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A Review of Energy and Environmental Policy for Offshore Liquefied Natural Gas (LNG) Terminals

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A REVIEW OF ENERGY AND ENVIRONMENTAL POLICY FOR
OFFSHORE LIQUEFIED NATURAL GAS (LNG) TERMINALS

A Thesis

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Master of Arts
in
Sociology

by

William D. Whitmore

B.S. The Pennsylvania State University, 2001

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LIST OF ABBREVIATIONS

Council on Environmental Quality	CEQ
Deepwater Port Act.....	DPA
Department of Homeland Security	DHS
Department of Transportation	DOT
Environmental Assessment	EA
Environmental Impact Statement	EIS
Environmental Protection Agency.....	EPA
Executive Order 13212	EO 13212
Federal Energy Regulatory Commission	FERC
Gravity Based Structure	GBS
Limited Liability Corporation	LLC
Liquefied Natural Gas.....	LNG
Louisiana Department of Wildlife and Fisheries.....	LADWF
Louisiana Offshore Oil Port	LOOP
Maritime Administration.....	MARAD
Maritime Transportation Security Act	MTSA
Memorandum of Understanding on Deepwater Port Licensing.....	MOU
Minerals Management Service	MMS
National Energy Development Policy Group.....	NEPDG
National Environmental Policy Act.....	NEPA
National Oceanic and Atmospheric Administration.....	NOAA
Not in My Back Yard.....	NIMBY
Non-government Organizations	NGO
Open Rack Vaporization	ORV
Political Opportunity Structure.....	POS
United States Coast Guard	USCG
White House Task Force on Energy Project Streamlining	TFEPS

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ABSTRACT

The Maritime Transportation Security Act of 2002 amended the Deepwater Port Act of 1974 allowing energy industries to construct offshore liquefied natural gas (LNG) terminals. The industry friendly amendments weakened environmental regulations resulting in quick approval of several terminals that utilize environmentally damaging open-loop regasification systems. The objectives of this case study are to determine what influences national energy security and energy industries have in offshore LNG policy development and what energy policy tactics are utilized by the George W. Bush administration. Senate testimony, industry publications, federal legislation, and permit case studies reveal the prominence of concerns for national energy security and industry complaints over terminal siting and permitting process delays. An eco-Marxist argument is visible when the Bush Administration centralizes the policy process by working cooperatively with energy industry elites to promote energy development and attempts to limit the role of certain federal and state agencies and citizens.

INTRODUCTION

On February 16, 2005 the administrator of the Maritime Administration (MARAD) authorized the construction of Gulf Landing terminal, an offshore liquefied natural gas (LNG) processing facility proposed for construction by the Royal Dutch Shell Company. The terminal, located offshore of Cameron, LA, was designed with an open-loop, open rack vaporization (ORV) system that intakes seawater for reheating the super-cooled liquid. Four on-shore LNG terminals currently exist in the United States and are all closed-loop systems, where one to two percent of the imported LNG is used to heat (regasify) the rest of the gas. The Shell Company designed an open-loop system because it provides economic advantages over the closed-loop system, a faster transfer and greater total supply of natural gas to the mainland United States, and cheaper overall production costs. The Gulf Landing terminal will earn roughly \$40 million dollars more a year operating as an open-loop instead of a closed-loop facility (Washington Post, 2003; Shell, 2005; Marshall, 2005).

Many state and federal environmental agencies, environmentalists, and commercial fishers are protesting the open-loop system (Marshall, 2005; Schleifstein, 2005). They have expressed concerns over the vaporization process and the impact these intake systems will have on vital marine life including plankton, crustaceans and fish eggs and larvae. The National Oceanic and Atmospheric Administration's Fisheries division (NOAA Fisheries) has stated that open-loop facilities cause greater environmental impacts than closed-loop systems (NOAA's Best Practices, 2005). Environmental organizations including the Sierra Club and the Coastal Conservation Association have been campaigning against Shell and the open-loop system (Schleifstein, 2005b). The Louisiana Charter Boat Association and Louisiana Shrimpers Association have called for boycotts of Shell products because of the environmental impacts

caused by the open-loop terminal. Governors of Louisiana, Alabama, and Mississippi have formed an alliance boycotting authorizations of any future open-loop LNG facilities (Brown, 2005)¹.

A lawsuit was filed on behalf of the Sierra Club and the Gulf Restoration Network, a non-government organization (NGO) made up of a consortium of Gulf state NGOs, against the Secretary of Transportation and the United States Coast Guard (USCG). The hearing focused on violations of the National Environmental Policy Act of 1969 (NEPA) and the Deepwater Port Act of 1974 (DPA), incurred by approval of the open-loop system (Gulf Restoration Network, 2006)².

How was it possible that environmentally damaging open-loop systems passed NEPA protocol when closed-loop technology, a less destructive alternative, was available? Part of the reason lies in the fact that policy regarding the permitting process of offshore LNG terminals had only recently been developed and was in its infant stages. In early 2004, a Memorandum of Understanding (MOU) was signed by federal agencies involved with the offshore terminal development. In the MOU, the agencies acknowledged the amendments of the Deepwater Port Act (DPA) and agreed to follow Executive Order (EO) 13212, written by President George W. Bush. EO 13212 required an expedited energy approval process for domestic energy production (MOU, 2004). A strong relationship between the Bush administration and the energy industry stressed state and capital cooperation (NEPDG, 2001). The Administration worked with energy industry elites to restrict any prohibitive agency participation and centralize the policy process.

¹ Kathleen Blanco, the Governor of Louisiana, remained true to her pledge not to approve open-loop facilities in early May 2006, rejecting a proposal by McMoRan Exploration Company for an open-loop LNG terminal (Grace, 2006). One business day following the denial, McMoRan issued a statement that they would pursue closed-loop technology (Russell, 2006).

² The results of this hearing have not been announced.

The result was a streamlined, industry friendly permitting process visible in the MOU and other influential policy procedures behind offshore LNG terminals.

The MOU of 2004 explains how the permitting process was legislated, including the Maritime Transportation Security Act (MTSA) of 2002 that amended the DPA. The amendment to the DPA established the USCG and MARAD as the lead permitting agencies for the development of offshore LNG facilities. It also made the USCG responsible for insuring the proposals and permitting process comply with NEPA regulations. Two questions will be addressed on this topic: (1) Why was the USCG presented with the task of enforcing NEPA compliance; and (2) Why was the DPA amended in the MTSA?

Policy experts often examine the relationship between energy policy and environmental policy. Frequently, environmental policy increases the cost of energy, while energy development may threaten the environment. At the same time, energy policy can have positive and negative environmental effects in the form of energy conservation or environmental deregulation (Gruenspecht and Portney, 2003).

While some say that policy is formulated primarily in Congress (Rosenbaum, 2005), others claim that the policy authority of the state has become increasingly influenced by major corporations such as energy and defense companies (Pellow, 2001). Austin (2002) explains how corporate funded think tanks and science mills funded by large corporations provide information to lobbyists and politicians. There is a well known connection between the neo-conservative regime of President George W. Bush and energy industries (Austin and Phoenix, 2005; Devine, 2004). Energy industries provided many Bush campaign donations (Devine, 2004). One way energy industry representatives became involved in national energy policy was in the secretive energy task force or National Energy Development Policy Group (NEPDG) led by Vice

President Dick Cheney. A question that arises here is how influential are energy corporations in the establishment of energy policy? How does the formation of policy for offshore LNG terminals compare with other energy and environmental policies established by the Bush administration? President Bush signed the Energy Act of 2005 updating a formal energy policy for the first time in over a decade. The Act was praised by the energy industry. That same year the first offshore LNG terminal began operating. How did the Bush administration accomplish all this?

The MTSA was created in response to an increasing terrorist threat on the United States. Energy security is a key aspect of national security (NEPDG, 2001). What sort of an impact does energy security have on environmental policy? What sort of effect does national and energy security create in the policy for LNG terminals?

Several social theories could provide a framework to explain the development of offshore LNG terminals in the United States. Eco-Marxists, or green socialists link environmental degradation to capitalism. The process of capitalism creates not only economic crisis, as Marx discussed, but an environmental crisis as well (Burkett, 1996; J. O'Conner, 1988). The neo-conservative Republican political regime associated with the George W. Bush administration retains close connections with business interests, especially elites within the energy industry, creating state policy that is beneficial to capitalists (Austin and Phoenix, 2005). In an effort to increase the supply of energy and profit, offshore LNG terminals have been permitted that utilize environmentally damaging ORV systems. State theory can be used to explain concerns with securing an energy supply necessary for national security and strength (Skocpol, 1979; Block, 1987). Since the terrorist attacks in 2001, the United States has maintained a pre-emptive stance

against terrorism. The creation of the Department of Homeland Security and the MTSA show a new focus by the state to maintain national and energy security.

Information will be presented to detail environmental and energy policies such as the NEPA and the DPA. The policy supporting offshore LNG terminals is outlined with specific comments on the MTSA and DPA, MOU of 2004, and Executive Order 13212. Following the policy background, case studies of four different offshore LNG terminals will show how the permitting process worked, how the policies were enacted, and provide examples of policy implications. Discussions of agency interactions and a timeline of events associated with the development of offshore LNG terminals provide a detailed look at the permitting process.

The policy research reveals an influential relationship between Senate testimony by energy industry executives and President Bush's authorization of EO 13212. The MOU further elaborates and emphasizes the necessity of government and industry cooperation and efficiency regarding the energy permitting process. Results of the LNG terminal case studies reveal the precedence of national security and commerce over environmental protection. The USCG and MARAD dismiss concerns about detrimental environmental impacts presented by state and federal environmental agencies and maintain a focus on maritime security and commerce.

Other environmental policy enacted by the Bush administration is discussed and compared with offshore LNG policy. The Energy Act of 2005, influenced heavily by industry representatives through Cheney's NEPDG, authorized tax breaks and subsidies to energy industries currently recovering record profits. The voice of local state agencies and the public was limited in the Energy Act of 2005 when the Federal Energy Regulatory Commission (FERC) was given sole permitting authority over near-shore LNG terminals, making public comments almost non-existent (Foster National Gas Report, 2005). The Healthy Forest Initiative directly

attacks the NEPA and the amount of time the public has to comment and protest forestry issues (Vaughn and Cortner, 2005). To the dismay of environmentalists, the Clear Skies Initiative proposes market-based mechanisms to prevent air pollution (deemed unsuccessful by environmentalists) and minimizes the role of the individual states (Devine, 2004). The connection between the dominance of the neo-conservative Bush regime, capitalist interests, national security concerns, and environmental degradation is illustrated when these environmental policies are compared. The Bush administration centralizes the formation of energy and environmental policy, increasing the influence of industry and limiting the role of state and local agencies and the general public. Beliefs of eco-Marxists can be substantiated by the political alliances and policies formed between energy industries and the Administration.

BACKGROUND

Theoretical Research

Two social/political theories are reviewed for applicability to the offshore liquefied natural gas (LNG) permitting process. State theory explains the relationship between United States energy policy and national energy security and examines the role of state-centered policy. Eco-Marxism addresses the influence of capitalism over democracy as well as the reliance on the natural environment by the global energy industry. Class coalitions formed around political regimes could explain the political power, policy decisions, and goals of the current George W. Bush administration.

National security concerns, specifically national energy security, are visible in recent maritime and energy policy, including the Maritime Transportation Security Act of 2002 (MTSA), Deepwater Port Act (DPA) amendments, and the report generated by the National Energy Policy Development Group (NEPDG). A popular belief held by many democrats and anti-war activists is that the war in Iraq is being fought for greater control over oil supplies and energy security (Austin and Phoenix, 2005). The Bush administration has maintained an offensive wartime strategy against terrorists since the World Trade Center attacks in 2001 and the United States lead invasion of Afghanistan. A war-focused nation increases the power of the state (Block, 1987). According to Skocpol (1979) the state has two roles, to maintain order and to compete with other states. The war in Iraq fulfills both of these roles. By eliminating a dictatorship and terrorist cells, the Bush administration believes it is maintaining order. By securing Iraq, the United States now has political leverage over much of the oil in the Middle

East. Competition for energy resources has spurred the development of LNG terminals which are frequently found in Japan and have been proposed for China and India. Gas accounts for only 2% of China's energy supply, but is expected to rise to 8% by 2010. Demand for LNG in Europe is also rising. (Brower, 2001).

Skocpol (1979) explains that along with competing against other states, state organizations may compete with the dominant classes over resource appropriations. When intimidated state rulers may take on military ventures that drain economic resources and undermine the socioeconomic interests of the dominant class. A state-centered theory holds that the power of the state is maximized for its own well-being and state regulations may have negative business impacts (Block, 1987, Skocpol, 1979). Because of this, Skocpol argues that neither business dominance nor the popular majority is a key factor, but rather the authority within the state lies with politically powerful and mobilized groups. Skocpol concludes that capital influences are visible at a state level, opposed to a societal level.

Block claims that state efficiency is weakened by bureaucracies and predicts state "deburacratization". Organizational changes will consist of fewer levels of supervision, greater reliance on teamwork, and expanded decision-making responsibilities for lower-level employees. It will also place responsibility in the hands of frontline government regulators who cooperate with citizens groups. These citizen groups will then increase corporate regulations in the form of labor laws and environmental regulations. Corporate managers have defended their management autonomy against regulations in the past and will continue to fear and fight greater regulations

from the different, decentralized levels of society (such as the state or non-governmental organizations (NGOs)³. According to Block and Skocpol, capital competes against the state.

