

**Crossnational Divergence in Post-OPEC Embargo Energy Policy:
Foreign Policy Capacity in Germany and the United States**

by

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Abstract

This thesis explains the origins of the differing domestic energy policy regimes in the United States and Germany. Using historical process tracing, the author argues that policy diverged following the 1973-74 Energy embargo. This crisis allowed space for considerable policy innovation in the two nations, but Germany was able to carry out far more extensive domestic reforms. The author argues Germany had a much greater incentive to pursue these often costly policies thanks to its limited foreign policy capacities. This hypothesis is tested using a methodology derived from Alexander George and Andrew Bennett's work on case studies and a theoretical model based on Terry Karl and Paul Pierson's analysis of critical junctures and path dependence. The United States, by contrast, was able to execute a solution based on securing external supplies. The thesis concludes by exploring the implications for contemporary energy policy.

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Dedication

To My Family, with love and affection

1 Introduction

Contemporary observers agree: the United States and Germany have differing domestic energy regimes. The United States has a very limited national energy policy, largely focused on research and development funding and conservation programs. Given the U.S. economy's substantial dependence on imported sources of energy, the limited nature of these efforts is puzzling. By contrast, various levels of Government in Germany strongly incentivize certain types of energy consumption and use through tax incentives, direct subsidy, and investment in 'green' energy infrastructure. These nations are in most senses quite similar, sharing relative affluence, dependence on imported sources of energy (though there is a very important difference in the degree of dependence and the sources of energy), and a federalized structure. Following the Second World War, similar energy policies were adopted in both nations. When and why did their respective energy policies diverge?

This question is of particular interest given contemporary developments in geopolitics and energy policy. Recent increases in conventional energy costs have triggered a debate about the extent of existing global reserves, while scientists and environmentalists decry the ecological damage caused by fossil fuel production and consumption. These concerns have provoked much discussion concerning the possible sources and implications of this difference. This essay attacks this question by using case studies to examine divergences in national policies. Germany and the United States are the cases chosen for further examination in this study. Both are extensively studied and noted for their distinctive policy choices. Germany has chosen to strongly support the generation and use of alternative energy sources, while the U.S. has tended to focus on maintaining secure supplies of conventional sources. I argue this difference arose following the 1973 OPEC embargo,

which starkly confronted western nations with the reality of external energy dependence. To explore the implications of historical events on policy, I deploy a theoretical framework that explores the importance of critical junctures (i.e. historical events) and path dependence (i.e. aggregations of policy decisions) upon cases. I conclude that the causal factor of the observed difference in energy policy was foreign policy capacity. The U.S. was able to turn the problem of high prices into one of securing external supply, given its particularly powerful foreign and military prowess. Germany, unable to exercise this option, contented itself with extensive and ever deeper domestic reforms.

This essay proceeds along the following lines: first, a brief narrative history of German and U.S. energy policy will be presented, identifying key events, actors, and institutions which influenced choices made in the aftermath of the embargo and the development of policies. Subsequently, a literature review will illustrate how scholars have conceptualized the development and implementation of energy policy. An original framework will then be presented which argues that foreign policy constraints and opportunities were the most significant factor in determining the nature of the divergence between German and U.S. policy. Some alternative explanations for the difference between cases are addressed and contextualized. Finally, some alongside generalized conclusions, possible implications for contemporary policy, and avenues for additional research are presented.

2 Energy Policy in Germany and the United States

2.1 Germany

Following World War II, the Federal Republic of Germany (FRG) pursued energy policies aimed at encouraging domestic industries and securing imports. The coal industry was favoured with generous subsidies, protective tariffs, and coal-based infrastructure, speaking to the economic and historic power of the trade. Even with these measures, Germany followed the western world into the oil age; in 1955 coal provided 75 percent of total energy, by 1972 the resource provided only 23 percent. Over the same period, oil increased from 23 to 60 percent of the total energy supply.¹ Following the war, global oil and gas prices were low, thanks to the wartime construction of infrastructure to extract and process these vital commodities, facilitating the FRG's transition to an oil based economy.

During the 1950s, environmental issues began to attain political salience. One early controversy concerned air pollution in the heavily industrialized Ruhr valley (*Ruhrgebiet*) region. Spurred on by inaction at the Land (state) and federal level, the opposition Social Democratic Party (SDP) made "Blue skies over the Ruhr" a centerpiece of their 1961 national campaign. Though the SDP was not victorious, the Christian Democratic-led Land government chose to implement some modest measures in response to constituent demands. When an SDP-led coalition came to power in 1969, the new government paid a great deal of lip service to environmental policy. The government's execution was ineffective however, as environmental competencies were added to economic ministries whose priorities conflicted with the nascent green movement. Coherent environment and energy

¹ Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power*, New York NY: Free Press, 1991, pg. 545

policy would not be possible unless and until the executive was significantly reformed.²

Bureaucratic changes were implemented slowly; the federal environment ministry was created in 1986, shortly after the Chernobyl disaster and three years after the federal Green party won seats in the Bundestag.

The Organization of Petroleum Exporting Countries (OPEC) embargo provoked two responses from the West German government. First, efforts were made to ensure that imported energy sources were secured through negotiations with producing nations.

Controversially, these sources included the Soviet Union, a move which drew the ire of the United States.³ In the theory section, Germany's limited capacity and autonomy in the international sphere will be discussed in more detail. Second, strong incentives for new energy technology were implemented. These 'sweeteners' included a substantial amount of monetary assistance to encourage research into and construction of green energy facilities.⁴

At present, Germany imports 45 percent of its oil from OECD sources, 33 percent from Russia, and 14 percent from OPEC nations, suggesting diversification has been largely successful.⁵ Figure 1 demonstrates the total energy supply trends in Germany from 1971-2009, fully encompassing the period of this study. This data suggests that renewable sources have been increasing substantially since the late 1990s. Nuclear, a source whose sustainability is the subject of much controversy, saw major increases between the embargo and the Chernobyl incident. Natural gas, a relatively clean hydrocarbon has seen major increases, while dirtier coal and oil have seen decreases. These trends are not just influenced by

² Hanger, Carol J., *Technological Democracy: Bureaucracy and Citizenry in the German Energy Debate*, Ann Arbor: University of Michigan Press, 1995, pgs. 63-64

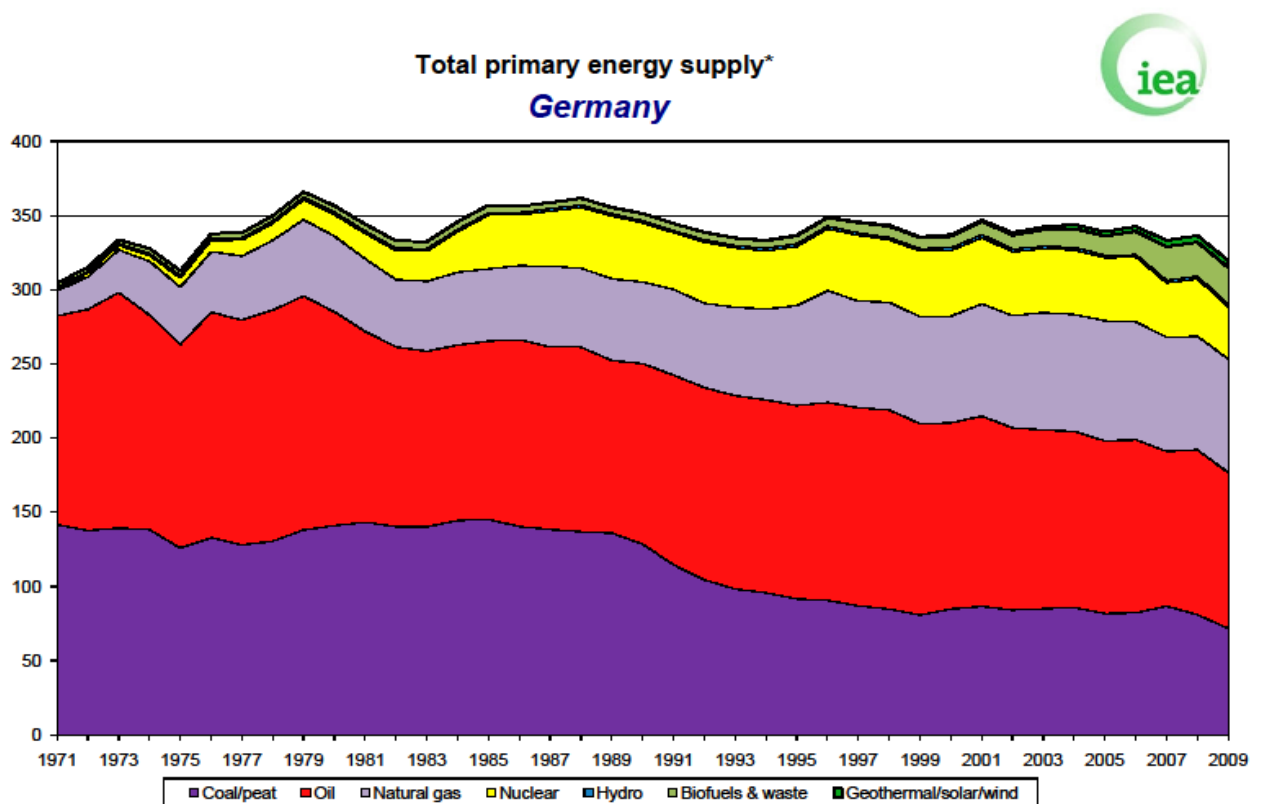
³ Yergin 1991, 742

⁴ Eberlein, Burkard and G. Bruce Doern eds. *Governing the Energy Challenge: Canada and Germany in a Multi-Level Regional and Global Context*. Toronto: University of Toronto Press, 2009

