structure following experiences in Iraq and Afghanistan made any glimpse into the future utility of energy unlikely despite the declaratory level's increased attention to these issues post-2006.

The Effect of Energy Security Considerations on the RAF from 2003 to 2010

The effect of energy security considerations on the RAF in this period contained certain similarities to the approaches seen within the Army and Royal Navy. As such, there began to be references to energy security issues in statements from senior officers, who, in accordance with the time cycle model, were intent on justifying continued investment in the RAF's procurement programmes by indicating their service's ability to address such issues as energy security prior to the general election of 2010. For example, in 2010 ACM Sir Stephen Dalton used the spectre of conflict over energy resources in the Falkland Islands as a means of emphasising the continued importance of maintaining British air superiority, thereby employing a similar tactic to senior Royal Navy officers.[108] However, there was no indication

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[107] CGS General Sir David Richards, **Future Conflict and Its Prevention: People and the Information Age, *Speech made to the International Institute for Strategic Studies (IISS)* (18 January 2010) accessed at http://www.iiss.org/recent-key-addresses/general-sir-david-richards-address/ on 4 October 2011.**

[108] CAS Air Chief Marshal Sir Stephen Dalton, *Dominant Air Power in the Information Page* (15 February 2010) accessed at http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/ChiefStaff/20100215DominantAirPowerInTheInformationAge.htm on 4 May 2012.

of any desire to move towards alternative or energy-efficient technologies, with energy security issues being addressed through the application of military force. Conversely, the RAF's doctrinal publications ignored energy issues and emphasised instead the importance of the 'Comprehensive Approach' in a manner akin to the Army, representing an RAF movement towards sustainable security ideas of inter-agency cooperation in military operations. However, the DCDC's Future Air and Space Operational Concept (FA&SOC) of 2009 gave appropriate reference to energy issues due to the influence of conclusions drawn from the *Strategic Trends* programme.[109] This was in contrast to documentation produced solely by the RAF, which did not discuss the possible applicability of alternative energy technology to air operations or the need to cut carbon emissions in order to effectively address its contribution to climate change. This can be ascribed to the fact that the RAF was the branch of the armed services with the highest operational fuel use within this time period and this was not to be easily reduced given the nature of the weapons platforms it had procured in this period.[110] Thus, as seen previously with the Army, there was a difference in the appreciation of energy issues between DCDC doctrine and that produced solely by the RAF, as DCDC papers post-2007 used *Strategic Trends* papers as key contextual documents to inform their conclusions.[111]

If we firstly examine doctrinal publications from this period we can observe that the key documents *Royal Air Force Strategy* and the fourth edition of *AP3000: British Air and Space Power Doctrine* were focussed on the RAF's role within the 'Comprehensive Approach': '... attention must be given to ... the Comprehensive Approach that coherently applies diplomatic, economic and military power in pursuit of policy objectives' and 'Doctrinally, a new edition of *AP3000* is required to set air and space power in the context of the Comprehensive Approach, which aims to achieve militarily and politically favourable outcomes in complex crises by using all available levers of power in a cross-governmental and inter-agency approach'.[112] Fuel was only mentioned in the latter document in relation to

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[109] MOD, *Future Air and Space Operational Concept 2009* (Shrivenham: DCDC, 2009) p. Vi.
[110] The RAF was responsible for 59% of the MOD's overall fuel use in the 2007/2008 financial year. See Paul Stein, Alternative Energy for the Military, *RUSI Defence Systems*, Vol. 12, No. 2, 2009, p.82. Each Eurofighter Typhoon is believed (the information is classified) to have an internal fuel capacity of 5,700 litres, with the capability to add external fuel tanks, see *Scramble Website*, 'Eurofighter Typhoon' (2012) accessed at http://wiki.scramble.nl/index.php/Eurofighter_Typhoon on 6 May 2012.
[111] MOD, *Future Air and Space Operational Concept* (RAF, 2006). There was no mention of energy issues in this document.
[112] MOD, *Royal Air Force Strategy* (RAF Publication, 2006) p.3 and MOD, *AP3000: British Air and Space Power Doctrine – Fourth Edition* (RAF, 2009).

its operational use and the limitations it could impose on certain weapons systems.[113] Similarly, the first edition of the Future Air and Space Operational Concept (FASOC), produced by the RAF's Air Warfare Centre, did not draw any attention to the possible development of alternative energy technologies or the future security challenges posed by the ORG's twin drivers of conflict.[114]

In contrast, the DCDC-produced FA&SOC of 2009 emphasised resource competition and climate change as likely causes of conflict in the future, in line with the DCDC's *Strategic Context* papers. The FA&SOC embraced this approach and, as with the accompanying maritime and land documents, accepted the fact that these would be key determinants of conflict in the years to come.[115] The FA&SOC also reiterated the points made in the FLOC regarding the increasing importance of stabilisation operations and the likelihood that these would be more important in future than conventional war-fighting: 'The increasing proportion of military operations devoted to security and stabilisation with their high demand for mobility and lift suggest a re-balancing of the air forces' structure'.[116] Thus, the DCDC recognised the need for the RAF to restructure its forces in future to better approach the challenges of stabilisation and peace support operations.

The impact of climate change on operations was also scrutinized. FA&SOC recognised that environmental issues had increased in prominence in general political discourse and, as a result, the armed forces may be required to take steps to reduce emissions: 'Technologies to reduce the carbon footprint by producing cleaner or alternative energy solutions are available and the rising cost of fuel and increasing opposition to noise pollution may increase pressure for reduced performance military aircraft and increased use of simulation'.[117] However, there was no detailed description of how the RAF's operational policies should change to address this particular issue. This is consistent with the approach of the 2007 and 2010 *Strategic Trends* publications that did not see alternative energy technologies as being viable in the coming thirty years.

There began to be a recognition of the issue of energy security within the statements of senior RAF officers from 2009 onwards. This appears to have been due to the increased political saliency of energy issues at the time (as we saw at the declaratory sphere), influence from the FA&SOC and the fact that the RAF wanted to find suitable reasons for continued

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[113] '... the amount of fuel carried for changing or maintaining orbit and attitude ... is limited'. Ibid. pp.20-21.
[114] MOD, *Future Air and Space Operational Concept* (RAF, 2006).
[115] *Future Air and Space Operational Concept 2009*, p.1-1.
[116] Ibid. p.2-4.
[117] Ibid. p.1-7.

investment in the RAF in the face of likely cuts following the forthcoming general election.[118] For example, in 2007, the then Chief of the Air Staff (CAS) Sir Glenn Torpy spoke about the important role the RAF had played in recent operations in Iraq and Afghanistan and called for continued investment in advanced weapons platforms such as the Joint Strike Fighter (JSF), the Eurofighter Typhoon and the Future Strategic Tanker Aircraft. He also outlined the continued importance of air power in modern operations. There was no mention of energy issues or climate change's possible future effect on procurement issues or operational procedures.[119] However, in 2009 ACM Sir Christopher Moran outlined in two separate speeches the fact that energy security threats were seen as being key issues that air power could address in future conflict.[120] Similarly, in 2010 CAS Sir Stephen Dalton made a speech emphasising the continued importance of control of the air and the need to invest in technologies that maintained the UK's military advantage over potential adversaries in an 'age of austerity'.[121] Alternative and renewable solutions to the issues of energy security or climate change were not outlined, although the threat of conflict in the Falkland Islands due to competition over the energy resources believed to be there was mooted.[122] In another speech, the same question of energy resource competition having the potential to precipitate inter-state conflict was used as one of the arguments for the retention of the Tornado and Typhoon.[123]

Thus, we can see a control paradigm approach that focused on the 'comparative advantage' given by air power over the UK's rivals and the need to invest in new technologies that enhanced combat capability. This did not envisage development of new fuel

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[118] See Malcolm Chalmers 'Capability Cost Trends: Implications for the Defence Review', RUSI *Working Paper No.5* (January 2010) and Richard Norton-Taylor, 'UK military chiefs clash over future defence strategy', *The Guardian* (19 February 2010).

[119] ACM Sir Glenn Torpy, *Speech to Guild of Air pilots and Navigators* (2007) accessed at http://www.raf.mod.uk/role/gapanspeechtranscriptcas.cfm on 4 May 2012.

[120] ACM Sir Christopher Moran, *Speech to the Royal Aeronautical Society* (2009) and ACM Sir Christopher Moran, 'Progress, Vision and Co-Operation: AF Building in the 21st Century – The Royal Air Force Perspective', *Speech to People's Republic of China and People's Liberation Army Air Force* (November 2009) accessed at http://www.raf.mod.uk/history/airpowerspeechesarchived.cfm on 4 May 2012.

[121] ACM Sir Stephen Dalton, 'Dominant Air Power in the Information Age: The Comparative Advantage of Air and Space Power in Future Conflict', *Speech to International Institute for Strategic Studies (IISS)* (15 February 2010) accessed at http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/ChiefStaff/20100215DominantAirPowerInTheInformationAge.htm on 4 October 2011.

[122] Ibid.

[123] 'Many of the likely future sources of conflict, such as competition for water and energy resources and the impact of climate change, can only be resolved at the level of sovereign states ... This demonstrates the essential uncertainty of the strategic environment ... the key is adaptability ... Importantly, in this debate, the Typhoon is providing huge and adaptable capability today'. ACM Sir Stephen Dalton, 'Combat Operations: The Asymmetric Advantage of Air Power', *RUSI Lord Trenchard Memorial Lecture 2009* (2009) accessed at http://www.raf.mod.uk/history/airpowerspeechesarchived.cfm on 4 May 2012.

technologies or the articulation of sustainable security ideas such as greater inter-departmental or multi-national cooperation. Of course, given the new Strategic Defence Review that was to be conducted after the May 2010 general election, this approach, along with those of the other services, was understandable as each service jostled for its 'fair share' of funding.[124]

The War in Iraq: A War for Energy Security?

Perhaps the most important area to scrutinize when analysing energy security's effect on British defence policy since 1997 is where British forces were actually deployed and what actions they took once they were deployed in a particular country. The crux of this analysis will focus on the war in Iraq as there is no clear evidence pointing towards any energy security considerations in any other major deployments of British forces under the Labour government (although of course there are still some commentators that propose that Kosovo and Afghanistan were invaded due to their potential importance as oil and gas transit routes).[125] It would also be true to say that the choice to join the United States in toppling Saddam Hussein's regime was the most contentious of Tony Blair's tenure as Prime Minister and is likely to be the decision that he will be most remembered for in his political career. However, as has already been mentioned in preceding chapters, the Iraq war generated a lot of controversy with many claiming it had been fought for the express purpose of securing key Middle Eastern fossil fuel reserves and maintaining Western dominance in the region. Indeed, many of the mass demonstrations against the war focussed on this hypothesis as their reason for their opposition. In order to determine whether energy security was a factor for the United Kingdom in the invasion and subsequent security operation we will first inspect the evidence in favour of this interpretation and then go on to scrutinize the counter-evidence that points towards other motives for the conflict. Of course, the US decision to go to war must be outlined as there are data that point towards a US decision to go to war for reasons of energy security. We can then frame British actions and decisions within this context and ascertain on the balance of evidence, and in light of the preceding analysis in this thesis, which argument appears most prescient.

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[124] *BBC News Online,* 'UK military chiefs fight for future of their services' (19 January 2010) accessed at http://news.bbc.co.uk/1/hi/uk/8466970.stm on 7 May 2012.

[125] William Engdahl sees the Kosovo conflict as being motivated by energy considerations as much as Iraq. See William Engdahl, *A Century of War: Anglo-American Oil Politics and the New World Order* (London; New York: Pluto, 2004).

Iraq: a War for Oil?

From a US political perspective, the initial decision to take action against Iraq is believed to have been made soon after the 9/11 terrorist attacks. Rather than this indicating a speedy response to the threat of Islamic terrorism and the danger of WMD proliferation it is considered by William Engdahl that this course of action was being pushed before the attacks on the World Trade Centre and Pentagon by Vice-President Dick Cheney and other members of the Bush Cabinet.[126] Indeed, Cheney, Bush and a myriad of other members of the Bush cabinet have been shown to have had close relationships with US energy companies prior to entering government. These companies potentially stood to benefit massively from any invasion of Iraq and subsequent exploitation of its large oil reserves.[127] This fact, combined with statements in papers written by Bush government members emphasising the desire to maintain access to key fossil fuel reserves and in this manner maintain American global economic, military and political pre-eminence, seems to point towards a war conducted in favour of these interests whilst the political capital of the September 11 attacks could be exploited. [128] There are also considered to be key historical precedents of US intervention in the Middle East to secure continued access to the oil reserves there. For example, James A. Paul comments that in 1959, Saddam Hussein was aided by the CIA in an unsuccessful plot to assassinate the incumbent Prime Minister as it was feared he may alter the favourable terms that US oil companies operated under in Iraq at the time.[129] The Iran-Iraq war and the 1990-91 Gulf War are also cited in this explanation. Indeed, as Paul Rogers has noted, the creation of CENTCOM in 1979 and a continuous US military presence in the area since this date demonstrated the US wish to control access to the large fossil fuel reserves in the area.[130]

Finally, notable realist academics John Mearsheimer and Stephen M. Walt stated in a well-known journal article prior to the war entitled 'An Unnecessary War' that, given proper analysis of his previous actions, there was no reason to believe that Saddam Hussein was an

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[126] Ibid. Chapter 13 gives an excellent overview of Engdahl's claims regarding this.
[127] See Greg Palast, 'Secret US Plans for Iraq's oil' *Newsnight Website* (17 March 2005) accessed at http://news.bbc.co.uk/1/hi/programmes/newsnight/4354269.stm on 7 May 2012 and Greg Muttit, 'Crude designs: the rip-off of Iraq's oil wealth', *Platform paper* (2005).
[128] Thomas Donnelly (Principal Author), 'Rebuilding America's Defenses: Strategy, Forces and Resources for a New Century' (Washington D.C: The Project for the New American Century, 2000) and Edward L. Morse (Chair), Amy Myers Jaffe (Project Director) 'Strategic Energy Policy: Challenges for the 21st Century', *Report of an Independent Task Force CoSponsored* [sic] *by the James A. Baker III Institute for Public Policy of Rice University and the Council on Foreign Relations* (New York: Council on Foreign Relations Press, 2001).
[129] James A. Paul, 'Oil Companies in Iraq: A Century of Rivalry and War', *Global Policy Forum* (November 2003).
[130] See Paul Rogers, *Global Security and the War on Terror: Elite Power and the Illusion of Control* (Abingdon; New York: Routledge, 2008) p.68.

irrational actor who would allow any WMDs to fall into terrorist hands. Hence, the reasons given for the war were unconvincing: 'If the United States is, or soon will be, at war with Iraq, Americans should understand that a compelling strategic rationale is absent. This war would be one the Bush administration chose to fight but did not have to fight'.[131]

Given that there are clear arguments that indicate the US went to war to secure Iraq's energy reserves and maintain US dominance within the Middle East, what is the evidence that the UK may have followed the same control paradigm approach in its decision to go to war alongside the United States? There is evidence that the UK government was prepared for the eventuality of another war with Iraq from 1998 and that the factor of energy resources was a key dynamic in this posture. As already seen in the declaratory chapter, Iraq was mentioned as a regional threat in the SDR in relation to 'economic interests': 'There are still dangerous regimes in the world ... As Iraq has amply demonstrated, such regimes threaten not only their neighbours but vital economic interests and even international stability'.[132] This followed a focus on the key importance of the fossil fuel reserves in the Persian Gulf: 'We have particularly important national interests and close friendships in the Gulf. Oil supplies from the Gulf are crucial to the world economy. Confrontation in the Middle East carries the risk of escalation and since the region borders on NATO, in some circumstances crises could involve the Alliance directly'.[133] Indeed, there has been a continual British Naval presence in the Persian Gulf since 1979, mirroring the US posture in the region.[134]

