# Inherency

#### The Energy Policy Act of 2005 only designated the DOI as the lead federal agency for OSW development- other federal agencies retained permitting authority and jurisdiction

Weber 7

[Lucas, no qualifications available, published on WindPower.net- the North American Offshore Wind Power Information Project, “Offshore Wind Energy Permitting”, May 10, p. online//wyo-tjc]

While several issues regarding the sufficiency of a Corps permit for offshore wind energy development along the OCS were being litigated60, the Energy Policy Act of 2005 was enacted. Section 388 of the Energy Policy Act of 2005 eliminates the regulatory uncertainty surrounding offshore wind energy development by establishing explicit authority for permitting renewable energy and related uses of the OCS.62 Section 388 amends the OCSLA by adding subsection 43 U.S.C. § 1337(p)(1), which authorizes the Secretary of the Interior (Secretary), in consultation with other relevant agencies, to grant leases, easements, or rights-of-way on the OCS for specific activities, including wind energy development.63 In essence, it entrusts the Department of the Interior (Department) with the authority to grant offshore property interests for the purpose of renewable energy development on the OCS and the authority to regulate activities resulting from such development.

The Act creates a framework that shifts authority to the Department without completely striping all other agencies of their authority. It is careful to make clear that federal agencies with permitting authority under other federal laws still retain their jurisdiction, notwithstanding the enactment of section 388.64 Thus, the offshore developments will be subject to multiple permitting requirements.65 Despite the care taken to preserve other agencies’ permitting authority, the Act fails to designate a lead agency to coordinate federal permitting and prepare NEPA analyses. The Department, however, infers from several of section 388’s provisions that it is to serve as the lead agency. For example, the Secretary is directed to consult with other agencies during the process of awarding leases, easements, or rights-of-way.66 Also, the Department must ensure that activities carried out under this new authority provide for coordination with relevant federal agencies.67 Therefore, federal agencies may retain their permitting authority over offshore renewable energy development but the Department serves as the lead agency.

# Plan

#### The United States federal government should give exclusive permitting authority to the Bureau of Ocean Energy Management for the production of offshore wind power in the United States.

# Solvency

#### Federal permitting consolidation is key to circumvent opposition to OSW and create certainty - state action is insufficient- opponents will just challenge at the federal level

Kimmell and Stalenhoef 11

[Kenneth, general counsel to the Massachusetts Executive Office of Energy and Environmental Affairs, was responsible for overseeing the state permitting of the Cape Wind project, and now serves as the Commissioner of the Massachusetts Department of Environmental Protection, and Dawn, environmental law attorney and Counsel for the Massachusetts Department of Public Utilities, Golden Gate University Environmental Law Journal, “The Cape Wind Offshore Wind Energy Project: A Case Study of the Difficult Transition to Renewable Energy”, p. asp//wyo-tjc]

The Cape Wind saga reveals that the current permitting process for offshore wind energy projects is broken. If the nation is serious about developing offshore wind energy projects along its coasts, Congress must advance reform. One place to look for inspiration, ironically, is Massachusetts. Despite its reputation for long and protracted siting battles, Massachusetts has instituted two major reforms that could serve as models for federal reform of offshore wind-project permitting. The first model reform is a “one-stop permitting” law that enables the State Energy Facilities Siting Board to issue a single permit and eliminates the need for any additional state or local permits.85 Enacted during the energy crisis of the early 1970’s, this law ensures that state and local agencies do not block power plants and infrastructure needed for a reliable energy supply. The law allows the Siting Board to step in when an energy project proponent is denied a necessary permit or experiences significant delays, including those caused by litigation.86 The Siting Board has broad representation: it is composed of the Executive Office of Energy and Environmental Affairs, the Department of Environmental Protection, the Department of Energy Resources, the Department of Public Utilities, and three citizen members representing labor, environmental, and consumer interests.87 It has wide jurisdiction and can review all of the various impacts of energy facilities that would be examined by state or local permitting agencies. It may also receive the input of all state and local agencies that would otherwise be called upon to grant permits.88 This authority ensures that all issues and all possible objections are heard once, rather than multiple times by multiple agencies. And unlike with most permits issued by state agencies, the appeals process is streamlined. Indeed, there is but one appeal of a Siting Board approval, which goes directly to the state Supreme Judicial Court.89 As noted above, this law was crucial to the success of Cape Wind’s permitting on the state level, because it ensured that the permitting of the electric cables would not get bogged down in other state and local level permitting, or be delayed by judicial appeals of such permit decisions. Had this law not been in place, it is likely that Cape Wind would still be in litigation with the Cape Cod Commission over its denial of the electric cables and would be defending the license issued by the Department of Environmental Protection allowing the cables to be placed in Massachusetts’ tidelands. There is no comparable “one-stop permitting” option for offshore wind projects available at the federal level. While the EPACT established that the MMS (now referred to as the Bureau of Ocean Energy Management, Regulation, and Enforcement, or BOEMRE) plays the leading-agency role for issuance of an offshore lease, numerous other federal agencies such as the Army Corps of Engineers, Environmental Protection Agency, Federal Aviation Administration, and the Coast Guard will still need to issue separate approvals for the project. Federal agencies, including the U.S. Fish and Wildlife Service, National Park Service, and the Advisory Council on Historic Preservation, will also play significant “consultative” roles. Rather than having the appeals of the permits lodged in one court, federal law provides for multiple appeals in various federal courts that will have to be resolved before the project can finally proceed. This multiplicity of permitting and consultative agencies, and numerous potential judicial appeals, is a formula for delay, confusion, redundancy, and inconsistency. In short, it is a boon for the forces of inertia.