⁵ Burkard and Doern 50

sustainability, natural gas has increased largely because Germany has been able to maintain good relationships with regional exporters and develop some domestic reserves.

Fig. 1: Total Primary Energy Supply in Germany, 1971-2009⁶⁷



⁶ According to the United Nations *Energy Statistics, Definitions, Units of Measure and Conversion Factors*, Series F, No. 44, primary energy is, “is calculated by the International Energy Agency as production of fuels + inputs from other sources + imports - exports - international marine bunkers + stock changes. It includes coal, crude oil, natural gas liquids, refinery feedstocks, additives, petroleum products, gases, combustible renewables and waste, electricity and heat. Domestic supply differs from final consumption in that it does not take account of distribution losses. The supply and use of energy commodities are converted to Kg. oil equivalent using standard coefficients for each energy source.”

⁷ Source: International Energy Agency, http://iea.org/stats/graphresults.asp?COUNTRY_CODE=DE, units of measure are Millions of Tonnes of Oil Equivalent (MTOE), © International Energy Agency 2009, by permission.

Table 1: 2009 Supply and Consumption Figures for Germany⁸

in thousand tonnes of oil equivalent (ktoe) on a net calorific value basis

SUPPLY and CONSUMPTION	Coal and Peat	Crude Oil	Oil Products	Natural Gas	Nuclear	Hydro	Geothermal, Solar, etc.	Biofuels and Waste	Electricity	Heat	Total*
Production	45703	3874	0	11113	35164	1605	4769	24861	0	0	127089
Imports	26763	100109	33293	76317	0	0	0	1	3600	0	240083
Exports	-874	-112	-22453	-9047	0	0	0	0	-4655	-6	-37148

2.2 United States

In the United States, energy and environment issues were not a source of contention for some two decades following the Second World War. The politically well connected and economically powerful oil industry and the U.S. government shared identical goals of encouraging a vibrant domestic oil industry and secure supplies of imports. David Painter labels this arraignment ‘corporatism’ and suggests it fostered a sustained tendency for limited government involvement in energy policy.⁹ Washington promoted the production and use of domestic energy reserves, while also promoting investment opportunities for U.S. companies abroad. These policies suited the companies, which fully supported both actions, and the government, which placated a major domestic economic actor and kept energy prices relatively low. Since corporations and government held identical aims, the government felt no compelling need to challenge oil interests. Corporatism was largely successful for a time; domestic oil production supplied 90 percent of demand through the end of the 1960s. However, total U.S. oil production peaked during the same period, necessitating a rapid

⁸ Source: International Energy Agency, http://www.iea.org/stats/balancetable.asp?COUNTRY_CODE=DE, © International Energy Agency 2009, by permission.

⁹ David S. Painter, *The Political Economy of U.S. Foreign Oil Policy, 1941-1954*, Baltimore: Johns Hopkins University Press, 1986, pg. 2

increase in imports during the first years of the 1970s.¹⁰ While the doomsday predictions of early ‘peak oil’ scholar M. King Hubbert, who argued that production would ‘spike’ before declining rapidly, carried much weight, events proceeded along a different path. Since then, U.S. production has remained roughly flat (and indeed has remained so until the present day). Problems resulted from increased demand as a result of economic expansion; the only solution was to increase imports.

As oil imports increased, environmental issues became politically salient. The first Earth Day, observed on April 22, 1970 proved to be a galvanizing moment which transformed environmentalism from a boutique academic interest into a politically relevant mass movement. As a direct result of this outpouring, President Richard Nixon created the Environmental Protection Agency and supported passage of the Clean Air Act.¹¹ Both have had significant impacts on U.S. energy policy by promoting conservation and regulating pollution, which in essence encourages certain forms of energy production over others. In the aftermath of the embargo, the United States implemented a number of environmental and energy policies. The first effort was promulgated by the Nixon administration in 1973, the so called Project Independence. This effort entailed a lowering of national speed limits to reduce consumption and broad commitments to conservation, development of alternative sources of energy, increased use of domestic resources (particularly coal), and additional funding for mass transit with the goal of making the U.S. ‘energy independent’ by 1980.¹² As was often the case with these proposals, independence was a much lauded but poorly defined goal: if this could only be achieved through exclusive reliance on domestic sources, the cost to society would be very great and the political ramifications profound.

¹⁰ Yergin 2011, 235

¹¹ Yergin 2011, 526

¹² Carl W. Biven, *Jimmy Carter’s Economy: Policy in an Age of Limits*, Chapel Hill: University of North Carolina Press, 2002, pg. 154

While the Carter Administration made some efforts to engage in domestic energy reforms, the production approach was confirmed in the Reagan Administration, which eschewed alternative energy policies and attempted to boost domestic production while securing stable external supplies. Daniel Yergin argues that renewable energy policies represented a ‘major discontinuity’ between the two administrations. While Carter and Reagan both promoted deregulation and the removal of Nixon era price controls, Reagan, and the Republican Party more generally, saw efforts to boost renewable energy production as an anathema to their liberal free-market economic values.¹³ While the Reagan Administration dismantled Carter’s renewable energy policies, market forces conspired to further undercut alternative sources of energy. Throughout the early 1980s, in response to expanded supply from non-OPEC nations and improved conservation measures in the developed world, oil prices declined precipitously. From a height of 34\$ a barrel, oil fell to as little as 10\$ a barrel by 1986.¹⁴ Yergin observes that U.S. R&D funding for renewables has tended to fluctuate roughly in parallel with oil prices since that time, with a recent spike during the current high plateau in energy prices combined with the election ideologically sympathetic Obama administration. However, there has not been a significant and coherent domestic renewables program on anything like the scale or ambition of the German example.

Figure 2 demonstrates that U.S. oil consumption fell somewhat following the embargo, but gradually increased in the following decades. Indeed, U.S. total energy use fell briefly in the 1970s thanks to the embargo and subsequent price shocks but has risen almost continuously since, with the recent economic crisis producing a sharp decline.