As with the Bush administration, there is also the fact that Tony Blair's government had many links with members and former members of BP and Shell, and these companies' were likely to gain access to Iraq's large exploitable reserves if an invasion was successful.[135] Indeed, Platform, an environmental action group, has stated that Production Sharing Agreements (PSAs) were the proposed oil agreements planned for Iraq following the

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[131] John Mearsheimer and Stephen Walt, 'An Unnecessary War', *Foreign Policy*, No.134 (2003) p.4 and p.11.
[132] *SDR*, Chapter 1, Paragraph 8.
[133] *SDR*, Chapter 2, Paragraph 40.
[134] Admiral Sir Mark Stanhope, 'Defence in a Changing World: Flexible Thinking, Flexible Forces', *Speech made at the Berwin, Leighton and Paisner Defence Breakfast* (19 January 2010). Admiral Stanhope commented in this speech that there had been a continuous British naval presence in the Persian Gulf since 1979.
[135] James A. Paul, 'Oil Companies in Iraq: A Century of Rivalry and War', *Global Policy Forum* (November 2003). 'In recent years, a number of personal ties stand out, especially the close friendship between Prime Minister Tony Blair and BP CEO John Browne (Lord Browne of Maddingley). The Blair-Browne relationship was so close that wags in the press called the company "Blair Petroleum," though it would have been more accurate to say that Blair was the BP Prime Minister. At least a dozen BP executives held government posts or sat on official advisory committees, including Browne's immediate predecessor David Simon (Lord Simon of Highbury). Simon had stepped down as BP CEO to serve as Blair's unelected Minister for European Trade and Competitiveness from May 1997 to July 1999. Later on, Tony Blair's longtime friend and personal assistant Anji Hunter, director of government relations and known as "the gatekeeper" in Downing Street, joined BP as head of public relations in the summer of 2002, just as the war was actively brewing'.

invasion. These were considered by some to be punitive economic contracts that would benefit the western oil companies more than the Iraqi treasury, depriving the Iraqi people of their rightful revenue.[136] They were not in use anywhere in the Middle East at the time. Ultimately, these contracts were not signed but British oil companies were the prime investors in the Iraqi oilfields since oil contracts were first put out to tender in 2009.[137]

The Saif Sareea exercise of 2001 also pointed towards a British desire to maintain a control paradigm posture in the Middle East. This major military exercise saw 22,500 military personnel, 6,500 vehicles and trailers, 21 Navy vessels and just under a 100 aircraft deployed to the sultanate of Oman in order to 'demonstrate key elements of the United Kingdom's ability to conduct expeditionary warfare '.[138] Another stated aim of the expedition was that it had 'clear foreign-policy objectives to demonstrate the United Kingdom's commitment to the Gulf region and to advance British interests in Oman'.[139] There was also the comment that 'While there were no explicit objectives to promote defence or civil exports, the potential for enhancing the United Kingdom's position as a trading partner with Oman was recognised'. We can garner from this operation that, whilst being important in ascertaining whether Britain still had the capability to conduct medium-scale expeditionary operations alone, there were other objectives such as the demonstration of British military capabilities to the wider Middle East and the chance to foster ties with a nation in a key strategic location as regards energy security. Oman itself has dwindling oil reserves but it border's Saudi Arabia and the exclave of Musandam fulfils the same role as Gibraltar does in the Mediterranean, guarding the Straits of Hormuz that lead into the Persian Gulf. Thus, British influence here would possibly help maintain access to the Persian Gulf and perhaps have an effect on Saudi Arabia's policy decisions, both key areas in terms of world oil and gas supply.

Finally, if we analyse the course of operations during the Iraq war itself, we can see that one of the key missions given to British soldiers on the opening day was the capture of Iraqi oil installations on the Al-Faw Peninsula.[140] This Royal Marine operation was

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[136] See Greg Muttit, 'Crude designs: the rip-off of Iraq's oil wealth', *PLATFORM paper* (2005).
[137] Carola Hoyos, 'US oil companies lose out in Iraq oil auction', *The Financial Times* (13 December 2009).
[138] NAO, *Ministry of Defence Exercise Saif Sareea II: Report By The Comptroller and Auditor General*, HC. 1097, Session 2001-2001 (London: TSO, 2002) p.1.
[139] Ibid. p.5
[140] See MOD, *Operations in Iraq: Lessons for the Future* (MOD , 2003) p.11.
Major Tim Collins, commander of the 1st Royal Irish during the invasion, mentions in his autobiography that he and his soldiers were briefed heavily on the importance of taking the oil installations in Southern Iraq intact before the operation to invade began. See Tim Collins, *Rules of Engagement: A Life in Conflict* (London: Headline, 2005) pp.141-142.

conducted with the support of a US Marine brigade, perhaps indicating the US's desire to ensure that these important resources and their accompanying infrastructure were not irreparably damaged. Also, following the official withdrawal of British soldiers from Iraq in April 2009, Royal Navy personnel continued to aid the Iraq authorities in protecting offshore oil installations.[141] Thus, the British maintained a presence in relation to Iraqi oil installations despite the official withdrawal of ground forces.

Alternative Reasons for the Iraq War

Despite the above evidence there are still reasons to doubt the war for oil hypothesis. Hakan Tunc has argued that the war was fought for separate military, psychological and ideological reasons by the US administration. Firstly, the military rationale was the desire to prevent the proliferation of WMDs in the Middle East and their potential leakage to terrorist groups. Secondly, the psychological rationale involved a demonstration of US power following the 9/11 attacks that would have more effect on Middle Eastern perceptions than the bombing of a militarily weak Afghanistan. Thirdly, the ideological rationale was the view that the implantation of democracy in Iraq could be the first step in a wider democratic and cultural transformation of the Middle East.[142] Hakan Tunc surmised that the key factors in the decision to go to war with Iraq were the 9/11 terrorist attacks and the fact they engendered a change in opinion in President Bush. Prior to these events, as we have seen already, he had been pressed to go to war with Iraq by members of his cabinet but had resisted these calls as he was content on a realist policy of containment. Iraq did not seem to pose a threat to regional security as long as the appropriate sanctions remained in place. With the mass casualties and panic caused by the attacks on the World Trade Centre and Pentagon the assessment of Iraq changed and focussed on Saddam Hussein's supposed irrationality and continued actions that indicated previous gross miscalculations of power politics.[143] In light of this, the Bush administration believed the risk of leaving such a potentially dangerous regime in power could not be taken and decided to remove it by force. Indeed, the decision was believed to have been made in the months immediately following 9/11.[144]

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[141] See Claire Taylor, 'Iraq: Multinational Forces after the Drawdown', *House of Commons Library Standard Note SN/IA/5247* (12 May 2010) p.3.
[142] Hakan Tunc, 'What was it all about after all? The causes of the Iraq war', *Contemporary Security Policy,* Vol. 26, Iss. 2 (2005) p.335.
[143] Ibid. p.342-343.
[144] Ibid.

Similar arguments were used by Robert Mabro, the Director of the Oxford Institute for Energy Studies (OIES): 'The main reasons [for the war] are that Iraq is militarily an easier target than North Korea or Iran; its regime, and for good cause, is universally detested; has invaded neighbours, then flouted UN resolutions. And as the 9/11 hijackers were Arab it makes more sense to attack an Arab country than North Korea or Iran'.[145] Similarly, Robert Mabro also explained that the war could be seen as a demonstration by America that it remained the only true global superpower. This sent an important geo-political message to rising and re-emerging powers such as Russia and China.[146]

As regards the UK decision to enter the conflict, there seems to be a consensus amongst his political allies that this was a result of a misplaced belief by Tony Blair that Saddam Hussein had developed WMDs and that, in any case, his regime needed to be removed due to its 'evil' nature. Blair's Chief-of-Staff at the time recently told the Chilcot Inquiry that Blair was certain that Saddam Hussein had significant stockpiles of WMDs due to his obstructive nature in his dealings with the UN weapons inspectors leading up to the invasion of Iraq.[147] Similarly, Tony Blair's political agent in his Sedgefield constituency, John Burton, maintained that Blair saw the war as primarily a fight between good and evil.[148] The vast majority of the members of the British Cabinet at the time also continue to maintain that the war was fought on the assumption that Iraq had WMDs and that the UN approach had failed to work.[149]

Other commentator's believed that involvement in Iraq was due to Britain's desire to maintain the supposed 'special relationship' with the US and to stand side by side with the US following the 9/11 attacks. John Kampfner, in his excellent book 'Blair's Wars', certainly postulates this as the main reason following extensive research and interviews with many civil servants in prominent positions at the time.[150] Caroline Kennedy-Pipe and Rhiannon Vickers argue that, in a similar way to the Bush administration, the 9/11 attacks fundamentally changed the British government's view of the nature of the threat from international terrorism. The Hussein regime in Iraq was considered to be a potential

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[145] Robert Mabro, 'Is the widely expected war on Iraq an oil war?', *Oxford Institute for Energy Studies* (February 2003).
[146] Ibid.
[147] Gordon Rayner, 'Iraq war: Tony Blair got it wrong, says top aide', *The Daily Telegraph* (19 January 2010).
[148] Jonathan Wynne-Jones, 'Tony Blair believed God wanted him to go to war to fight evil, claims his mentor', *The Daily Telegraph* (23 May 2009).
[149] See Iraq Inquiry evidence from David Miliband, Alastair Campbell, Geoff Hoon and John Reid at http://www.iraqinquiry.org.uk/.
[150] John Kampfner, *Blair's Wars* (London: Free Press, 2004).

contributor to this threat and thus needed to be removed.[151] Similarly, it was considered that not backing the US would portray the Labour government as being weak on security issues, a return to the perception of Labour when Blair began his tenure as an MP under Michael Foot's leadership.[152] This could not be countenanced by a Labour party that had fought hard to dominate the centre ground of British politics in the 1990s and early 2000s.

Following on from this, if we look at the British Army's preparedness for the conflict, the statements of senior Army officers would seem to point away from a British expectation that major conflict would be fought in Iraq. Retired CGS Sir Michael Jackson, in service at the time of the war, has said that the MoD's defence planning assumptions at that time only saw the possibility of a small-scale intervention in the Persian Gulf in the foreseeable future.[153] Also, he considered that the MoD procurement strategy had not prepared the Army adequately for desert combat despite the Saif Sareea operation in 2001.[154] This seems to contradict the assertion that that particular operation was embarked upon to prepare for an Iraq-type war in the Middle East. As we have already seen in this chapter, the then CGS Sir Richard Dannatt also made similar points in 2007 when he commented in a speech that the Army, in terms of equipment, was still only prepared for a European war in 2003 and it had taken the difficult experience in Iraq for it to change significantly. In terms of opinions on the war, Sir Michael Jackson has stated that he believed the WMD threat from Iraq was real and had seen no evidence that the war was in fact fought for oil.[155] He also believed that the Iraq war was justified and continues to maintain this view.[156]

Finally, if we look at the operational experiences in Iraq we can see that the original planning assumptions were for the British to invade Iraq from Turkey.[157] These were changed shortly before the invasion as Turkey refused to grant the right of passage to British and American forces. This evidence points away from a seeming British military desire to safeguard oil installations in the south for future exploitation. Also, the British did not focus their security efforts on the oil infrastructure in Southern Iraq once the incumbent regime had been overthrown in Baghdad. Instead, responsibility for safeguarding production was

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[151] Caroline Kennedy-Pipe and Rhiannon Vickers, 'Blowback' for Britain?: Blair, Bush, and the war in Iraq', *Review of International Studies,* Volume 33 (2007).
[152] Ibid. p218.
[153] Mike Jackson, '*Soldier: The Autobiography'* (London: Corgi, 2007) p.405.
[154]Ibid. p.406.
[155] Ibid.p.396, p.401.
[156] Ibid.p.403.
[157] Michael Knights and Ed Williams, 'The Calm Before the Storm: The British Experience In Southern Iraq', *The Washington Institute for Near East Policy: Policy Focus Paper 66* (2007) p.6.

transferred to a locally staffed Oil Protection Force as quickly as possible.[158] The British instead concentrated on ensuring the urban areas of Basra were under control before withdrawing to an 'overwatch' role.[159] Indeed, another pertinent point to make here is that the Southern region of Iraq that the British were granted control of contained the vast bulk of Iraq's proven oil reserves. If the US had fought the war for oil why would they grant such a significant economic asset to British operational control?

Taking all the evidence into account, it does appear that the most important factors in the British government's reasoning in going to war were to remove what was considered a dangerous regime and also demonstrate solidarity with the United States following the epoch defining events of September 11 2001. However, given the evidence, it is also inconceivable that the strategic benefits of Iraq's vast oil reserves were not considered in the decision to join the US. Indeed, to say that this was in no way a consideration would be disingenuous. We have seen that Iraq's oil wealth and regional threat to the oil reserves in the Middle East was outlined in the SDR and that the British armed forces were deployed on a major operation to test their expeditionary capabilities in the region in 2001. Indeed, the National Audit Office's (NAO) report on the Saif Sareea operation saw it as a demonstration of Britain's military capability to the wider Middle East as much as a training exercise and hoped to forge links with Oman as a result. In fact, the subsequent failure to update equipment for the 2003 invasion of Iraq is unsurprising given the fact the NAO's report on Saif Sareea noted that important lessons from operations in the Gulf War had not been learned or had been forgotten.[160] Thus, it should not be interpreted as a lack of commitment to the area but more as a continued military tendency to forget the experiences of the past.

Ultimately, if the US were going to invade Iraq no matter what, it seems the British government and military establishment believed that they should support them and reap the possible benefits of the removal of Saddam Hussein's regime, whatever they may be. This is certainly John Kampfner's interpretation.[161] Indeed, the former Foreign Secretary David Miliband stated to the Chilcot inquiry that the invasion of Iraq had reinforced perceptions of Britain's power in the Middle East and had been beneficial in this respect.[162] Certainly, one

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[158] Ibid. p.23.
[159] See James Wither, 'Basra's Not Belfast: the British Army, "Small Wars" and Iraq', *Small Wars and Insurgencies,* Vol. 20, Iss. 3 (2009) p.625.
[160] NAO, *Ministry of Defence Exercise Saif Sareea II: Report By The Comptroller and Auditor General*, HC. 1097, Session 2001-2001 (London: TSO, 2002) p.4.
[161] *Blair's Wars,* pp.167-169.
[162] James Kirkup, 'Iraq Inquiry: David Miliband says war has boosted Britain's reputation in Arab world', *telegraph.co.uk* (8 March 2010) accessed at http://www.telegraph.co.uk/news/worldnews/middleeast/iraq/7397179/Iraq-Inquiry-David-Miliband-says-war-

of the lessons garnered from this conflict may be that the UK may need to conduct similar operations in the future, perhaps explaining the increased prominence of energy security in the DCDC's stated doctrine and the Royal Navy's desire to use the issue of competition over energy resources to back its claims for an increased hard power capability.

Conclusion

In sum, this chapter has shown that when it came to the views of the individual services, it can be said that concepts of energy security at the operational level of policy had an impact when they were seen to offer a degree of benefit in putting forward an individual service's case for its efficacy in achieving Britain's national security goals (in the process putting forward the case for continued levels of funding) or for the continued development of a particular weapons platform. In the former case, we saw the Royal Navy outlining its ability to maintain secure access to oil and gas imports and the RAF following the same tack in the last year of the Labour administration. In the latter case, the continued delays in the construction of the mooted aircraft carriers saw their efficacy in securing energy supplies being outlined. Thus, the interaction between the declaratory and operational time cycles led to the use of energy security justifications when the RAF and Royal Navy perceived that particular aspects of their service were threatened. Otherwise, the declaratory level's stated view on energy security was only incorporated if it fitted in with the military's own policy inclinations. Accordingly, whenever concepts of energy security did have an impact on individual services these manifested themselves in a control paradigm manner, with the attendant concentration on the use of military force to secure energy resources.