Some claim that the policy authority of the state has increasingly been influenced by major corporations and that there is little difference between dominant class, political party, and business interests (Pellow, 2001). When capitalist interests are heavily involved with political and social movements, the line separating politics and the economy is blurred with corporations becoming both policy makers and the new targets of challengers (Pellow, 2001). Are we over in Iraq to secure an energy source or protect our country against terrorism? Is one more important than the other? Who is benefiting the most from this, the citizens of the United States, the citizens of Iraq, or international oil companies? These are all questions with debatable answers. These questions also mix beliefs of state theory and Marxist beliefs. Is the Bush administration helping corporate interests or the nation? These are not separate issues with neo-conservatives who believe that the nation will perform best when aided by unregulated markets. State theory calls for politically mobilized groups to establish policy so the state can compete against capital. What happens when capital is the powerful political elite?

While studying geo-economic theories through corporate campaign donation records stored by the Federal Elections Commission, Burris (1987) found donations matched a “Yankee-Cowboy” theory and the regulatory environment theory. Burris explains the “Yankee-Cowboy” theory as a division of corporations along regional lines and found that eastern banks and Midwestern manufacturers are seen as political moderates while “Cowboy industries of the Sun Belt” like defense, energy, construction and regulated industries support neo-conservative

³ The National Environmental Policy Act (NEPA) of 1969 decentralized the permitting process allowing citizens access to environmental assessments and meetings.

Republicans, or the “New Right”⁴. Although this finding was from research compiled in the 1980s, the connection between energy and defense industries and the neo-conservative movement still exists. Many believe that current Bush regime policies are very similar to policies of the Reagan administration, specifically the link between industries associated with defense, energy, and textiles to New Right candidates (Thompson, 2005). Bush even nominated individuals into his cabinet who worked under the Regan administration. Gale Norton, an assistant to James Watt, was nominated for Secretary of the Interior (Devine, 2004). One of Norton’s first tasks was to work on legislation to permit oil drilling in the Arctic National Wildlife Refuge.

By fostering an open, informal relationship with business interests, the Bush administration has increased the strength of capitalists. Eco-Marxists, or green socialists, link environmental degradation to capitalism. From this perspective, the losses experienced by capitalist corporations are externalized to the public via the commons, or the natural environment (Bellamy-Foster and Soron, 2004; M. O’Conner, 1989; Strange, 2000). Capitalism creates not only its own economic crisis, as Marx discussed, but an environmental crisis as well (Burkett, 1996; J. O’Conner, 1988).

James O’Conner describes two different outcomes of capitalism, the restructuring of productive forces and changes in production relations (J. O’Conner, 1988). The restructuring of productive forces is seen when corporations look for ways to increase production efficiency, therefore increasing profit, usually through technology or cutting labor costs. Corporate profits are privatized while many expenses are externalized to the public (Brook, 2001). A pertinent

⁴ Vice President Dick Cheney was formerly the President and CEO of Halliburton, a contractor for gas and oil industries that is a prime example of a southern “Cowboy” industry. Halliburton has since become a key contractor in Iraq.

example is the desire to increase profit from offshore LNG terminals by utilizing open-loop regasification technology. Though closed-loop technology exists and was requested by several federal and state environmental agencies, open-loop systems were permitted because of their increased profitability.

Since there are some forces that capitalism cannot alter for its' benefit such as the availability of natural resources, or public uneasiness over development, capitalism will reach out to the state for aid (O'Conner, 1988). Relations between the state and capital can be adapted so that there is increasing control for both organizations over the production and planning processes. Examples of this process include altering zones of development, decreasing environmental regulations, adjusting public policy, and increasing tax incentives. This can be seen in the Bush administration's alteration of NEPA, the Energy Act of 2005, policy regulating offshore LNG terminals, and an administration-ordered risk assessment prior to the formation of any new environmental regulations (Switzer, 2004).

Capitalism creates two crises, economic and environmental (Deleage, 1989; Strange, 2000). Economic expansion normally forces capitalism to intensify and extend environmental degradation in some manner by extracting more resources or new resources from unused areas. Eco-Marxists look at capitalism and nature as comparing a sustainable against a rational use of nature, with the rational use of nature dominating (M. O'Conner, 1991). There is a competitive timeline between the economy and the environment. The market is a short-term and needs addressed immediately, while environmental impacts slowly evolve. As a result, most public policy addresses economic concerns over environmental concerns (Hay, 1992; Dryzek, 1992). One simple way to look at this is to compare the development of open- versus closed-loop LNG terminals. Industry representatives say that a one to two percent reduction in LNG production

associated with closed-loop systems is a significant reduction in energy imported. Energy industries as well as the United States Coast Guard and Maritime Administration view the increased energy accumulation via open-loop systems as a rational use of nature despite the impacts on the environment. They view the impacts as insignificant, opposing environmental agencies and NGOs.

Recent research on political regimes and movements has focused on political opportunity structures (POS) (Kreisi, 1995). Giugni (2004) discusses two dimensions of POS, the structure of the state along with the arrangements that govern the decision making process and the power and structure of political alliances. The permeability of the political system is a key component of social movements, the greater the degree of decentralization, the greater the degree of access (Giugni, 2004; Kreisi, 1995). Campbell (1988) summarizes a split in policy attitude, some arguing for a decentralized, pluralist model while others preferred a more centralized, elite model. He further explains that a decentralized model focuses on policy implementation while a centralized model examines policy formation. A state utilizing a more centralized policy process is less accessible than a decentralized state (Campbell, 1988). In his study of nuclear power companies, Campbell found a centralized policy process was formed within insulated agencies restricted to corporate and political elites. The policy formed within those groups frequently benefits industry. This is the energy and environmental policy practice of the George W. Bush administration (Rosenbaum, 2005, Austin and Phoenix, 2005).

Energy and Environmental Policy

Environmental policy can be viewed from many vantage points and an exact definition is difficult to state. While gathering data, I found that there were three ways one could define

environmental policy; as environmental initiatives or goals established by a group, as laws or environmental acts written by a legislative body, and as the entire environmental-political process, including everything from proposals for permits, public scoping periods, permit authorizations, and judicial lawsuits. The research on environmental policy for offshore LNG terminals focused on Senate testimony that influenced security, energy, and environmental legislation, energy industry publications, as well as the permitting process for offshore LNG terminals. Offshore LNG terminals are regulated by the Maritime Transportation Security Act of 2002 (MTSA), and the Deepwater Port Act (DPA), which was amended by the MTSA so these policies will be examined.

Environmental policy was established and recognized in the United States with passage of the National Environmental Policy Act of 1969 (NEPA). NEPA promoted environmental preservation, called for an established, systematic, environmental permitting review process, and created the President's Council on Environmental Quality (CEQ). The focus of NEPA was to "promote efforts which will prevent or eliminate damage to the environment and biosphere" as well as "attain the widest range of beneficial uses of the environment without degradation" (NEPA, 1969). NEPA decentralized the policy process, requiring federal agencies to evaluate and disclose to the public the environmental impacts of any major action they are planning (NEPA, 1969). The NEPA process involves the design of an environmental assessment (EA) and if a "significant impact" is found, an environmental impact statement (EIS) is prepared and reviewed by federal and state agencies and open to public comment. Notifications are made public in the Federal Register and a public "scoping" or comment period reviewing the EIS takes place. This process can take place multiple times, for example, to review a draft EIS and then the final EIS. The CEQ consists of three individuals who are appointed by the President to serve

at his pleasure after approval by the Senate. One member appointed by the President will serve as the Chairman of the CEQ.

Challenges of environmental policy making in the United States include government structure and divisions of knowledge (Caldwell, 1997). Caldwell cites the administrative structure of government as a policy problem, with federal departments such as Agriculture and Commerce maintaining special interests in policy design. Every agency has individual legislation, structure, and goals. Agencies also develop different relationships with other federal agencies. These agencies have special expertise and levels of knowledge unique to themselves. In the case of offshore LNG terminals, the Coast Guard has expertise in security, the Maritime Administration is most knowledgeable in commerce, transportation and the shipping industry, and agencies like NOAA Fisheries and the Environmental Protection (EPA) agency understand the marine environment to be developed. The Maritime Administration would obviously have stronger ties to the shipping industry than the EPA while NOAA Fisheries has a historical relationship with commercial fishers. These relationships come into play in policy deliberation for open-loop LNG terminals.

Bush Administration Energy and Environmental Policy

One outcome of NEPA was a decentralized permitting process that increased the authority of the state and local governments as well as the general public. Kreisi (1995) finds that a federalized system like the United States provides social movements multiple points of access. Often federalized systems are regionalized which gives states a stronger policy making role (Rosenbaum, 2005). Environmental groups benefit greatly from decentralized, increased access to the policy process (Rosenbaum, 2005). Campbell (1988) states that policy goals are

more difficult to achieve with increased participation. In other words, democracy can be time consuming and undermine elite interests.

The Bush administration claims that the appeals process created by NEPA is being abused by environmental groups (Devine, 2004, Vaught and Cortner, 2004). Lawsuits against timber and mining companies frequently delay the harvesting of natural resources (Switzer, 2004). In 2002 the CEQ established a NEPA taskforce to review and streamline NEPA (Switzer, 2004). The policy of the Bush regime has been to centralize policy formation among elites (Rosenbaum, 2005, Austin and Phoenix, 2005). In regards to energy and environmental policy, members of the "environmental countermovement" associated with the neo-conservative administration are gaining access (Austin, 2002; Boston, 2000, Pellow, 2001, Rosenbaum, 2005). Austin (2002) connects the Bush administration with corporate interests in areas such as energy policy, the war in Iraq, and a business agenda visible in his cabinet assignments. By placing elite anti-environmentalists in key cabinet positions, Bush is able to shape business-friendly environmental policy (Switzer, 2004). Vice President Cheney's NEPDG went to court and won to protect the confidentiality of group meetings, keeping the public in the dark about energy policy formation under the Bush administration (Devine, 2004).

Corporate funded think tanks such as the Heritage Foundation also provide information to lobbyists and politicians that create legislation endorsed by political players like former President George H. Bush and Newt Gingrich (Austin, 2002, Boston, 2000). These foundations have an interest in securing social, economic, and political control at the expense of the majority and the environment (Boston, 2000). For instance, according to Switzer (2004), most individuals prefer energy conservation over increased production, yet the energy policy of the Bush administration

focuses on increasing production. Supporters of development are convinced that a top-down approach is the most efficient, even if it ignores local interests and cultures (Josephson, 2004).

A centralized policy approach would support claims by eco-Marxists that capitalism tends to undermine democratic processes. A small group of elites (such as energy industry capitalists) create policies that influence development while the democratic process is reduced to a mere formality. A decentralized approach would support state-theory, where the policy process is accessible to many, especially lower-level government and state agencies (Block, 1987). Increased participation may result in more ideas that are beneficial to more people. Greater public participation results in a longer time period implementing policy. But the Bush administration claims increased permitting time periods are costly to industry and may result in greater regulations (Switzer, 2004). The Bush administration's energy policy is a political opportunity structure for industry capitalists and is rapidly closing to the public.

It is possible that state theory, the shifting class coalitions centered on political regimes, and eco-Marxist beliefs interact jointly. Neo-conservative theory is predominantly market oriented so eco-Marxists would likely agree with the problems identified. The administration has "rolled back" environmental regulations in favor of energy and forestry industries (Devine, 2004). Bush Administration environmental regulations are debatable. The administration believes that the economy and environment can co-exist (NEPDG, 2001). Bush has labeled himself a conservationist, though environmentalists are quick to point out the difference between a conservationist and a preservationist (Devine, 2004). The Bush administration believes that drilling in the Arctic National Wildlife Reserve should be allowed because technology improvements make environmentally-safe drilling possible. Environmentalists feel that an area as pristine as a national wildlife reserve should remain undisturbed.

State theorists such as Skocpol and Block could also point to unilateral decisions made by the Bush administration in regards to terrorist threats and the expansion of global democracy and capitalism that would match the neo-conservative approach. Vice President Dick Cheney's NEPDG focused on issues with energy and national security, but coordinated heavily with energy industry representatives. The connection appears to be the weakest when comparing state theorists and eco-Marxists. Eco-marxists would claim that the role of the state is subordinate and that capitalism is the driving factor, while state theorists would claim that the state is a living body, concerned for its' own well being and survival. The driving factor of environmental degradation would be disputed. Eco-Marxists blame capitalist greed for the development of open-loop systems. State theorists will point to the "adverse but insignificant"⁵ environmental impacts of open-loop systems as a necessary by-product for national security. State theorists may claim environmental degradation is permissible because extensive regulation may inhibit national energy security (Barnett, 2001).

Counter to Block's predictions, the Bush administration centralizes the energy and environmental policy process to "cut through the red tape". In the policy for offshore LNG terminals (as well as in the Energy Act of 2005 and the Healthy Forests Initiative) Bush removes power from front-line agencies and NGOs and places it within elite task forces of political insiders and energy industry representatives. The result is industry guided policy, not increased regulation. Skocpol's argument is weakened by the closeness of the neo-conservative Bush regime and corporate interests, the politicians are the capitalists. Within the Administration, what works for capital works for the state. Counter to state theory, the Bush Administration does

⁵ USCG letter to NOAA Fisheries. 2005. Gulf Landing LLC Deepwater Port Environmental Impact Statement EFH Consultation. Docket USCG 2004-16860-43. Written February 7, 2005.

not compete with, but aids capital. The strength of elite capitalism and the resulting environmental impacts follow more closely an eco-Marxist theory.

RESEARCH BELIEFS AND HYPOTHESES

As an environmentalist and an employee of the National Oceanic and Atmospheric Administration (NOAA), I first became interested in the offshore liquefied natural gas (LNG) terminal issue by reading newspaper articles pertaining to the development of Shell's Gulf Landing terminal off the coast of Louisiana, designed and approved as an open-loop regasification system. As a researcher and federal employee who works frequently with the United States Coast Guard (USCG), I did not choose sides in regards to the conflict between NOAA and the USCG, I simply searched for an explanation how offshore LNG policy evolved and why the open-loop system was approved. Although part of this study points out environmental degradation associated with the open-loop systems, the purpose of the study is to discover the economic, political, and environmental factors which lead to the development of the energy and environmental policy for offshore LNG terminals.