¹³ Yergin 2011, 532

¹⁴ Yergin 2011, 533

Fig. 2: Total Primary Energy Supply in the United States, 1971-2009¹⁵

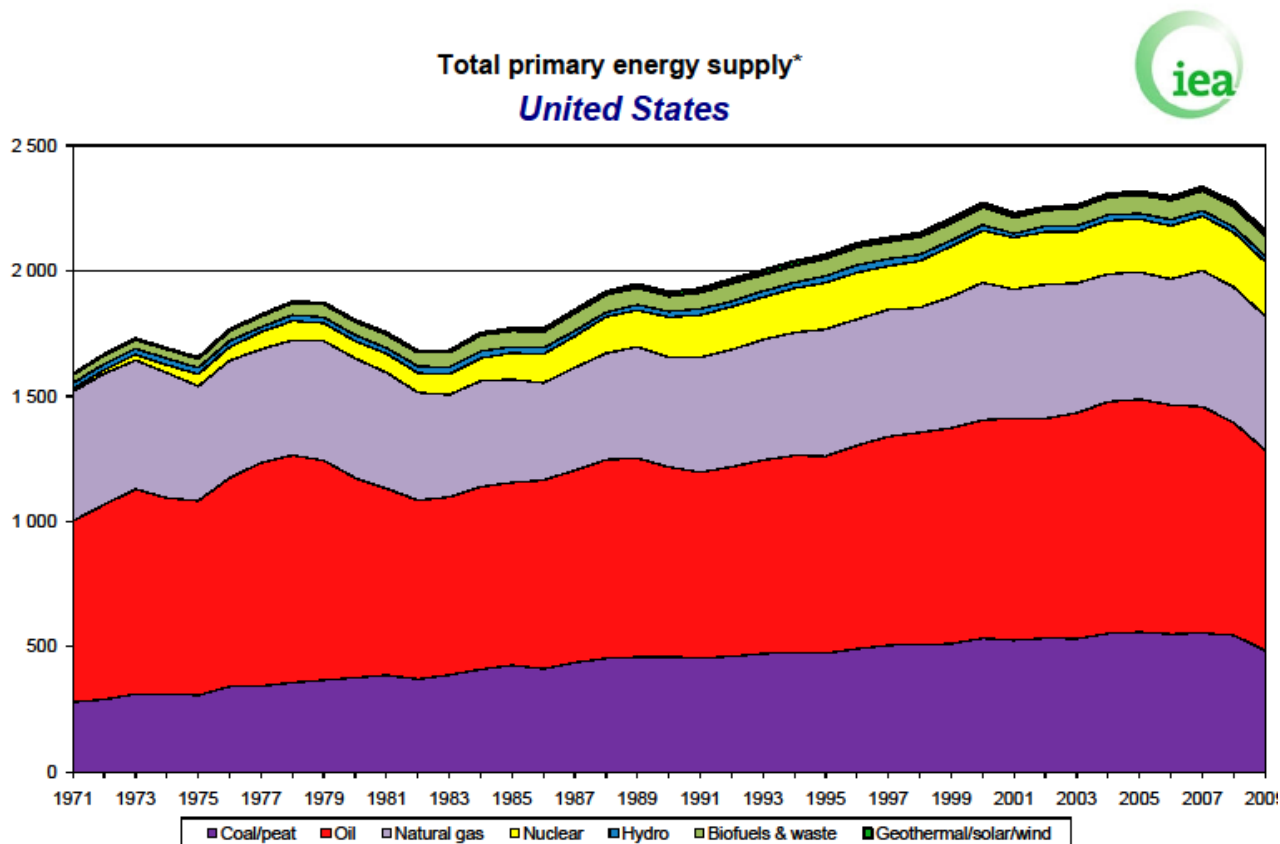


Table 2: 2009 Supply and Consumption Figures for the United States¹⁶

in thousand tonnes of oil equivalent (ktoe) on a net calorific value basis

SUPPLY and CONSUMPTION	Coal and Peat	Crude Oil	Oil Products	Natural Gas	Nuclear	Hydro	Geothermal, Solar, etc.	Biofuels and Waste	Electricity	Heat	Total*
Production	530133	337062	0	478572	216358	23701	16251	84326	0	0	1686402
Imports	12757	535581	80666	87009	0	0	0	632	4488	0	721134
Exports	-34866	-8579	-91621	-24627	0	0	0	-867	-1560	0	-162120

¹⁵ Source: International Energy Agency, http://iea.org/stats/graphresults.asp?COUNTRY_CODE=US, units of measure are Millions of Tonnes of Oil Equivalent (MTOE), © International Energy Agency 2009, by permission.

¹⁶ Source: International Energy Agency, http://www.iea.org/stats/countryresults.asp?COUNTRY_CODE=US, © International Energy Agency 2009, by permission.

3 Literature Review

This section examines the existing literature across several broad subfields of the political science literature to see how scholars have analyzed these events and the differing policies that resulted. Most energy policy scholarship takes place in a world slightly apart from the broader political science and public policy schools. Journals such as *Energy Policy* feature a purpose built suite of interdisciplinary and applied methods. There is also an extensive energy literature within the political science field. Some scholars primarily tackle the subject using comparative means, particularly when attempting to understand differences within or across domestic regimes. Studies have focused both on sub-national energy policies, particularly in diverse federal jurisdictions where regional factors strongly affect the potential for various forms of energy development, and cross-national studies which compare distinct sovereign nations and their constituent elements, such as local and regional governments. These distinct threads are relevant to the cases chosen for this essay, both being strongly federal states with a good deal of regional energy diversity.

IR scholars tend to examine the foreign policy and geopolitical implications of the global energy trade and how states secure energy supply through foreign and military policy. Some also analyze how ideas and norms are translated into policies and institutions. One example of this thread is the work of Martha Finnemore and Kathryn Sikkink, who analyze the influence of norms, culture, and ideas on international politics. They note that, “IR scholars have generally assumed that the existence of a coercive state able to enforce laws made domestic order very different from international order... (however) even within a domestic setting, making successful law and policy requires an understanding of the

pervasive influence of social norms of behaviour.”¹⁷ This reading suggests the relationship between international and national norms is close; they share similar characteristics and can easily influence one another.

Finnemore and Sikkink’s framework includes a discussion of how norms become institutionalized over time. This process occurs, “by clarifying what, exactly, the norm is and what constitutes violation and by spelling out specific procedures by which norm leaders coordinate disapproval and sanctions for norm breaking.”¹⁸ The authors posit that three hypothetical factors influence the transfer of domestic norms onto the international stage: legitimation from international sources, prominence of the states advancing the norm, and intrinsic characteristics (i.e. the substance) of the norm being promoted.¹⁹

This work is of use in understanding how different jurisdictions might adopt differing policies. However, I would argue that Finnemore and Sikkink’s work is of limited use because energy policy is not yet subject to the kind of strong norms that would cause uniform policies to be adopted. While the U.S. is often scolded and Germany praised for their respective policies in contemporary media, at the time of the embargo there were few such constraints.

Another stream of IR research conceptualizes foreign policy and its relationship to other policy areas. Mihaela Papa defines foreign policy as “state policy directed to matters beyond state borders, especially relations with other countries. As such, it is about the interactions between domestic and international affairs.”²⁰ Papa observes that, “every state operates within its specific political, cultural, and historical context which shapes its menu

¹⁷ Martha Finnemore and Kathryn Sikkink. “International Norm Dynamics and Political Change.” *International Organization*. 52 (4). 1998. pg. 893

¹⁸ Finnemore and Sikkink 900.

¹⁹ Finnemore and Sikkink 906.

²⁰ Mihaela Papa, “Environmental Foreign Policy: Towards a Conceptual Framework,” in *Environmental Change and Foreign Policy: Theory and Practise*, Paul G. Harris ed., Oxford: Routledge, 2009, pg. 203

for choice.”²¹ This understanding is a useful tool for understanding state capacity in foreign policy, a subject that will be treated at length in this paper’s framework. While Papa primarily focuses on how domestic factors influence foreign policy, this paper will examine how foreign policy impacts the outcome of various foreign and domestic energy policy options.

Global or international energy policy scholars use common IR themes such as security as explanatory variables, often reflecting realist conceptions of self-interest and international order.²² Shane Mulligan’s work examines how security, environmental and energy concerns have interacted over time in different political contexts. Mulligan argues that governments are generally ill-prepared to cope with the imminent peaking of fossil fuel production, reserving particular criticism for the U.S. which relies on rhetorical slights of hand (such as ‘energy independence’) instead of adopting effective policy solutions.²³ However, I argue that this literature does not accurately reflect the heterogeneous energy security and normative concerns among nations. Mulligan assumes that all nations have similar capacities and motivations for engaging in policymaking. While this framework is perhaps useful on a more abstract level, once again when speaking of this kind of contextual understanding and specificity required for a good small-n case study, Mulligan’s ideas are less useful. For example, Mulligan is unable to comprehend why the U.S. might have particular difficulties in designing and implementing a policy, he assumes Washington’s motivations and capacities are similar or identical to other nations. I in fact argue that the U.S.’s special international position allowed for an extra option when it came to energy policy, bypassing the need for politically fraught domestic reform. A small-N analysis provides an empirically sound basis for understanding the broad divergence in energy policy among developed

²¹ Papa 210

²² Shane Mulligan, “Energy, Environment, and Security: Critical Links in a Post-Peak World,” *Global Environmental Politics* 10 (4), May 2010.

²³ Mulligan 92

nations as such methods can allow for detailed and substantive analysis of varied domestic conditions.