As regards DCDC publications, these were more cognisant of the increasing dangers to global security of climate change and energy resource competition due to the DCDC's longer term outlook and relative independence from other organizations. This was most prominently displayed in the DCDC's *Strategic Trends* papers. The requirement to develop alternative energy technologies was not considered viable within the next twenty to thirty years but the potential on the battlefield was still propounded in JDPs published for the Army and RAF in this time period. As such, there was a small movement towards the sustainable energy security tenets with the recognition that alternative power sources could be used on

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has-boosted-Britains-reputation-in-Arab-world.html on 7 May 2012. Miliband commented: 'In the Arab world today, I don't believe that the Iraq decisions have undermined our relationships or our ability to business. Some of our ambassadors say we are in stronger position'.

the battlefield in the future, although this was not motivated by energy security concerns. In addition, the 'Comprehensive Approach' signified another movement towards sustainable security tenets, but, again, this had little to do with the issue of energy security in the armed forces' (and in particular, the Army's) consciousness.

Finally, we have seen that the decision by the British government to join the US in the invasion of Iraq was not motivated primarily by the desire to secure the vast energy resources that the country contained. Instead, the most significant reasons for British involvement in the conflict were a belief that the Iraqi regime was developing a WMD capability that it had previously shown it was willing to use, as well as the desire to show solidarity with the United States administration following the events of 9/11. Still, it would appear that the political, economic and energy security benefits of the removal of Saddam Hussein's regime were subsidiary considerations that certainly made the decision to involve British armed forces in this operation more enticing.

The next chapter will now scrutinise the impact of energy security issues on the Defence Industrial Base (DIB). This will be done by examining the research and development of alternative energy technologies within the British defence industry from 1997 and 2010, and also by studying any arms deals made with countries considered important to UK energy security. We can then ascertain whether the DIB remained in line with the declaratory circle of policy, in contrast to what we have seen at the operational circle in this chapter.

Chapter Five

Defence-Industrial Policy

Controversy over procurement for the armed forces became a major issue in the British media following the Labour Government's decision to deploy soldiers in Iraq and Afghanistan. The media perception was that the types of vehicle and equipment provided for the armed forces (particularly in regard to the Army) were often sub-standard and not properly attuned to the combat environments that soldiers found themselves fighting in. The focal points for criticism were the seeming lack of vehicular protection from Improvised Explosive Devices (IEDs), resulting in high British casualty figures in the Afghanistan and Iraqi deployments, as well as the apparent dearth of helicopter lift capability to deploy and extricate soldiers from the combat zone.[1] As regards the Royal Navy, the main procurement decisions taken by the government soon after election were to construct two large Queen Elizabeth class aircraft carriers and equip these with a new Joint Combat Aircraft (JCA) to replace the Navy's ageing Sea Harriers (as well as the RAF's Harrier force). This subsequently morphed into the decision to acquire the Lockheed Martin Joint Strike Fighter (JSF) F-35 Lightning II from the United States.[2] These decisions attracted similar controversy from the media as the expected in-service dates of these systems were delayed and their likely high cost was expected to hamper the further procurement of other equipment for the future armed forces.[3] Similarly, there remained much debate over the long-running development and acquisition of the Eurofighter Typhoon for the RAF. The air superiority supersonic fighter was first approved for development by the British government in 1987 and had still not fully entered service 23

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[1] For an in-depth analysis of the former issue, read Richard North, *Ministry of Defeat: The British War in Iraq 2003-2009* (London; New York: Continuum, 2009). Also, see *BBC News Online,* 'SAS commander quits 'over kit'' (1 November 2008) accessed at http://news.bbc.co.uk/1/hi/7703419.stm on 7 May 2012; Mark Townsend, 'Lack of helicopters 'puts injured troops at risk'', *The Observer* (26 July 2009); Andrew Porter and Mary Riddell, 'Minister Lord Malloch-Brown admits to Afghanistan helicopter shortage', *The Daily Telegraph* (21 July 2009).

[2] For good background information on the British involvement in the development of the JSF see House of Commons Defence Committee, *Second Report – Future Carrier and Joint Combat Aircraft Programmes*, HC. 554, session 2005-2006 (London: TSO, 2005) paragraph 84.

[3] *BBC News Online,* 'Carriers victim of cash crisis' (11 December 2008) accessed at http://news.bbc.co.uk/1/hi/uk/7777723.stm on 7 May 2012 and *BBC News Online,* 'Navy carriers '1bn over budget' (29 June 2009) accessed at http://news.bbc.co.uk/1/hi/uk/8125449.stm on 7 May 2012.

years later.[4] The large cost overruns meant that the 160 planes that would finally be acquired were likely to have cost in the region of £23 billion, a unit cost of approximately £143 million per aircraft.[5]

Given this context, this chapter will establish what impact energy security considerations had on British defence-industrial policy between 1997 and 2010, and, if there was an impact, whether this manifested itself as a control paradigm or sustainable security approach to energy considerations. The chapter will then seek to explain the basis for eventual policy outcomes through the use of Allison's and Dorman's models of government. However, before we embark on the main body of analysis, we will need to reacquaint ourselves with the findings of the previous chapter, which will help us to recognise any familiar themes that connect the different levels of defence policy in relation to the topic of energy security.

In Chapter Four, we saw that energy security considerations had a variable effect on the operational level of defence policy and this was not ultimately in line with the declaratory sphere of policy. As such Allison's GPM and Dorman's time cycle model provided the most cogent explanations as to this eventuality. Overall, there was generally a control paradigm approach to this issue in the armed forces, with the Royal Navy and RAF outlining or alluding to the possible use of military power to secure energy resources. For example, throughout the examined period, the Royal Navy utilised the issue of energy security as a justification for the Royal Navy's efficacy as a service and, concomitantly, as a validation of its procurement preferences (most notably the mooted Queen Elizabeth class aircraft carriers). Similarly, the RAF began to use energy security justifications for its chosen equipment programmes from 2009 onwards, as the general election drew nearer and energy security issues had risen in prominence in British political discourse. In contrast, the Army's senior officers did not appear to view energy security issues as offering a viable argument for their own organisational and equipment preferences and therefore remained quiescent on the issue. Indeed, from 2003 onwards there was a notable movement towards sustainable security tenets (enshrined in the 'Comprehensive Approach') due to the Army's experiences in Iraq and Afghanistan rather than any appreciation of energy issues. This juxtaposed with the

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[4] Some 53 tranche 1 aircraft entered service and another 91 tranche 2 aircraft are currently being modified so as to provide ground-attack capabilities. See *RAF Website,* 'Typhoon FGR4', accessed at http://www.raf.mod.uk/equipment/typhooneurofighter.cfm on 7 May 2012. 40 tranche 3 aircraft were ordered by the British government in September 2009. See *Hansard,* HC Deb Volume 496, Column 135-6WS (9 September 2009) for confirmation of this from Defence Minister Quentin Davies.

[5] See NAO, *Ministry of Defence – Management of the Typhoon Project – Report by the Comptroller and Auditor General,* HC. 755, session 2010-2011 (London: TSO, 2011) p.15, p.26.

doctrine produced by the DCDC for the Army, which did see competition for energy resources as a future driver of conflict and one that could be addressed through the adoption of a 'Comprehensive Approach' to military operations. Still, future development of alternative energy technologies was mooted but not seen as a way for the military to aid in the prevention of conflict through reduced greenhouse gas emissions. Finally, the reasons for the British decision to go to war in Iraq were examined for any evidence of energy security considerations. This found that although energy issues were not the *deciding* factor, they certainly made the decision to go to war more enticing, given the positive economic benefits to British companies that would likely result.

This chapter will scrutinize defence-industrial policy. As outlined in Chapter One, this refers to the third 'circle' of British defence policy in Ian Bellany's framework for analysis. It denotes 'what the defence-contracting sector of the British economy regards itself being for, and holds itself ready to do'.[6] Thus, we will need to analyse the statements made by important figures within the defence industry, the actual products developed and produced for the British armed forces and also the export strategies for the equipment that was developed. Given that the British defence industry continued to rely on the UK government to be the main purchaser of defence equipment, we will also need to analyse the government's procurement strategy from 1997 until 2010. However, before we do this it would first be prudent to outline how control paradigm and sustainable security concepts will be used to measure the effect of energy security considerations at the defence-industrial level of policy.

As we saw from John Mearsheimer's comments in Chapter One, senior figures within the British defence industry would be unlikely to emphasise the importance to British security of arms sales to energy-rich states, due to the negative effect this would have on the public's attitudes to the British defence industry.[7] As such, it would be difficult to ascertain the impact of energy security considerations on defence-industrial policy by looking purely at justifications from senior figures for the Industry's arms sales to particular regions as these are unlikely to be candid, if mentioned at all. A better method of seeing if there was a control paradigm approach to energy security amongst senior figures within the DIB would be to observe the defence industry emphasising the development of military equipment that would be capable of providing 'global reach' for Britain's armed forces and the ability to use 'hard

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[6] *Reviewing Britain's Defence*, p.2.
[7] See Chapter One.

power' to enforce stated British 'global interests'.[8] In terms of British defence procurement, we would expect to see the purchase of equipment and weapons platforms that provided these aforementioned capabilities, so as to allow intervention in areas key to Britian's continued energy security. In parallel with this, there would be a desire to maintain 'the military advantages enjoyed by key regional allies'.[9] As such, the defence industry would seek to provide advanced military equipment to certain regimes perceived as important to maintaining stability in regions with large oil and gas reserves.

In contrast, if a sustainable security approach to energy security had an impact at the defence-industrial level of policy we would see the defence industry stating the importance of reducing carbon emissions and improving energy efficiency so as to address climate change. We would also see the issues of climate change and energy resource competition touted as reasons for the development of more energy-efficient vehicles, as well as alternative and renewable sources of power, thus reducing the reliance on foreign imports of oil and the need to secure access to these sources of fuel through the threat and actual use of military force.[10] Finally, arms sales to key fossil fuel producing regions would be discouraged as these were likely to have the effect of causing greater instability (and attendant energy insecurity) through the support provided to repressive regimes.

This chapter will demonstrate that concepts of energy security had a variable effect at the defence-industrial level of defence policy between 1997 and 2010. Firstly, when examining the impact of energy security considerations on statements made by senior figures within the British defence industry, we will see that throughout this period there was little or no mention of the importance of developing weapons that had 'global reach' and the ability to protect British overseas trade, thereby ensuring energy security. This was despite the importance of energy security considerations at the declaratory sphere of policy. Instead, the main issues for defence industry figures for much of the period included the desire to maintain or increase funding for the British defence industry at a time when research and development funds were decreasing and weapons programmes were being delayed in order to make short-term savings within the defence budget, the desire to see increased US-UK cooperation in defence technology matters, as well as the question of the form the

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[8] *Delivering security in a changing world*, p.4: 'the UK has a range of global interests including economic well-being based around trade, overseas and foreign investment, and the continuing free flow of natural resources'.
[9] James Kemp, 'Sustainable Peace and Security', *Compass Thinkpiece* 18 (November 2006) p.2.
[10] As outlined in Chapter One, the adoption of alternative energy technologies can be seen as contributing towards a sustainable energy security approach but may ultimately not be motivated by the desire to address the conflict drivers of climate change and energy resource competition. Thus, their development would not be as a result of energy security considerations.

relationship between the MOD and the defence industry should take.[11] Thus, senior figures in the DIB tended to be focussed on ensuring the continued funding and survival of the British defence industry, rather than on emphasising the benefits they provided to the aims of British defence and security policy; in this case, the positive contribution their equipment could make to ensuring Britain's continued energy security. Still, from 2006 onwards the issue of energy use within the military began to be addressed by certain sections of the DIB as they responded to increased focus on this issue within government. Thus, there was a movement towards sustainable security notions, with a discussion of the development of renewable energy technologies, reflecting the increasing saliency of energy issues within British political discourse.

In terms of equipment development and production, we can see that the DIB was, to a large extent, beholden to the Labour Government's procurement policy in this period as the declaratory level and operational levels of policy determined what equipment was researched and produced. Hence, the development of the new aircraft carriers and the new Type 45 destroyers could be correlated with Labour's aspirations for an increased expeditionary stance and the concomitant stated desire to continue British military influence in the Persian Gulf region.[12] Thus, energy security considerations can be said to have had an impact in this procurement decision, despite the fact it could not be considered directly attributable to the influence of the DIB. Still, despite the control paradigm approach to energy security implied by these procurement decision, there were developments in energy and propulsion technology that demonstrated positive movements towards energy sustainability, although these could not be attributed to any real appreciation of sustainable security notions, having been instituted before the need to combat climate change and energy resource competition was identified within British defence policy. These positive developments included the Integrated Electrical Propulsion System (IEPS) that was to be used to power the Royal Navy's new Type 45 Destroyers, lithium battery cells used to power equipment designed for the Army's Future Infantry Soldier Technology (FIST) programme and proposals to install hybrid electric drive systems on the much delayed Future Rapid Effects System (FRES).

Indeed, by 2008 there was a definite discourse on the need for the defence industry to develop engine technology that helped to combat the effects of climate change through lower emissions of greenhouse gases. Thus, there was ultimately an appreciation of sustainable

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[11] These points will be outlined in greater depth as the chapter progresses.

[12] Defence Minister Adam Ingram: 'Power projection is a fundamental part of [the future aircraft carrier] capability requirement'. *Hansard,* HC Deb Volume 410, Column 701W (16 September 2003).

energy security notions at the defence-industrial level which mirrored that seen at the declaratory circle of policy. As at the declaratory level of policy, movements towards emissions reductions from British defence companies can be seen as a response to the increased political saliency of the issue within the United Kingdom in the last few years of the Labour administration.[13] Thus, Dorman's time cycle model can be used as an explanatory tool in this instance.

Similarly, it appears that the declaratory and operational spheres of defence policy did not believe that the UK had the resources to devote to the research and development of all aspects of emerging technology. This was due to the fact that there was a lack of funding allocated to defence research in this period.[14] As such, there was a stated desire from the government, the armed forces and the DIB to cooperate more with the United States on technology, so as to possibly benefit from their expertise, not least in alternative energy matters.[15] This also provides an additional explanation as to the lack of interest in developing new energy technologies prior to 2008.

In terms of arms exports during this period, energy security considerations can be said to have had a clear impact. The Labour government's control paradigm approach to energy security and concomitant desire to influence regimes in the Middle East saw the government willing to facilitate significant arms sales to this region throughout its time in government. The defence industry (in particular, BAE Systems) was unlikely to reject this support, especially as, on past experience, sales to the Middle East offered the chance to make significant profits.[16] In this way, the Labour government sustained the approach of the previous Conservative administration in allowing (and propagating) arms exports to the Gulf, despite the notion of an 'ethical foreign policy' that had been espoused by Foreign Secretary

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[13] 'Nearly half UK's [sic] biggest companies failing to act on carbon emissions law', *guardian.co.uk*, (14 June 2011) accessed at http://www.guardian.co.uk/environment/2011/jun/14/uk-biggest-companies-carbon-emissions on 5 October 2011.

[14] See House of Commons Defence Committee, *Third Report – Defence Equipment 2009*, HC. 107, session 2007-2008 (London: TSO, 2009) paragraph 159. MOD research spending was £676 million in 1995-96 and £632 million in 2006-07.

