**\*\*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**

**The 2005 Energy Policy Act failed to create uniform permitting jurisdiction federally- multiple federal agencies are still responsible**

**Vann 12**

[Adam, Legislative Attorney, CRS Reports, “Wind Energy: Offshore Permitting”, 10.17, p. online//wyo-tjc]

**Prior to enactment of EPAct in 2005**, **the Army** **Corp of Engineers** (Corps) **took the lead role in the federal offshore wind** energy **permitting process**, **claiming jurisdiction pursuant to** Section 10 of **the Rivers and Harbors Act** (RHA),28 as amended by the Outer Continental Shelf Lands Act (OCSLA).29 The Corps has jurisdiction under these laws to permit obstructions to navigation within the “navigable waters of the United States” and on the OCS.30 The Corps’ jurisdiction over potential offshore wind projects had never been made explicit, however. **Section 388 of EPAct sought to address some of the uncertainty** related to federal jurisdiction over offshore wind energy development by amending the OCSLA to specifically establish legal authority for federal review and approval of various offshore energy-related projects. The provision amended the OCSLA **by adding a new subsection that authorizes the Secretary of the Interior,** in consultation with other federal agencies, **to grant leases, easements, or rights-of-way** **on the OCS for** **certain activities—wind energy development** among them—not authorized by other OCSLA provisions, the Deepwater Port Act, the Ocean Thermal Energy Conversion Act, or “other applicable law.”31 A memorandum of understanding between the Department of the Interior and the Federal Energy Regulatory Commission (FERC) signed in April of 2009 confirmed the exclusive jurisdiction of the Secretary of the Interior, exercised through the Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEM),32 an agency within DOI, over “the production, transportation, or transmission of energy from non-hydrokinetic renewable energy projects on the OCS.” **EPAct also makes clear that federal agencies with permitting authority under other federal laws retain their jurisdiction, despite enactment of this subsection.**33 **Thus, the Corps continues to permit offshore development pursuant to the RHA, and other federal agencies with jurisdiction over issues related to energy development,** such as species impacts, **are similarly unaffected**. **The legislative language does not clearly dictate which agency should take the lead role in coordinating federal permitting and responsibility for preparing analysis under** the National Environmental Policy Act (**NEPA**).34 However, several provisions within Section 388 suggest that DOI is charged with primary responsibility. The law directs the Secretary of the Interior to consult with other agencies as a part of its leasing, easement, and right-of way granting process.35 DOI is also responsible for ensuring that activities carried out pursuant to its new authority provide for “coordination with relevant federal agencies.”36 The law also directs the Secretary to establish a system of “royalties, fees, rentals, bonuses, or other payments” that will ensure a fair return to the United States for any property interest granted under this provision.37

**Lack of clarity and multiple authorities denies OSW the momentum it needs to scale up and commercialize in both state and federal waters**

**Fleischauer 11**

[Patricia, Vice President of TRC Companies, a national environmental engineering and consulting firm based in Lowell, Massachusetts, “Regulatory uncertainty hindering offshore wind development”, 2.23, p. <http://ebookbrowse.com/offshore-wind-pat-fleischauer-pdf-d73772552> //wyo-tjc]

**Energy infrastructure development inherently has** elements of **uncertainty. The challenge is to reduce the level of ambiguity and** manage the residual **risk in order to expedite the siting and permitting process**. **Offshore wind** development **in the United States**, not quite in its infancy but certainly not as mature as onshore projects, **faces a host of uncertainties that continue to hinder its full potential** **as a useful** renewable **resource** for power generation. The **changes and evolution in the U.S**. environmental review **process** for offshore projects **have helped, but more progress is needed for offshore wind projects to develop needed momentum**. **Just as a clearly defined regulatory path is imperative for onshore wind** development -- i.e., a clear statement of requirements that, if achieved, will result in project approval -- **offshore development needs the same certainty if it is to help meet near-term** Renewable Portfolio Standard (**RPS) requirements and** long-term **goals for energy independence**. **The promulgation of rules specifying the role and responsibility of** the U.S. Minerals Management Service (**MMS) has helped clarify development in federal waters. However, development in state waters is not exempt from federal environmental permitting requirements, which could stall state efforts** to advance offshore development.