Moving on from norms and their influence on policies and institution, we find a second concern of this literature examining human consumption of resources; these works focus on human lifestyles and their relative sustainability. Energy issues are often related back to consumption and the threat it poses to human well-being.²⁴ According to Peter Dauvergne, excess consumption is a by-product of globalization and can only be solved through some form of global governance mechanism.²⁵ Much research in the field has focused on finding informal mechanisms that create informal governance structures within economic supply chains, such as corporate social responsibility (CSR) or third party certification programs such as fair trade. I argue that energy policy is still largely the parish of national states and formal governance mechanisms, as can be seen in the deliberately weak institutional design of the International Energy Agency (IEA) and the limited progress made with binding international mechanisms. In essence, there are no binding international mechanisms which can substantially force a national state to alter its domestic energy policy. While a number of normative factors might be in play, such as shaming nations which produce or consume dirty sources of energy, national states remain the final arbiter of energy policies.

A final key focus of the Global Environmental Politics (GEP) literature concerns multi-level governance and the impact of overlapping institutional 'layers' on the development and implementation of energy policy. This section of the literature will be the subject of a considerable section of this essay, given the extensive body of research which has arisen on the subject and its relevance to my theoretical framework and chosen cases.

²⁴ Peter Dauvergne, "The Problem of Consumption," *Global Environmental Politics*, 10 (2), May 2010

²⁵ Dauvergne 4

Several aspects of this research are also useful when developing a new theoretical understanding of the different policies in the chosen cases. John Barry, Geraint Ellis, and Clive Robinson note that national government policies on renewable energy are often opposed by local or regional interests. The authors perform a rhetorical (content) analysis upon the materials released by wind project opponents in Great Britain, concluding that local interests tend to defend their position by casting aspersions upon the motives of national policymakers and asserting local environmental quality rights in the face of national interests.²⁶ This approach however, cannot account for cases where national governments adopt more stringent energy or environmental policies by local and regional interests. For instance, the intense pollution suffered by citizens in the Los Angeles Basin and the Ruhr Valley became nationalized when political parties courted votes by promising to ameliorate the problem through national policy. Local interests are quite heterogeneous; regions with an environmental quality problem may encourage higher levels of government to impose national policies which irritate other localities. Regions with particular environmental or geographical features will see intense development that may be in another region's or the national government's interest. Increasingly, national governments are allowing local and regional actors to play a substantive role in energy development,²⁷ partially as a blame avoidance measure.²⁸ These dynamics are illustrated in the strongly federalized case studies used in this paper.

Institutional factors strongly affect German policy. One line of inquiry analyzes the influence of the European Union and federalism on the German government's choice of

²⁶ John Barry, Geraint Ellis, Clive Robinson, "Cool Rationalities and Hot Air: A Rhetorical Approach to Understanding Debates on Renewable Energy," *Global Environmental Politics* 8 (2), May 2008, 73-83

²⁷ Sarah J. Mander, "Regional Renewable Energy Policy: A Process of Coalition Building," *Global Environmental Politics* 7 (2), May 2007

²⁸ Paul Pierson, "Fragmented Welfare state: Federal Institutions and the Development of Social Policy," *Governance: An International Journal of Policy and Administration*, (8) 4, October, 1995

instruments. The E.U. presently requires member states to adhere to the so called 20-20-20 targets, which obligate member states to obtain 20 percent of their energy from renewables,²⁹ achieve 20 percent efficiency improvements, and attain a 20 percent reduction in greenhouse gas emissions by 2020.³⁰ The E.U. policy also established goals for most individual member states: Germany's are among the most stringent, given its relative wealth and size within the Union.³¹ Many German initiatives are nested within these goals.³² Furthermore, the European Union Emissions Trading System (E.U.-ETS) applies to Germany, which results in a non-zero price on carbon emissions and a national limit on total emissions. Conversely, much national policy has its origins in local or regional efforts. Environmental and energy issues first became salient on a national level when local voters in the heavily industrialized Ruhr Valley began to advocate for air pollution controls.³³ During the late 1980s, some municipalities and Länder (German provinces) innovated new subsidies and renewable inducements which eventually influenced federal policies, including the feed-in tariffs.³⁴ More recently, the university town of Fribourg, an electoral stronghold for the Green Party, has introduced a number of innovative conservation and efficiency policies that have been hailed as models.³⁵ There is a growing body of evidence that local policy innovation can have a profound influence on other local governments or be adopted by higher levels (regional,

²⁹ Renewable is here defined as any source of energy which is produced sustainably (i.e. derived from a virtually limitless natural process). These include, solar and wind generated power, hydroelectricity, and biofuels.

³⁰ Miranda A. Schreurs, "From the Bottom Up: Local and Subnational Climate Change Politics," *The Journal of Environment & Development*, (17) 4, 2008, pg. 349

³¹ Richard Schmalensee, "Evaluating Policies to Increase the Generation of Electricity from Renewable Energy," *MIT Center for Energy and Environmental Research*, May 2011, pg. 10

³² Schreurs briefly touches on the possibility that EU policies were in fact based upon local, regional, and national German models, given Germany's high standing as an energy innovator. For the purposes of this essay, it should be acknowledged that policies can migrate upward and downward, according to the most current literature on multi-level governance and federalism.

³³ Hanger 63-64

³⁴ Lutz Mez, "Renewables in Electricity Generation: Germany as Pioneer?" in Burkhard Eberlein and G. Bruce Doern eds., *Governing the Energy Challenge: Canada and Germany in a Multilevel Regional and Global Context*, Toronto: University of Toronto Press, 2010, pg. 377

³⁵ Schreurs 347

national, transnational, international). “Local government action,” concludes Schreurs, “can have powerful effects far beyond local jurisdictions.”³⁶

Burkhard Eberlin and G. Bruce Doern’s comparative analysis of the role of multi-level governance on energy policy in Germany and Canada concludes that, “energy governance is shaped by two key factors.”³⁷ These are (1) the structure and features of the energy industry and (2) the institutional arena in which various actors make and contest claims on the basis of interests and resources. The first factor is fairly simple; the resource endowments possessed by a given nation will give rise to an endogenous energy industry with particular interests. Germany lacks a major producer region, the government had a freer hand to impose subsidies for green energy and taxes on oil products.³⁸ The German government did face constraints from other economic and civil society actors, most significantly the German energy supply industry (ESI). Lutz Mez argues that the pre-liberalization German ESI can best be understood as a form of alliance capitalism which is, “characterized by collaborative relationships between commercial entities, and success relies on the concentrated orchestration of large resources for common goals.”³⁹ The German ESI sector was a major economic and political power at the local and national level, featuring strong formal and informal links to various levels of government. Ironically, the tariff policy was not initially subject to protest from the ESI sector because it was thought the policy would only impact small producers.⁴⁰ When in practise the ESIs were financially burdened by the tariffs, they attempted to repeal the law; these efforts were for naught as they were

³⁶ Ibid. 353

³⁷ Burkhard and Doren 398

³⁸ Burkhard and Doern 62

³⁹ Mez 380

⁴⁰ The misreading occurred because the ESIs failed to understand the substantial indirect impacts the law would have on their operations. By obligating the large producers to purchase green energy at generous prices, the law had limited impact when the sector was modest in size, but proved quite onerous when the wind power sector rapidly expanded.

already too entrenched in government policy, supported by economic liberals and environmentalists alike.⁴¹ Germany was thus able to overcome a potential governance failure, where government is unable to make a necessary reform or implements an obviously inefficient or ineffective policy, often at the behest of economic actors.⁴²

The second variable is more complex, concerning the interlocking institutions, governance levels, and actors in multi-level governance. Burkhard and Doern place their focus on the international and transnational aspects of Germany's institutional setting, eschewing local or regional contexts. This decision allows for a concerted focus on E.U.-German policy interactions. Peter D. Cameron's contribution to Burkard and Doern's work focuses on the E.U.'s attempts to create a coherent single energy market across its 27 institutionally and culturally heterogeneous member states. As noted above with the 20-20-20 goals, Germany often designs its domestic policies around E.U. directives and guidelines. Cameron notes that this tendency extends to various liberalizing market reforms undertaken at the behest of the E.U. However, the author suggests the E.U. has tended to maintain a fairly decentralized and informal regulatory structure, since member states tend to be unwilling to delegate national sovereignty to the E.U.⁴³ Like other member states, Germany has used E.U. requirements as a tool to achieve domestic policy goals. Berlin's embrace of electricity market reforms was partially a result of the vociferous resistance the powerful ESI industry had summoned in the face of previous failed liberalization efforts.⁴⁴

⁴¹ Mez 378

⁴² Laurence H. Goulder and Ian W.H. Parry, "Instrument Choice in Environmental Policy," *Resources for the Future*, Discussion Paper 08-07, April 2008, pg. 25

⁴³ Peter D. Cameron, "The EU Single Energy Market and Multi-Level Interaction," in Burkhard Eberlein and G. Bruce Doern eds., *Governing the Energy Challenge: Canada and Germany in a Multilevel Regional and Global Context*, Toronto: University of Toronto Press, 2010 pg. 175

⁴⁴ Mez 381

In sum, none of these contributions can fully and completely answer the question posed at the opening of this essay. In the following section, a different methodological and theoretical framework will be presented which is designed to analyze the interplay of events and institutions which made the contemporary difference in policy possible.