[15] See Chairman of BAE Systems, Dick Olver, *Speech made to the Woodrow Wilson International Center for Scholars* (12 July 2005) accessed at http://www.baesystems.com/Newsroom/SpeechesandPresentations/autoGen_10712810261.html on 1 October 2011 on 4 May 2012. Much of the speech was devoted to calling for greater technology cooperation between the UK and the US. Also, see House of Commons Defence Committee, *Seventh Report – Aspects of Defence Procurement and Industrial Policy*, HC. 675, session 1997-1998 (London: TSO, 1998) summary of recommendations, paragraph f: 'It is vital that the UK builds on the excellent basis of mutual trust and continues to give close attention to bilateral collaborations with the US, especially where the US offer the technologies essential to our future operational capability'.

[16] The Al-Yamamah arms contracts in the 1980s and 1990s are believed to have yielded £43 billion for BAE Systems and 'provided the profits that allowed it to keep staggering on when just about everything else it touched turned to dross'. See *The Economist*, 'Defender of the realm' (18 October 2007).

Robin Cook upon Labour's election to power.[17] This policy approach can best be ascribed to the continued British governmental desire to extend its influence in a key energy-producing region through arms sales. As Mark Phythian commented: '[Arms sales since 1945 have] played a key role in cementing influence and securing the continuation of the existing order'.[18]

Additionally, arms sales to the Middle East had other political benefits. The government policy of facilitating arms sales to the Middle East on behalf of the DIB presented the opportunity of further employment at this level of defence policy for the MPs involved upon leaving the government. This has been popularly termed the 'revolving door', with many MPs and senior officers within the armed forces attaining senior positions within defence companies upon leaving their original positions at the declaratory or operational spheres of policy.[19] In addition, senior figures within BAE Systems are believed to have had a significant influence on Tony Blair during his time in government, not to mention its influence on previous Prime Ministers.[20]

Taking all this evidence into account, Allison's GPM and Dorman's time cycle model provide the best explanations as to the specific nature of the impact of energy security considerations at this level of defence policy. Ultimately, the defence companies of the DIB were uninterested in energy security matters per se. This was demonstrated by the failure of senior figures within the defence industry to state the importance of the DIB in providing military capability that could potentially intervene to secure energy supplies for the UK. Rather, they were interested, as Allison's model indicates, in securing funding for the UK defence industry so as to ensure the British DIB's continued survival and, as private companies, profitability.[21] Thus, the movement towards sustainable security tenets in the last

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[17] Robin Cook commented 'The Labour Government does not accept that political values can be left behind when we check in our passports to travel on diplomatic business. Our foreign policy must have an ethical dimension and must support the demands of other peoples for the democratic rights on which we insist for ourselves. The Labour Government will put human rights at the heart of our foreign policy and will publish an annual report on our work in promoting human rights abroad'. Robin Cook, 'Robin Cook's speech on the government's ethical foreign policy', *guardian.co.uk* (12 May 1997) accessed at http://www.guardian.co.uk/world/1997/may/12/indonesia.ethicalforeignpolicy on 2 October 2011.

[18] Mark Phythian, *The Politics of British Arms Sales Since 1964* (Manchester; New York: Manchester University Press, 2000) p.2.

[19] See *CAAT Website*, 'Revolving door – log' (2012) accessed at http://www.caat.org.uk/issues/influence/revolving-door.php on 4 May 2012.

[20] See Mick Lambert, Judith Rattenbury and Ian Prichard, 'The Political Influence of Arms Companies', *Campaign Against the Arms Trade Paper* (April 2003) accessed at http://www.caat.org.uk/resources/publications/government/political-influence-0403.pdf on 4 May 2012.

[21] Graham Allison noted that players in the political arena represent their particular organisation or department and their own particular areas of expertise and concern. See *Essence of Decision*, p.156. The then Chairman of BAE Systems, Sir Richard Evans commented to the House of Commons Defence Committee in 2004 that 'If in fact we are not able to deploy shareholders' funds in this country in support of the current investments that we

few years of the Labour government can be understood in the context of the growing political importance of climate change within the UK. Thus, various defence companies within the DIB began to outline their need to cut overall carbon emissions from their day-to-day operations, so as to boost their corporate ethical profile and avoid environmental criticism.

The DIB remained obliged to develop the types of equipment the government and armed forces had asked for and the development of certain weapons platforms could be ascribed to some degree to energy security considerations. Despite this fact, there was still development of energy technology for military use. However, this was primarily for its perceived operational rather than any notion of its potential beneficial effect on climate change or energy resource competition issues. Finally, British arms exports to the Middle East in this period demonstrated a clear control paradigm approach to energy security from the British government, which facilitated sales to Middle Eastern countries as best it could so as to enhance British influence in this key strategic area. As regards the DIB, there was no indication that it saw its role in these exports as helping to enhance British energy security concerns. Still, there were other reasons for the sanctioning of these sales, such as the fact that the profits that these sales provided for the defence industry were often a significant proportion of their overall income.[22]

Defence Industry Statements from 1997 to 2010

If we firstly examine the views of senior figures within the British defence industry during this period, we can see that the British DIB's potential contribution to UK energy security considerations was not considered to be of sufficient importance to be utilised as a justification for continued investment in the British defence industry. Instead, defence industry figures were keen to point out that they thought it essential to maintain an independent British defence industry so as to ensure adequate supply of the British armed forces logistical requirements. Thus, defence-industrial policy was not in line with

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have here and they are not producing a satisfactory return, the existing management of BAE Systems will have to take that money to somewhere else where it can get that return and, if the management does not do it, the shareholders will put a new bunch of managers in who will do it'. House of Commons Defence Committee, *Sixth Report – Defence Procurement: Volume II: Oral and Written Evidence*, HC. 572-II, session 2003-2004 (London: TSO, 2004) answer to question 6.

[22] 'The conflicts in Iraq and Afghanistan and lucrative fighter jet work in Saudi Arabia helped lift profits at BAE Systems by 15% in the first six months of the year' in James Boxell, 'Conflicts buoy BAE's results', *The Financial Times* (September 13 2009); Sylvia Pfeifer, 'New naval outfit taps Mideast market', *The Financial Times* (21 July 2008): 'Britain's new naval shipbuilding champion is tapping into the prosperous Middle East market, teaming up with a company in the United Arab Emirates to provide support services'.

declaratory policy in its appreciation of energy security issues. For example, in oral evidence given to the Defence Select Committee in 1998, the head of the Defence Manufacturers Association (DMA) David Wright indicated that he was against foreign ownership of British defence companies such as (the then) British Aerospace as he saw this posing possible future problems as regards the supply of British soldiers: '[British ownership] is a security and supply [issue], it is a national interest in terms of the defence national interest ... This is the distinguishing feature of the defence industry from other industries. If you have not actually got it embedded there and securely able to supply you ... then your defence of the realm is at stake'.[23] This desire to defend the British DIB against the perceived danger of foreign ownership was again evident in 2003, when Sir Richard Evans (Chairman of the Defence Industries Council (DIC) and Chairman of BAE Systems) commented: 'The playing field is absolutely not level. It varies from country to country but certainly in the context of the US the Buy American Act provides certain protections. It is extremely difficult to compete on equal terms ... The fact of the matter is here in the UK - this is a point we have made repeatedly to government - we are probably the only country, certainly in terms of the western world, that has a pretty much open (although there may be one or two highly restrictive areas probably relating to nuclear capabilities) position in the context of bidding and tendering, and that absolutely and definitely is not reciprocated by any of the other markets that we go into'.[24] Similar views were again propagated in 2004 with Sir Richard Evans noting the importance of maintaining an independent British DIB for reasons of sovereignty, with the danger to BAE System's profits and defence jobs in the UK highlighted if this sovereignty was not sufficiently protected.[25] Indeed, in 2009 the defence industry was moved to setup the website *Defence Matters* and publish the paper *Securing Britain's Future and Prosperity* with the aim of highlighting the employment the British DIB provided in the UK, as well as the equipment the arms industry supplied to British armed forces to ensure the continued security of the UK.[26] Thus, the perennial issue for senior figures within the

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[23] House of Commons Joint Defence and Trade and Industry Committee, *Eighth Report – Aspects of Defence Procurement and Industrial Policy: Minutes of Evidence, 1 April 1998*, HC. 675, session 1997-1998 (London: TSO, 1998) answer to question 93.

[24] House of Commons Defence Committee, *Eighth Report – Defence Procurement: Minutes of Evidence, 13 May 2003*, HC. 694, session 2002-2003 (London: TSO, 2003) answer to question 17.

[25] 'What I really want to point out at the start of this hearing is that the Defence Industrial Policy is not a policy for industry's sake but it is actually, we believe, very much in the national interest. It is about the sovereignty of the UK and it is about our economic future'. House of Commons Defence Committee, *Sixth Report – Defence Procurement: Volume II: Oral and Written Evidence*, HC. 572-II, session 2003-2004 (London: TSO, 2004) answer to question 1. Also, see the answers to question 6 and 7.

[26] See *Defence Matters Website,* 'The defence industry in the UK today officially launches a new website to showcase its importance to the UK economy' (7 May 2009) accessed at

defence-industrial sphere in this period was the desire to maintain levels of funding from the government and so sustain an independent British defence industry.[27] Energy security justifications were evidently not seen as holding sufficient weight to carry the DIB's argument and were therefore not used.

Still, by 2008 there was evidence that the impact of climate change considerations at the declaratory level of policy had filtered through to the DIB and created a greater alignment between the two levels of defence policy. Thus, there was a move towards acceptance of sustainable security notions such as the need to cut greenhouse gas emissions to address climate change, as well as the imposition of energy efficient measures. For example, in 2008 Qinetiq produced a report for the Office of Climate Change (OCC) examining the potential for the abatement of carbon dioxide emissions through the introduction of new energy technologies.[28] Similarly, in 2009 Chris Courtaux of BAE Systems co-authored a paper outlining a model for efficient energy usage within the military. This referred to the MOD's *Climate Change Strategy* as a 'key driver for change in the use of energy in defence'.[29] Therefore, we can see that movements towards sustainable security tenets in this area were as a result of direction from the government. Indeed, despite not being a major issue for British defence companies, the desire to address the effects of climate change through greater energy efficiency could be seen from 2006, with BAE Systems' Annual *Corporate Responsibility Report* noting that 'climate change is now a serious issue for all companies'.[30] Subsequent reports noted that BAE Systems was looking to develop a coherent climate change strategy, as well as to analyse its own 'carbon footprint'.[31] This approach was also taken by companies such as Thales, which began producing an annual *Environment Report* in 2009.[32] Ultimately, the reasons for the adoption of this increasingly sustainable approach could be ascribed to government expectations for its defence suppliers to reduce their emissions following the

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http://www.defencematters.co.uk/news/%E2%80%9CVital%E2%80%9D-UK-industry-launches-Defence-Matters.aspx on 4 May 2012. Also see Ian Godden, 'Is England Asleep? The State of UK Defence Industrial Policy', *RUSI Defence Systems*, Vol. 12, No. 1 (2009). Ian Godden was Chief Executive of the Society of British Aerospace Companies (SBAC) and used this article to put forward the need for government investment and protection of the British defence industry.

[27] Tim Webb, 'Defence firms make plea for more spending', *guardian.co.uk* (1 September 2009) accessed at http://www.guardian.co.uk/world/2009/sep/01/arms-industry-plea on 7 May 2012 and *BBC News Online,* 'Defence industry 'vital for UK'' (1 September 2009) accessed at http://news.bbc.co.uk/1/hi/uk/8230910.stm on 7 May 2012.

[28] Pamela Farries and Chris Eyers, 'Aviation CO_2 Emissions Abatement Potential From Technology Innovation', *QINETIQ/CON/AP/CR0801111* (OCC, 2008).

[29] Zoe Banfield, Chris Courtaux and John Golightly, 'The Fully Burdened Cost of Energy, *RUSI Defence* Systems, Vol. 12, No. 2 (2009) p.90.

[30] BAE Systems, *Corporate Responsibility Report 2006* (BAE Systems, 2007) p.10.

[31] BAE Systems, *Corporate Responsibility Report 2008* (BAE Systems, 2009) p.20.

[32] Thales Group, *Environment Report 2009* (Thales Group, 2010).

Stern Review, as well as the desire of companies to appear 'environmentally-friendly' as this issue became more important with investors.[33] Indeed, in keeping with the increased importance of environmental issues for the government at the time, the MOD introduced a Sustainable Procurement Charter in 2008 that companies would sign in order to demonstrate their commitment to mitigating their industry's effect on the environment.[34] This illustrated the increased pressure from the declaratory sphere of policy for the DIB to demonstrate its green credentials, as the issue became more important in British political debate. Thus, the declaratory level of policy was exerting pressure on the DIB to adopt environmentally-friendly policies so as to demonstrate its own adherence to environmental principles. Hence, Allison's GPM helps to explain the increasing adoption of sustainable energy ideas within defence policy at this time, with the time cycle model explaining increased saliency of environmental issues in defence policy as the 2010 General Election drew closer.

British Defence Procurement Strategy from 1997 to 2010

Manifestations of a Control Paradigm Approach

If we try and determine the impact of energy security considerations on British defence procurement strategy between 1997 and 2010, we can observe that the decision at the declaratory level of policy to develop and acquire Astute class nuclear-powered submarines, the new Type 45 destroyers and the Queen Elizabeth class aircraft carriers was influenced to a large degree by the desire to have a power projection capability that could be utilised in areas of British interest. As we saw explained in Chapter Three, energy supplies from the Middle East were outlined as an important strategic interest in the *SDR* of 1998 and remained so throughout Labour's time in government. Thus, the procurement of these particular naval weapons platforms could be ascribed to a control paradigm approach to energy security and the desire to secure access to important energy resources (if need be) through their 'hard power' attributes. For example, the *SDR* commented: '... we plan to buy two new larger aircraft carriers to project power more flexibly around the world ... Aircraft carriers will have a wide utility, including for deterrence and coercion ... They can also offer a coercive

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[33] 'The UK government has placed climate change high on its agenda following the Stern Review ... The UK Ministry of Defence aims for its office estate to achieve carbon neutrality by 2012 and will expect suppliers to help them reduce their carbon footprint'. BAE Systems, *Corporate Responsibility Report 2006* (BAE Systems, 2007) p.11.

[34] David Robertson, 'MoD to require tally of environmental impact', *The Times* (August 18 2008)

presence which may forestall the need for warfighting, as recently in the Gulf [sic]'.[35] The coercion and deterrence capabilities of the new Astute class submarines were similarly outlined.[36] Similarly, in 2003 Defence Minister Adam Ingram commented that 'Power projection is a fundamental part of [the] capability requirement' for the future aircraft carrier project.[37] The Type 45 destroyer programme (initiated in July 2000) was an important part of this projection capability, providing an improved maritime air defence capability to protect the aircraft carriers, as well as enhanced anti-submarine ability.[38] Indeed, these three weapons platforms were envisaged as the key constituents of the 21st Century Royal Navy, thereby demonstrating the continued importance of using force as a means of securing British interests abroad.[39]

Certainly, senior officers at the operational level of policy also stated the importance of the aircraft carrier programme in ensuring a viable British expeditionary and power projection capability.[40] As already seen in Chapter Four, the Royal Navy in particular were keen to acquire new aircraft carriers as these would help maintain the prestige and independence of the Royal Navy and avoid the perceived threat of it becoming merely a support arm for the Army.[41] There was also the fact that each service had particular historical inclinations towards certain types of equipment and the three core weapons platforms in the naval construction programme fitted in neatly with these organisational tendencies.[42] Consequently, the Royal Navy's desire for these weapons platforms was also a key reason for their development.