This study identifies social theories that support these governmental actions. Questions include, has the role of the state strengthened since the terrorist attacks? What sort of influence did national security have on the most recent energy and environmental policy? At the same time, what role did industry play in the policy process? How influential are corporate concerns on the George W. Bush administration? Is national security, capitalism, or a combination, driving our national energy and environmental policies?

One prediction is that the anti-environmental corporate movement is driving the neo-conservative Bush administration to create an energy policy that is industry friendly. Interactions within the Bush administration between defense and energy industries are similar to those observed during the Reagan administration (Thompson, 2005). The “war on terrorism” is a

perfect opportunity to increase aid to these corporations through increases in the defense budget as well as a focus on energy security (Austin and Phoenix, 2005).

Secondly, cumulative changes in the Maritime Transportation Security Act of 2002, the United States National Security Strategy, and the Energy Policy Act of 2005 will override the regulations within the National Environmental Policy Act and lead to further environmental degradation. Evidence of this can be found in the recent licensing of several open-loop LNG terminals.

Eco-Marxists would agree with the negative environmental outcome of industry influence over Bush administration policies. The strength of the eco-Marxist argument is based on the observation that the state is taking a clear stance to promote energy and national security by reducing the traditional role of federalism by working cooperatively with the energy industry elites and limiting the role of local state agencies and concerned citizens.

OFFSHORE LIQUEFIED NATURAL GAS POLICY

While studying the development of offshore LNG policy, several key amendments, orders, and agreements were influential in the policy process. These included a Memorandum of Understanding (MOU) released by the White House Task Force on Energy Project Streamlining (TFEPS), amendments to the Deepwater Port Act (DPA) made in the Maritime Transportation Security Act (MTSA), and Executive Order (EO) 13212 issued by President George W. Bush. EO 13212 set precedence for energy policy goals of the George W. Bush administration. The DPA of 1974 was amended by the MTSA in 2002, allowing for the development of offshore LNG terminals. The entire offshore LNG terminal permitting process is summarized in the MOU released by the TFEPS. Reviewing the development of these policies reveals the close connections the Bush administration maintains with energy industries, the desire for the Administration to centralize and expedite the permitting process, and the new influence national and energy security has over environmental policy.

Executive Order 13212, Expedited Energy Approval Process

Executive Order (EO) 13212, "Actions to Expedite Energy-Related Projects" issued by President Bush in May 2001 was an early hint at the Administration's energy policy, encouraging an expedited process regarding the production, transmission, and conservation of energy. In EO 13212, the President encourages federal agencies to take any action necessary to accelerate the completion of energy-related projects, while maintaining public health, safety, and environmental protection.

So how did President Bush come up with the idea of an expedited approval process? Following California's rolling electrical blackouts in 2001, the Senate held a series of hearings addressing energy trends and market concerns. During the hearings, representatives from energy

and oil industries blamed the Environmental Protection Agency and Bureau of Land Management for permitting delays that were preventing energy development and increasing development costs. No representatives from these federal agencies were present to explain the delays (U.S. Congress, Senate, 2001, S. Hrg. 106-90 Pt. 1). On May 15, 2001, the Senate conducted a follow up energy hearing. The purpose, outlined by Sen. Frank Murkowski (R-AK), then Chairman of the Committee on Energy and Natural Resources was "to consider national energy policy with respect to federal, state, and local impediments to the siting of energy infrastructure," (U.S. Congress, Senate, 2001, S. Hrg 107-90). Currently the Governor of Alaska, Murkowski has openly strong ties with oil and energy industry representatives (State of Alaska, 2006), as does his daughter, Lisa Murkowski, who is now a Senator from Alaska who supports drilling in the Arctic National Wildlife Refuge (Kiely, 2005). Although the focus at those hearings was on energy problems in the state of California, the Federal Energy Regulatory Commission (FERC) was repeatedly berated by industry representatives on their handling of National Environmental Policy Act (NEPA) compliance and siting issues.

Between the agenda and invitees, it seemed the outcome of the hearings was decided before the testimonies even began. Campbell (1988) found this same occurrence when studying the relationship of the nuclear power industry and federal and state agencies. The Senate hearings over energy issues found that problems with infrastructure siting delays revolved around the federal permitting process. Three days after the last hearing President Bush issued Executive Order 13212.

The Maritime Transportation Security Act and Deepwater Port Act amendments

The Deepwater Port Act (DPA) of 1974 was written to "regulate commerce, promote efficiency in transportation, and protect the environment by establishing procedures for the

location, construction and operation of deepwater ports”. The focus of the act was to create guidelines for the permitting process of an offshore terminal to import oil. Instead of pumping oil from a cargo ship at a land-based facility, oil is pumped off the ship into a subsurface pipeline and transferred onto land where it is then refined. The DPA is not a well-known or widely utilized policy, in fact to most Americans, an offshore deep-water port seems like a futuristic concept. That is because only one deepwater port has ever been developed in the United States. The Louisiana Offshore Oil Port, or LOOP terminal is located 18 miles south of Grand Isle, Louisiana in 110 feet of water.

Following the NEPA, the DPA requires NEPA protocol for environmental assessments and public comment to be followed. The DPA also acknowledges laws under the Coastal Zone Management Act by granting the Governor of the adjacent coastal state veto authority over approval of the Secretary of Transportation⁶. The governor’s decision must be made within 45 days of United States Coast Guard (USCG) and Maritime Administration (MARAD) recommendations, otherwise state approval is assumed.

The DPA established a general timeframe for the licensing and permitting process for offshore oil importing terminals. The first step is that the reviewing agencies, the USCG and MARAD, with help of other federal agencies, must certify the application as “complete”. Once the application is deemed complete, a notice is posted in the Federal Register. Within 240 days of the posting, at least one public meeting must be held. After the last public hearing, federal agencies have 45 days in which to comment on the application. Within 90 days of the last public

⁶ This timeline came in to play for the approval of Shell’s gulf Landing Terminal. In the case of offshore LNG terminals, the administrator of MARAD authorizes the license on behalf of the Secretary of Transportation.

meeting approval or denial of the application is required (Federal Register, 67:249). The entire process then takes only 330 days. This includes necessary NEPA compliance and consultation.

Following the terrorist attacks of September 11, 2001, the Homeland Security Act of 2002 moved the United States Coast Guard (USCG) from the Department of Transportation (DOT) to the Department of Homeland Security (DHS). The Maritime Transportation Security Act was signed by President Bush on November 25, 2002 and called on the Coast Guard to improve security of the nation's ports and waterways. The MTSA also required the USCG to lead Area Maritime Security Committees to increase intergovernmental and private-sector cooperation regarding port security (MTSA, 2002). One section of the MTSA was an amendment to the Deepwater Port Act (DPA, 1974) to include natural gas, specifically "any sort of mixed natural gas including liquefied natural gas". This establishes the opportunity for energy industries to develop offshore LNG facilities (MTSA, 2002). The Secretary of DHS and the Secretary of DOT delegated the processing of deepwater port applications to the USCG and MARAD. The responsibility of enforcing NEPA compliance was also given to the USCG.

Industry praised the amendments to the DPA. The once limiting requirement that offshore terminals be operated as a "common carrier" was no longer necessary. Now, developers of offshore terminals can bypass the "open access" requirement to the terminal. This means that developers can control what LNG imports they accept. The DPA lowered the constraints imposed on developers. Many of the environmental permitting problems associated with developing shore-side terminals do not exist offshore (Petroleum Economist, 2004). On top of that, the new regulations regarding environmental assessment are less prescriptive and allow the use of the most current Council on Environmental Quality NEPA documentation. Instead of having multiple analysis for a variety of federal agencies with different interests, only one is

required by MARAD and it serves as a single federal environmental analysis (Daughdrill et al, 2003). This CEQ document has been weakened by the Bush administration (Switzer, 2004). The USCG and MARAD were willing to cooperate with industry as EO 13212 requested, but the USCG was short on LNG terminal expertise. In fact, the regulatory process was so new to the Coast Guard that they asked industry for help. William Daughdrill, former Coast Guard chief of commercial vessel safety in New Orleans, encouraged companies developing offshore LNG terminals to become involved in guiding future offshore LNG regulations, saying “The guys in the regulatory agencies won’t be doing this stuff on their own; they’ll look to industry experts to help move this process forward” (Gas Daily, 2002). Daughdrill himself became an “industry expert” leaving the Coast Guard to become principal environmental scientist for Ecology and Environment, a consulting firm that produces environmental assessments for offshore LNG terminals (Gas Daily, 2002b). MARAD was prepared for their tasking. In an industry update administrator Captain William Schubert claimed, “We are moving rapidly on these approvals” (Petroleum Economist, 2004).

Captain David Scott, Chief of the USCG's Office of Operating and Environmental Standards, the office responsible for deepwater ports, testified at two hearings regarding the importation of LNG. The focus of his testimony and the entire hearing was LNG terminal siting and security (U.S. Congress, Senate, 2005, S. Hrg. 109-10)⁷. The first time Scott testified, on January 24, 2005, he did not mention the US Coast Guard's role regarding NEPA, only security concerns (U.S. Congress, Senate, 2005, S. Hrg 109-2). At the second hearing on February 15, 2005, he did mention NEPA but never addressed possible environmental impacts of open-loop systems, even after environmental harm to fisheries was discussed by Senator Mary Landrieu (D-

⁷ Most of the testimonies discussed the citing authority and process of the Federal Energy Regulatory Commission for near-shore LNG terminals.

LA)⁸. The USCG continues to struggle with their role of upholding/enforcing the NEPA and identifying possible open-loop impacts, and has instead noted that "there is little reliable data" available on harmful environmental impacts (USCG Proceedings, 2006).

Memorandum of Understanding (MOU) on Deepwater Port Licensing

On May 20, 2004 an inter-agency MOU written by the White House Task Force on Energy Project Streamlining (TFEPS) described the process for licensing deepwater ports. The White House TFEPS was formed after a recommendation made by Vice President Cheney's National Energy Policy Development Group (TFEPS, 2006). Other projects the task force is working on include streamlining the Department of the Interior administrative appeals process, energy right-of-way permitting, and improved pipeline permitting.

The goal of the MOU was to expedite the offshore LNG terminal permit approval process by increasing inter-agency coordination, defining the lead and "participating agencies" involved in the permit approval process, and explaining agency responsibilities. The MOU discusses EO 13212, "Actions to Expedite Energy-Related Projects" and reiterates the administration's desire to expedite the review process for energy project authorizations. It explains that EO 13212 applies to the DPA and that the DPA establishes a timeframe of 330 days to complete the review process. A summary of the pertinent policy and approval process for offshore LNG terminals was also presented. The MOU can be viewed as a final document for federal guidance and policy.

After reviewing the process it appears this was a necessary step as there was confusion over which agency, the USCG or MARAD, was actually the lead permitting agency (Armistead

⁸ This is interesting due to the fact that only weeks before, the USCG had received several comments from federal and state agencies as well as non-governmental organizations protesting the environmental impacts of an open loop system.

and Wong, 2004; Gas Daily, 2002b; Keenan, 2004). Why the confusion between agencies? The individual responsible for approving the permits is the Secretary of Transportation, and prior to the establishment of the DHS, the USCG and MARAD were in the DOT. Approval from both agencies was required. A policy clarification and decision was necessary when the agencies representing the Secretary of the DOT were separated into two federal departments with different responsibilities. The MOU names the USCG and MARAD as lead agencies to represent the Secretary of the Department of Homeland Security (DHS) and the Secretary of Transportation, respectively. The USCG is responsible for NEPA compliance, navigational engineering, safety standards, and facility inspection. MARAD is responsible for determining financial capabilities of applicants, citizenship, preparing the actual record of decision, and issuing or denying the license.

Following descriptions of the roles of the lead agencies, the responsibilities of the "participating agencies" are also reviewed in the MOU, including that of NOAA Fisheries, NOAA's National Ocean Service (NOS), Department of Defense, Army Corps of Engineers, Minerals Management Service (MMS), Environmental Protection Agency, US Fish and Wildlife Service, and Council on Environmental Quality (CEQ). These agencies are defined only as advisors to the USCG and MARAD. Under the MOU, NOAA Fisheries is responsible for advising the USCG on issues pertaining to fisheries impacts including marine mammals, protected species, and ecosystem integrity. The role of NOS is to ensure that the Coastal Zone Management Act is adhered to, including section 307(c)(3)(A), which states that the coastal state(s) adjacent to port development must concur with the certification prior to approval of the permit by the federal agencies (USCG and MARAD). In other words, the state closest to the

proposed offshore port has veto authority⁹. MMS is designated as the federal agency responsible for issuing and enforcing safety regulations and environmental protocols of the facility, which is in line with responsibilities MMS currently has concerning offshore oil platform development and maintenance along the outer continental shelf in the Gulf of Mexico. The role of CEQ is to negotiate any disagreements between participating federal agencies.

Under the MOU, the USCG and MARAD are required to comment on the "completeness" of the permit application within 21 days of receiving the application. Agencies agreed to early involvement and open discussion. The participating agencies are given at least five of these 21 days to make their own initial review¹⁰. Agencies agreed to share data and cooperate with development plans. Lastly, agencies agreed to communicate informally, to resolve disputes as quickly as possible, and to have the CEQ present resolutions for any disputes within 30 days. Cooperation is stressed throughout the Memorandum. The USCG and MARAD design the review schedule, but if any agency is not prepared or requires more time, the lead agencies are directed to work with that agency to minimize the anticipated delay.