4 Analyzing the Differences between German and U.S. Policy

4.1 Methods

How can we account for the cross-national variation observed in these two cases of Germany and the U.S.? First, a proper methodology must be outlined and explained. This paper follows Alexander L. George and Andrew Bennett's method of theory building and empirical testing through the use of case studies, historical analysis, and process tracing. The authors present a framework for 'structured and focused' comparison, which asks the researcher to deal "with certain aspects of the historical cases examined" (structure) and to "write general questions that reflect the research objective and that these questions are asked of each case under study to guide and standardize data collection" (focus).⁴⁵

At the most basic level, structured and focused comparison requires a careful specification of the role particular variables play within a given study. In this study, the dependant variable (or outcome) is the variation in energy policy observed between the U.S. and Germany. German policy has followed a path of *state planning*, strongly dependent on subsidies provided and goals articulated in the domestic sphere. This path is typified by high levels of government intervention in the domestic energy system. Germany's external efforts tend to be more limited than those seen in the U.S. case, generally focusing on regional efforts to improve import diversity. U.S. outcomes are shaped by a policy of *external supply reinforcement*, consisting of limited government efforts to conserve energy and foster alternative forms of energy coupled with a consuming interest in pursuing external sources of supply. The independent (or causal) variable that is hypothesized to most directly contribute to this outcome is foreign policy capacity, which I define in two ways, as soft diplomatic power and hard military power. I argue that the U.S., during the period discussed

⁴⁵ Alexander L. George and Andrew Bennett, *Case Studies and Theory Development in the Social Sciences*, Cambridge MA: The MIT Press, 2005, pg. 67

by this study, possessed more of both types, as evidenced by its critical role in the Cold War. German power, by contrast, was limited by the relatively recent events of the Second World War, which inclined Germany policy makers to present themselves as willing partners in the western Cold War alliance and the European project. The war resulted in German disarmament and a subsequent prohibition on foreign military actions.

While Germany has attempted to secure supplies through foreign policy, these efforts have been notably more limited than in the U.S. case. In the immediate aftermath of the 1973 embargo, Bonn attempted to maintain a good relationship with Arab producers: “When the U.S. used its bases in West Germany to resupply Israel in the October 1973 Arab-Israeli war, Bonn, like other European states eager to stay on good terms with the oil-supplying Arab states, complained, in private and public, only to be met by the intemperate American response that the Federal Republic ‘enjoyed only limited sovereignty’ in American eyes.”⁴⁶

While the two cases presented here exhibit many differences beyond foreign policy capacity; I argue that these differences are manifest as conditional rather than explanatory variables. This suggests scholarship focused on domestic factors, which includes much of the literature reviewed previously, has failed to provide a fully convincing account of the observed difference in policy. However, these factors may have caused certain outcomes to be more or less likely in either nation. Intervening and conditional variables can either be held constant (to function as parameters) or vary across cases. In particular, scholars have claimed various domestic variables are responsible for differences in energy policy. One frequently cited example concerns the effect of Germany’s electoral system. Scholars argue the system of proportional representation used to elect the federal and state legislatures

⁴⁶ Frank Ninkovich, *Germany and the United States: The Transformation of the German Question Since 1945*, Boston: G.K. Hall & Co. 1988, pg. 157

allowed the Green Party to enter state and national parliaments, promote particular policies, and eventually enter government. However, the German Green Party only experienced significant electoral success following the 1986 Chernobyl disaster, and as a result simply built upon policies that originated following the 1970s crises. The cross-national divergence witness has its origins in the earlier events of the embargo.

Additionally, as indicated by the narrative, the U.S. green movement, while not able to birth a party of its own, was politically consequential. The creation of the EPA and the passage of various environmental and energy regulations since that time are at least partially a result of pressure exerted by the green movement. Electoral systems and other participatory institutions can be considered conditioning variables, as it is possible that the existence of a viable Green Party in Germany helped direct energy policies over time. It would not be accurate however to suggest that the presence of this party in the national legislature was the primary cause of the observed divergence in policy.

A second potential explanatory variable highlighted by David Painter analyzes the presence of major oil producers within the U.S. as a key contributor to policy outcomes. David Painter's work proffers a version of this concept with his theory of corporatism, which suggests oil companies and the U.S. government essentially pursue mutually satisfactory goals. However, I would likewise posit that this variable is conditioning rather than causal. Oil companies can be considered simply one among several types of broadly defined economic interests which can have a relationship with their respective national governments. The German case illustrates that German electricity utilities had a similarly privileged position vis a vis Berlin, until various EU mandates forced the monopolies to be broken and the electricity system liberalized. While the electricity sector was economically and politically powerful, the tariff system created just prior to reunification demonstrates

that Berlin was willing to pursue policies contrary to their interests. The presence of a major oil lobby likely made the U.S. more willing to pursue an oil-based energy agenda, but should be regarded as a conditioning factor only. The U.S. was more willing to follow policies directed at problems of external supply thanks to the presence of these companies, which would profit from opening new markets.

The influence of the EU is one final variable that should be addressed and contextualized. While the U.S. exists within a number of supra-national organizations which possess a degree of influence on national policies, they are far less influential and institutionalized than the EU. I argue that the EU has not played a strongly distinctive role in German energy policymaking; generally Germany has seen the EU as a forum for advancing national policies on a continental level.⁴⁷ German efforts to create common European policies have been partly motivated by a desire to freely and competitively export green technologies. Additionally, by requiring other nations within the EU to adopt policies similar to Germany's, the competitive disadvantage of penalizing conventional forms of energy, and by extension conventional forms of economic activity, is reduced. These efforts are possible as Germany wields substantial influence in the EU and a general reluctance among member states to yield national sovereignty to EU wide institutions outside of economic policy.

This section can be summarized in the following figure:

⁴⁷ Liesbet Hooghe and Gary Marks, *Multi-Level Governance and European Integration*, Oxford: Rowman & Littlefield Publishers Inc. 2001, pg. 77

Table 3: Possible Independent Variables

	United States	Germany
Conventional Domestic Resources (Total)	Few	Some, insufficient to meet domestic demand
Conventional Domestic Resources (Developable)	Few (North Sea Gas)	Some (Alaska, Texas etc)
Domestic Governance Capacity (Energy)	Strong	Strong, but limited by 'corporatism'
Foreign Policy Capacity (Diplomatic)	Moderate, but limited by historical taboos	Strong
Foreign Policy Capacity (Military)	Very Weak, little to no military autonomy	Strong
Energy Policy (Dependent Variable)	State Planning	External Supply Reinforcement

The two foreign policy variables are the most heterogeneous and suggest that the choices faced by policymakers in the two nations were not identical. Though both were strongly dependant upon foreign energy sources when the embargo occurred and shared relatively similar domestic energy profiles, the U.S. possessed foreign policy capabilities unavailable to Germany. The foreign policy option was attractive, as the short term social, political, and monetary costs were less than those engendered by significant domestic policy changes. The implications of this result can be contextualized by drawing on Papa's framework, which outlines two conditioning criteria for pursuing a foreign policy, willingness and opportunity. Willingness represents the preferences of policymakers when faced with a particular problem, while opportunity equals the menu of choices facing policymakers.⁴⁸ The forgoing analysis suggests policymakers preferred a foreign policy solution, but Germany did not have the opportunity to follow this course (this finding is represented in table 2). The implications of this result will be analyzed in the following section, which sets up a theoretical model for the purpose of exploring this difference.

⁴⁸ Papa 206, 210

Table 4: Potential Policy Options (Opportunity) Across Cases

	Germany	United States
Domestic Reform	Yes	Yes
Foreign Policy	No	Yes

It should be noted that this model assumes that these were the only two macro-level policy options available to contend with the challenge presented by the embargo. Although there are many potential nuances and distinctions nested within these policies, some of which, such as the distinction between military and diplomatic components of foreign policy, will be explored, this distinction holds. Logically, if high prices for conventional energy are presenting a challenge for developed nations with limited domestic resources, the two possible solutions are altering the domestic energy regime to reduce conventional energy consumption or securing additional resources from abroad.