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[35] *SDR*, paragraph 6, paragraph 115 and supporting essay 6, paragraph 26.
[36] *SDR*, paragraph 141.
[37] *Hansard*, HC Deb Volume 410, Column 701W (16 September 2003).
[38] NAO, *Ministry of Defence - Providing Anti-Air Warfare Capability: the Type 45 Destroyer – Report by the Comptroller and Auditor General*, HC. 295, session 2008-2009 (London: TSO, 2009) p.4, p.12.
[39] See Lee Willett, 'The Astute-Class Submarine – Capabilities and Challenges', *RUSI Defence Systems*, Vol. 7, No. 1 (2004) and *Hansard*, HC Deb Volume 429, Column 1 (10 January 2005) Defence Minister Adam Ingram: 'We are adapting and modernising the Royal Navy into a versatile maritime force that is structured to meet the challenges of the changing strategic environment of the 21st Century. Our investment will see the Navy's capability enhanced through the procurement of new aircraft carriers, Type 45 destroyers, Astute class submarines and amphibious support vessels'.
[40] FSL Admiral Sir Alan West: 'I think as far as my top priority in terms of procurement, it is the CVF[future aircraft carrier]'. House of Commons Defence Committee, *Fifth Report – Defence White Paper 2003: Minutes of Evidence, 24 March 2004*, HC. 465-II, session 2003-2004 (London: TSO, 2004) answer to question 73.
[41] See Paul Cornish and Andrew Dorman, 'Blair's wars and Brown's budgets: from Strategic Defence Review to strategic decay in less than a decade', *International Affairs*, Vol. 85, Iss, 2 (2009) pp.255-256.
[42] *Lions, Donkeys and Dinosaurs: Waste and Blundering in the Military*, p.216.

Direction from the Declaratory Level of Policy

As the above evidence indicates, decisions on equipment procurement were made primarily at the declaratory level, with attendant input from the armed forces at the operational level. The obvious point to make here is that the equipment and systems that the defence industry in the UK produced, as with any other country, was chiefly determined by the requirements of the British government and the British armed forces. This point was made in the *National Defence Industry and Technology Strategy* (NDITS) of 2004, (a report commissioned by the National Defence Industries Council (NDIC) and the National Defence and Aerospace Systems Panel (NDASP)) that commented 'Industry's technology strategy is driven by MoD's equipment procurement strategy in terms of both the equipment requirement and how it is procured and maintained'.[43] Indeed, the declaratory level of defence policy confirmed this interpretation when it observed in 2007's *Innovation Strategy* 'For innovation to flourish, we must identify our needs early and articulate our future capability aspirations in a form all potential suppliers can understand'.[44]

Due to this reliance on direction from the declaratory level of defence policy, the approaches to energy security manifested in procurement at the defence-industrial level of policy remained generally in line with that at the declaratory level. As such, there was a failure to emphasise research into alternative energy technologies until the last few years of the Labour government as the control paradigm approach to energy security meant this was not a priority. Where there was research and development into alternative energy technologies prior to 2006, this could be attributed to the specific nature of the programme (such as the Army's FIST programme) or the further development of technology that had already been utilised (the Type 45 destroyer's Integrated Electric Propulsion System (IEPS)) rather than any real appreciation of energy security issues. Then, as sustainable energy security ideas became more ingrained at the declaratory level of defence policy from 2006 onwards, there were increased calls by the MOD for ideas on how new energy technologies could be utilised by the military.

Firstly, if we examine the government's stated procurement strategy, we can see that there was little attention devoted to energy issues until the *Defence Industrial Strategy* of 2005. For example, the SDR of 1998 introduced the new procurement policy of 'Smart

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[43] NDIC and NDASP, *National Defence Industry Technology Strategy 2004: Executive Summary* (DTI, 2004) p.2.

[44] MOD, *Innovation Strategy: Creating a new environment for innovation within the defence supply chain* (MOD, 2007) p.5.

Procurement' in British defence policy. This aimed to improve the defence acquisition process through setting less ambitious targets for the initial capability of new equipment but meeting any emerging requirements with pre-planned upgrades.[45] There were also other measures to improve the cost-efficiency of defence procurement through the creation of Integrated Project Teams (IPTs) that would ensure a coherent 'through-life' approach to any procurement throughout the process of development.[46] Despite this recalibration of the procurement process, there was no mention here of the importance of the development of alternative energy technologies. This omission was continued in the 'Defence Support' chapter of the SDR that outlined the changes in the logistical framework of the armed forces for the 21st century.[47] Hence, the potential for development of alternative sources of power and fuel were not considered to be important enough to merit discussion within the declaratory level of policy at the beginning of the Labour government's time in office.

This approach continued with the publication of the government's *Defence Industrial Policy* (DIP) paper in 2002.[48] This update to the Smart Procurement programme (which had been renamed Smart Acquisition in 2000) was welcomed by the defence industry as a good demonstration of support.[49] Still, there was no mention of any desire to invest in alternative energy technologies for the military. For instance, the DIP stated that the global strategic environment had changed but there was no mention of what these changes were or how they should affect research and development strategies.[50] In the research and technology section of the paper there was also a lack of specificity on what areas the government's research budget should be invested in. Thus, the British DIB continued to receive little guidance from the declaratory level of defence policy on what emerging technologies should be research priorities. Indeed, this lack of direction from the government attracted a significant degree of criticism from figures within the defence industry at the time.[51]

The *Defence Industrial Strategy* (DIS) of 2005 provided the first statement of a desire to develop new energy technologies. Indeed, the DIS proved to be the most comprehensive statement of the Labour government's procurement strategy since it came to power in 1997.

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[45] *SDR*, paragraph 156.
[46] *SDR*, paragraph 157.
[47] *SDR*, chapter 9.
[48] MOD, *Ministry of Defence Policy Paper – Paper No. 5: Defence Industrial Policy* (MOD, 2002).
[49] See Claire Taylor and Tom Waldman, 'British defence policy since 1997', *House of Commons Library Research Paper 08/57* (27 June 2008) p.35.
[50] *Ministry of Defence Policy Paper - Paper No. 5: Defence-Industrial Policy*, p.3, p.5, p.7.
[51] 'A common concern identified by industry was the need for clarification on what UK industrial capabilities and defence industry would be required in the future'. House of Commons Defence Committee, *Sixth Report – Defence Procurement: Volume I*, HC. 572-I, session 2003-2004 (London: TSO, 2004) paragraph 108.

In contrast to previous statements on procurement, it provided greater detail on where it believed research and development within the defence industry should be concentrated in the future. As such, the requirement for development of alternative fuel and power sources was outlined in the section entitled 'Technologies for Future Capability Solutions': 'Key technologies that we will need to understand and exploit, or modify to meet military applications, are: efficient motive power for vehicles and power supply for systems; personal power sources; fuel cells ... We also recognise that integrated propulsion and power plant in UCAVs could become a critical defence capability as demand for power is driven by increasingly complex embedded electronics; and that UK excellence in propulsion provides the opportunity to gain a competitive advantage in this area of technology'.[52] However, this particular area for development, whilst being recognised, was not given major prominence within the DIS. Similarly, there was no mention of the need to develop these technologies to address the twin drivers of climate change and competition for energy resources. Instead, emerging energy technologies were part of a number of technologies outlined as important, including data and information technologies, sensor technologies and remote and autonomous operation technologies.[53] Consequently, alternative energy solutions were viewed as being one constituent part of an overall trend towards development of newer technologies, and were not considered an essential focus for development in their own right.

This articulation of the need for energy technology research was continued in the *Defence Technology Strategy* (DTS) of 2006, which expressed clearly for the first time the government's priorities in military research and development.[54] As such, fuel cells were articulated as a 'priority' technology for research and as important for future military capability: 'The availability of both electrical and motive power is of the highest importance to modern military operations, requiring a systems approach across the military logistics supply chain'.[55] This change in approach to energy technology reflected the overall governmental recognition of the importance of energy security considerations from 2006 onwards, which (as we saw in Chapter Three) led to a gradual appraisal of the importance of new energy technologies within the MOD. Indeed, for the first time the DTS outlined energy security and climate changes as 'key challenges' in future technology research and innovation. As such, we can see here the first correlation between developments in energy technology and the desire to address these twin drivers of insecurity.

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[52] *Defence Industrial Strategy: Defence White Paper,* Cm. 6697 (London: TSO, 2005) p.123.
[53] Ibid. pp.122-123.
[54] MOD, *Defence Technology Strategy for the demands of the 21st Century* (MOD, 2006).
[55] Ibid. p.52.

In addition, a number of programmes for research into energy solutions to particular problems were outlined by the MOD in the last year of the Labour administration. These included a 'Future Tank' that would need to have a 'reduced logistic footprint' and 'Electric drive systems to realise the potential for such a fighting vehicle system', as well as a 'Self Sustaining Forward Operating Base' that would need to rely on alternative and renewable fuel technologies.[56] Thus, these initiatives indicated that the MOD was starting to take the need to develop new energy sources more seriously in the last two years of the Labour government, as evidenced by the *Climate Change Strategy* and trinity of *Climate Change Strategy Papers* (as well as the *Sustainable Procurement Strategy*) that were published in this period.[57] Accordingly (as was to be expected given the importance of direction from the declaratory level of policy) there was an adoption of sustainable security notions in defence procurement

In sum, we can see that the lack of any clear enunciation of the need for research into alternative energy and power generation technologies at the declaratory level of defence policy led to delayed research into this particular area. As explained, the British DIB still relied heavily on direction as to what research areas to focus on from the government, due to the fact that the British government remained the key buyer of British military equipment. With this important factor in mind, we will now turn our attention to other reasons for the failure to invest in sustainable energy technologies since 1997.

The Cost of Major Procurement Projects and Budgetary Constraints

Defence Procurement under the Labour government was dominated by large equipment projects, which continued to incur large costs on the overall defence budget and restricted the development of alternative energy solutions through the lack of focus on other procurement options. The Labour government inherited a number of equipment projects that, along with budgetary constraints due to the economic downturn, contributed to an almost 50% real terms

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[56] See MOD, 'Future Protected Vehicle Capability Vision (FPVCV): Call for proposals & expressions of interest in Innovative and Novel Military Vehicle Technologies Sub Systems', *Centre for Defence Enterprise call for proposals & expressions of interest in Innovative and Novel Military Technologies Sub Systems* (MOD, June 2009) accessed at http://www.science.mod.uk/getpfd.pdf?158 on 4 May 2012 and Ministry of Defence, 'Reducing Operational dependency on Fossil Fuels Capability Vision: 'The Self Sustaining Forward Operating Base'', *Centre for Defence Enterprise call for proposals* (MOD, June 2009) accessed at http://www.science.mod.uk/search.aspx?client=default_frontend&filter=0&output=xml_no_dtd&q=sustaining&site=default_collection on 4 May 2012.

[57] See Chapter Four.

cut in the MOD's research and development budget from 1997 to 2010.[58] These projects included the Eurofighter (with a projected cost of £13.3 billion in 1993 that subsequently rose to around £20.6 billion), Nimrod (an initial projected cost of £2.4 billion that rose to the figure of £3.6 billion) and the Astute class attack submarines (initial projected cost of £2.1 billion; eventual estimated cost of £3.9 billion).[59] However, the blame for these procurement overruns could not be laid solely on the previous Conservative government as the Labour government's procurement decisions continued to result in large overspends, as well as continued delays in weapons systems entering service with the armed forces. The examples included the Army's much delayed Future Rapid Effects System (FRES) (which aimed to provide medium-weight armoured vehicles that could be deployed quickly via airlift), the new Type 45 Destroyers, the JCA being designed to replace the Harrier Vertical Take Off and Landing (VTOL) Jet and the Royal Navy's Queen Elizabeth class aircraft carriers.[60]

In addition, the high operational tempo of the armed forces during this period saw UORs being increasingly used to fill any capability gaps on specific operations. This had the effect of reducing the money that could be assigned to future equipment programmes, resulting in continued delays in those equipment programmes and less money allocated to research and development in defence.[61] Hence, research spending had to be focussed on specific areas, these being counter terrorism and support for operations, which paralleled with

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[58] House of Commons Defence Select Committee, *Sixth Report - Defence Equipment 2010*, HC. 99, session 2009-2010 (London: TSO, 2010) p.38.

[59] Eurofighter Typhoon and Nimrod figures taken from: NAO, *Ministry of Defence - Major Projects Report 1999 - Report by the Comptroller and Auditor General*, HC. 613, session 1999-2000 (London: TSO, 2000) p.2 and NAO, *Ministry of Defence – The Major Projects Report 2010 - Report by the Comptroller and Auditor General*, HC. 489-I, session 2010-2011 (London: TSO, 2010) date from figure 3; Astute figures taken from NAO, *Ministry of Defence - Major Projects Report 1999 - Report by the Comptroller and Auditor General*, HC. 613, session 1999-2000 (London: TSO, 2000) p.2 and House of Commons Defence Committee, *Third Report – Defence Equipment 2009: Memorandum from the Ministry of Defence*, HC. 107, session 2008-2009 (London: TSO, 2009) Ev. 84.

[60] For a detailed outline of the significant delays in the FRES programme since its inception see: NAO, *Ministry of Defence - The cost-effective delivery of an armoured vehicle capability - Report by the Comptroller and Auditor General*, HC. 1029, session 2010-2012 (London: TSO, 2011) p.5; for information on the Type 45 destroyer see: NAO, *Ministry of Defence - Providing Anti-Air Warfare Capability: the Type 45 Destroyer - Report by the Comptroller and Auditor General*, HC. 295, session 2008-2009 (London: TSO, 2009) p.17; for information on the delays in the Future Carrier and JCA programmes see: House of Commons Defence Committee, *Second Report – Future Carrier and Joint Combat Aircraft Programmes*, HC. 554, session 2005-2006 (London: TSO, 2005) and NAO, *Ministry of Defence – The Major Projects Report 2010 - Report by the Comptroller and Auditor General*, HC. 489-I, session 2010-2011 (London: TSO, 2010) date from figure 3.

[61] 'It can be clearly predicted that [the FRES] programmes are at risk from further delay or dilution due to the volume of UOR vehicles procured over the past two years'. Chris Maughan, 'The Impact of UORs on the UK Defence Industry', *RUSI Defence Systems*, Vol. 11, No. 3 (2009); Ian Godden: 'We have an incompatibility today between George Robertson's SDR and the money available for the Future Equipment Programme, so one of these two things has to give'. House of Commons Defence Committee, *Third Report – Defence Equipment 2009: Minutes of Evidence*, HC. 107, session 2008-2009 (London: TSO, 2009) answer to question 79; also, see David Kirkpatrick, 'Lessons from the Report on MoD Major Projects', *RUSI Defence* Systems, Vol. 12, No. 1 (2009).

the declaratory focus on expeditionary operations and defeating international terrorism. This was to the detriment of innovation in alternative areas, such as energy and power generation technology.[62] Similarly, the delay in the delivery of the various aforementioned weapons systems also contributed to a lack of focus on the perceived urgency of the development of alternative fuels and motive power systems. This is because, once fully operational, weapons systems such as the Eurofighter Typhoon and the JCA were expected to have a service life of around 25 years, if not longer.[63] Given this fact, as well as seeing that the UK's full complement of Typhoon's was not fully delivered during Labour's time in government and the JCA would not enter service during Labour's time in power, it was understandable that military planners were not heavily focussed on developing renewable or alternative energy technologies to be used in systems such as these. It would seem these considerations were more likely to be important in the next major round of procurement decisions that would be taken in the 10 to 15 years after 2010. It must also be noted here that the government's defence procurement strategy emphasised a 'through-life approach' that intended to upgrade basic weapons platforms with more advanced technology throughout their service life.[64] This presented the possibility that more advanced fuels could be utilised and alternative engine types installed by the armed forces as these became available. Accordingly, this provides another explanation as to the failure to address this issue in the early years of the Labour administration.