Discussion

The formation of offshore LNG policy displays the influence energy corporations have in the permitting process. It also reveals the attempts for the Bush administration to centralize policy formation. The administration's goal of streamlining and expediting policy limits public participation and forces understaffed and unprepared state and federal agencies to review and comment on permits in a rushed manner. To promote national and energy security, environmental degradation was permitted. Executive Order (EO) 13212 impacts not only

⁹ This issue was addressed in the DPA.

¹⁰ Other timeline requirements were established under the DPA amendments.

permitting procedures for mining and energy infrastructure as it was originally intended, but also the Deepwater Port Act (DPA) and offshore LNG terminal siting. Amendments to the DPA were industry friendly and the MOU was written by a small group of elites unknown to the public.

EO 13212 was issued prior to the terrorist attacks of 9-11 and was an answer to concerns from the energy industry. Following Senate testimony that was focused on the current energy infrastructure and the rolling blackouts in California in 2001, energy corporations complained about the permitting process, particularly the public comment period. Federal agencies involved in the process were not present to return comment. President Bush issued EO 13212 as a solution to that problem, and it was written in a general scope so that it could cover any future energy development issues. The Bush administration is known for placing energy industry representatives in key environmental positions (Austin and Phoenix, 2005; Boston, 2000). For instance, Samuel Bodman was a chemical engineer interested in venture capital who eventually signed the MOU as Deputy Secretary of the Department of Commerce, the department that houses NOAA. Bodman signed as a representative of NOAA Fisheries and the NOS. President Bush later promoted Bodman from Secretary of the Department of Commerce to the Secretary of Energy in February 2005. This cabinet swap demonstrates the economic and political connections between energy and commerce.

EO 13212 and the MOU were attempts by the Bush administration to centralize the permitting process. By centralizing the process, the administration was able to work on forming new policy and forcing it into action without concern over how the process was implemented. The fact that the MOU was written by the White House Task Force on Energy Project Streamlining defines the goals of the Bush administration. The timeline (Table 1) also shows how the policy was streamlined and what sort of effects an expedited process has on policy

development and LNG license procedures. EO 13212 was written in May 2001. The MTSA became public law, amending the DPA on November 25, 2002. A license was granted by MARAD for ChevronTexaco's Port Pelican terminal before the MOU detailing agency roles, responsibilities, and timelines was authored on May 20, 2004. Some policy analysts may call this efficient, productive policy. Environmentalists claim that this time frame is too short to really review environmental impacts. The policy of the Bush administration called for a "streamlined" approach and created a task force to see that it was implemented, but the process started so quickly that agencies were caught unprepared. For instance, NOAA did not publish a draft guide for offshore LNG terminal best management practices until December, 2005 (NOAA, 2005). The Governor of Louisiana was also nervous about the time frame and the lack of background environmental studies and information necessary for a confident approval for Gulf Landing (Schleifstein, 2005b). Even the Coast Guard, one of the lead agencies in the permitting process, had to ask for an expanded staff with technical qualifications in anticipation of permitting offshore LNG terminals (Gas Daily, 2002b).

If federal agencies are unprepared, the public is unaware. One outcome of a centralized approach to policy formation is a lack of public and agency involvement. The public was denied access to information pertaining to the NEPDG (Walker vs. Cheney, 2002). Exactly who meets as members of the White House Task Force on Energy Project Streamlining is also unknown. The irony associated with EO 13212 cannot go unnoticed. The EO states that all environmental laws must be followed (including NEPA) but at the same time directly limits these laws. By placing an expedited timeline on the permitting process and the public scoping period, one of the strongest democratic aspects of NEPA is weakened. Any time that a review period is hastened, a comment period shortened, and an approval period rushed, long-term environmental concerns

may not be fully addressed. Less than one year after the legislation creating offshore LNG terminals was signed, the first open-loop terminal was licensed by MARAD. With no previous open-loop systems in existence, no federal agencies providing research data, and less than one year to learn the estimated environmental impacts, how can the public comment?

It appears that the USCG was given the role of lead NEPA agency because it was given NEPA authority by the Secretary of the DOT under the original DPA. The USCG does have an environmental compliance division, although their focus is mainly security. Also, it is convenient for the USCG to stay in the NEPA permitting role because it eliminates the need for a second lead agency. Those are logical conclusions. The fact that the DPA was amended in the MTSA though, opens a different door.

Offshore LNG terminals were not conceived and permitted in the National Gas Act or the Energy Act of 2005, but their existence came as an amendment within the MTSA. Why wasn't the DPA amended on its own, in the Natural Gas Act, or the Energy Act of 2005? The strong role of the USCG in the permitting process summarizes the chief concerns of offshore LNG terminals, maritime transportation and security, not the environment. Although environmental concerns are mentioned in the DPA and NEPA procedures and compliance is detailed, it is still located within an act focused on commerce, and amended by an act focused on maritime security. The USCG and MARAD are the lead agencies in the offshore LNG permitting process because shipping, energy security, and commerce are the concerns for offshore LNG terminals, not the environment.

CASE STUDIES OF OFFSHORE LNG TERMINALS

Even before the Maritime Transportation Security Act (MTSA) amended the Deepwater Port Act (DPA) to include liquefied natural gas (LNG) facilities, energy companies were investigating the possibility of offshore terminals for importing LNG. As a result of high natural gas prices, low priced LNG was in such high demand that the two on-shore terminals functioning within the United States made plans for expansion and two facilities previously mothballed in the early 1980s were reactivated (Armistead and Rosta, 2001). The “coincident” drivers importing LNG described by an El Paso Corporation managing director were a steep increase in demand, rising prices, and decreasing costs to produce, transport, and regasify LNG (Armistead and Rosta, 2001). El Paso Global LNG Group began developing their “Energy Bridge” offshore LNG terminal concept in 2000 (Kammerzell, 2005). In August 2001, ChevronTexaco commenced a 16-month technical and commercial investigation into the feasibility of an LNG receiving and regasification terminal in the Gulf of Mexico (Maksoud, 2003). They weren’t the only companies taking notice; others including Enron, British Petroleum, and Shell were examining possible terminals and investments utilizing LNG (Armistead and Rosta, 2001). Terminals in the United States would receive LNG from the west coast of Africa, Australia, Malaysia, Indonesia, Algeria, Kuwait, Qatar, Nigeria, Angola, and Trinidad (Maksoud, 2003).

Why the transition to offshore terminals? Maksoud (2003) suggests three different reasons; location, safety, and security. An offshore terminal can be located in the Gulf of Mexico closer to areas of high gas demand and existing infrastructure. Residents close to proposed near-shore terminals worry about possible explosion risks. A government funded research report stated that significant public impacts exist within approximately 500 meters of a

spill, with lower impacts at distances beyond 1600 meters. Though large, unignited LNG vapor releases are unlikely, the report declared that hazards from a nominal intentional spill (terrorist act) could create hazards up to 2500 meters away from the scene. The report also declared that there are many unknowns and inconsistencies (Sandia, 2004). Offshore facilities mitigate the risk of terrorist sabotage (Keenan, 2004). Frustration with the permitting process and resident complaints is frustrating the energy industry. Wallace P. Parker Jr., president of energy company KeySpan Corporation described New England customer attitudes as “BANANA”, Build Absolutely Nothing Anywhere Near Anything (Business Week, 2005). Senate testimony by industry representatives repeatedly called for adjustments to the National Environmental Policy Act (NEPA) for permitting near-shore LNG terminals (U.S. Congress, Senate, 2005, S. Hrg 109-2). An “out of sight, out of mind” attitude comes easily with offshore terminals that are located close to shipping lanes for easy terminal access and an increased distance from high population areas. Companies were also looking to avoid congested ports since there is a limited availability of ports capable of accepting the deep-draft vessels required to transport LNG (Hitchings, 2003; Zellner and Hindo, 2005). Terminals proposed near-shore could be two to three times cheaper than those built offshore, but in addition to the above concerns, create greater environmental problems including impacts to essential fish habitat and endangered birds (Armistead and Wong, 2004, Gas Daily, 2003a). In fact, grassroots environmental movements forced several near-shore terminal designs to move offshore (Clark, 2004). Many companies are focusing their locations in the Gulf of Mexico because of the long symbolic relationship between Gulf states like Texas and Louisiana and energy industries (Business Week, 2005).

Shortly after the United States Coast Guard (USCG) and the Maritime Administration (MARAD) were granted permitting authority over offshore LNG terminals, two suppliers issued

terminal proposals (Hitchings, 2003). ChevronTexaco had designs for a gravity based structure (GBS) similar to a large concrete island for its LNG terminal, Port Pelican. LNG carriers would dock at the facility where the LNG would be regasified and transferred to pipelines. El Paso's terminal, called Energy Bridge, would consist of a buoy-turret system that a ship would attach itself to, similar to a mooring buoy. LNG would be regasified onboard the ship and then the gas would be passed through the buoy-turret and into a pipeline system. Freeport-McMoRan applied for an offshore terminal permit that would have 28 billion cubic feet of gas storage capacity within a 2-mile diameter caprock and salt dome below their Main Pass terminal (Gas Daily, 2003b). Shell submitted a proposal for a \$700 million dollar terminal, named Gulf Landing, for possible operation by late 2009 (Platts International Gas Report, 2003). Several other terminals were proposed for the Gulf of Mexico and Pacific coast near the United States/Mexico border. The application process for four terminals, ChevronTexaco's Port Pelican, El Paso's Energy Bridge, Freeport-McMoRan's Main Pass, and Shell's Gulf Landing were reviewed.

Table 1
Timeline of Offshore LNG Terminal Policy and Permitting Events

2001

May 18 - President Bush issues memo for “Expedited Energy Approval Process”

2002

November 25 - MTSA amends DPA to include offshore LNG ports. The USCG and MARAD are listed as lead permitting agencies. USCG and MARAD receive a 701 page application for ChevronTexaco’s Port Pelican offshore LNG Terminal.

December 16 -USCG and MARAD accept the application for Port Pelican as complete.

2003

January 03 - USCG and MARAD authorize El Paso Energy Bridge as complete.

July 01 - Public meeting in Lafayette, LA for Port Pelican

July 15 - NOAA Fisheries responds with environmental impact concerns from Port Pelican’s open-loop system.

October 03 - Public meeting for Energy Bridge in New Orleans, LA

October 15 -NOAA Fisheries comments on environmental impacts of Energy Bridge, requests an EIS, and recommends mitigation procedures.

November 14 - Director of MARAD authorizes license for Port Pelican

November 24 - Various government agencies respond to proposal, several state that proposal is incomplete. USCG notifies Shell of proposal problems.

November 25 - USCG issues “Finding of No Significant Impact” for Energy Bridge, denying the need for an EIS.

December 02 - USCG notifies Shell of various ways to improve the Gulf Landing proposal and specifies concerns raised by NOAA and MMS

2004

January 22 -Notice of complete application for Gulf Landing published in the Federal Register

May 20 - MOU completed by several agencies regarding Expedited Energy Approval and the Deepwater Port Act.

May 26 - MARAD issues license for Energy Bridge

June 9 - USCG and MARAD accept application for Freeport-McMoRan Main Pass Energy Hub

July 15 - Public meeting held in Lafayette, LA for Gulf Landing.

August 8, 9 - NOAA, DOI, LADWF respond to draft EIS for Gulf Landing.

August 10-12 - Public meetings held in Mobile, AL, Pascagoula, MS, and New Orleans, LA for Main Pass Hub

Table 1 con't.

August 27	- USCG suspends application process for Gulf Landing to wait on more environmental information
September 03	-USCG suspends application process for Main Pass Hub to wait on more environmental information
November 08	-USCG rescinds suspension of Gulf Landing
November 18	- Public meeting held in New Orleans, LA for Gulf Landing.
December 03	- USCG announces publication of final EIS in federal register.
2005	
January 31	- LADWF sends letter to Gov. Blanco discouraging use of open loop system for Gulf Landing.
February 07	- USCG sends letter to NOAA stating that fisheries impact of open-loop system by Gulf Landing would be “insignificant.”
February 15	- Gov. Blanco sends letter to MARAD encouraging strict “environmental monitoring of open loop system” and more research into the Gulf Landing open-loop system .
February 16	- MARAD authorizes license for Gulf Landing.
March 08	- USCG notifies ChevronTexaco of required EIS for GBS construction
April 6	- Excelerate Energy/El Paso announce successful operation of Energy Bridge
July 12	- ChevronTexaco suspends development of Port Pelican until further notice.
July 18-20	-Public meetings in Grand Bay, AL, Pascagoula, MS, and New Orleans, LA reviewing draft EIS for Main Pass Hub
July 29	- LADWF notifies MARAD of concerns over open-loop system
August 26	- USCG suspends application process for Main Pass Hub again for further environmental review
September 23	- USCG suspends application process for Main Pass Hub due to hurricane Katrina
2006	
March 8	- USCG lifts suspension for Main Pass Hub application process
March 21-23	-Public meetings in Grand Bay, AL, Pascagoula, MS, and New Orleans, LA reviewing final EIS for Main Pass Hub
May 5	- Louisiana Governor Kathleen Blanco denies permit approval for Main Pass Hub because of open-loop system
May 8	- Freeport McMoRan announces plans to pursue license of Main Pass Hub with closed-loop technology.

ChevronTexaco's Port Pelican Offshore LNG Terminal

On November 25, 2002, the very same day that President Bush authorized the Maritime Transportation Security Act (MTSA) which amended the Deepwater Port Act (DPA) to allow for offshore LNG terminals, the United States Coast Guard (USCG) and Maritime Administration (MARAD) received an application from ChevronTexaco for their Port Pelican offshore LNG terminal. The application was 701 pages long. Obviously, the authorization of the MTSA was anticipated by ChevronTexaco. The facility would be located approximately 36 nautical miles south southwest of Fresh Water City, LA. On December 16, 2002 the USCG and MARAD considered the application complete and the public and federal agency review period commenced. A notice was placed in the federal register that the last possible date for a public hearing would be August 25, 2003 and that the application must be approved or denied within 90 days of that date (Federal Register 67:249).