4.2 Theoretical Framework

This paper's theoretical model builds on the path dependence and policy choice literature. Terry Lynn Karl provides a useful extension of Pierson's ideas in her work on governance in oil exporting nations.⁴⁹ Karl articulates a framework of "structured contingency" as a means of understanding how institutional constraints and individual preferences interact. According to her, "Decisions of policymakers are viewed as embedded in institutions that have been formed through constant interaction with organized groups, and domestic and international markets, that are characterized by interlocking histories and shared meanings."⁵⁰ Though Karl applies her framework to a fairly narrow range of developing nations, I believe it can fruitfully used in a broader comparative historical study.

⁴⁹ Paul Pierson's work on the subject is best represented by, "Increasing Returns, Path Dependence, and the Study of Politics," *American Political Science Review*, Vol. 94 No. 2, June 2000

⁵⁰ Terry Lynn Karl, *The Paradox of Plenty: Oil Booms and Petro States*, Berkeley: University of California Press, 1997, pg. 10

Karl's structured contingency suggests that decisions become entrenched through socioeconomic structures, political institutions, and rules that mould future behaviour.⁵¹ For the purposes of this essay, these factors have been reduced to a simpler model. I argue that structured contingency can be used to examine how decisions in a given time and context can have an extensive impact on future policy. Although decisions can be made after these policies are solidified, policy options will be more limited and the speed of change necessarily more gradual. However, Karl posits that major alterations in a policy trajectory can occur during a so-called critical juncture. Possible triggers for such a juncture include (but are not limited to), "the advent of foreign domination, political regime change, war, an international crisis."⁵² These windows of opportunity provide a chance for policy innovation and systemic reorientation.

Given the importance ascribed to the term, 'policy capacity' needs to be defined for the purposes of this framework. I define the term as the ability of a given government to formulate and implement a policy. This definition is somewhat akin to Weber's classical definition of the state and its functions. Policy capacity can be limited in several ways; the government in question may be unwilling or unable to challenge a domestic economic or political constituency, constrained by normative or substantive means in the international sphere, hampered by institutional arrangements (such as federalism) or incapable of formulating and carrying out policies. This last point is inapplicable given both cases are conventionally considered strong governments. The other constraints are at play in both cases to varying extents, conditioning the choices available to policymakers following the embargo.

⁵¹ Karl 11

⁵² Ibid.

This leads to two questions: what is the capacity of a given government in historically contingent circumstances to pursue a chosen policy? And, how and why did policymakers commence down a particular path given the events and context in which they were acting? Domestic reforms are, in the short term, more politically and economically costly than external attempts to obtain external supply. These policies require substantial outlays of public money and potentially challenge economic interests entrenched in the energy sector. Logically, if a foreign policy option is available a government would prefer it to domestic reforms. Policymakers would see the lesser immediate costs as attractive, even if there was an understanding of the possible long term advantages of domestic reform. As noted, Germany lacked the ability to organize the international system in a way to guarantee external supply, either by diplomatic or military force. However, Germany did play a complementary role in U.S. policy, lending its support to U.S. efforts to unify the world's consuming nations in the aftermath of the crisis.⁵³

This observation suggests that though there were only two options, the actions and abilities of each nation cannot be seen in isolation. Germany benefited from U.S. efforts to secure external supplies, which had the ancillary affect of increasing supply, reducing costs, and enhancing security for all consuming western nations. Why then did Germany continue to pursue domestic reform?

The foreign policy capacity variable was further weakened in Germany's case, thanks to its greater reliance on foreign imports. Writing in 1982, Melvin A. Conant noted "There are crucial differences among the allies over oil that are rooted in their respective degrees of

⁵³ *Akten zur Auswärtigen Politik der Bundesrepublik Deutschland: 1. Januar bis 30. Juni. 1974*
Herausgegeben im Auftrag des Auswärtigen Amts vom Institut für Zeitgeschichte, Oldenbourg, R.
Oldenbourg Verlag München, 2005, pg. 196

dependence on imported supply.”⁵⁴ Conant noted that Europe obtained 62 percent of its oil from the Persian Gulf region, while the U.S. obtained merely 30%.⁵⁵ The relative efficacy of obtaining further supplies from foreign sources was very different across the two cases. Germany could not follow the U.S. by wielding substantial foreign policy capabilities in the quest for additional sources. This contributed to the eventual failure of the U.S.’s domestic reform programs, as the temptation to use the less immediately costly foreign policy option was always present.

According to this model, the differences in policy occurred because the U.S. possessed an option that Germany could not pursue. Why did the U.S. choose foreign policy over domestic reform? It has been argued that domestic reforms are and were costly in the short term, which provided an immediate disincentive for U.S. policymakers. The logic of path dependency implies that once the decision to follow a foreign policy path had been taken, the costs of changing course increased over time. Unfortunately for the U.S., while defraying domestic reform may have been more affordable in the short term, the choice is more problematic when seen through a longer time period. Domestic energy reform, if properly designed and implemented, should make the implementing nation less dependent on foreign sources of energy, enhancing security and providing tangible environmental benefits.

Table 5: Relative Policy Benefits over Time

	Domestic Reform	Foreign Policy
Short Term Benefits	Low	High
Long Term Benefits	High	Low

⁵⁴ Melvin A. Conant, *The Oil Factor in U.S. Foreign Policy, 1980-1990*, Lexington MA: Lexington Books, 1982, pg. xvi

⁵⁵ Conant 3

Speaking in the abstract, we can imagine policymakers in our cases presented with the embargo, which threatens their economic security and demands some form of policy response. If given the option to pursue a foreign policy solution, the temptation would be great, given the relatively lower immediate cost. However, policymakers situated in a nation with insufficient foreign policy capacity to follow this policy would be left with a single option, domestic reform. Additionally, as per Conant, while the choice of one nation to follow a foreign policy course may influence the choices of another nation, it may be incapable of fully meeting said nation's distinct energy needs. Hypothetically, had Germany been capable of choosing a foreign solution to the embargo, it would have done so. Similarly, the U.S. likely would have engaged in domestic reforms if it had been unable to secure additional supply. As seen in the historical section, the U.S. was fortunate enough in the 1980s to experience a glut of supply which made the foreign option appear in retrospect quite successful. This further entrenched their chosen path. Counting on foreign supply and markets is risky however, as shortages and political problems in producing nations could cause a shock much like the embargo.

The result of this choice can be seen in the variance in U.S. policy over time. When an administration sympathetic to domestic reform is in office during a time of high energy prices (such as the Carter and Obama administrations) some attempts at domestic reform are made. However, the costs of engaging in reform are high and prone to being undone by fluctuations in prices (which remove any impetus for reform) and changes in administration (which vitiate political will). Germany by contrast has not been so sanguine; Berlin's greater reliance on external sources and inability to customize the international system has led to a sustained commitment to domestic reform across the politic spectrum.

Given the relative quiescence observed in energy policy before the embargo crisis, I argue this event was a ‘critical juncture’ consistent with Pierson and Karl’s work. The sudden interest and rapid innovation in policy seen following the crisis began the divergence between the two nations, which has grown over time as these initial differences have become more entrenched, subsequent policymakers possess less and less ability to perform a radical change in policy, barring another critical event.

4.3 Empirical Analysis

4.3.1 United States

Given the importance of the embargo to future energy policy, what immediate actions were taken by governments in Germany and the U.S. during and after this event? There is little evidence that German policymakers had vastly different ideas about energy than their U.S. counterparts before the advent of the embargo. In a paper presented to the German Foundation for Developing Countries on October 25, 1968, Georg Grimm noted that recent discoveries of natural gas in Holland and the North Sea had spurred a major increase in consumption. Grimm breezily predicted, “The problem of energy supply is no longer one of availability but is becoming to an increasing extent one of competitiveness between the individual energy agents.”⁵⁶ Analysts on both sides of the Atlantic assumed that supplies were plentiful and secure.

When the embargo proved otherwise, developed governments moved to secure external supply and reduce domestic consumption. The U.S. took the lead in external efforts, attempting to mould the international order in a favourable way. U.S. policymakers pursued a somewhat contradictory two-pronged foreign policy approach. One feint saw the U.S.