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[62] House of Commons Defence Select Committee, *Sixth Report - Defence Equipment 2010*, HC. 99, session 2009-2010 (London: TSO, 2010) pp.38-39

[63] See Keith Hartley, 'The Industrial and Economic Benefits of Eurofighter Typhoon: Updated Report', *Paper commissioned by Eurofighter PR & Communications Office* (2008) p.12, accessed at http://www.eurofighter.com/fileadmin/web_data/downloads/extpub/03_Typhoon_Updated_Report_Feb_2008.pdf on 4 May 2012 and Jeremiah Gertler, 'F-35 Joint Strike Fighter (JSF) Program: Background and Issues for Congress', *CRS Report for Congress* (2009) p.12, accessed at http://www.au.af.mil/au/awc/awcgate/crs/rl30563.pdf on 4 May 2012.

[64] *SDR,* paragraph 156 and paragraph 157; also, see *Innovation Strategy: Creating a new environment for innovation within the defence supply chain*, p.6; Chief Executive of defence company MBDA, Guy Griffiths: 'Today the UK MoD has 27 complex weapons either in service or under procurement, and one can envisage over the course of the next 10-20 years that through a policy of technology insertion (not massive new programmes but small investments in particular enhancements to those systems) one could both increase military capability at a relative modest expense but also, through introducing modularity, thin down and reduce the number of systems that need to be retained in service by making them more versatile to particular varieties of applications'. House of Commons Defence Committee, *Seventh Report – The Defence Industrial Strategy: Minutes of Evidence, 31 January 2006*, HC. 824, session 2005-2006 (London: TSO, 2006) answer to question 51.

An Increased Reliance on the Civilian Sector and Other Nations to Develop Transferable Energy Technology

Another reason for the lack of movement towards alternative and renewable energy technologies within the DIB was that, in the light of reduced research budgets, the UK government believed that the civilian sector and other states such as the US would be able to develop transferable technologies that the UK armed forces could then utilise.[65] For example, Elizabeth Quintana of RUSI stated that there was little perceived benefit within the RAF for the development of its own synthetic or bio-fuels, due to the aforementioned limited research budget. As such, they hoped that the US military or the civilian sector would develop a viable alternative fuel that could then be used within the British armed forces.[66] Similarly, Lord Walker commented that during his time as CDS (2003-2006) there was a degree of interest in the possibilities of alternative fuel technologies amongst the British armed forces but this was essentially seen as something that needed to be developed in the civilian sector.[67] Indeed, the need to collaborate more with civilian industries to develop transferable technology was outlined in the *SDR*.[68]

Additionally, although energy issues were not paramount in the MOD's thinking at the time, an emphasis on technology transfer with the Americans was outlined in the DIP in the comment 'The Government is pressing for a freer flow of technology created on both sides of the Atlantic. The UK has signed a Declaration of Principles with the US which commits both governments to improve the operation of transatlantic defence business. As part of these efforts we are seeking the easier transfer of defence information not just between the two governments but at the industry level'.[69] This desire to rely on the United States to develop technologies that could then be used by British forces was further illustrated by the signing of the US-UK Defence Trade Co-operation Treaty in 2007, which sought to reduce export controls and facilitate the transfer of classified technological data between the US and

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[65] 'As the SDR recognises, the growth of new and sophisticated technologies presents another significant challenge for MoD procurement. The solutions proposed in the new smart procurement initiative must address not only the lessons of history, but a range of new and emerging technological challenges. An increasing proportion of civilian technology can be adapted to military purposes or integrated into military systems'. House of Commons Defence Committee, *Eighth Report – The Strategic Defence Review*, HC. 138-I, session 1997-1998 (London: TSO, 1998) paragraph 320.

[66] See *Department of Defense Energy Blog*, 'Ministry of Defense [sic] Implementing Sustainability' (28 January 2010) accessed at http://dodenergy.blogspot.com/2010/01/uk-ministry-of-defense-role-in.html on 4 May 2012.

[67] Interview with Lord Walker of Aldringham, 17 March 2011.

[68] See *SDR,* supporting essay number three.

[69] *Ministry of Defence Policy Paper – Paper No. 5: Defence Industrial Policy*, p.16.

UK so as to enhance cooperation between the two states.[70] Indeed, senior figures within BAE Systems outlined the desire for greater technological cooperation between the two countries in 2006 and 2008.[71]

This indicated that there was the recognition within the British defence establishment that the United States was likely to make greater headway in the development of emerging technologies, and particularly in the field of alternative energy. This assumption was with good reason as there was a whole raft of publications by the different branches of the US armed forces in this period outlining potential responses to this issue.[72] Indeed, the interest in new energy technologies far outweighed that that was demonstrated by officers serving with the British armed forces.[73] Essentially, it appeared that the UK, due to reduced research investment, was more and more willing to buck-pass in terms of the research and development of sustainable energy technologies and sought to rely on technology transfer from the US in this area, as much as possible.

The Development of Alternative Energy Solutions within the British Defence Industry

As alluded to earlier in the chapter, there were advances made by British industry in terms of alternative energy technology for military use in this period. However, this progress was not directly related to any consideration of wider energy security issues. Rather it was due to the particular requirements of the systems that needed to be developed. For example, the Army's

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[70] Claire Taylor, 'UK-US Defence Trade Co-operations Treaty', *House of Commons Library Standard Note SN/IA/4381* (17 February 2009).

[71] 'If the US cannot find a way to share US systems technology for the Brits to do those things, then, speaking more as an individual British citizen, rather than CEO of BAE Systems, I am concerned about the consequences'. BAE Systems Chief Executive Mike Turner, *Speech to the Washington Economic Club* (10 May 2006) accessed at http://www.baesystems.com/Newsroom/SpeechesandPresentations/autoGen_107128111230.html on 4 May 2012 and Chairman of the DMA, Guy Griffiths, 'Meeting the Global Challenge Market', *Speech made to SBAC Conference* (27 March 2008) accessed at http://www.baesystems.com/Newsroom/SpeechesandPresentations/autoGen_1083110145.html on 4 May 2012.

[72] As early as 2001, the US Department of Defense [DOD] produced a document looking at ways to increase fuel efficiency in the US armed forces. See Department of Defense, 'More Capable Warfighting Through Reduced Fuel Burden', *Report of the Defense Science Board* (DOD, 2001) accessed at www.acq.osd.mil/dsb/reports/ADA392666.pdf *on 4 May 2012. Publications include: Lt. Colonel Michael J. Hornitschek, 'War Without Oil: A Catalyst for True Transformation', Occasional Paper No. 56: Center for Strategy and Technology (2006); Scott C. Buchanan [a strategist in the US DOD], 'Energy and Force Transformation', Joint Force Quarterly, Iss. 42, No. 3 (2006); also, see Department of Defense Energy Blog,* 'Ministry of Defense [sic] Implementing Sustainability' (28 January 2010) accessed at http://dodenergy.blogspot.com/2010/01/uk-ministry-of-defense-role-in.html on 4 May 2012.

[73] US General James Mattis, former military commander in Iraq, commented in 2003 'Release us from the tether of fuel'. There has been no similar statement by a British senior officer in the past decade or so despite the increased prominence of military views in the media recently. For further information on US energy technology developments in this period see *The Economist,* 'Technology Quarterly: Greenery on the march' (12 December 2009).

FIST programme sought to provide 'dismounted soldiers with an integrated suite of equipment that [optimised] their effectiveness on the battlefield'.[74] Essentially, this meant linking all of the soldier's future equipment (radios, computers, Global Positioning Systems (GPS), weapon sights and cameras) into an integrated system that would see each individual soldier able to transmit real-time information to their commanders so as to give a better impression of what was occurring on the battlefield.[75] Thus, this was essentially an NEC concept diffused to front-line soldiers at squad-level.[76] The power demands of the equipment to be used required the development of novel power generation technology and, as a result, in 2007 the MOD commissioned the British defence company Qinetiq and the American firm ABSL Power Solutions to develop personal power sources utilising fuel cell technology for this particular programme.[77] Similar investment was also put into research for naval and air force fuel cell technologies in 2008.[78] Similarly, the potential utilisation of hybrid electric drive technology in the Army's FRES programme was mooted as early as 1997 (although it must be noted here that this technology has been available in various forms for over a hundred years).[79] Still, this proposal was not due to energy security considerations per se. Rather, the operational advantages of such technology were of prime importance.

The Royal Navy had a particularly good history of innovation in motive technology for its ships, which seemed to give it a greater appreciation of energy issues and the potential application of new motive technologies.[80] Accordingly, in the examined period, Integrated Electrical Propulsion Systems (IEPSs) were planned for the new Type 45 Destroyers,

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[74] NAO, *Ministry of Defence – Major Projects Report 2007 Project Summary Sheets – Report by the Comptroller and Auditor General*, HC. 98-II, session 2007-2008 (London: TSO, 2007) p.176.
[75] Derek Barnes, 'A Vision of the Infantry Soldier in 2020', *RUSI Defence Systems*, Vol. 7, No. 3 (2005) p.77 and Paul Wathen, 'Trialling the Future Integrated Soldier Technology', *RUSI Defence Systems*, Vol. 7, No. 3 (2005) p.85.
[76] Refer to Chapter Three for further information on NEC.
[77] Nicholas Huleatt-James & Joseph McCarney, 'Outlook: Delivering fuel cell technology to the military', *Low Carbon and Fuel Cell Technology Knowledge Transfer Network Paper* (June 2008).
[78] Ibid.
[79] NAO, *Ministry of Defence - The cost-effective delivery of an armoured vehicle capability - Report by the Comptroller and Auditor General*, HC. 1029, session 2010-2012 (London: TSO, 2011) p.14 and Sandy Wilson, 'Hybrid Electric Drive', *RUSI Defence Systems*, Vol. 10, No. 3 (2008).
[80] The Royal Navy was the first service to use oil power for its ship; it was the first service to use nuclear power with the launch of the Resolution class nuclear-powered submarines in the 1960s; it was the first service to use electric propulsion with the Type 23 Frigates (entering service in the 1990s) being the first surface ships to utilise this motive technology. See C. G. Hodge and D. J. Mattick, 'The Electric Warship: Then, Now and Later', *Paper on electric propulsion and the advances over the last 30 years presented at INEC 2008 in Hamburg, Germany* (2008) accessed at http://media.bmt.org/bmt_media/resources/33/ElectricPropulsion.pdf on 4 May 2012.

Landing Platform Docks (LPDs) and Queen Elizabeth class aircraft carriers.[81] Electrical propulsion differs from the more traditional mechanical propulsion systems in that the ships engines produce a common pool of electricity which is then used to power the ship's engines *and* the ship's other onboard electricity needs (computer systems, general electric power etc). In contrast, traditional mechanical propulsion systems have two sets of engines; one set to propel the ship and the other set to provide the onboard electricity.[82] Because of this, electrical propulsion systems save space, are more energy-efficient and result in an increased range of operations.[83] Thus, the Royal Navy's most modern ships were employing novel energy technologies at this time but there is no evidence to suggest that this was due to the impact of energy security considerations. Instead, the operational advantages imparted by the IEPS were the main consideration.

As regards aerial vehicles during this period there was little investment in alternative sources of energy for manned aircraft within the British defence sector for the reasons previously outlined in this chapter. The picture in terms of unmanned vehicles became more promising from 2008 with the development of the solar-powered Unmanned Aerial Vehicle (UAV) Zephyr by Qinetiq in collaboration with a US company. Indeed, it was believed that Zephyr could have the capability to stay airborne for indefinite periods of time.[84] However, there was no specific in-service date for this and other UAVs in development by the MOD at this time (Watchkeeper and Taranis) were not planned to utilise alternative power sources, instead continuing to rely on traditional internal combustion engine propulsion.[85] Again, there is no evidence to indicate that the Zephyr's development was influenced to any significant degree by the desire to address climate change or any energy security considerations. Hence,

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[81] See Rosamond, Jon, 'All systems go as electric solutions power future ships', *Jane's Navy International* (May 2008) accessed at http://media.bmt.org/bmt_media/resources/33/ArticlefromJanesCJanesInformationGroup.pdf on 7 May 2012.

[82] See Captain S. S. Chitale, 'Integrated Full Electric Propulsion (IFEP)', *Paper presented at Twenty-third National Convention of Marine Engineers, Jaipur* (September 2009) accessed at http://www.ieindia.org/pdf/90/90MR203.pdf on 4 May 2012.

[83] See *Navy Matters Website*, 'Future Aircraft Carrier – CVF: part 2' (2012) accessed at http://navy-matters.beedall.com/cvf3-2.htm on 6 May 2012.

[84] *Qinetiq Website,* 'QinetiQ's Zephyr solar-powered unmanned aerial system is flown by US Naval Air Warfare Center personnel' (23 November 2009) accessed at http://www.qinetiq.com/news/pressreleases/Pages/us-zephyr.aspx on 6 May 2012 and Richard Gray, 'Solar powered spy plane breaks flight record', *The Daily Telegraph* (23 August 2008). The Zephyr stayed in the air for three and a half days.

[85] See an outline of the proposed Taranis Unmanned Combat Air Vehicle (UCAV) at *airforcetechnology.com,* 'Taranis, United Kingdom' (2012) accessed at http://www.airforce-technology.com/projects/tanaris/ on 4 May 2012. For information on the Watchkeeper UAV see *Thales Group Website*, 'Watchkeeper UAV undertakes maiden flight' (15 April 2010) accessed at http://www.thalesgroup.com/Pages/Event.aspx?id=6918 on 7 May 2012.

the operational benefits of this platform seem to have been the paramount factor in its development.

Given the above evidence, we can see that the MOD did begin to invest money into developing alternatives to traditionally powered equipment during the examined period. Through reduction in greenhouse gas emissions and improvement in energy efficiency, these were likely to aid in providing sustainable security solutions to the potential conflict drivers of energy resource competition and climate change, even if this was not one of the main intentions shaping their development. As such, there was some movement towards the adoption of technology amenable to sustainable security principles, although without the attendant sustainable security intentions being evident in the justification for their development.

Arms Exports: Evidence of a Control Paradigm Approach

In terms of the impact of energy security considerations on British arms exports we can see that there was a clear control paradigm approach apparent in the Labour government's desire to facilitate sales of defence equipment to the Middle East in the examined period. Certainly, the British defence industry used defence exports to bolster links between the UK and Saudi Arabia in particular, acting as a proxy for the Labour government. In this manner, the government hoped to ensure continued influence in a strategically important region, as well as close relations with a regime that controlled the world's largest proven oil reserves and whose oil production was a key determinant of world oil prices. Indeed, the *SDR* implied the importance of defence exports to Labour's defence vision.[86] Similarly, the Defence Select Committee certainly believed that British defence exports enhanced UK political influence in those countries that received British arms.[87] In addition, Mark Phythian commented that arms exports were 'an expression of Britain's desire to play a world role and a way of facilitating it'.[88] Thus, the evidence in succeeding paragraphs will demonstrate this argument.

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[86] 'The Government's manifesto contained a commitment to maintain a strong British defence industry. The MOD will continue to support and promote defence exports within the strict criteria laid down in July 1997 to avoid their misuse for aggression or internal oppression'. *SDR*, paragraph 163.