#### Lack of one-stop permitting destroys the regulatory certainty and timeframe necessary for OSW investment decisions- placing authority under the department of the interior’s lead agency is essential

Weber 7

[Lucas, no qualifications available, published on WindPower.net- the North American Offshore Wind Power Information Project, “Offshore Wind Energy Permitting”, May 10, p. online//wyo-tjc]

As the above description of the various permitting authorities illustrates, the regulatory process for offshore wind energy development can be overwhelming. In order to combat this problem, there must be some form of centralized management. In Europe, the common practice is to use a “one-stop shop office” approach.136 Under this approach, the developers communicate with one official contact office to handle everything from administrative to legal matters. A recent study by the International Energy Agency concluded that the use of “one stop shop offices” has been a success from the point of view of both agencies and developers.137 The MMS, as the lead agency, would be perfect for this “one-stop shop” position. As the one-stop shop agency for wind energy permitting on the OCS, the MMS could streamline the approval process by coordinating with all of the other relevant agencies. In fact, the Energy Policy Act of 2005 mandates such coordination.138 Therefore, the MMS should coordinate efforts with the other relevant agencies to form a one-stop shop permitting office for wind energy development on the OCS. IV. CONCLUSION In sum, developing the United States’ potential for using offshore wind energy will contribute to security of energy supply, reduce dependency on fuel imports, reduce emissions of greenhouse gases and other pollutants, and improve environmental protection. Despite a vast potential for offshore wind energy along the OCS, the MMS is holding potential development hostage through regulatory delay and time-consuming replications of environmental reviews. It is vital that the MMS reduce the regulatory confusion and establish a unified coordinated approach to ensure the expeditious, yet responsible, development of offshore wind energy.

#### OSW cost drops are inevitable, but the US market is frozen because it lacks clarity- the plan breaks the impasse by lowering risk and creating certainty

Navigant Group 12

[private market consulting group awarded DOE grant for preparing an analysis on OSW manufacturing and supply chains in the US, Dec 12, 2012, accessed from:

<http://www.thebioenergysite.com/articles/1349/us-offshore-wind-manufacturing-and-supply-chain-development> //wyo-tjc]

The supply chain is evolving in a number of areas. Larger rotors allow for increased energy capture and production. Next-generation drivetrains will result in increasing turbine efficiency and reliability. Offshore wind towers in the future may employ concrete, composites, or other alternative materials to help combat corrosion and reduce steel content while simultaneously enabling taller hub heights. Shifting to High-Voltage Direct Current (HVDC) interconnection lines will reduce electrical losses, and higher voltage array cabling and larger turbines will allow for project layouts that minimize array cabling needs. Such advancements will help to reverse the recent trend of increasing offshore wind power prices, which are driven largely by a movement toward deeper-water sites located farther offshore; increased siting complexity; and higher contingency reserves that result from greater uncertainty when working in the offshore environment. As the industry matures and uncertainties are reduced, both capital costs and the levelized cost of electricity (LCOE) from offshore wind facilities are expected to plateau and trend downward. The potential exists for significant domestic supply of a future US offshore wind market. A lack of current US offshore demand means no domestic manufacturing facilities are currently serving the offshore wind market. However, strong domestic supply capacity for the US land-based wind market suggests that potential also exists to supply significant portions of the future offshore market domestically. The magnitude of US-based offshore wind manufacturing capacity will depend on turbine suppliers perceiving stable, long-term policy support and subsequent demand for offshore wind in the US market. Three major barriers combine to have a dampening effect on the development of the US offshore wind supply chain: the high cost of offshore wind energy; infrastructure challenges such as transmission and purpose-built ports and vessels; and regulatory challenges such as new and uncertain leasing and permitting processes. The result is that European and Asian suppliers who are currently supplying offshore wind turbines and components have a competitive advantage over their US counterparts. The US offshore wind industry faces a “chicken-and-egg” problem where plants will not be built unless the cost is reduced, and local factories (which will help bring down the cost) will not be built until there is a proven domestic market. In deciding whether to enter the US offshore wind market, potential suppliers will assess the supply and demand dynamics. Suppliers will assess whether the market will be large enough to warrant dedicating manufacturing capacity to offshore wind-related products.

European-based suppliers will use demand forecasts to determine whether it is financially attractive to build manufacturing plants in the US On the supply side, potential suppliers will assess the competitive rivalry, the barriers to entry, and the risk for each component. Market entry will be more attractive with higher fragmentation, lower barriers to entry, and lower overall risk.