Port Pelican was to consist of two concrete gravity based structures (GBS) that would be fixed to the seabed with interior LNG storage tanks, LNG receiving and vaporization equipment, berthing accommodations for ships, facilities for delivery of natural gas into a pipeline system, and personnel accommodations (Federal Register 67:249). A draft environmental impact statement (EIS) was made available for review by the public and advisory federal agencies on May 30, 2003 and a public meeting was scheduled in Lafayette, LA on July 1, 2003 (Federal Register, 68:104)¹¹.

An open-loop regasification system, also known as an open-rack vaporization system (ORV), was designed for use at Port Pelican. Near-shore facilities currently importing LNG

¹¹ Unlike the Shell Gulf Landing and McMoRan Main Pass hearings, transcripts for the public meetings of Pelican Point and El Paso's Energy Bridge were not available.

utilize a closed-loop system, but offshore terminals have been designed with an open-loop system that provides economic incentives. In a closed-loop system, approximately two percent of the natural gas imported is used to heat (regasify) the chilled LNG. In an open-loop system, natural seawater, which is free, is used to heat the LNG. With the open-loop method, there is no cost to warm the gas, and the two percent of gas that would be used can instead be sold (Marshall, 2005). At the time of the proposals, there were no offshore terminals utilizing open-loop technology anywhere in the world.

Two weeks after the public meeting in Lafayette, LA, the southeast regional office of the National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) commented on the draft EIS and expressed concerns over possible adverse impacts to essential fish habitat (EFH) from entrainment of eggs and larvae into the ORV, or open-loop system (NOAA Fisheries letter to USCG, 2003). NOAA Fisheries estimates the loss of any aquatic life entrained in the open-loop system at 100%. Support for the proposal from Louisiana's Congressional delegation was written in a letter to the USCG later that month. The final EIS was made available on August 29, 2003 (Federal Register, 68:168). NOAA Fisheries responded in a letter to the Coast Guard discussing the USCG's decision on the environmental mitigation measures requested by NOAA Fisheries. Though the mitigation measures suggested by NOAA Fisheries were agreed upon by the USCG and ChevronTexaco, NOAA Fisheries continued to express concern over the open-loop design, as no true data were known about the environmental impacts of an open-loop system. (NOAA Fisheries letter to USCG, 2003b). NOAA Fisheries also requested

ChevronTexaco to develop a monitoring program so environmental impacts could be measured¹².

On November 14, 2003, the director of the Maritime Administration (MARAD) authorized a license to ChevronTexaco for Port Pelican terminal. But the construction of the terminal created other environmental hazards. An environmental assessment (EA) was required for the location where the GBS was to be built. Because the GBS would be built on land and transferred to water, the construction site would require dredging and alteration of wetlands and essential fish habitat. Following the EA, the Coast Guard could not ignore the significant impact that would be created by the building of the construction site for the GBS and along with MARAD concluded that an EIS was necessary. The Coast Guard notified ChevronTexaco of this decision along with the fact that the Coast Guard would hire a contractor to undertake the EIS at ChevronTexaco's expense (USCG letter to ChevronTexaco, 2005). The EIS would also add a considerable time delay and another public review period. Four months later, ChevronTexaco responded to the Coast Guard notifying them that the company would no longer actively pursue the development of Port Pelican but would continue to maintain the site and license if they decided on future development. Their reason for delaying the construction was to "better align project timing with the development of LNG supply and other commercial arrangements" (ChevronTexaco letter to USCG, 2005).

El Paso Energy Bridge Offshore LNG Terminal

Unlike the other three offshore terminals studied, the Energy Bridge terminal is a submerged turret loading system. The submerged turret is attached to a buoy on the surface and

¹² Since no open-loop offshore LNG terminals exist, true environmental impacts are unknown. Models were used by NOAA Fisheries to anticipate possible impacts.

held in place by chains, lines, and anchors. An LNG tanker with both on board open- and closed- loop regasification systems attaches the turret to the ship, revaporizes the LNG, and transmits the gas through the terminal into a pipeline system. The submerged turret system is estimated to cost only \$50 million dollars and El Paso described their offshore system as “cost competitive” compared to land-based facilities” (Hastings, 2003).

The USCG and MARAD announced a complete application for the Energy Bridge in January, 2003 with a public hearing to follow no later than September 22, 2003. Although the terminal location would be 146 miles south of Lake Charles, LA, the public meeting was scheduled in New Orleans, LA on October 3, 2003 (Federal Register, 68:171). New Orleans is more than a three hour drive east of Lake Charles, LA and the hearing was held on a Friday afternoon, requiring any residents employed in Lake Charles to miss an entire work day to attend. Prior to the hearing, a letter from then Governor of Louisiana, M.J. “Mike” Foster Jr. was sent to the USCG in support of the Energy Bridge terminal.

Following the public hearing, NOAA Fisheries sent the USCG a letter with several concerns (NOAA Fisheries letter to USCG, 2003c). One issue NOAA Fisheries contested is that only an EA was conducted, not an EIS. The letter explained the issue:

“The stated purpose of the EA is to facilitate public involvement in the decision-making process, however the level of information and degree of public involvement required for an EA is distinctly less than required for an EIS... An EIS was prepared for the proposed Port Pelican deepwater LNG port project reviewed by the USCG and MARAD. Port Pelican has potential environmental impacts similar to those posed by El Paso Energy Bridge, particularly to marine fisheries resources.”

Along with requesting an EIS of Energy Bridge, NOAA Fisheries pointed out that the ships regasifying the LNG can operate as an open, closed, or combination system. El Paso was

proposing to operate in an open-loop system the majority of the time to increase efficiency. NOAA Fisheries recommended that the system operate as a closed loop system or slow the seawater intake velocity. The open-loop system would in-take water at a velocity of 1 foot/second. NOAA Fisheries requested that if an open-loop system had to be used that the system be modified to intake seawater at a rate of .5 feet/second instead. It also recommended that if used, the open-loop system be utilized no more than 248 days a year. NOAA Fisheries also requested that the ships copper-mode antifouling system be turned off while the open-loop system was operating and again, requested El Paso establish an environmental monitoring program (NOAA Fisheries letter to USCG, 2003c).

One month later the USCG and MARAD issued a “Finding of No Significant Impact” for the El Paso Energy Bridge application. This removed the need for an EIS. The only requests by NOAA Fisheries enforced by the USCG and MARAD were a monitoring plan, regulations to operate in open-loop no more than 248 days every year, and for the ship to turn off its copper-anode antifouling system. The requests for closed-loop only operation, an EIS, and slower water intake were ignored. In a letter to the USCG, NOAA Fisheries re-stated their concerns along with a new issue, that impacts from multiple offshore open-loop systems would accumulate and possibly cause an overall level of fisheries degradation never considered. NOAA Fisheries did not request any further action by the USCG or MARAD (NOAA Fisheries letter to USCG, 2003d).

El Paso’s Energy Bridge deepwater LNG port application was approved on May 26, 2004. Less than one year later, Energy Bridge was importing LNG (Excelerate Energy, 2005). The terminal can vaporize up to 690 million cubic feet per day with all six vaporizers in open-loop mode. When the ship is operating in open-loop mode, the vessel draws in approximately

50,000 gallons of seawater an hour and the discharge water is 13.5 degrees cooler than the intake water (Cook, 2005). For efficiency, the open-loop system is utilized when the temperature in the Gulf of Mexico is at least 58.5°F (this is the case the majority of the year).

Shell Gulf Landing Offshore LNG Terminal

"Shell is fully confident that Gulf Landing can operate with no impact to fishing and shrimping in Louisiana or anywhere else in the Gulf of Mexico. Without that confidence, we would not develop the project. This sustainable development commitment is consistent with Shell's existing programs to enhance Gulf of Mexico marine habitat and protect Louisiana's wetlands."

-- Jose Alberto Lima, President Shell US Gas & Power

Gulf Landing LLC (A division of Shell US Gas and Power LLC) delivered a proposal to the US Coast Guard for construction of the Gulf Landing Offshore LNG terminal in the Gulf of Mexico, 38 miles off Cameron Parish, Louisiana, in early November 2003. During the following two months, various government agencies, including NOAA and MMS, found errors and issues of concern in the proposal and notified the USCG of their discoveries. After some additions the proposal was accepted as complete by the USCG on January 6, 2004.

The first EIS was made public, reviewed, and comments were received through early August 2004. Again, worries expressed by NOAA Fisheries focused around the ORV design and its harmful effects on the marine ecosystem. This time, NOAA Fisheries was joined by Louisiana's Department of Wildlife and Fisheries (LADWF) and the Gulf of Mexico Fishery Management Council (LADWF letter to DOT, 2004). Because of these concerns and the timeframe the USCG and MARAD were required to follow under the DPA, the license application was suspended pending a more detailed environmental investigation (USCG letter to Shell, 2004). Slowly, word spread through non-governmental organizations such as the Coastal Conservation Association and the Gulf Restoration Network about the likely environmental

impacts of an open-loop LNG system. For the first time, letters were sent to the USCG from a variety of environmental organizations concerned with impacts from the facility on biological resources.

Results from a scientific study conducted on biological impacts that was required by the USCG were acquired by November 8, 2004 and the permitting process was reconvened. By November 18, 2004, two public meetings concerning the draft EIS were held, one in Lafayette, Louisiana and one in New Orleans, Louisiana. Each meeting had one concerned citizen in attendance¹³. Present at the first meeting was an individual who was concerned about the safety aspects regarding LNG. A representative from the Sierra Club was the lone attendee at the second meeting, where again, safety concerns from terrorist attacks were discussed, as well as the suggestion of a Gulf of Mexico-wide EIS that would incorporate all potential LNG facilities in the Gulf¹⁴.

On December 3, 2004, the final EIS for Gulf Landing was made public and one month later, public and federal agency comments were due. Estimates from the EIS state that impacts from the open-loop system could range between .8% and 3.8% percent of the recreational and commercial red drum (known locally as redfish) Gulf of Mexico harvests. If Energy Bridge, Gulf Landing and McMoRan's Main Pass terminal were to function as open-loop systems as proposed, the conservative loss estimate would be near 12% of red drum landings in the Gulf of Mexico. In their review of the final EIS, LADWF prescribed more research and data be

¹³ Though there has been an increasing amount of protest since the permit for Gulf Landing was issued, it appears that, prior to the actual approval, there was not much concern from the general public.

¹⁴ This is an idea similar to that proposed by NOAA Fisheries in their letter to the USCG (NOAA Fisheries letter to USCG, 2003d).

collected first, that “the analysis of impacts to important commercial and recreational species are not complete.”¹⁵ LADWF also added that they felt that Louisiana state agencies deserved more consideration in the process (LADWF letter to DOT, 2004b). NOAA Fisheries’ response to the final EIS advocated the use of closed-loop systems and condoned the use of an open-loop ORV system (NOAA letter to USCG, 2005). With the terminals being located in Louisiana, NOAA Fisheries predicted that the red drum loss within Louisiana will be greater than the 3.8% prediction for the entire Gulf of Mexico (Schleifstein, 2005). Their comments further stated that the USCG did not consider the cumulative impact of multiple LNG facilities within the Gulf of Mexico.

On February 7, 2005, the USCG presented NOAA Fisheries with their final ruling on the open-loop versus closed-loop debate. The following paragraph taken from the letter summarizes the USCG’s findings:

“We have tried to identify other mitigation methods that would make the use of an open-loop system acceptable to NMFS (NOAA Fisheries), but NMFS has stated that no mitigation has been proven effective in reducing these impacts, and therefore, only use of a closed-loop system would resolve their concerns. Therefore, we were unsuccessful. USCG/MARAD stands by the conclusion that the calculated impacts, while adverse, are not significant, and therefore do not require directing the applicant to redesign its proposed system.”
(USCG to NOAA Fisheries, 2005)

Governor Blanco of Louisiana wrote a letter to MARAD on February 15, 2005 urging strict monitoring of the open-loop system as NOAA Fisheries had requested. Blanco encouraged MARAD to "build on Shell's commitment to a monitoring and mitigation plan", and highlighted

¹⁵ The EIS was done on four commercial species proposed by NOAA Fisheries, red drum, red snapper, Gulf menhaden, and bay anchovy. LAWF was concerned with only modeling four commercially valuable and not having any data for other commercial species, such as shrimp or flounder.

the concerns expressed by LADWF, including the need for the state to have additional input. She also stressed that the uncertainty behind the effects of the open-loop system was unacceptable. Nowhere in the letter did Governor Blanco prohibit the licensing of Gulf Landing. One day later, MARAD authorized the construction of Shell's Gulf Landing terminal.

Journalists for the New Orleans *Times-Picayune* published articles explaining the possible effects on local fisheries and called for the Governor to oppose the terminal, but they were published after the license was granted (Marshall, 2005; Schleifstein, 2005b). A variety of environmental organizations including the Sierra Club and the Coastal Conservation Association began public campaigns against Shell and the open-loop system. The Louisiana Charter Boat Association and Louisiana Shrimpers Association, as well as many local fisherman and conservationists, called for boycotts on Shell products and gasoline. Under heavy pressure from the commercial fishers and shrimpers of Louisiana, Governor Blanco agreed to boycott all future open-loop systems. The governors of Louisiana, Alabama, and Mississippi have since formed an alliance against the authorization of open-loop LNG facilities (Brown, 2005).