[87] 'There are also other significant but often unquantifiable benefits from defence exports. They may be decisive in supporting strategic defence manufacturing capabilities within the UK, and it is argued that they help open up overseas markets for civil exporters. They are also seen to help in cementing military alliances and in bringing political influence where it might not otherwise exist'. House of Commons Defence Committee, *Second Report – The Appointment of the New Head of Defence Exports Services*, HC. 147, session 1998-1999 (London: TSO. 1999) paragraph 10.

[88] *The Politics of British Arms Sales Since 1964,* p.33.

When we examine the evidence we can see there has been a history of arms exports between Great Britain and countries in the Middle East stretching back to the 1950s.[89] However, the most significant transactions in this region were the so-called Al-Yamamah arms deals of the 1980s and 1990s, which saw Saudi Arabia purchasing Tornado and Hawk jets from Britain for approximately £43 billion over a twenty year period.[90] This willingness to sell arms to the Middle East continued between 1997 and 2010 despite Labour's supposed 'ethical' foreign policy. For example, by monetary value, Saudi Arabia was the top destination for British arms exports in 1998 and 2003, as well as being the second largest export market for each of the years from 1999 to 2001.[91] Similarly, Oman was the fourth and third most valuable destination for British arms exports in 2004 and 2005 respectively and the United Arab Emirates (UAE) was the fourth most valuable market in monetary terms in 1998.[92]

Following on from this, a further accord between the UK and Saudi Arabia (termed 'Al-Salam') confirmed in 2007, resulted in the agreement to sell 72 Eurofighter Typhoons to Saudi Arabia for a fee of £4.4 billion, from which BAE Systems would benefit greatly.[93] It would appear that the desire to keep this agreement for security reasons (which was mooted in meetings between Tony Blair and the Saudi regime in 2005) was behind the termination in December 2006 of a Serious Fraud Office (SFO) investigation into alleged corrupt practices used to secure the previous Al-Yamamah arms deals. This termination was in response to threats from the Saudi royal family that they would cut diplomatic links, intelligence co-operation and end the Al-Salam arms deal, following SFO efforts to gain information on Swiss bank accounts used by the Saudi regime and allegedly connected to bribes provided by BAE Systems.[94] The grounds given for the closure of the investigation by the SFO were the 'need to safeguard national and international security'.[95] In relation to this, it was emphasised by the SFO and the Attorney General that the motive for termination was not related in any

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[89] See *The Politics of British Arms Sales Since 1964*, chapter 5 and chapter 6.
[90] *The Sunday Times*, 'BAE cashes in on £40 billion Arab jet deal' (20 August 2006) and Tim Webb , 'Bribing for Britain: Government Collusion in Arms Sales Corruption', *Goodwin Paper Number 5* (CAAT, 2007) p.13
[91] Access Strategic Export Controls Annual Reports at http://www.fco.gov.uk/en/publications-and-documents/publications1/annual-reports/export-controls1 accessed on 2 October 2011.
[92] Ibid.
[93] See *CAAT Website*, 'Arms Trade Issues - Saudi Arabia' (2012) accessed at http://www.caat.org.uk/issues/saudi-arabia.php on 4 May 2012.
[94] 'BAE: Company out of control', *CAAT Paper* (2008) p.3, accessed at http://www.caat.org.uk/resources/publications/ on 4 May 2012.
[95] CAAT, 'Submission to High Court of Justice : Eurofighter', *CAAT Document* (2007) Paragraph 27, accessed at http://www.controlbae.org.uk/background/CAAT_witness_statement.pdf on 4 May 2012.

way to economic interests.[96] This seems to be belied by the fact that Tony Blair emphasised the number of jobs that could be lost in the UK if the Al-Salam arms deal did not go through, as well as the importance of maintaining good relations with a country that had a wider 'strategic interest' for the United Kingdom.[97] Thus, we can see that good relations with such an important oil producer were more important to the British government than the need to conduct a justifiable criminal investigation.[98]

Another reason for the continued arms exports to the Middle East was the significant political influence that defence companies (particularly BAE Systems) had on the government at this time. In this instance, we can therefore see Allison's GPM in play, with senior figures in the DIB able to influence declaratory policy to a significant degree. For example a defence industry insider commented that BAE Systems Chairman Sir Richard Evans was one of the few businessmen who could see Prime Minister Tony Blair on request.[99] This was certainly not a new development, as Michael Portillo had noted that when he was Defence Secretary in the preceding Conservative administration senior figures in the defence industry would often bypass him and speak directly to the Prime Minister about their particular concerns.[100] Indeed, there was a clear manifestation of what has been termed the 'revolving door' in this period. In essence, the 'revolving door' sees Ministers, government officials and ex-members of the armed forces taking up jobs in the defence industry upon vacating their original occupations, and figures within the defence industry taking up seconded roles within government.[101] The implication here is that this allows the defence industry to maintain close personal relationships with members of the government, potentially skewing procurement decisions in favour of vested interests rather than more objective considerations.[102] Previous senior figures at the declaratory and operational levels of policy who now work for companies involved in defence include Geoff Hoon, Adam Ingram, Dr John Reid, ACM Sir Glenn Torpy, Admiral Sir Alan West and Lieutenant General Richard Applegate.[103]

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[96] Ibid. paragraph 28.
[97] *BBC News Online*, 'Blair defends Saudi probe ruling' (15 December 2006) accessed at http://news.bbc.co.uk/1/hi/uk_politics/6182125.stm on 7 May 2012.
[98] 'BAE: Company out of control', *CAAT Paper* (2008) p.4.
[99] Mick Lambert, Judith Rattenbury and Ian Prichard, 'The Political Influence of Arms Companies', *Campaign Against the Arms Trade Paper* (April 2003) p.3.
[100] 'How the MoD Wastes Our Billions', *Dispatches- Channel 4*, first broadcast on 20 September 2010.
[101] Mick Lambert, Judith Rattenbury and Ian Prichard, 'The Political Influence of Arms Companies', *Campaign Against the Arms Trade Paper* (April 2003) p.3.
[102] Ibid.
[103] See *CAAT Website*, 'Political Influence: Revolving Door – Log' (2012) accessed at http://www.caat.org.uk/issues/influence/revolving-door.php on 4 May 2012.

Thus, the political influence of figures within the British DIB was another reason for the facilitation of British arms sales to the Middle East by the declaratory sphere of policy, either through the allowance of military exports to countries in the region or via direct meetings with those countries' rulers. Indeed, from 1997 until 2010 successive Defence Secretaries conducted bilateral meetings with Middle Eastern countries such as Oman, Kuwait, Qatar, Iraq, the UAE and Saudi Arabia every year, indicating the importance that was attached to maintaining good relations with these countries.[104] This intervention was important for many British defence companies as the Middle East was either a profitable region at this time or considered to be a region in which companies could potentially enhance their future profitability.[105]

Finally, arms exports to regions such as the Middle East were encouraged as a key means of ensuring the survival of an independent British defence industry that could act as a symbol of continued British independence on the international stage (as well as ensuring security of supply in the event of war).[106] For example , the *SDR* stated 'The British defence industry is outstandingly successful and a vital national asset. It provides jobs for over 400,000 people and earns the country around £5Bn [sic] from exports each year. From a defence point of view a healthy and competitive industrial base is crucial to ensuring that we will be able to continue to procure the right equipment for our forces at competitive prices'.[107] The same arguments in support of the British defence industry were used by Defence Secretary Geoff Hoon in 2002 and Defence Minister Lord Drayson in 2007.[108]

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[104]Defence Minister Adam Ingram: 'The Ministry of Defence provides a high standard of support to legitimate defence exports. The Defence ministerial team plays a full part in this work and Ministers have continued to promote UK defence exports vigorously. In recent years we have helped the UK defence industry to win orders worth on average around £5 billion annually ...'. *Hansard,* HC Deb Volume 429, Column 19 (10 January 2005). For a list of overseas visits made by Cabinet Ministers costing in excess of £500 from 1997 onwards see *National Archives Website*, 'Travel and Gifts' (17 July 2009) accessed at http://webarchive.nationalarchives.gov.uk/+/http://www.cabinetoffice.gov.uk/propriety_and_ethics/ministers/travel_gifts.aspx on 6 May 2012.

[105] Outside the UK, EU and the US, Saudi Arabia was the largest defence market in monetary terms for BAE Systems in 2007 and 2008, accounting for £1.9 billion and £1.6 billion respectively. See 'Leveraging Global Capability', *BAE Systems Annual Report 2008* (BAE, 2009) p.118; 'Cobham is developing its activities in regions and countries which are forecast to experience higher growth rates, such as India, South Korea, Saudi Arabia and other Middle East states'. Cobham, *Cobham Annual Report and Accounts 2009* (Cobham, 2010) p.9; 'There was also strong growth in Chemring's munitions division, where sales leapt by 35 per cent thanks to orders from the Middle East', John O'Doherty, 'Bomb detectors lift Chemring sales', *The Financial Times* (18 January 2011).

[106]*Ministry of Defence Policy Paper – Paper No. 5: Defence Industrial Policy,* p.10.

[107] *SDR,* paragraph 162.

[108]'We all benefit from the quality of our defence industry. And we can be proud of its success. It provides some 3% of the UK's manufacturing output and employs some 345,000 people directly and indirectly. The defence industry makes a major contribution to the UK economy and to this country's science and technology base. Over the past 5 years it has achieved a global market share of some 21%, which is second only to the US defence industry - which is of considerably greater size'. Geoff Hoon, *Speech at the Defence Industry Conference*

Indeed, Jean Seaton has argued that, such is the desire to retain an independent British defence industry, that British defence policy can ultimately be seen as a defence industrial policy.[109] Certainly, Antonia Feuchtwanger believed this to be a key reason for the continued overspending on British military equipment in her book *The Best Kit; Why Britain's Defence Doesn't Need an All- British Defence Industry.*[110] Also, we can see Allison's GPM at play in the desire for the Labour government to be seen to be protecting British industrial jobs, as any loss could affect key parliamentary constituencies. For example, Gordon Brown's decision when Prime Minister to build the mooted aircraft carriers on the River Clyde and Portsmouth was seen by some as a way of upholding the Labour vote in key Labour seats.[111]

In sum, there was essentially a continuity of approach between the Labour government and their Conservative predecessors in the desire to promote arms exports to Middle Eastern countries.[112] Energy security considerations and the desire to maintain influence in a key global region certainly played a significant part in this attitude, although the lobbying power of the British DIB and the desire to protect and maintain an independent British defence industry were also key determinants of this approach.

Conclusion

In conclusion, we can see that energy security considerations had a variable degree of impact on the defence-industrial level of policy in this period. Firstly, we saw that defence industry representatives were interested in defending the position of the British defence industry by emphasising the importance of security of supply of military equipment to British forces, as well as the jobs that the industry sustained within the UK. The importance of the equipment produced by the DIB in ensuring the maintenance of overseas interests was not greatly used as this would have been a tenuous argument at best. As such, we can see that the GPM

(October 14 2002) accessed at http://articles.janes.com/articles/Janes-Defence-Weekly-2002/CONFERENCE-Geoff-Hoon-s-speech-at-the-EXHIBITIONS.html on 30 April 2012 and Lord Drayson, *Speech at the Defence Manufacturers Reception* (16 May 2007) accessed at http://webarchive.nationalarchives.gov.uk/20081120170436/http://www.mod.uk/DefenceInternet/AboutDefence/People/Speeches/MinDES/20070516DefenceManufacturersAssociationReception16May2007.htm on 30 April 2012.

[109] Jean Seaton, 'The Defence and Security Review We Need', *The Political Quarterly*, Vol. 81, No. 3 (2010) p.363.

[110] Antonia Feucthwanger, *The Best Kit; Why Britain's Defence Doesn't Need an All- British Defence Industry* (London: Policy Exchange, 2004).

[111] Angus Macleod, David Robertson and Roland Watson, 'Revealed; the truth about the aircraft carrier deal', *The Times* (22 October 2010).

[112] Neil Cooper, 'Arms exports, new labour and the pariah agenda', *Contemporary Security* Policy, Vol. 23, No. 3 (2000) p.62.

explains the lack of alignment between the declaratory and defence-industrial spheres of policy in this respect, with the British DIB keen to protect its position within the British defence establishment through arguments regarding British independence, industrial expertise and employment. However, the articulation of sustainable security notions by the DIB from 2006 onwards demonstrated the increasing importance of the issues of climate change and energy competition in defence and reflected the saliency of these issues as the 2010 General Election drew nearer. As we saw in Chapter Three, this could therefore be attributed to Dorman's time cycle model and the attendant contraction of the time cycle at the declaratory sphere leading to pressure from the government for the British DIB to demonstrate their environmental credentials. Similarly, in political terms, adopting sustainable energy targets boosted defence companies' corporate credentials. Thus, despite continued arms sales to Middle Eastern countries, there was an adoption of certain sustainable security tenets in this period that represented a positive move towards an ultimate ideal of sustainable energy security across the British defence establishment.

In terms of defence procurement, we saw that the development of the Astute class submarines, Type 45 destroyers and Queen Elizabeth class aircraft carriers was motivated to a degree by a governmental desire to maintain British influence in areas such as the Middle East. As such, their development could be ascribed to a control paradigm approach to energy security. There was also a lack of significant investment in energy technology research due to the cost of major procurement budgets and the assumption that the UK would be able to accrue the benefits of any technological research conducted by the United States or the civilian sector. Yet, there was research into alternative energy technologies for military use as regards the Army's FIST programme, the Royal Navy's IEPS and the development of the Zephyr solar-powered UAV, although their development could not be accredited to the impact of any energy security considerations.

Finally, we saw that arms exports to the Middle East were used in this period to bolster British influence in a region that was key to supplying British (and global) energy needs. In this manner, the Labour government continued the control paradigm approach of their Conservative predecessors. Nonetheless, there were other noteworthy explanations for the promotion of arms exports to the Middle East. The DIB had significant lobbying power and was able to use the 'revolving door' to try and sway Ministers to aid arms exports to the profitable Middle Eastern market. Also, the government was keen to promote arms exports as these ensured the profitability of the defence industry and helped safeguard jobs in key constituencies. Thus, we can again see the effect of the GPM, with the need for the

government to maintain political support and the interaction between different levels of defence policy leading to particular decisions being made at the defence-industrial level of defence policy.

Conclusion

This thesis has examined the impact of concepts of energy security and sustainable security on defence policy during the tenure of the previous Labour government. In order to do this effectively, it utilised Ian Bellany's framework for analysis that was initially outlined in his 1994 book *Reviewing Britain's Defence.* This divided British defence policy into three 'spheres' of policy: the declaratory level, the operational level and the defence-industrial level. Hence, this structure created a sound methodological scaffolding that allowed effective analysis of the separate strands of defence policy, as well as enlightening the reader as to any synergies or differences between the three levels.

In addition to Bellany's analytical model, the ORG's concepts of a control paradigm and a sustainable security paradigm were used as twin prisms so as to analyse the effect of energy security considerations on defence policy in the examined period. The former paradigm allowed us to view the impact of energy security issues on defence policy through the justification of the need to develop or maintain the capability to deploy military force to secure important energy resources. In contrast, the latter paradigm emphasised a preventative approach, and its effect would therefore be seen in the espousal of the need to adopt better energy efficiency standards and develop alternative energy technologies for military use in order to address the conflict drivers of climate change and energy resource competition and, in the process, also enhance the United Kingdom's energy security. Also, Andrew Dorman's time cycle model of defence policy and Graham Allison's three models of government were used as effective explanatory tools to clarify the reasons for the specific nature of the impacts of energy security considerations at each level of defence policy. Finally, Chapter Two outlined the energy needs of the United Kingdom in the examined period, so as to provide a solid understanding of the context in which decisions on energy security would be made.