# Ports

**Changes to port infrastructure NOT coming now**

**Paul Davidson,12**

“USA's creaking infrastructure holds back economy” <http://usatoday30.usatoday.com/money/economy/story/2012-05-20/creaking-infrastructure/55096396/1>, accessed 10/28/12,WY/JF

**The shortcomings were** partly **masked during the recession as fewer Americans worked and less freight was shipped, easing traffic on transportation corridors**. **But interviews with shippers and logistics companies show delays are starting to lengthen along with the moderately growing economy**. "I call this a stealth attack on our economy," says Janet Kavinoky, executive director of transportation and infrastructure for the [U.S. Chamber of Commerce](http://content.usatoday.com/topics/topic/Organizations/Political+Bodies/United+States+Chamber+of+Commerce). "It's not like an immediate crisis. It's something that's sneaking up on us." **Freight bottlenecks and other congestion cost about $200 billion a year, or 1.6% of U.S. economic output**, according to a report last year by Building America's Future Educational Fund, a bipartisan coalition of elected officials. **The chamber of commerce estimates such costs are as high as $1 trillion annually, or 7% of the economy**. **Yet, there's little prospect for more infrastructure investment as a divided Congress battles about how to cut the $1.3 trillion federal deficit, and state and local governments face their own budget shortfalls**. Government investment in highways, bridges, water systems, schools and other projects has fallen each year since 2008. [IHS Global Insight](http://content.usatoday.com/topics/topic/IHS+Global+Insight)expects such outlays to drop 4.4% this year and 3% in 2013.

**Offshore wind key to port revitalization and manufacturing**

**LEED ‘12**

[Lake Erie Energy Development Corporation, “Ports and Maritime” 8.8.2012. <http://www.leedco.org/why-offshore/ports>//wyo-hdm]

**The scale and magnitude of offshore** [**wind energy**](http://www.leedco.org/why-offshore/ports) **requires a significant amount of maritime capabilities, capacity, and onshore land availability. As the industry launch pad and staging area for all installation and assembly activity, port revitalization is an essential backbone to a thriving offshore industry. This includes a number of vessels and shipbuilding activity required to service the industry**. To this end, Ohio's ports could sustain its own industry in addition to projects in other states and Canada. Here's a look at the landscape of Ohio's existing ports. In 1999, Germany’s ports became involved in offshore wind for the same reasons Ohio is seeking out today. Offshore wind is a plays a role in reversing the rapid decline of its ports' productivity**. Similarly, with decline of the manufacturing and steel presence** in Northeast Ohio, the region can benefit from an industry with a variety of maritime activities, raw material needs, and port facilities; all to the benefit of the local economy. According to TeamNEO, Ohio has six deepwater ports. **Offshore wind is one of the few industries of current relevance which offers the scale of development to bring about significant revitalization while employing thousands.** Multiple German ports are involved at various levels ([see report, page 2](http://www.gtai.de/GTAI/Content/EN/Invest/_SharedDocs/Downloads/GTAI/Fact-sheets/Energy-environmental/fact-sheet-wind-energy-in-germany,property=pdf,bereich=gtai,sprache=en,rwb=true.pdf)). **A similar model for Ohio is realistic as no single port can support an entire industry simply based on space constraints. This, in effect, guarantees** (what is already a multi-county regional economic development project**) a more efficient build out**, across Ohio's North shore. Commercial scale farms will require [a network](http://www.leedco.org/why-offshore/ports) of supporting facilities. While location drives logistics, outfitting one port for a particular use may not be economically feasible for the same purpose at an adjacent county. Therefore it is likely one port may specialize in foundation construction and another in turbine assembly. Beyond Ohio, the entire Great Lakes is outfitted with suitable ports for offshore wind. Check out an inventory of all the ports in a report called [The Role of the Great Lakes-St. Lawrence Seaway Ports in the Advancement of the Wind Energy Industry](http://www.glc.org/energy/wind/pdf/GLWC-PortSurvey-2010-web.pdf) by the Great Lakes Wind Collaborative. A similar infrastructural inventory was completed in [Massachusetts.](http://masscec.com/masscec/file/MA%20Port%20Study%20Final%20Report_4-20-10.pdf)

**The U.S. can’t compete without ports, increasing domestic energy production is also key**

**Peter Marber, 11/9**

is an adjunct associate professor of International and Public Affairs at Columbia University “How the United States Can Maintain Its Global Edge” <http://www.theatlantic.com/international/archive/2012/11/how-the-united-states-can-maintain-its-global-edge/265011/>, accessed 11/15/12,WYO/JF

**New infrastructure** and energy production: **We can't compete using** [**crumbling** bridges, roads, and **ports**](http://www.infrastructurereportcard.org/)**. American infrastructure is ranked 25th globally**, according to the Global Competitiveness Report. **Equally important is expanding our domestic energy production** capabilities -- from fracking to **renewables -- which would reduce imports, lower electricity costs, reshore lost manufacturing, and boost employment**. **Combined,** **these could be game-changers and reverse America's 30-year decline in trade.** Michael Lind and Sherle Schwenninger of the New America Foundation have called for a federal Works Progress Administration-style infrastructure bank to help finance more than $2 trillion over five years. **With interest rates low, and returns on infrastructure high, there may never be a better time.**

**Ports are key to exports – they are the biggest internal link to the global supply chain, and current infrastructure vulnerable to a terrorist attack**

**Giermanski and Hains ‘12**

[JIM and Laura, Homeland Security Today.us, “Supply Chain Security And DHS Oversight,” 6.5.2012. <[http://www.hstoday.us/blogs/guest-commentaries/blog/supply-chain-security-and-dhs oversight/55079ca7058f8f48ad6ba50411635596.html](http://www.hstoday.us/blogs/guest-commentaries/blog/supply-chain-security-and-dhs%20oversight/55079ca7058f8f48ad6ba50411635596.html)>//wyo-hdm]