⁵⁶ Georg Grimm, “Energy Policy in the Federal Republic of Germany,” in *Report on a Seminar on Energy Policy and Energy Economy*, German Foundation for Developing Countries, paper presented October 25, 1968, pg. F4

promote a unified policy among importing nations. Starting with the Washington Energy Conference of February 1974, the U.S. Government played a leading role in a series of energy summits held throughout the 1970s.⁵⁷ The American position at these meetings is amply demonstrated in Secretary of State Henry Kissinger's speech at the Washington Conference. "The United States has called this conference for one central purpose," argued Kissinger, "to urgently resolve the energy problems on the basis of cooperation among all nations."⁵⁸ Kissinger acknowledged the extensive plurality of interests and circumstances that existed among the consuming nations and portrayed the U.S. as an honest broker, willing to put aside national prerogatives in the interest of consensus. According to Kissinger, it was a, "matter of enlightened self-interest – and moral responsibility – to collaborate in the survival and restoration of the world economic system."

The IEA was the most proximate result of this policy. Its creation was a clear result of the U.S.'s leadership and diplomatic strength over other western consuming nations. It was designed to directly confront OPEC by coordinating the energy policies of the consuming nations. To this end, IEA membership entailed certain responsibilities, such as the creation of an emergency energy rationing plan and the creation of a national petroleum reserve containing enough oil to operate the economy for ninety days. The United States, one of the largest and certainly the most politically powerful member of the IEA, has never met either goal, undercutting the effectiveness of the organization. This presents something of a quandary, as the model presented in this paper would suggest the U.S. would want to enhance its power through an organization such as the IEA. However, giving the IEA substantial power would mean allowing other western nations to possess a certain amount of

⁵⁷ Conant73

⁵⁸ *Opening Remarks of the Honorable Henry A. Kissinger*, Washington Energy Conference, February 11, 1974, National Archives, RG 59 (Central Files), 150-68-15-2, Box 195, Folder 3

influence over the U.S. The U.S. reluctance to cede real power to the IEA was a source of contention at the Washington Conference, and contributed to the French decision to initially stay out of the organization.⁵⁹ The goal of the IEA was to bring the other importing nations together in support of U.S. policy, but thanks to the U.S. decision to grant it limited influence, it remained largely advisory. Thus the U.S. felt free to pursue and complete bilateral energy agreements with exporting nations in the Persian Gulf, further undercutting the effectiveness of the IEA alliance.⁶⁰

The U.S. has intermittently pursued 'green' energy policy through domestic reforms, generally when an ideologically sympathetic administration is paired with relatively high conventional energy costs. The election of Democratic President Jimmy Carter in 1976 provided momentum for the domestic reform movement. Carter strongly supported 'energy security' policies intended to decrease U.S. reliance on foreign energy sources. Among these measures was a massive incentive program encouraging the production and consumption of synthetic fuels, developed by oil heir and prominent Republican Nelson Rockefeller.⁶¹ Not content with policy innovation, Carter asked former Secretary of Defence James Schlesinger to amalgamate over fifty discreet government agencies into a new Department of Energy.⁶² Carter continued to promote the necessity of energy reforms; his most notable public statement on the matter occurred with the so-called 'Malaise' speech of July 1979, in which he proposed major new synthetic fuels incentives as a cure for dependence on foreign resources and a contaminant 'crisis of the American spirit.'⁶³ Notably, there was no effective concerted effort to either assert national ownership over domestic resources, which were

⁵⁹ *Akten zur Auswärtigen Politik der Bundesrepublik Deutschland: 1. Januar bis 30. Juni. 1974*, pg. 197

⁶⁰ Conant 75

⁶¹ Yergin 1991, 695

⁶² Yergin, 2011, pg. 527-529

⁶³ For more on the content and generally negative reception to the speech, see Kevin Mattson, *What the Heck Are You Up To, Mr. President: Jimmy Carter, America's "Malaise," and the Speech The Should Have Changed the Country*, New York: Bloomsbury USA, 2009.

already quite scarce, or encourage alternative forms of energy, both of which were common responses in other nations. Rather, new forms of production were generally emphasised. Recently, the Obama administration has placed a substantial emphasis on building ‘green’ energy infrastructure and conservation. The most concrete manifestation of this is found in the American Recovery and Reinvestment Act of 2009, which provided billions of dollars in R&D funding, infrastructural investment, and conservation and efficiency programs.⁶⁴

Outside of these transient periods, U.S. policy has largely been external in focus. According to the theoretical model, this is because domestic reforms are not entrenched and are subject to revocation when governments change and conventional prices fluctuate. One excellent example can be seen in the Caspian region, where the U.S. exerted a great deal of influence following the fall of the Soviet Union. The U.S. was not drawn to the Caspian simply because of its proximity to Russia; the region holds a great deal of underdeveloped oil and gas reserves. The U.S. was willing to involve itself in the fractious politics of the region in order to secure a new source of energy. The most visible result of these efforts was the so-called ‘Contract of the Century,’ struck between the governments of Azerbaijan, Georgia, Turkey, and several regional and multinational oil companies at the behest of the U.S. State Department.⁶⁵ The agreement allowed for the construction of oil and gas pipelines from the region to ports in Anatolia, profiting western consumers and oil companies alike.

4.3.2 Germany

Germany in some ways benefited from the ‘limited sovereignty’ it was allowed by the U.S. and its allies. U.S. efforts to maintain stable global supplies of oil indirectly benefited

⁶⁴ Kate Galbraith, “Obama Signs Stimulus Packed with Clean Energy Provisions,” *New York Times*, February 17, 2009, <http://green.blogs.nytimes.com/2009/02/17/obama-signs-stimulus-packed-with-clean-energy-provisions/>

⁶⁵ Nassibli Nasib, “Azerbaijan: Oil and Politics in the Country’s Future,” in Michael P. Croissant and Bülent Aras, *Oil and Geopolitics in the Caspian Sea Region*, Westport CT: Praeger Publishers, 1999, pg. 107

most other western nations by creating a more secure supply of energy. Germany has seen fit to play a supporting diplomatic role in many of these efforts, Sascha Müller-Kraenner notes that Germany is the only European nation to possess embassies in the five central Asian republics, key nations for securing energy supply for Europe.⁶⁶ Müller-Kraenner argues this is no coincidence, Germany is maintaining a certain amount of autonomy within Europe and the NATO alliance when it comes to securing supply while also being seen to support coincident U.S. efforts. However, German efforts are still subsidiary to U.S. efforts in the region. The U.S. was the only nation that could have brought the various public and private actors involved together. Germany continues to support and benefit from U.S. foreign energy policy, while continuing to engage in domestic reform. Interestingly, as noted above, Germany also focused on securing imports as part of a two-pronged approach to energy policy. The extensive domestic reform witnessed in Germany was absent in the U.S., were external solutions where favoured when the crisis faded.

In Germany, there was a much stronger consensus among political elites concerning the need for domestic energy reforms. As was seen in the historical section, renewables policy in the U.S. became a matter of political controversy following the election of Ronald Reagan in 1980. The contrast with Germany is clear when one examines a speech given by CDU parliamentarian Ludwig Gerstein at the Seventh International Association of Energy Economics (IAEE) Conference in 1985. While the U.S. was moving away from domestic reform, Gerstein lauded German efforts to lower oil use through the ‘away from oil program.’ These initial efforts provided R&D funding for nascent and unproven renewable technologies, coupled with extensive ‘fuel switching’ efforts which incentivised the use of

⁶⁶ Sascha Müller-Kraenner, *Energy Security*, Gabriele Hase Trans., London: Earthscan, 2007, pg. 68

coal and nuclear power over imported oil.⁶⁷ These initial efforts were clearly less ‘green’ than subsequent policies aimed at increasing renewable sources. As renewable technology became more viable over time, coal and nuclear gained a greater stigma as worries about climate change and nuclear safety metastasised, further pushing policymakers toward other forms of energy. Gerstein concluded that:

The policy ‘away from oil’ was especially successful in the Federal Republic of Germany. The primary energy use of oil declined by about 25 per cent, from 209 million tones of coal equivalents in 1973 to 159 million tons of coal equivalents in 1984. The oil industry, which made this adjustment without any government help, demands today the abandonment of the ‘away from oil’ policy. They do that, in my view with some good reasons. The oil refineries in the FRG must bear not only the burden of their own adjustment, but also competition from other countries. Foreign refineries can delay the adjustment because of government help and offer their surpluses on the FRG’s oil market.⁶⁸

Gerstein’s membership in the centre-right CDU suggests conservation and ‘green’ energy policy were broadly accepted across the political spectrum. This is not to say certain domestic political and social developments were also distinctive in Germany. The green movement was particularly well organized and politically successful here; every election since the late 1980s has seen the German Green Party (*Bündnis 90/Die Grünen*) win seats in the national legislature, the party even served as junior coalition partner in the federal government from 1998-2005. It is likely that organized green activism predates and strongly influenced policy decisions made in the aftermath of the embargo. However, as noted above, I find this variable to be more conditional than a potential causal factor. Gerstein’s remarks suggest ‘green’ politics were viable before the Green Party experienced significant national electoral success.