Ultimately, the main body of the thesis established that energy security considerations did have an impact at each level of British defence policy between 1997 and 2010. However, this impact was variable and depended upon the differing aims of the actors at each of the policy levels. As such, there was no consistency in approach to the question of energy security considerations throughout defence policy. Still, where energy security issues were referenced, there tended to be a clear manifestation of the ORG's control paradigm approach, with an emphasis on the securing of fossil fuels resources through military action. For example, the declaratory level of defence policy considered energy security to be a key issue

during this period, as the United Kingdom continued to rely heavily on fossil fuel-derived energy for its transportation and electricity generation needs. The need to ensure a continued supply of overseas energy resources in the face of diminishing North Sea oil and gas reserves, as well as rises in global energy prices, saw declaratory policy (in documents such as the *SDR* and *The Future Strategic Context for Defence*) emphasising the importance of maintaining the ability to intervene in energy-rich areas such as the Middle East. In essence, until 2008 there was a purely control paradigm approach to the issue of energy security, with the British armed forces' expeditionary capability being seen as an important means of ensuring continued energy supplies to the UK. However, as Chapter Three demonstrated, this was a rational governmental appraisal of a very real security concern. Certainly, there was a distinct lack of viable energy alternatives on offer for immediate use in the early part of the period under examination. This fact was evidenced by the concurrence with the government's approach from the House of Commons Defence Committee, the Chief Scientific Adviser to the MOD, as well as the failure of opposition parties to criticise the government for failure to develop alternative energy technologies for use by the military. Thus, in the final analysis, until 2008 the approach of the Labour government to the issue of energy security was ultimately a decision based upon rational considerations, rather than any political pressure from other actors within defence policy or the wider British political establishment. In view of this, Allison's RAM provided the best explanation as to the impact of energy security considerations at the declaratory level of policy in the first eleven years of the Labour government.

The RAM explanation for the energy security approach displayed at the declaratory level of policy was in stark contrast to the lack of interest shown in energy security matters by the Army and RAF at the operational level. Instead, both these services were initially more concerned with retaining their high-end warfighting capability in the face of uncertainty over their future roles following the recent end of the Cold War and the newly elected Labour government's desire for the armed forces to be a 'force for good in the world'. As such, energy security considerations were not considered to provide sufficient justification for the two services' organisational and procurement proclivities. Additionally, there was the assumption in the Army that whatever mission they were tasked with they would have the capability and ingenuity to adapt to the exigencies of the specific environment in which they were deployed. This was due to the experiences garnered from the many differing combat environments the armed forces had been involved in since 1945. Similarly, the increased use of UORs in military operations during this time meant any past requirement for the need to

develop equipment for use in specific regions or to fulfil a definite capability gap gradually receded.

Still, as Labour's time in power looked to be drawing to a close and funding cuts became a distinct possibility, senior RAF officers used energy security justifications as a means of proposing continued investment in the RAF. This displayed a pertinent recognition of the increased saliency of energy issues within political discourse at this time (although not the sustainable security tenets that were being espoused within the declaratory circle of policy at this time; the RAF continued to emphasise how its conventionally powered equipment could ensure access to energy resources through the use of military force). However, the Army continued to ignore energy issues (except for occasional reference in doctrinal papers produced by the DCDC). Instead, its continued embroilment in operations in Afghanistan saw it emphasising the need to adapt the Army's outlook and organisational structure so it was better suited to similar operations in the future. In light of this, Allison's GPM provided an effective explanation as to the varying degrees of appreciation of energy security matters amongst the two services, with energy issues only impacting on the views of senior officers if they were seen as providing a strong argument for the continued funding of their service.

Ironically, the GPM also provided an effective explanation for the noticeable impact of energy security considerations in the statements and doctrine of the Royal Navy throughout the period in question. This was due to the fact that the Royal Navy could use the issue of energy security as a means to emphasise its economic importance to the British government and, in this manner, secure continued investment for its mooted procurement programmes. Indeed, the increasing political saliency of energy issues from 2003 onwards (with the publication of 2003's *Our Energy Future – Creating a Low-Carbon Economy*, the Stern Review of 2006 and the Climate Change Act of 2008) saw a continued stress by the Royal Navy on its ability to ensure access to energy resources through military action. As such, the ORG's control paradigm approach to energy security was manifested by the Royal Navy from 1997 until 2010.

The work of the DCDC also demonstrated another difference in approach to energy security at the operational level of defence policy. As a department of the MOD, this body consisted of military and civilian personnel whose stated aim was to 'produce concepts and doctrine ... to help inform decisions in Defence strategy, capability development and

operations ...'.[1] Essentially, the DCDC's *Strategic Trends* programme saw climate change and energy resource competition as being key global conflict drivers from 2003 until 2040. This recognition of the importance of energy security considerations to defence policy could be attributed to the relative independence of the DCDC from the contemporary concerns of the government and the armed forces. It was allowed the scope to look forward twenty to thirty years in the future and to consult with independent strategic thinkers working outside the MOD. However, its stated reaction to these conflict drivers remained essentially a control paradigm response, with the application of military force still seen as the most effective means of ensuring the United Kingdom's continued energy security. Again, this viewpoint could be ascribed to the peculiar makeup and role of the DCDC within the MOD. The freedom it had to predict the likely future security threats in the approaching two to three decades, combined with the civilian component to create an appreciation of the likely long term impacts of the energy security conflict drivers. Nevertheless, the military members of the DCDC put an emphasis on a military response to these drivers that was consistent with their backgrounds and training.

At the defence-industrial level of policy, energy security considerations had little effect on the perceptions of senior figures in the defence industry until 2008. There was no mention of the ability of the UK defence industry to protect British energy interests by producing equipment and weapons platforms that enhanced the UK's expeditionary capability. Instead, statements from defence industry representatives demonstrated that their main focus was on the desire for the Labour government to continue to invest in the British DIB and also protect it from foreign takeover. The GPM provided an explanation for this approach as the DIB (in a similar vein to that demonstrated at the operational level of policy) remained understandably eager to defend its position within the British defence establishment in the face of cuts in research and development funding, in addition to delays in equipment programmes as the government sought to make short-term cost savings in the defence budget.

Still, despite the lack of impact of energy security concerns on the consciousness of actors within the defence industry, a control paradigm approach was discernible in the development of weapons platforms such as the Type 45 destroyers, the Astute class nuclear-powered submarines and the Queen Elizabeth class aircraft carriers. These could all be used for power projection purposes and, given the statements made at the declaratory level about the importance of maintaining access to the Persian Gulf and its energy resources, were

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[1] *DCDC Website*, 'What We Do' (2012) accessed at http://www.mod.uk/DefenceInternet/MicroSite/DCDC/WhatWeDo on 4 May 2012.

therefore developed by the government to ensure the United Kingdom could continue to secure its interests abroad, with these interests including energy concerns. Of course, there were other factors in their development, including the Royal Navy's desire for the procurement of such large weapons platforms as a demonstration of the Royal Navy's continued independence as a service, as well as an organisational inclination towards these types of platforms.[2]

Similarly, the continued facilitation of significant arms sales to Middle Eastern regimes illustrated the British government's desire to maintain and demonstrate its influence in such a key strategic area. Thus, a control paradigm approach to energy security was again demonstrated with the desire to maintain the 'military advantages enjoyed by key regional allies', as well as the continued fostering of close links with the Saudi Arabian and Omani regimes. Nonetheless, as with the development of the Royal Navy's new weapons platforms, there were other reasons for the assistance the government gave to British arms exporters. These included the lobbying power of the British defence industry, as well as the belief that the profits that overseas arms sales garnered for British defence companies would allow the continued existence of an independent British DIB. Of course, what this (and the procurement of military equipment such as the Type 45 destroyer) demonstrated, was that the DIB was to a certain extent beholden to the procurement decisions taken by the government and, to a large extent, the operational level of policy. Hence, any development of alternative energy technology (and consequent movement towards sustainable security tenets) would ultimately have had to come from direction given by the declaratory and operational spheres of defence policy.

Accordingly, we saw that the aforementioned differences and differing approaches to energy security at the three policy levels justified the use of the ORG's control paradigm idea, as well as Allison's three models of government. Both of these concepts were able to provide suitable explanations for the effect (or lack thereof) of energy security considerations at each level of defence policy. They also aided in illuminating the wider concerns at play at each level of defence policy and demonstrated the difficulty of transmitting the importance of particular security threats through all levels of defence policy, in the face of differing aims and concerns at each particular level.

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[2] Lewis Page, *Lions, Donkeys and Dinosaurs: Waste and Blundering in the Military* (London: Arrow, 2007) p.216.

The ORG's sustainable security paradigm and Dorman's time cycle model were also of great use in identifying and explaining the changes in the appreciation of energy security concerns at the declaratory and defence-industrial levels of policy from 2008 onwards. For instance, the election of David Cameron as Leader of the Conservative Party in December 2005 and the subsequent appointment of Gordon Brown as Prime Minister in 2007 saw environmental issues rising up the political agenda in Britain, as both of the main political parties attempted to emphasise their 'green' credentials (not least the Conservatives, who were keen to use environmental issues to portray themselves as a more 'friendly' party). Certainly, the passing of the Climate Change Act of 2008 saw the creation of legally-binding emissions targets for all government departments. Thus, the impending general election of 2010 created an imperative for the government to display its willingness to address greenhouse gas emissions at all levels of government. This had the effect of compelling the MOD to publish its own *Climate Change Strategy* in December of that year. As it would have appeared politically remiss to ignore the substantial contribution of the MOD to Britain's 'carbon footprint', the declaratory level of policy increasingly moved towards the espousal of sustainable security notions with the further publication of papers such as the *MOD Climate Change Strategy 2010*, *Defence In a Changing Climate* and the *Sustainable Procurement Strategy*. These papers outlined the requirement for the MOD and the armed forces to cut their greenhouse gas emissions and move towards greater development of alternative energy technologies so as to address the issue of climate change and, in the process, improve the UK's energy security situation. However, statements from Defence Secretaries in 2009 and 2010 showed that the government was still eager to retain influence in the Middle East due to the continued reliance on oil reserves from this region.

In light of this evidence, we saw that Dorman's time cycle model provided an effective explanation as to the reasons for the adoption of sustainable energy security principles at the declaratory level of defence policy from 2008 onwards. The forthcoming general election and the increased saliency of climate change and energy security (following the Stern Review and the UN IPCC report of 2007) meant the Labour administration was keen to avoid any opprobrium on these issues in all areas of government policy. Indeed, the government's increased focus on the need to institute sustainable energy principles was transmitted to the defence-industrial level of policy with the establishment of the Sustainable Procurement Charter in 2008. Accordingly, the DIB became more willing to demonstrate its environmental credentials in journal articles, reports and specific papers such as Qinetiq's *Aviation CO_2 Emissions Abatement Potential From Technology Innovation* and Thales

Group's annual *Environment Report*. Of course, as well as receiving a stimulus from the government on this issue, British defence companies understood the beneficial public relations effects that followed from the institution of such measures.

As well as helping to explain the particular impact of energy security issues on defence policy from 2008, Dorman's time cycle model also aided in the explanation of other aspects of defence policy that were addressed in the main analysis. For example, we saw that the impact of the 9/11 terrorist attacks in the United States drastically changed the focus of British defence policy towards the combating of international terrorism and WMD proliferation. This left little chance of sustainable security principles being adopted as the UK became involved in long-running conflicts in Iraq and Afghanistan. Similarly, the increased use of UORs when the armed forces were deployed overseas indicated a disjuncture between policy formulation and policy implementation in defence policy. Thus, the short-term political judgements of the government to intervene in certain regions did not always match up to the equipment capabilities of the armed forces. Finally, the DCDC's contention in its 2010 *Strategic Trends* papers that the development of alternative energy technologies in the near future would not be sufficient to replace fossil fuels appeared to be in contrast to the positive statements regarding renewable energy made in government papers such as the *MOD Climate Change Delivery Plan*, as well as the government's own targets set out in the Climate Change Act of 2008.[3] Given this evidence, we could see that the government and DCDC were operating in different time cycles, with the DCDC able to look ahead several decades, whilst the government had to operate in its own short-term political cycle (which emphasised its 'green' credentials) as the 2010 General Election drew ever closer.

This study also revealed that there was evidence of sustainable security ideas and technologies being adopted within the British defence establishment during this period without any attendant conception of the need to address the sustainable energy security drivers of climate change and energy resource competition. These changes were primarily caused by the operational experiences and imperatives of the time. Firstly, the Army's experiences of stabilisation missions in Iraq and Afghanistan in this period saw a gradual appreciation of the need to adopt a 'Comprehensive Approach' to security. This meant greater inter-governmental and inter-departmental cooperation in the course of military operations and an Effects-Based Approach to Operations (EBAO) that focussed on the likely result of any military or political actions rather than emphasising the use of force as an end in

[3] This aimed at a legally binding target of an 80% reduction in emissions within the UK by 2050.

itself. Thus, the sustainable security paradigm's notion of greater integration between government departments was embraced by the Army. Indeed, this idea was the prime conceptual focus of the Army from 2003 onwards, with senior Army officers and DCDC doctrinal papers outlining the importance of this approach in contemporary and future operations. There was a similar recognition of the importance of a 'Comprehensive Approach' to security in RAF doctrine at this time and, to a lesser extent, Royal Navy doctrine. However, the recognition of energy security issues in doctrine produced for the RAF and Army came from the DCDC and reflected their greater appreciation of these issues in comparison to the Army and RAF alone.

The experience of operations in such places as Afghanistan also affected the declaratory level of policy and saw the 'Comprehensive Approach' to security propounded with the publication of the *NSS* in 2008, which also noted the importance of an integrated approach to the United Kingdom's security challenges. In contrast to the Army and RAF, there was an appreciation of energy security issues and the *NSS* did recommend the diversification of energy supplies and the development of renewable energy technologies as appropriate responses to future energy security challenges. The articulation of these measures would have been in response to the findings of the Stern Review of 2006 and the UN IPCC Report of 2007. However, despite the positive intent of the document, there was little in the way of precise content on how an integrated response to security threats would be instituted within government. As such, it bore the hallmarks of inter-departmental compromise which was redolent of Allison's GPM.

Sustainable energy technologies for military usage were also researched at this time but without any energy security justifications. Instead, operational requirements were the paramount rationale for their development. For instance, the FIST programme looked to develop portable power devices to power dismounted infantry's individual equipment. This was part of the wider drive to develop NEC within the armed forces and was stimulated by future operational requirements. Similarly, there was also continued development of the more energy efficient IEPS for many of the Royal Navy's new ships, but, again, the main rationale for its use was the operational benefits that this motive system provided. Indeed, the British defence establishment's technological focus on NEC in this period was certainly a factor in the lack of investment and lack of interest in renewable and alternative energy technologies. This was combined with an expectation that the British armed forces would be able to reap the benefits of any civilian or US military technological developments.

Looking to the future, the new Conservative government's Defence Review (entitled *Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review*) saw energy security as a key issue in the face of the rising need for oil and gas imports to fuel Britain's economy.[4] Interestingly, there was little mention of the need for the military to adopt renewable and alternative energy technologies, perhaps highlighting again the importance of the electoral cycle in the publication of such documents as *Defence in a Changing Climate*. However, the sustainable security notion of greater inter-departmental cooperation on this issue was certainly highlighted, indicating that the lessons of the Labour era were understood to some degree.[5] Ultimately, it appeared that the dominant control paradigm approach that was evident during the Labour government's time in power was likely to persist as long as fossil fuels remained the predominant energy source, although the development of alternative energy sources may provoke a gradual evolution away from these in the future.

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[4] MOD, *Securing Britain in an Age of Uncertainty: The Strategic Defence and Security Review*, Cm. 7948 (London: TSO, 2010) p.50.
[5] Ibid. p.51.

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