Securing the global supply chain system is integral to securing both the lives of people around the world and to maintaining the stability of the global economy. **We must work to strengthen the security, efficiency and resilience of this critical system. Supply chains must be able to operate effectively in a secure and efficient fashion in a time of crisis,** be able to recover quickly from disruptions, and continue to facilitate international trade and travel. In her April 25, 2012 testimony before a Senate Committee on the Judiciary hearing on oversight of the Department of Homeland Security (DHS), DHS Secretary Janet Napolitano structured her testimony to cover: Preventing terrorism and enhancing security; Securing and managing our borders; Enforcing and administering our immigration laws; and Safeguarding and securing cyberspace. Assuming that “securing the global supply chain system is integral to securing both the lives of people around the world, an maintaining the stability of the global economy,” Napolitano said little on global supply chain security that reflected accurate or complete information in view of its enormity and importance. **In 2010 (**the latest year of data available), **the statistics of waterborne container trade by customs ports revealed that almost 28 million twenty-foot equivalent units (TEUs) passed through our water ports**. By weight measurement in thousands of short tons, one can see that 76 percent of international trade for the United States passes through water ports, alone. Truck and rail constitute 21 percent, while air cargo constitutes only one-half of one percent. Government agencies, research entities and consultants confirm the role and importance of seaports and their value to our economy. Their value may have best been expressed by Bethann Rooney, the manager of ports security for the Port Authority of New York and New Jersey, in 2005. **Rooney said 95 percent of the international goods that come into the country come in through our nation’s 361 ports**. Twelve percent of that volume is handled in the Port of New York and New Jersey alone, the third largest port in the country. The port generates 229,000 jobs and $10 billion in wages throughout the region. Additionally, the port contributes $2.1 billion to state and local tax revenues and $24.4 billion to the US gross domestic product. Cargo handled at the port serves 80 million people -- or 35 percent of the entire US population. In 2004, the port handled over 5,200 ship calls, 4.478 million TEUs (which is approximately 7,300 containers each day), 728,720 autos and 80.6 million tons of general cargo. **Today, international trade accounts for 30 percent of the US economy.** Consequently, it’s easy to see how a terrorist incident in our nation’s ports or along the cargo supply chain would have a devastating effect on our country and its economy. **Indeed, given the size and magnitude of use of containers and trailers to carry weapons of mass destruction (WMD) through our sensitive and vulnerable port system, the supply chain is the single most important and potentially devastating vulnerability to a terrorist attack**. Meanwhile, the vulnerability is increased by the lack of appropriate training that’s given to Customs and Border Protection (CBP) in the supply chain arena. In 2012, CBP admitted that there could be a serious vulnerability within the US in-bond cargo program regarding the contents, access and whereabouts of in-bond cargo shipments.

**Economic decline causes protectionism and war – their defense doesn’t assume accompanying shifts in global power.**

**Royal 10** – Jedediah Royal, Director of Cooperative Threat Reduction at the U.S. Department of Defense, 2010, “Economic Integration, Economic Signaling and the Problem of Economic Crises,” in Economics of War and Peace: Economic, Legal and Political Perspectives, ed. Goldsmith and Brauer, p. 213-215

Less intuitive is how periods of economic decline may increase the likelihood of external conflict. Political science literature has contributed a moderate degree of attention to the impact of economic decline and the security and defense behavior of interdependent states. Research in this vein has been considered at systemic, dyadic and national levels. Several notable contributions follow. First, on the systemic level, Pollins (2008) advances Modelski and Thompson’s (1996) work on leadership cycle theory, finding that rhythms in the global economy are associated with the rise and fall of a pre-eminent power and the often bloody transition from one pre-eminent leader to the next. As such, exogenous shocks such as economic crisis could usher in a redistribution of relative power (see also Gilpin, 1981) that leads to uncertainty about power balances, increasing the risk of miscalculation (Fearon, 1995). Alternatively, even a relatively certain redistribution of power could lead to a permissive environment for conflict as a rising power may seek to challenge a declining power (Werner, 1999). Seperately, Pollins (1996) also shows that global economic cycles combined with parallel leadership cycles impact the likelihood of conflict among major, medium and small powers, although he suggests that the causes and connections between global economic conditions and security conditions remain unknown. Second, on a dyadic level, Copeland’s (1996, 2000) theory of trade expectations suggests that ‘future expectation of trade’ is a significant variable in understanding economic conditions and security behavious of states. He argues that interdependent states are likely to gain pacific benefits from trade so long as they have an optimistic view of future trade relations, However, if the expectations of future trade decline, particularly for difficult to replace items such as energy resources, the likelihood for conflict increases, as states will be inclined to use force to gain access to those resources. Crisis could potentially be the trigger for decreased trade expectations either on its own or because it triggers protectionist moves by interdependent states. Third, others have considered the link between economic decline and external armed conflict at a national level. Blomberg and Hess (2002) find a strong correlation between internal conflict and external conflict, particularly during periods of economic downturn. They write, The linkages between internal and external conflict and prosperity are strong and mutually reinforcing. Economic conflict tends to spawn internal conflict, which in turn returns the favor. Moreover, the presence of a recession tends to amplify the extent to which international and external conflict self-reinforce each other. (Blomberg & Hess, 2002. P. 89) Economic decline has been linked with an increase in the likelihood of terrorism (Blomberg, Hess, & Weerapana, 2004), which has the capacity to spill across borders and lead to external tensions. Furthermore, crises generally reduce the popularity of a sitting government. ‘Diversionary theory’ suggests that, when facing unpopularity arising from economic decline, sitting governments have increase incentives to fabricate external military conflicts to create a ‘rally around the flag’ effect. Wang (1996), DeRouen (1995), and Blomberg, Hess, and Thacker (2006) find supporting evidence showing that economic decline and use of force are at least indirectly correlated. Gelpi (1997), Miller (1999), and Kisangani and Pickering (2009) suggest that the tendency towards diversionary tactics are greater for democratic states than autocratic states, due to the fact that democratic leaders are generally more susceptible to being removed from office due to lack of domestic support. DeRouen (2000) has provided evidence showing that periods of weak economic performance in the United States, and thus weak Presidential popularity, are statistically linked to an increase in the use of force. In summary, recent economic scholarship positively correlated economic integration with an increase in the frequency of economic crises, whereas political science scholarship links economic decline with external conflict at systemic, dyadic and national levels. This implied connection between integration, crisis and armed conflict has not featured prominently in the economic-security debate and deserves more attention.