Freeport-McMoRan Main Pass Offshore LNG Terminal

In the middle of their debate with NOAA Fisheries over Shell's Gulf Landing Terminal, the USCG and MARAD received an application for Freeport-McMoRan's Main Pass Energy Hub offshore LNG terminal (Federal Register, 69:111). The Main Pass Hub was designed to replace an abandoned offshore sulfur mining facility with an LNG terminal, and the necessary remodeling for LNG tanks and a ship berthing system were included in the plans. Salt domes underneath the site would have a storage capacity of 28 billion cubic feet of natural gas (Gas

Daily, 2003b). An ORV system was proposed for the terminal.

Prior to the Gulf Landing debate, Governor Blanco sent a warm welcome to Freeport-McMoRan, claiming to pledge the state's support "to assume that the necessary permits are handled in the most efficient manner possible" (Blanco letter to McMoRan, 2004). Unique to the Main Pass terminal, three states were labeled as "coastal adjacent states" according to protocol from the Deepwater Port Act, and public meetings were scheduled for August 2004 in Mobile, Alabama, Pascagoula, Mississippi, and New Orleans, Louisiana (Federal Register, 69:145). In a manner similar to that which occurred with Gulf Landing (within a two week time period and through similarly formatted letters) the license application was suspended pending further EIS review (USCG letter to Freeport McMoRan, 2004). Public meetings were scheduled again in the three coastal states to in July 2005 review the draft EIS (Federal Register, 70:116). The responses from LADWF and NOAA fisheries regarding the draft EIS were like their responses to the Gulf Landing draft EIS, detailing problems with open-loop systems. But this time, along with those letters came letters from hundreds of individuals and organizations with the same concerns. On August 26, 2005, the USCG and MARAD temporarily suspended the license processing timeline again for continued EIS review (USCG letter to Freeport-McMoRan, 2005a). As a result of hurricane Katrina, the USCG suspended the license timeline further because the public would not have an ample opportunity for participation as required by the National Environmental Policy Act (USCG letter to Freeport McMoRan, 2005b).

By March 8, 2006, Freeport-McMoRan had completed the final EIS and the suspension for the application timeline was lifted (USCG letter to Freeport McMoran, 2006). Public meetings for citizen response to the final EIS were scheduled for March, 2006. The same

comments were made by NOAA Fisheries and LADWF regarding their displeasure over an open-loop system.

What was different with the Main Pass terminal was the amount of negative public opinion. In response to this public angst and pressure from local fisheries, Governor Blanco disapproved the application for Main Pass Energy Hub in early May, 2006 (Blanco letter to MARAD, 2006). This action made it impossible for MARAD to grant the terminal license. Less than one business day later Freeport-McMoran decided to attempt license approval under a closed-loop system (Russell, 2006).

Discussion

Terminals for importing LNG are being moved offshore for safety, security, and environmental benefits. Shore-side terminals are located near higher population areas and more environmentally sensitive habitats. But offshore terminals come at an increased cost which companies attempt to offset by streamlining the policy process and utilizing open-loop regasification technology. Since no open-loop technology existed at the time the terminals were proposed, harmful environmental impacts were unknown. As a result, federal and state permitting agencies and public protests were delayed, minimized, or ignored.

The fact that the application for Port Pelican was submitted to the USCG and MARAD on the same day that President Bush signed the MTSA cannot go unnoticed. Obviously, ChevronTexaco was in communication with members of Congress, the Bush Administration, and possibly the USCG, and MARAD long before the MTSA was signed; after all, a 701 page application requires time to develop. NOAA Fisheries was wary of the environmental impacts

caused by the open-loop system, but had no real time to research the issue. The agency simply cautioned the Coast Guard and recommended a monitoring program, as they did with every other permit they reviewed.

El Paso's Energy Bridge further displayed the minimized role of NOAA Fisheries as environmental advisors to the USCG and MARAD. Important recommendations requesting closed-loop processing and an environmental impact assessment were ignored. Because of this NOAA Fisheries protested that the public was unaware of true environmental impacts. The public was also limited in their involvement when a public meeting that should have been held in western or central Louisiana was scheduled in New Orleans.

But the public became increasingly involved in Gulf Landing, as did the state of Louisiana and NOAA Fisheries. The state of Louisiana shifted from an open welcome to LNG developers to strong caution. Letters from NOAA Fisheries contained stronger warnings. The open-loop system was approved for Gulf Landing, but the public outcry over resulting fisheries impacts may have ruined the chances for any other companies looking to use an open-loop system. After Gulf Landing was passed and a better understanding of fisheries impacts was understood, Gulf Coast Governors formed an alliance against all offshore terminals utilizing open-loop systems. Governor Blanco held true to her commitment by disapproving Main Pass Hub. While Shell has not backed down from public protest over their open-loop system, Freeport-McMoRan quickly altered their application to accommodate a closed-loop system.

Reviewing these four case studies reveals several problems with the policy process. The first is that federal and state agencies, as well as the public, were unaware of the possible environmental impacts, were unfamiliar with the process, and were unable to properly complete

a satisfying review. A license was granted for the Port Pelican terminal before the agency MOU of 2004 detailing federal responsibilities was even signed. By the time the state of Louisiana realized the significance of the offshore terminals, two had already been approved. Their regret is shown in letters by LADWF and Governor Blanco requesting greater state involvement in the process for both the Gulf Landing and Main Pass Hub terminals. Public participation slowly escalated from one participant at each of the two public meetings for Gulf Landing, to a total of nine public meetings for Main Pass Hub. Hundreds of letters protesting an open-loop system were sent to the USCG and MARAD for Main Pass Hub, and Mississippi and Alabama filed for adjacent coastal state status along with Louisiana. It appears corporations had an easier time in the early stages of offshore LNG terminal development.

Second, as much as NOAA Fisheries and the state of Louisiana opposed open-loop systems, the USCG or MARAD were never truly challenged on the issue. It appears that the recommendations made by NOAA Fisheries were largely ignored; small requests were granted, but their chief request of operating in closed-loop only mode was ignored by the USCG and MARAD every time. It brings to question the real purpose of NOAA Fisheries in the process. Is it just a token environmental acknowledgement? All correspondence between NOAA and the USCG was courteous, official, and timely, as requested by the MOU. But protests by the agency never went as far as the President's Council on Environmental Quality, a process prescribed in the MOU. A similar stance was taken by Governor Blanco in her letter to MARAD regarding Shell's Gulf Landing. It seems that no agency was truly willing to take a stand against the USCG and MARAD. That, or no one had enough time or agency support to actually prepare for a dispute.

Almost every letter from NOAA Fisheries that requested a closed-loop system provided alternatives to "mitigate environmental damages" if an open-loop system was still authorized. NEPA states that environmental impacts must be minimized. The best way to minimize environmental impacts from offshore LNG terminals is to prohibit open-loop systems. NOAA Fisheries addresses this issue, but at the same time recommends an alternative way out. If environmental degradation needs to be minimized, only closed loop systems should be licensed, eliminating impacts to fisheries from open-loop systems. Why offer mitigation advice when a non-destructive regasification mode exists?

This further highlights the strength of the relationship between the energy industry and government. If Freeport-McMoran can change their application from an open to closed-loop system in a matter of days, why are Energy Bridge and Gulf Landing permitted to continue with their open-loop strategies? Clearly, industry invested in the terminals for the income and the terminals will create a profit running as an open or closed-loop system, otherwise Freeport-McMoRan would not have changed tactics so quickly. The reason behind the authorizations for open-loop terminals is the desire for more energy and greater profit, at the expense of the environment. Eco-Marxism is buttressed when capitalist expansion results in environmental degradation. Industry elites created a centralized policy process, limiting the role of the public and many federal and state agencies. The strength of this argument with open-loop LNG lies in the fact that open-loop systems are not a necessity, but represent a newer technology developed by energy industries to increase efficiency and profit.

The goals of the Bush administration's offshore LNG policy were largely successful early on. Licenses for Port Pelican and Energy Bridge passed were granted quickly with little protest.

But as NOAA Fisheries and LADWF reviewed more applications their questions increased. Eventually public concerns expressed by these agencies prohibited the Main Pass Hub from utilizing the ORV technology. This shows the necessity of EO 13212 and the MOU. But despite the attempts by the Administration to minimize the role of "participating" agencies and the public, they were not entirely successful. Capitalist influences may be strong within the Bush administration, but they did not dominate over the democracy of the NEPA.

BUSH ADMINISTRATION ENERGY AND ENVIRONMENTAL POLICY

The Energy Act of 2005

The National Energy Policy Development Group (NEPDG), a task force under Vice President Dick Cheney of federal agency administrators produced a report in mid-2001 that formed the energy policy of the George W. Bush administration. The report claimed “America in the year 2001 faces the most serious energy shortage since the oil embargoes of the 1970’s. The effects are already being felt nationwide,” it added, “This imbalance, if allowed to continue, will inevitably undermine our economy, our standard of living, and our national security. (NEPDG, 2001; Rosenbaum, 2005). Environmentalists from the Natural Resources Defense Council responded that the plan will provide no short-term benefits to the American public and will increase environmental degradation. The primary beneficiaries will be the oil, coal, and nuclear industries which donated heavily to the Bush campaign (Rosenbaum, 2005). So started the debate over Bush administration energy policy.

After several years of failed attempts, the Administration and Congress passed the Energy Act of 2005. The Act was the first true guide to the nation's energy policy in over a dozen years. The Energy Act was hailed by industry and policy makers and was endorsed by some environmentalists as a small step in the right direction (Simon and Peltz, 2005). The Act encouraged the development of ethanol and hydrogen based energy sources, provided tax breaks for household and vehicular energy efficiency, and promoted the development of renewable resources and nuclear power.

The Energy Act was also criticized by many environmentalists. President Bush recommended \$6.7 billion in tax breaks, Congress included tax breaks worth over \$10 billion. Democratic representatives in the House noted that the Energy Act provided more than \$3 billion

in tax breaks and direct spending for the oil and gas industries, and authorized at least an additional \$1 billion in subsidies (Simon and Peltz, 2005). Following the precedence of EO 13212, The Energy Act strengthened the focus on streamlining the permitting process for oil and gas development, and called for an inventory of oil and gas resources in the Gulf of Mexico on the outer continental shelf for future development. The Act also clarified the permitting role of the Federal Energy Regulatory Commission (FERC), making it the lead agency with exclusive authority over near-shore LNG facilities. State agencies can comment on the development of LNG facilities but no longer have veto-authority as they do with offshore LNG terminals.

FERC goals and tactics have long been questioned by environmentalists and industry (S. Hrg. 107-90, S. Hrg. 109-10). FERC Chairman Pat Wood III was determined for FERC to progress through permitting problems in other areas. At a conference Wood attended in October 2002 he discussed the importance of a natural gas pipeline from Alaska to the lower 48 states saying “That’s why I came to FERC, to get that permitted” (Gas Daily, 2002a). Statements like this make it easy to question the neutrality of federal permitting agencies such as FERC. It is hard to believe that concerned citizens and environmentalists have a fair say against an agency with a chairman like Wood III.

In a Senate hearing on January 24, 2005, Lee Fuller, an executive with the Independent Petroleum Associate of America made this statement:

“NEPA and other federal land management processes have become tools to prevent federal decisions through delay and litigation rather than assure effective environmental management.”

(U.S. Congress, Senate, 2005, S. Hrg. 109-10)

Critics of the Energy Act claim that the inventory of offshore gas resources could lead to a repeal of the 24-year moratorium on new offshore drilling. Currently a drilling ban is in place

for all US waters except a large portion of the Gulf of Mexico and certain areas off Alaska (Simon, 2005). The contentious decision regarding FERC as the lead and single permitting agency for near-shore LNG terminals was deemed necessary by many to support the current energy demand and to fight “NIMYBYism” (Not In My Back Yard) and grassroots objections (Simon and Bustillo, 2005). This policy decision countered the normal Republican rhetoric of maximizing federalism and state's rights, but followed the Bush administration’s goals of streamlining the federal energy permitting process (Thompson, 2005). Other critics have claimed that the influence of energy industries within the Republican party can be connected with the policy maneuver granting FERC sole permitting authority (Reilly, 2005).

Some skeptics question the intentions of contributors to the Energy Act, including Vice President Dick Cheney and the National Energy Policy Development Group (NEPDG) he led. The purpose of the Development Group described in their policy report in May 2001 was "to develop a national energy policy designed to help the private sector, and, as necessary and appropriate, state and local governments, promote dependable, affordable, and environmentally sound production and distribution of energy for the future" (NEPDG, 2001). Along with the Vice President, the group consisted of Secretaries from various federal agencies as well as others invited by Cheney to contribute. A lawsuit asking for more detailed information regarding contributors to the Development Group was filed against Cheney, who eventually won the suit (Walker vs. Cheney, 2002). A letter to the Senate from Ross Pillari, a representative of British Petroleum, responds to Senate questioning about his company’s stake in the Development Group and details the role energy industry played within Cheney’s Task Force:

“I have since looked into the matter and can advise you that BP representatives did meet with staff members of the National Environmental Policy Development Group (Task Force) and provided them with comments on a range of energy policy

matters including natural gas, LNG, transportation fuels and renewables. As you know, the Task Force was a government body and as such, BP was not a member. We provided comments and information much like we continue to do, on a routine basis, with members of Congress and the Administration.”

(BP letter to Senate, 2005)

This letter brings reason for concern. Although some involvement by energy industry representatives would be justified, it appears that their influence was very strong. The main goal of the Bush administration was federal cooperation with the energy industry. The resulting Energy Act of 2005 brought many benefits to the energy industry in the form of tax breaks and development incentives and reduced public involvement by increasing federal oversight and streamlining the permitting process.