⁶⁷ Judith Lipp, “Lessons for Effective Renewable Energy Policy from Denmark, Germany, and the United Kingdom,” *Energy Policy*, 35 (11), November 2007.

⁶⁸ Ludwig Gerstein, “Energy and Economy: Opening Speech,” *Seventh IAEE/GEE International Conference: Energy and Economy, Global Interdependence, 1985*, pgs. 22-23

Germany is a major contemporary exporter of ‘green’ energy technology. Incentives encouraged the early development of such technology, before it was widely affordable in other nations. The tariff law was in fact the final law passed by the West German legislature before reunification, thanks to the efforts of Green and Social Democratic legislators. These groups formed an alliance with members of the Christian Social Union (CSU), the Bavarian branch of the governing Christian Democratic Union (CDU) who were frustrated by regulations which prevented local utilities from selling energy into the national grid. This policy, “turned Germany into the world’s leader in renewable energy for a decade, and as such did much to lay the basis for today’s global renewable energy industry.”⁶⁹ Some 10 years later, following the election of the SPD-Green Schröder government, Berlin implemented the Renewable Energy Sources Act (Erneuerbare-Energien-Gesetz or EEG), which set distinct tariffs for different energy sources in an attempt to rationalize the wide divergence in developmental potential and technological risk among sources. The legislation has subsequently been amended, most recently in 2009, as policy objectives and economic realities have changed.⁷⁰ These incentives were generally designed in the following manner: the tariffs were implemented at a high level, which has gradually been ratcheted down as the technology becomes more reliable, cheaper, and widespread. Various external considerations have moulded the policy over time, the most recent amendments increased wind energy tariffs to encourage off-shore wind projects while lowering most of the other tariffs.

However, other policies may materially compliment one another. Partly for political reasons, Berlin coupled the 1990 feed-in tariff law with two market creation programs. The government provided funding and incentives to create 100 MW of wind capacity and install

⁶⁹ Daniel Yergin, *The Quest: Energy, Security, and the Remaking of the Modern World*, New York: Penguin Press, 2011, pg. 537

⁷⁰ For the current tariff levels see, International Energy Agency, “2009 Amendment of the Renewable Energy Sources Act,” <http://www.iea.org/textbase/pm/?mode=ccd&action=detail&id=4054>

PV solar modules on 100,000 homes. The rationale for this feint was twofold, firstly lawmakers reluctant to support the tariff policy were enticed by the handsome amounts of government largess they could gift their constituents under the market creation programs. Additionally, it was hoped the creation of these sources would prime the market and encourage widespread adoption of these technologies, once their feasibility had been demonstrated.⁷¹

Partly because these policies have created a thriving green technology sector, cross-party support for 'green' policies can be observed in present day German politics. Berlin is currently planning to phase out its nuclear power plants by 2020 as a result of legislation passed by the Greens while in government. The current Christian Democratic-Liberal (CDU/CSU-FDP) coalition government had planned to dismantle this statute, until the Fukushima Daiichi nuclear disaster resulted in dramatic electoral gains for the Greens. Maintaining the 2020 decommissioning schedule will be costly, in monetary terms and, ironically, increase fossil fuel demand.⁷² The strength of the green lobby in Germany is manifest as the political impact has been limited in other nations. However, the foregoing analysis has shown how the lack of a foreign policy option proved most decisive in determining Berlin's course.

⁷¹ Mez 377

⁷² "The Downside of Germany's Nuclear Phase-out," *Der Spiegel*, <http://www.spiegel.de/international/germany/0,1518,767900,00.html> Accessed June 6, 2011

5 Conclusion

This paper represents a novel attempt to use case studies and historical process tracing to analyze the origin and implication of differences in national energy policy. It is hoped that this effort will open additional avenues of research. One area that warrants additional study concerns the U.S.'s differing use of soft and hard power to secure energy supplies. Critics of the U.S.'s recent conflicts in Central Asia and the Middle East have alleged that these efforts are simply means of attaining energy. Most of these claims are made in politicised terms with little empirical backing. Additionally, various regional relationships and attributes might play an important conditioning role on energy policies in a given nation. The U.S. shares an extensive border with Canada, a close ally and significant exporter of conventional energy. Germany must import conventional sources across greater physical distances and from culturally and politically dissimilar nations such as Russia or the Middle Eastern exporters. While some works have explored the role Canada has played in U.S. energy security policy, more could be done to examine the historical evolution and contemporary implications of this relationship.⁷³

While I would argue that the U.S. is something of a unique case among developed nations for its lack of a coherent national energy policy, the method used in this paper could be used with other cases. Examining how the embargo affected exporting nations would be particularly interesting. Exporting nations seen to be 'safe' such as Canada and Norway may have seen outsized benefits from OPEC's decision to use oil to further political ends. Adding cases from other regions of the globe, such as Asia and South America, would also

⁷³ The best recent book on this topic is Stephen J. Randall, *United States Foreign Oil Policy Since World War I: For Profits and Security*, 2nd Ed. Montreal: McGill-Queen's University Press, 2005

be illustrative. Did nations in these regions have distinct policies? Did the embargo affect them in similar ways?

This paper suggests the foreign policy variable can reasonably account for the difference between U.S. and Germany energy policy. This is not to say this one variable can alone account for every aspect of the divergence. As has been noted, there are many heterogeneous domestic factors in the two nations that can account for some of the variation. There are some aspects of the divergence I would suggest the same variable can account for the broad differences in policy seen between the U.S. energy policy and that seen in other developed nations, which tend as a whole to have embraced domestic reforms over foreign policy solutions. However, this framework is limited as I believe the U.S. to be a virtually unique nation in terms of its foreign policy capacity. It alone possesses the ability to secure supply through this means. Therefore, this model would likely be of limited use when attempting to address differences between energy policies in other developed nations. If one were to compare Germany with Japan or another European nation, the policies would be less different on a macro level, and more detailed distinctions would likely be the result of domestic factors. Foreign policy might play a conditioning role in these circumstances, as there is substantial variability in terms of where resources are obtained and in what quantities. The model does provide an accurate and original accounting of the majority of differences observed between U.S. and Germany policy.

Some implications of this paper are worthy of further empirical testing. The model implies that policymakers, when presented with a crisis and a limited number of options, will tend to choose the least costly short-term path, even if an alternative would be beneficial over a longer period of time. It would be valuable to see if this pattern holds for all policy areas and cases, or if policymakers will, under certain conditions, follow a long-dividend

policy. Another generalizable finding concerns the sources of policy divergence in similar nations. According to the model, choices made in the heat of critical juncture events tend to become entrenched thank to the logic of path dependency. Similarly, it would be useful to see this hypothesis tested with other forms of policy and choices made in other sets of critical junctures.

To conclude, some implications of this study for contemporary policy will be explored. The U.S. is presently experiencing something of a renaissance in ‘green’ energy, logically enough, given high energy prices and the presence of the ideologically sympathetic Obama administration. This relative disinterest in foreign supply was amply illustrated by the State Department’s recent decision to reject the construction of the Keystone XL pipeline, which would have further integrated the Canadian Oilsands into the U.S. energy economy. While this decision was strongly influenced by election year political posturing,⁷⁴ the fact the Obama administration saw this decision as a net political plus suggests there may be a growing green energy and domestic reform constituency in the U.S.

Germany continues its longstanding efforts to move away from conventional energy. History, with its known ironic tendencies, seems at the present time to be favouring the German approach. While in the short term, German policies were likely more costly, the persistence of high energy costs seems to validate attempts to shift to alternatives. The U.S. will face higher costs in adopting a German style policy as a latecomer, consistent with the logic of path dependence. Germany’s efforts have provoked some internal debate concerning costs and benefits as well; future developments in both nations will warrant

⁷⁴ John M. Broder and Dan Frosch, “Rejecting Pipeline Proposal, Obama Blames Congress,” *New York Times*, January 18, 2012, <http://www.nytimes.com/2012/01/19/us/state-dept-to-put-oil-pipeline-on-hold.html>

attention from scholars, given their respective importance for regional and global energy policy.

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