**Trade prevents war: economic stakes give reasons to avoid conflict**

**Kleinberg et al 12**

(Katja, Binghampton University, Gregory Robinson, Binghampton University, Stewart French, Saginaw Valley State University, Journal of Politics, “Trade Concentration and Interstate Conflict, April 1, 2012, accessed via Academic Search Premiere//wyo-mm)

In the most commonly cited formulation of the liberal peace, the argument begins with the notion that **trade between states is (mutually) beneﬁcial**. In general, **specialization due to trade is** thought **to allow for greater consumption and to facilitate economic growth at the national level**. Within states, **ﬁrms and individuals involved in international trade realize welfare gains. These actors** in turn **develop a stake in the** continuation and **expansion of trade**. **To the extent** that **armed conﬂict with a particular trading partner would jeopardize welfare gains, governments and societal actors have incentives to avoid conﬂict**. In part through concerns about welfare losses and, depending on regime type, through concerns about the political repercussions associated with such losses, **trade** thus **paciﬁes interstate relations**. Arguments derived from this general proposition often center on the salience of the particular dyadic trade relation, suggesting that more intensive trade is associated with greater prospective losses from conﬂict. Larger opportunity costs in turn generate greater constraints on the foreign policy of trading states.

**Offshore wind would revitalize weak US ports and shipyards and create millions of sustainable jobs**

**DOE ‘11**

[U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Wind & Water Power Program U.S. Department of the Interior, Bureau of Ocean Energy Management, Regulation, and Enforcement, “A National Offshore Wind Strategy Creating an Offshore Wind Energy Industry in the United States” 2.7.2011 <http://www1.eere.energy.gov/wind/pdfs/national\_offshore\_wind\_strategy.pdf>//wyo-hdm]

**Deployment of wind energy along U.S. coasts would** also **trigger direct and indirect economic benefits. According to NREL analysis and extrapolation of European studies, offshore wind would create approximately 20.7 direct jobs per annual megawatt installed in U.S. waters** (W. Musial 2010). Installing 54 GW of offshore wind capacity in U.S. waters would create more than 43,000 permanent operations and maintenance (O&M) jobs and would require more than 1.1 million job‐years to manufacture and install the turbines (W. Musial 2010). **Many of these jobs would be located in economically depressed ports and shipyards, which could be revitalized as fabrication and staging areas for the manufacture, installation, and maintenance of offshore wind turbines. Offshore wind provides an opportunity for revitalization of U.S. ports and heavy industry facilities.** Due to the large scale of offshore wind turbine components, towers and foundation structures, it is generally advantageous to limit or eliminate overland transport from assembly and installation scenarios in order to maximize process efficiency and minimize logistics time and costs. In addition, **European experience has clearly indicated that it will be necessary to create a purpose‐built installation, operations, and maintenance** (IO&M**) infrastructure for offshore wind, including specialized vessels and port facilities**. To assist industry and regional port facilities in making informed decisions regarding design requirements for IO&M infrastructure, DOE will participate in collaborative studies of infrastructure needs and capabilities for the benefit of all national regions. A significant portion of the cost differential between land‐based and offshore wind energy systems lies in transport and installation requirements. European experience indicates that specialized wind system installation vessels, rather than adapted oil and gas vessels, will be required for cost‐effective, high‐ volume installation.