The Healthy Forests Initiative

In response to millions of acres of land burning during Western wildfires from 2000 to 2002, President Bush proposed the Healthy Forest Initiative to help reduce hazardous fuels (i.e. dead/decaying wood) and promote forest restoration projects. The policy was designed to "streamline unnecessary red tape that prevents timely and effective implementation of wildfire prevention and forest health projects on public lands" (United States Department of Agriculture, 2002). A case study of Bush forest policy by Vaughn and Cortner (2004) found that the goal of the Administration was a reduction in regulatory constraints under the National Environmental Policy Act, as well as repealing legal provisions that allowed for appeals of US Forest Service project decisions. The Bush administration believes that these administrative appeals were delaying projects and the best solution was to expedite the appeals process (Devine, 2004). President Bush announced his plan for the Healthy Forest Initiative in August 2002, and by December 3, 2003 a version of the proposal that had been revised by Congress was signed into

law by the President. Environmentalists claim that Bush was responding to large campaign donations from timber companies (Vaughn and Cortner, 2004). The Oregon Natural Resources Council (2002) said that Congressional hearings were a set up on a report by the Forest Service that attributed process delays in implementing projects. The hearings helped the administration design a policy that will benefit the timber industry and weaken environmental protection.

Other Bush Administration Environmental Policies

The Kyoto Protocol, a global attempt to reduce emission of greenhouse gases, was dismissed by the Bush administration. Former President Bill Clinton negotiated the option to allow industrialized countries to pay developing countries to reduce emissions instead of forcing the more developed countries to reduce theirs. Although this came across as environmentally-unfriendly, there was some legitimacy to the amendment as many developing countries emit far more carbon dioxide than developed countries (Vig and Kraft, 2000). But Bush pulled out of the Kyoto agreement altogether, believing that the economic costs of regulation were too high, much to the dismay of other Western and European nations (Devine, 2004; Roseanbaum, 2005). Bush established a NEPA task force, similar to Cheney's Energy Task Force, to investigate the possibility of streamlining NEPA (Switzer, 2004). The Administration also proposed changes to the Clean Air Act with a new policy called the Clear Skies Initiative. The Initiative calls for reductions in power plant emissions, but does not address oil refineries or carbon dioxide emissions. In addition, proposals for utilizing market-based mechanisms to minimize the role of the state in this policy did not sit well with environmentalists (Devine, 2004).

Discussion

"Streamlining is code for avoiding accountability, for side stepping laws and regulations that protect our health and natural resources by subjecting projects that may harm the environment to thorough study, public review, and challenges from citizens"

- Robert Divine, 2004

The policy tactics utilized by the Bush administration for offshore LNG terminals are visible in other energy and environmental policy initiatives. Many energy decisions are made for “national security” reasons. This appears to be a stretch, as energy influences national security only as a necessary “food source” for industrial development. By limiting outside involvement and centralizing the formation of federal policy, the administration is able to streamline the policy process. Bush emphasizes government and industry cooperation, increasing the influence of industry in the policy process. This increases industry profit and limits the regulatory role of the state.

There is a common thread in environmental policies generated by the Bush administration. The words "expedited" and "streamlined" are repeated throughout Bush's environmental policies, including the Energy Act of 2005, the Healthy Forests Initiative, the formation of the NEPDG and the CEQ established NEPA review task force (Switzer, 2004; Vaughn and Cortner, 2004). Instead of openly emphasizing environmental deregulation, the Bush administration has focused on reducing the strength of NEPA, and limiting opportunities for the public. By limiting the time frame for permit review and appeals, natural resource developers such as the timber and energy industries can progress in a more timely and cost effective manner. Vaughn and Cortner point to Bush's use of legislative and regulatory change in a parallel strategy regarding the Healthy Forests Initiative. This idea is visible in the offshore LNG terminal policy as well, with the issuing of EO 13212 followed by the MTSA and DPA

amendments. The "red tape" that the Bush administration is referring to is not the bureaucratic world of Washington, DC politics, but the lengthy review and comment period by experts and concerned citizens described in NEPA. Industry representatives complained that NEPA regulations were being abused by the public (U.S. Congress, Senate, 2001, Hrg 107-90; U.S. Congress, Senate, 2005, S. Hrg. 109-10). Eliminating the state permitting authority for near-shore LNG terminals in the Energy Act of 2005 and alterations of public participation procedures as seen in the Healthy Forests legislation result in a reduced focus on environmental concerns while providing industry a greater likelihood of gaining approval to develop the natural resources it seeks.

As industry participation increases, their profits rise. The suggestions offered by Vice President Cheney's NEPDG emphasize the roll of industry in energy policy. The Energy Act of 2005 provides incentives and tax breaks for industry to work on conservation and renewable and alternative energy development. At the same time, these industries are provided permitting assistance to hasten development. Any way the issue is addressed, industry is benefiting from increased access to the Bush administration while the public is losing protest opportunities.

CONCLUSIONS

The energy and environmental policies drafted and authorized under the administration of George W. Bush support theoretical claims of eco-Marxists. Because of the concern over national security and a decrease in federalism, state theory could also be supported but appears not to be as strongly associated. Energy industry executives were requested to testify before Congress and work with the National Energy Policy Development Group (NEPDG) to increase government and corporate cooperation for energy development. The policy tactics of the Bush administration focused on centralizing policy formation and streamlining the approval and implementation process. This increases the influence of capital while limiting access to the democratic process. The results show an increase in profits at the expense of the public and the environment. Following the terrorist attacks, national security has been added to the equation pitting the economy against the environment. The policy process which created offshore liquefied natural gas (LNG) terminals shows that an adequate, constant, and secure energy supply is seen as an absolute necessity for economic development and national security. Democratic access and environmental concerns are secondary to economic and security needs under the Bush administration.

This case study on the offshore LNG permitting process is significant for several reasons. It shows that the policy procedures utilized by the Bush administration to expedite the energy approval process and increase development of offshore LNG terminals were similar to those for other energy-related policies. The White House Task Force on Energy Project Streamlining (TFEPS) was involved not only in the Memorandum of Understanding (MOU) for offshore LNG terminals, but with right-of-way policies for pipeline permitting and electric transmission lines.

The Task Force is also working to set limits on the appeals process for Department of the Interior issues such as forestry and mining projects (TFEPS, 2006).

The policy developed for offshore LNG terminals provides insight into the effects that energy and national security have on environmental policy. The eco-Marxist debate about the needs of the economy competing against environmental conservation is now complicated by state theory and national and energy security demands. When the Maritime Transportation Safety Act amended the Deepwater Port Act, legislation focused on maritime security invented a new energy sector for importing LNG. This proves that energy and national security are driving energy policy. Under the Bush administration, capitalism is increasing its profits by providing energy and security demands made by the state. Though LNG terminals located offshore away from high population areas and sensitive environments create less risk, technological improvements (like the open-loop system for offshore LNG terminals) resulting in substantial environmental impacts were designed and approved. The additional two percent of imported LNG is deemed necessary by the Bush Administration to meet energy demand. A consistent energy supply improves energy security which stabilizes national security.

The influence oil and energy industries have within the Bush administration is visible in offshore LNG policy. The Bush regime provided a political opportunity structure to industry, aiding them along the way by forming task forces to increase government-industry cooperation. Close collaboration between capitalists and certain elite federal individuals is typical of the Administration (Austin, 2002; Austin and Phoenix, 2005, Devine, 2004). Offshore LNG policy and other environmental and energy policies developed under the Bush administration have brought great benefits to the energy industry at the expense of the environment. This supports the theory of eco-Marxism.

The National Environmental Policy Act of 1969 decentralized the environmental permitting process (Campbell, 1988). Environmental legislation created in the 1970s, such as the Clean Air Act and Endangered Species Act, increased the input of local agencies and the public. The policy tactics of the Bush administration reversed this process, centralizing policy development and limiting public participation. The neo-conservative Bush regime went against the traditional conservative view supporting federalism by granting sole permitting authority for near-shore LNG terminals to the Federal Energy Regulatory Commission (FERC). The expedited approval process described in Executive Order 13212 applies to all energy development plans including offshore LNG terminals. This streamlined process favors industry and capital over the democratic process (Campbell, 1988; Vaughn and Cortner, 2004).

This approach coincides with the unilateralism of the war in Iraq. Policy for offshore LNG was implemented so quickly that agencies were unable to respond in the necessary time and believed they did not have enough information to make informative decisions. This matches policy problems found with the war in Iraq, where critics claim that the Bush administration had no long term occupation plan. Knowing that the Bush administration can work so closely with industry and continue to impose restrictions on the democratic process shows the strength of the Bush regime and the applicability of regime theory. The administration has changed how environmental policy is produced by focusing on policy formation, bringing in elite experts and limiting outsider involvement. The ability for the administration to continue to promote and pass policies laden with ironies only further prove its' strength.

Rep. Don Sherwood, a Pennsylvania Republican explains:

"By setting our future policy, basing it on LNG, then we will be subject to the same forces that we're now subject to in oil supply. In other words, foreign disruptions, political events, growth of the energy sector in Asia..."

The Bush administration is telling us we need to reduce our oil reliance from the same countries the may soon be sending us LNG. The Bush administration is pushing to drill for oil in the Artic National Wildlife Refuge to decrease foreign reliance of foreign oil at the same time it is increasing reliance on foreign LNG. These are only two examples of policy goals that appear contradictory as far as national or energy security is concerned. The driving force behind these maneuvers is the energy industry, but the Bush neo-conservative Administration is strong enough to pass these concurring policies.

The national security focus and energy and economic concerns of the Bush administration support state theory, but the close relationship maintained between energy corporations and the administration counter state theory and certain claims by both Block (1987) and Skocpol (1979). Unlike what Skocpol said, that business would compete with the state, business interests are a key factor in the current political regime. The placement of industry representatives in cabinet-level positions in the Administration show the importance of capitalists to the current Administration. Countering Block's predictions, the Bush administration's increased efforts to decentralize the bureaucracy has been followed by environmental and market deregulations in offshore LNG policy, as well as the Energy Act of 2005. These policies were welcomed by industry. But the neo-conservative Bush regime believes in a free-market economy and that a growing economy is necessary for a productive nation. By blurring the lines between what is good for the economy and what is good for the state, policies have been approved for one reason or the other. This is one of the strength's of the Bush administration. By making energy security part of national security, the importance of energy-related issues increases. This makes it extremely difficult for the ordinary citizen to

separate what is beneficial to him or her, from what is beneficial to the nation or beneficial to industry.

State theory can be linked to the Bush administration's national security policy which has some influence over energy policy. But otherwise state theory does not appear to fit with the regime theory and eco-Marxist tendencies that dominate the energy and environmental policies of the Bush administration. These policies are created cooperatively with industry elites at the expense of the public and the environment.

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Appendix A. Research Methods.

This case study was an analysis of recent United States energy policy developments, specifically those involving offshore LNG terminals. The goal was to answer several questions including how and why the policy was developed. Research methods and strategies were derived from Yin (2003) and Creswell (1998).

An embedded design was utilized for this study. The general focus being energy policy and offshore LNG terminals with a specific case study focusing on the recent permitting of the Gulf Landing terminal off the coast of Louisiana¹⁶. A case study reviewing forest policy created by the Bush administration was also reviewed and utilized. Data was collected from a variety of sources including energy and environmental policy legislation, senate hearings, agency websites and administrative documents, letters, memorandums, research journals, newspaper articles, and books. The use of multiple sources, or triangulation, increases the validity and reliability of the case study by displaying similar and supportive findings in different data types (Yin, 2003; Creswell, 1998). Newspaper articles were supported by Senate testimony. Senate testimony supported legislation. Pattern matching linked policy influences and outcomes to the proposed political economy theories (Yin, 2003).

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¹⁶ The case study on Gulf Landing served as a pilot case study for the thesis.

Presidential Documents

Executive Order 13212 of May 18, 2001

Actions To Expedite Energy-Related Projects

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in order to take additional steps to expedite the increased supply and availability of energy to our Nation, it is hereby ordered as follows:

Section 1. Policy. The increased production and transmission of energy in a safe and environmentally sound manner is essential to the well-being of the American people. In general, it is the policy of this Administration that executive departments and agencies (agencies) shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy.

Sec. 2. Actions to Expedite Energy-Related Projects. For energy-related projects, agencies shall expedite their review of permits or take other actions as necessary to accelerate the completion of such projects, while maintaining safety, public health, and environmental protections. The agencies shall take such actions to the extent permitted by law and regulation, and where appropriate.

Sec. 3. Interagency Task Force. There is established an interagency task force (Task Force) to monitor and assist the agencies in their efforts to expedite their review of permits or similar actions, as necessary, to accelerate the completion of energy-related projects, increase energy production and conservation, and improve transmission of energy. The Task Force also shall monitor and assist agencies in setting up appropriate mechanisms to coordinate Federal, State, tribal, and local permitting in geographic areas where increased permitting activity is expected. The Task Force shall be composed of representatives from the Departments of State, the Treasury, Defense, Agriculture, Housing and Urban Development, Justice, Commerce, Transportation, the Interior, Labor, Education, Health and Human Services, Energy, Veterans Affairs, the Environmental Protection Agency, Central Intelligence Agency, General Services Administration, Office of Management and Budget, Council of Economic Advisers, Domestic Policy Council, National Economic Council, and such other representatives as may be determined by the Chairman of the Council on Environmental Quality. The Task Force shall be chaired by the Chairman of the Council on Environmental Quality and housed at the Department of Energy for administrative purposes.

Sec. 4. Judicial Review. Nothing in this order shall affect any otherwise available judicial review of agency action. This order is intended only to improve the internal management of the Federal Government and does not create any right or benefit, substantive or procedural, enforceable at law

or equity by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.

A handwritten signature in black ink, appearing to read "George W. Bush". The signature is written in a cursive style with a large, prominent "G" and "B".

THE WHITE HOUSE,
May 18, 2001.