# Warming

**American clean energy markets are on the verge of collapse- incentives and declining export opportunities will gut renewables absent fast policy action**

**Jenkins et al 12**

[Jesse, Director of Energy and Climate Policy, Breakthrough Institute, Mark Muro, Senior Fellow, Metropolitan Policy Program, Brookings Institution, Ted Nordhaus and Michael Shellenberger, Cofounders, Breakthrough Institute, Letha Tawney, Senior Associate, World Resources Institute, Alex Trembath, Policy Associate, Breakthrough Institute, Beyond Boom and Bust: Putting Clean Tech on a Path to Subsidy Independence, April 2012, p. online//wyo-tjc]

**In the absence of significant and timely energy policy reform, the recent boom in US clean tech sectors could falter**. **Driven by** private innovation and entrepreneurship as well as **critical public sector support in the form of tax credits, grants, and loan guarantees, several clean energy technology (or “clean tech”) segments have grown robustly in recent years while making progress on cost and performance**. Renewable electricity generation doubled from 2006 to 2011, construction is under way on the nation's first new nuclear power plants in decades, and American manufacturers have regained market share in advanced batteries and vehicles. Prices for solar, wind, and other clean energy technologies fell, while employment in clean tech sectors expanded by almost 12 percent from 2007 to 2010, adding more than 70,000 jobs even during the height of the recession.1 **Despite this recent success**, however, **nearly all clean tech segments in the United States remain reliant on production and deployment subsidies** or other supportive policies to gain an expanding foothold in today’s energy markets. **Now, many of these subsidies and policies are poised to expire—with substantial implications for the clean tech industry**. This report aims to take stock of the coming changes to federal clean tech subsidies and programs (Part 1); examine their likely impact on key clean tech market segments (Part 2); and chart a course of policy reform that can advance the US clean tech industry beyond today’s policy-induced cycle of boom and bust (Part 3). Along the way, this report provides a comprehensive analysis of the spending trajectory of 92 distinct federal policies and programs supporting clean tech sectors over the 2009 to 2014 period. As this analysis illustrates, **an era of heightened clean energy spending supported by the American Recovery and Reinvestment Act of 2009** (ARRA) **is now coming to an end, coinciding with the expiration of several additional time-delimited tax credits and programs. As a result, key portions of the clean tech industry can now anticipate substantially reduced federal support** (see Figure ES1). **At the same time, market subsidies are being cut in several European markets,2 reducing export oppor tunities for US clean tech manufacturers and leading to oversupply and declining margins**,3 even as pressure mounts from both low-cost natural gas at home4 and foreign clean tech manufacturers abroad.5 **US clean tech sectors therefore face a combination of new challenges, despite the growth and progress achieved in recent years**. The specific market impacts will vary by sector (see Part 2). But **without timely and targeted policy reform, several sectors are likely to experience more bankruptcies, consolidations, and market contraction ahead**.

**Warming is human caused, shifting the amount of emissions produced is key to stop rapid warming, it’s try or die**

**Muller 12**

(Richard A., professor of physics at the University of California, Berkeley, and a former MacArthur Foundation fellow, “The Conversion of a Climate-Change Skeptic,” 7-28-12, <http://www.nytimes.com/2012/07/30/opinion/the-conversion-of-a-climate-change-skeptic.html?_r=2andpagewanted=all>), accessed 9/22/12,WYO/JF

**How definite is the attribution to humans**? The carbon dioxide curve gives a better match than anything else we’ve tried. **Its magnitude is consistent with the calculated greenhouse effect — extra warming from trapped heat radiation**. **These facts don’t prove causality** and they shouldn’t end skepticism, **but they raise the bar:** to be considered seriously, **an alternative explanation must match the data at least as well as carbon dioxide does**. **Adding methane**, a second greenhouse gas, **to our analysis doesn’t change the results.** Moreover, **our analysis does not depend on large, complex global climate models, the huge computer programs that are notorious for their hidden assumptions and adjustable parameters. Our result is based simply on the close agreement between the shape of the observed temperature rise and the known greenhouse gas increase**.

**The environment is at the tipping point- Collapse will be fast and catastrophic**

**AFP, 12**

(Agence France-Presse, citing UN study, “Environmental collapse now a serious threat: scientists,” Raw Story, http://www.rawstory.com/rs/2012/06/06/environmental-collapse-now-a-serious-threat-scientists/)

**The paper by 22 top researchers said a “tipping point” by which** the biosphere goes into swift and irreversible change, **with** potentially **cataclysmic impacts for humans, could occur as early as this century.**¶ The warning contrasts with a mainstream view among scientists that environmental collapse would be gradual and take centuries.¶ **The study appears ahead of the June 20-22 UN Conference on Sustainable Development,** the 20-year followup to the Earth Summit that set down priorities for protecting the environment.¶ The Nature paper, written by biologists, ecologists, geologists and palaeontologists from three continents, compared the biological impact of past episodes of global change with what is happening today.¶ **The factors in today’s equation include a world population that is set to rise from seven billion to around 9.3 billion by mid-century and global warming that will outstrip the UN target of two degrees Celsius** (3.6 degrees Fahrenheit).¶ **The team determined that once** 50-90 percent of small-scale ecosystems become altered**, the entire eco-web tips over into a new state, characterised especially by species extinction**s.¶ **Once the shift happens, it cannot be reversed.**¶ To support today’s population, about 43 percent of Earth’s ice-free land surface is being used for farming or habitation, according to the study.