[FR Doc. 01-13117
Filed 5-21-01; 10:19 am]
Billing code 3195-01-P

Appendix C. Cover letter from Vice President Dick Cheney to President George W. Bush for policy report by National Environmental Policy Development Group



THE VICE PRESIDENT
WASHINGTON

May 16, 2001

The Honorable George W. Bush
President of the United States
The White House
Washington, D.C. 20500

Dear Mr. President:

On behalf of the National Energy Policy Development Group, I submit for your consideration our National Energy Policy report. As you directed us at the outset of your Administration, we have developed a national energy policy designed to help bring together business, government, local communities and citizens to promote dependable, affordable and environmentally sound energy for the future.

The report reflects the requirements and philosophy you set out for our work. It envisions a comprehensive long-term strategy that uses leading edge technology to produce an integrated energy, environmental and economic policy. To achieve a 21st century quality of life -- enhanced by reliable energy and a clean environment -- we must modernize conservation, modernize our infrastructure, increase our energy supplies, including renewables, accelerate the protection and improvement of our environment, and increase our energy security.

We submit these recommendations with optimism. The tasks ahead are great but achievable. To meet our energy challenge, we must put to good use the resources around us and the talents within us. It summons the best of America and offers a healthier environment, a stronger economy and a brighter future for the American people.

Sincerely,

A handwritten signature in cursive script that reads "Dick Cheney".

Enclosure

Appendix E. Photographs and Drawings



Photograph of abandoned platform to be used by Freeport-McMoRan for Main Pass Energy Hub (Freeport-McMoRan, 2006)



Photograph of Energy Bridge Metering Bridge (Excelerate, 2006)

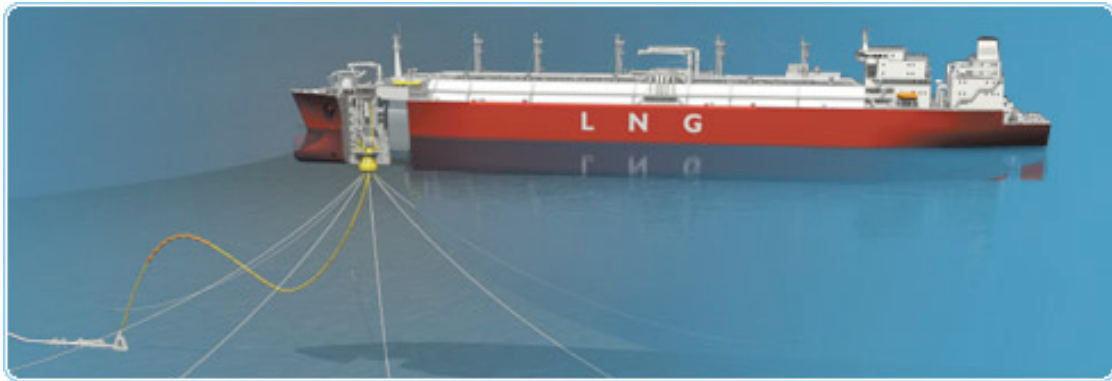


Diagram showing Energy Bridge™ technology used by El Paso/Excelerate Energy Bridge (Excelerate, 2006)

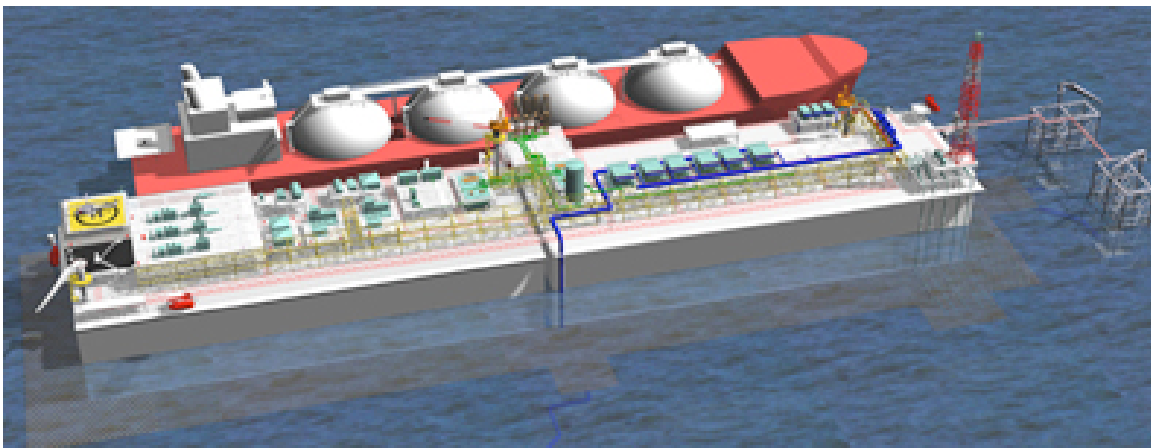
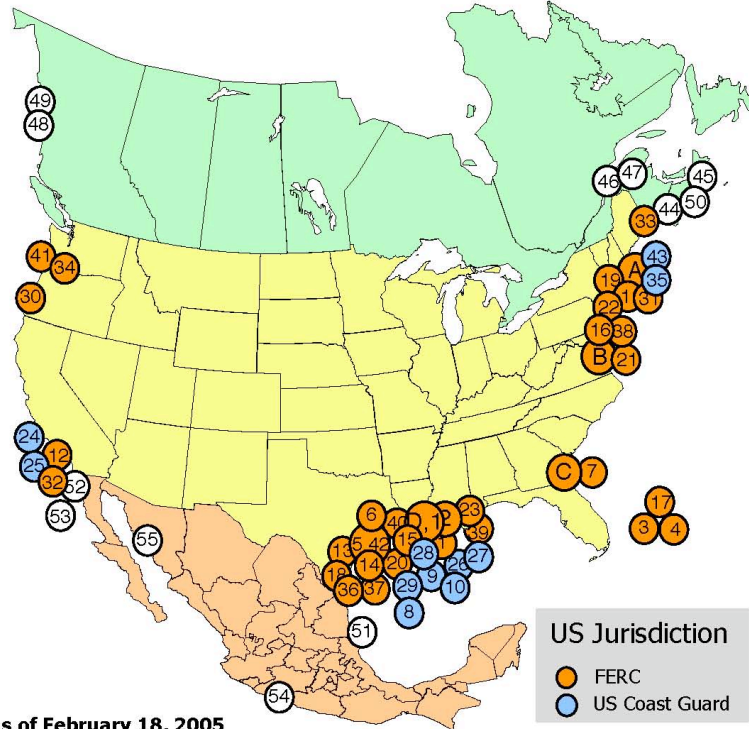


Diagram of Shell Gulf Landing (Shell Gulf Landing, 2006)

Appendix F. Map of LNG Terminals.

FERC

Existing, Proposed and Potential North American LNG Terminals



As of February 18, 2005

* US pipeline approved; LNG terminal pending in Bahamas
 ** These projects have been approved by the Mexican and Canadian authorities

Office of Energy Projects

Constructed

- A. Everett, MA : 1.035 Bcfd (Tractebel - DOMAC)
- B. Cove Point, MD : 1.0 Bcfd (Dominion - Cove Point LNG)
- C. Elba Island, GA : 0.68 Bcfd (El Paso - Southern LNG)
- D. Lake Charles, LA : 1.0 Bcfd (Southern Union - Trunkline LNG)

Approved by FERC

- 1. Lake Charles, LA: 1.1 Bcfd (Southern Union - Trunkline LNG)
- 2. Hackberry, LA : 1.5 Bcfd, (Sempra Energy)
- 3. Bahamas : 0.84 Bcfd, (AES Ocean Express)*
- 4. Bahamas : 0.83 Bcfd, (Calypso Tractebel)*
- 5. Freeport, TX : 1.5 Bcfd, (Cheniere/Freeport LNG Dev.)
- 6. Sabine, LA : 2.6 Bcfd (Cheniere LNG)
- 7. Elba Island, GA: 0.54 Bcfd (El Paso - Southern LNG)

Approved by MARAD/Coast Guard

- 8. Port Pelican: 1.6 Bcfd, (Chevron Texaco)
- 9. Gulf of Mexico: 0.5 Bcfd, (El Paso Energy Bridge GOM, LLC)
- 10. Louisiana Offshore : 1.0 Bcfd (Gulf Landing - Shell)

Proposed to FERC

- 11. Fall River, MA : 0.8 Bcfd, (Weaver's Cove Energy/Hess LNG)
- 12. Long Beach, CA : 0.7 Bcfd, (Mitsubishi/ConocoPhillips - Sound Energy Solutions)
- 13. Corpus Christi, TX : 2.6 Bcfd, (Cheniere LNG)
- 14. Corpus Christi, TX : 1.0 Bcfd (Vista Del Sol - ExxonMobil)
- 15. Sabine, TX : 1.0 Bcfd (Golden Pass - ExxonMobil)
- 16. Logan Township, NJ : 1.2 Bcfd (Crown Landing LNG - BP)
- 17. Bahamas : 0.5 Bcfd, (Seafarer - El Paso/FPL)
- 18. Corpus Christi, TX: 1.0 Bcfd (Ingleside Energy - Occidental Energy Ventures)
- 19. Providence, RI : 0.5 Bcfd (Keyspan & BG LNG)
- 20. Port Arthur, TX: 1.5 Bcfd (Sempra)
- 21. Cove Point, MD : 0.8 Bcfd (Dominion)
- 22. LI Sound, NY: 1.0 Bcfd (Broadwater Energy - TransCanada/Shell)
- 23. Pascagoula, MS: 1.0 Bcfd (Gulf LNG Energy LLC)

Proposed to MARAD/Coast Guard

- 24. California Offshore: 1.5 Bcfd (Cabrillo Port - BHP Billiton)
- 25. So. California Offshore : 0.5 Bcfd, (Crystal Energy)
- 26. Louisiana Offshore : 1.0 Bcfd (Main Pass McMoran Exp.)
- 27. Gulf of Mexico: 1.0 Bcfd (Compass Port - ConocoPhillips)
- 28. Gulf of Mexico: 2.8 Bcfd (Pearl Crossing - ExxonMobil)
- 29. Gulf of Mexico: 1.5 Bcfd (Beacon Port Clean Energy Terminal - ConocoPhillips)

Potential Sites Identified by Project Sponsors

- 30. Coos Bay, OR: 0.13 Bcfd, (Energy Projects Development)
- 31. Somerset, MA: 0.65 Bcfd (Somerset LNG)
- 32. California - Offshore: 0.75 Bcfd, (Chevron Texaco)
- 33. Pleasant Point, ME : 0.5 Bcfd (Quoddy Bay, LLC)
- 34. St. Helens, OR: 0.7 Bcfd (Port Westward LNG LLC)
- 35. Offshore Boston, MA: 0.8 Bcfd (Northeast Gateway - Excelerate Energy)
- 36. Galveston, TX: 1.2 Bcfd (Pelican Island - BP)
- 37. Port Lavaca, TX: 1.0 Bcfd (Calhoun LNG - Gulf Coast LNG Partners)
- 38. Philadelphia, PA: 0.6 Bcfd (Freedom Energy Center - PGW)
- 39. Pascagoula, MS: 1.3 Bcfd (ChevronTexaco)
- 40. Cameron, LA: 3.3 Bcfd (Creole Trail LNG - Cheniere LNG)
- 41. Astoria, OR: 1.0 Bcfd (Skipanon LNG - Calpine)
- 42. Freeport, TX: 1.5 Bcfd, (Cheniere/Freeport LNG Dev. - Expansion)
- 43. Offshore Boston, MA: 0.4 Bcfd (Neptune LNG - Tractebel)

Canadian Approved and Potential Terminals

- 44. St. John, NB : 1.0 Bcfd, (Canaport - Irving Oil)
- 45. Point Tupper, NS 1.0 Bcfd (Bear Head LNG - Anadarko)
- 46. Quebec City, QC : 0.5 Bcfd (Project Rabaska - Enbridge/Gaz Met/Gaz de France)
- 47. Rivière-du-Loup, QC: 0.5 Bcfd (Cacouna Energy - TransCanada/PetroCanada)
- 48. Kitimat, BC: 0.61 Bcfd (Galveston LNG)
- 49. Prince Rupert, BC: 0.30 Bcfd (WestPac Terminals)
- 50. Goldboro, NS 1.0 Bcfd (Keltic Petrochemicals)

Mexican Approved and Potential Terminals

- 51. Altamira, Tamulipas : 0.7 Bcfd, (Shell/Total/Mitsui)**
- 52. Baja California, MX : 1.0 Bcfd, (Sempra & Shell)**
- 53. Baja California - Offshore : 1.4 Bcfd, (Chevron Texaco)
- 54. Lázaro Cárdenas, MX : 0.5 Bcfd (Tractebel/Repsol)
- 55. Puerto Libertad, MX: 1.3 Bcfd (Sonora Pacific LNG)

VITA

William Whitmore was born in North East, Pennsylvania and graduated from North East High School in North East, Pennsylvania. He attended The Pennsylvania State University in University Park, Pennsylvania where he received his B.S. in Forest Science (Watershed Management Option) in May 2001. William was commissioned in the National Oceanic and Atmospheric Administration (NOAA) Corps in August 2001 and was assigned as a deck officer on board NOAA SHIP DELAWARE II in Woods Hole, MA. While underway in the North Atlantic Ocean DELAWARE II conducted commercial fisheries surveys and studied marine mammals. After two years at sea William was assigned to a position supporting NOAA's Office of Response and Restoration in New Orleans, Louisiana where he supported the United States Coast Guard in hazardous materials and oil spill emergencies. To further his educational background in environmental conservation and human ecology he entered the Graduate School at the University of New Orleans in August 2004, where he is currently a candidate for the degree of Master of Arts in Sociology at the University of New Orleans. He and his wife Kelly were married in August 2004 and have greatly enjoyed living in New Orleans and studying at the University of New Orleans. Following a successful completion of his Master's degree William has been accepted into a doctoral program in Marine Affairs at the University of Rhode Island.