#### Inevitable gas-price contraction will trigger coal-switching and further emissions from gas production—now is key time to lock-in renewable energy deployments to avoid the worst impacts of warming

Rotman 12

[David, editor of Technology Review, Technology Review, “King Natural Gas”, October, p. asp//wyo-tjc]

But optimism about the environmental benefits should be tempered. For one thing, utilities might return to using more coal as increased demand makes natural gas more expensive. Another concern is that extracting and transporting natural gas itself generates greenhouse gases. Dueling studies have published varied and sometimes contradictory estimates of the total emissions associated with natural-gas production, but the contributing factors include the energy used in the extraction process and the fact that methane -- an extremely potent greenhouse gas-is released during drilling and leaks from pipelines during transport. In fact, there are no reliable measurements of how much energy drilling for shale gas consumes or how much methane actually escapes.

In any case, it's clear that switching from coal to natural gas will not come close to delivering the huge reductions in greenhouse-gas emissions that most scientists contend are needed by midcentury to ward off the worst effects of climate change. According to estimates by economist Henry Jacoby and his colleagues at MIT, the increased use of shale gas might lower carbon emissions somewhat in the next five to 10 years, but at best it will keep them flat through 2050. In other words, there is a short window of opportunity to begin inventing and deploying cleaner technologies. Jacoby predicts that natural-gas prices will stay relatively low over the next decade, climbing slowly to around $5 to $6 per million BTUs -- still making it hard for renewables to compete.

#### Climate change results in multiple scenarios for extinction

Sawin 8/12

Senior Director of the Energy and Climate Change Program at the WorldWatch Institute Aug. ’12

(Janet, “Climate Change Poses Greater Security Threat than Terrorism,” <http://www.worldwatch.org/node/77>, accessed 9/30/12,WYO/JF

As early as 1988, scientists cautioned that human tinkering with the Earth's climate amounted to "an unintended, uncontrolled globally pervasive experiment whose ultimate consequences could be second only to a global nuclear war." Since then, hundreds of scientific studies have documented ever-mounting evidence that human activities are altering the climate around the world. A growing number of international leaders now warn that climate change is, in the words of U.K. Chief Scientific Advisor David King, "the most severe problem that we are facing today—more serious even than the threat of terrorism." Climate change will likely trigger severe disruptions with ever-widening consequences for local, regional, and global security. Droughts, famines, and weather-related disasters could claim thousands or even millions of lives and exacerbate existing tensions within and among nations, fomenting diplomatic and trade disputes. In the worst case, further warming will reduce the capacities of Earth's natural systems and elevate already-rising sea levels, which could threaten the very survival of low-lying island nations, destabilize the global economy and geopolitical balance, and incite violent conflict. Already, there is growing evidence that climate change is affecting the life-support systems on which humans and other species depend. And these impacts are arriving faster than many climate scientists predicted. Recent studies have revealed changes in the breeding and migratory patterns of animals worldwide, from sea turtles to polar bears. Mountain glaciers are shrinking at ever-faster rates, threatening water supplies for millions of people and plant and animal species. Average global sea level has risen 20-25 centimeters (8-10 inches) since 1901, due mainly to thermal expansion; more than 2.5 centimeters (one inch) of this rise occurred over the past decade. A recent report by the International Climate Change Taskforce, co-chaired by Republican U.S. Senator Olympia Snowe, concludes that climate change is the "single most important long term issue that the planet faces." It warns that if average global temperatures increase more than two degrees Celsius—which will likely occur in a matter of decades if we continue with business-as-usual—the world will reach the "point of no return," where societies may be unable to cope with the accelerating rates of change. Existing threats to security will be amplified as climate change has increasing impacts on regional water supplies, agricultural productivity, human and ecosystem health, infrastructure, financial flows and economies, and patterns of international migration. Specific threats to human welfare and global security include: ► Climate change will undermine efforts to mitigate world poverty, directly threatening people's homes and livelihoods through increased storms, droughts, disease, and other stressors. Not only could this impede development, it might also increase national and regional instability and intensify income disparities between rich and poor. This, in turn, could lead to military confrontations over distribution of the world's wealth, or could feed terrorism or transnational crime. ► Rising temperatures, droughts, and floods, and the increasing acidity of ocean waters, coupled with an expanding human population, could further stress an already limited global food supply, dramatically increasing food prices and potentially triggering internal unrest or the use of food as a weapon. Even the modest warming experienced to date has affected fisheries and agricultural productivity, with a 10 percent decrease in corn yields across the U.S. Midwest seen per degree of warming. ► Altered rainfall patterns could heighten tensions over the use of shared water bodies and increase the likelihood of violent conflict over water resources. It is estimated that about 1.4 billion people already live in areas that are water-stressed. Up to 5 billion people (most of the world's current population) could be living in such regions by 2025. ► Widespread impacts of climate change could lead to waves of migration, threatening international stability. One study estimates that by 2050, as many as 150 million people may have fled coastlines vulnerable to rising sea levels, storms or floods, or agricultural land too arid to cultivate. Historically, migration to urban areas has stressed limited services and infrastructure, inciting crime or insurgency movements, while migration across borders has frequently led to violent clashes over land and resources. The parallels with terrorism are compelling. Traditional responses to security threats cannot address the root of such problems, and related impacts could persist even if global emissions are cut dramatically over coming decades because of the significant lag time between cause and effect. As with terrorism, we know that changes will occur, but not when or where they will strike, nor how damaging and costly they will be. Climate change already claims more lives than does terrorism: according to the World Health Organization, global climate change now accounts for more than 160,000 deaths annually. By the time the world experiences the climate equivalent of September 11th, or the 2004 Madrid bombings, it could be too late to respond.

#### Transition to OSW in the US is crucial to emission reductions and adaptation against climate change. Regulatory requirements and uncertainty derails investment decisions

Thaler 12

[Jeffrey, University of Maine's first Visiting Professor of Energy Policy, Law & Ethics, and Assistant University Counsel for environmental, energy and sustainability projects, “Fiddling as the world burns: How climate change urgently requires a paradigm shift in the permitting of renewable energy projects”, Environmental Law, Volume 42, Issue 4, Forthcoming, p. <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2148122> //wyo-tjc]

As noted in the Introduction, offshore wind energy projects have the potential to generate large quantities of pollutant-free electricity near many of the world’s major population centers, and thus to help reduce the ongoing and projected economic, health, and environmental damages from climate change.99 Wind speeds over water are stronger and more consistent than over land, and “have a gross potential generating capacity four times greater than the nation’s present electric capacity.”100 The net capacity factor101 for offshore turbines is greater than standard land-based turbines, and their blade-tip speeds are higher than their land-based counterparts.102 Offshore wind turbine substructure designs mainly fall into three depth categories: shallow (30 m or less), transitional (>30 m to 60 m), and deep water (>60 m).103 All of the grid-scale offshore wind farms in Europe have monopole foundations embedded into the seabed in water depths ranging from 5m to 30m; the proposed American projects such as Cape Wind in Massachusetts and Block Island in Rhode Island would likewise be shallow-water installations. In deeper water, it is not economically feasible to affix a rigid structure to the sea floor, and floating platforms are envisioned. Three concepts shown below have been developed for floating platform designs, each of which is tethered but not built into the seabed. Each design uses a different method for achieving static stability, and some small pilot efforts are underway to demonstrate the performance of different turbines. 105 Greater wind speeds and thus available energy capture are found further from shore, particularly at ocean depths greater than 60m.106 These attributes, combined with proximity to major coastal cities and energy consumers,107 are why offshore wind—in our carbon-stressed world—requires serious consideration and prompt implementation. As demonstrated in the following pages, however, the maze of federal and state regulatory requirements facing renewable energy projects in general and offshore wind in particular, is especially burdensome.108 These requirements undermine the fundamental goal of significantly increasing reliance on emission-free renewable energy sources109 and, unless substantially revised, will effectively preclude any meaningful efforts to mitigate the many damaging human and economic impacts of climate change. B. Federal and State Jurisdiction U.S. jurisdiction over the ocean and seafloor extends from the coast 200 nautical miles seaward.110 Within the umbrella of U.S. jurisdiction, ocean governance is divided between the federal government and individual states.111 Individual state governments retain title to submerged land within three nautical miles from shore,112 and may regulate activities within that area, subject to federal law;113 the federal government retains title and authority over all remaining waters out to 200 nautical miles from shore (Outer Continental Shelf, or OCS).114 The federal government also retains some jurisdiction within state coastal waters, thus numerous federal laws impact offshore wind development occurring solely within state waters. Likewise, several statutes, most notably the Coastal Zone Management Act (CZMA),115 allow for state review of certain federal activities occurring solely federal waters. These instances will be discussed in greater detail below.

#### Failure to move forward on OSW guts American credibility on climate leadership

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[Kenneth, general counsel to the Massachusetts Executive Office of Energy and Environmental Affairs, was responsible for overseeing the state permitting of the Cape Wind project, and now serves as the Commissioner of the Massachusetts Department of Environmental Protection, and Dawn, environmental law attorney and Counsel for the Massachusetts Department of Public Utilities, Golden Gate University Environmental Law Journal, “The Cape Wind Offshore Wind Energy Project: A Case Study of the Difficult Transition to Renewable Energy”, p. asp//wyo-tjc]

If completed, the Cape Wind offshore wind energy project would be one of the largest offshore wind farms in the world. The project is also one of the most significant greenhouse gas (GHG) reduction measures in our nation. It would reduce GHG emissions by an estimated 730,000 tons per year, which is the equivalent of taking 175,000 cars off the road each year.2 Due to its size, novelty, and colorful permitting history, the project has become a symbol of the United States’ resolve to take action to reduce its greenhouse gas emissions and its dependence on fossil fuels. However, if the project is not constructed, either because of the aesthetic concerns of tenacious beachfront property owners who oppose the project or because of its large up-front costs, the world may well begin to question the United States’ commitment to doing its part to avert climate change.

#### Offshore wind is key to electricity production in the U.S

DOE,11

“A National Offshore Wind Strategy: Creating an Offshore Wind Energy Industry in the United States.” <http://usoffshorewind.org/wp-content/uploads/2012/06/national_offshore_wind_strategy2.pdf>, accessed 11/1/12,WYO/JF

On average, one gigawatt of installed offshore wind power capacity can generate 3.4 million megawatt‐hours (MWh) of electricity annually. Generating the same amount of electricity with fossil fuels would consume 1.7 million tons of coal or 27.6 billion cubic feet of natural gas and would emit 2.7 million tons of carbon dioxide equivalent (CO2e) annually (S. Dolan 2010). Because offshore winds generally blow more strongly and consistently than onshore winds, offshore wind turbines operate at higher capacity factors2 than wind turbines installed on land.