**Federal permitting consolidation is critical to circumvent opposition to OSW and create the certainty necessary- state action is insufficient**

**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 m**ajor reforms that could serve as models for federal reform of offshore wind-project permittin**g. **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 OceanEnergy 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**, **E**nvironmental **P**rotection **A**gency, **F**ederal **A**viation **A**dministration, **and the Coast Guard will still need to issue separate approvals f**or 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 certainty and timeframe necessary for investment decisions- plan’s consolidation is key**

**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 is feasible and can solve energy demand within current limits of the technology- shallow federal waters, proximity to load centers, and sufficiency of supply**

**Roek 11**

[Katherine, a partner at Lindquist & Vennum, PLLP, Minneapolis, “Offshore wind energy in the United States: a legal and policy patchwork”, Natural Resources & Environment, Spring, p. asp//wyo-tjc]

Given the relatively high development cost of offshore wind in comparison to land-based alternative energy sources, a logical threshold question is why pursue offshore wind in the first place? Part of the answer may be long-term energy policy. **A 2008 study by the** U.S. Department of Energy (**DOE**), "20% Wind Energy by 2030," **concluded that a national goal of deriving 20 percent of U.S. electrical supply from wind energy is possible, even economically feasible, and that offshore wind could play a large role in that supply, possibly more than 50 gigawatts**. DOE, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY'S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY. [section] 1.2.1 (July 2008). The **National Renewable Energy Laboratory has estimated that several states**, including Michigan, Ohio, New Jersey, both Carolinas, Maine, and Massachusetts, **may be able to supply more than 100 percent of their 2004 state electricity consumption through offshore wind facilities sited in water less than 30 meters deep** **at locations within 50 nautical miles of shore**. Id. [section] 2.5 (citations omitted). Some of **these states lack** significant **onshore wind resources, making offshore wind an alternative means by which these states' utilities may satisfy their obligation to purchase electricity from renewable resources**. **Offshore wind resources are also frequently located close to large load centers**, e.g., the New York City metropolitan area and the state of New Jersey, among the most densely populated U.S. cities and states. DOE's Energy Information Administration also notes that **of the contiguous forty-eight states twenty-eight have a coastal boundary and that coastal states consume approximately 78 percent of the nation's electricity**. Id. (citations omitted). **Building offshore wind resources close to these load centers may mitigate the need for long and costly transmission lines**. (This article does not discuss issues related to siting and permitting of transmission lines for offshore wind projects.)

**\*\*\*Advantage One**

**U.S. Shipbuilding industry is collapsing**

**Paulo Santos, 12**

Paulo Santos is a Portuguese independent trader, analyst and algorithmic trading expert, having worked for both sell side (brokerage) and buy side (fund management) institutions. “Expecting A Bust In The Shipbuilding Industry” <http://seekingalpha.com/article/341301-expecting-a-bust-in-the-shipbuilding-industry>, accessed 12/20/12,WYO/JF

As the [Baltic Dry Index](http://www.bloomberg.com/apps/quote?ticker=BDIY:IND) plunges ever lower, [taking out the 2008 lows](http://seekingalpha.com/article/336001-baltic-dry-index-plumbs-new-lows), **we've already concluded that many dry ship bulkers will** [**go under the bankruptcy waves**](http://seekingalpha.com/article/318245-as-shipping-gets-no-relief-bankruptcies-are-to-be-expected) **in this cycle**. However, there are other obvious consequences of this pricing environment. We know that one of the clear reasons why freight rates are imploding is simply too many ships being delivered. And **such an influx of ships was the result of the bubble in freight rates** that took place during 2007 and early 2008, together with long delivery periods. Thus, today's incredibly low rates will lead to the opposite - precious few ships will be ordered and made in the next 2 years or so. So certainly, **the shipbuilders are going to hit a dry spell here. Unfortunately, shipbuilding is something that's long gone from the U.S. economy and markets**, and other than Huntington Ingalls Industries ([HII](http://seekingalpha.com/symbol/hii)), I can't even locate any other shipbuilder. Naturally, HII doesn't fit this thesis, since it does mostly military work. Certainly, we can follow the events through a [worldwide shipbuilding index](http://www.bloomberg.com/apps/quote?ticker=BWSHIP:IND) published by Bloomberg, but that won't cut it as far as trading goes, since the shipbuilding companies are mostly Korean, like Hyundai and Daewoo as well as Chinese, such as Yangzijiang Shipbuilding. **There is, however, another consequence of a bust in shipbuilding**. It's something that adds to other factors I've already [written about](http://seekingalpha.com/article/320883-steel-is-in-china-s-hands), regarding the Chinese Economy slowdown, namely the drop in auto production that's already occurring, and the predicted drop in residential construction, given that residential prices are already falling. What is this consequence? **Well, those large ships take a lot of steel. If you don't make ships, you don't use steel. So this is one more reason why the steel sector will face substantial headwinds during 2012,** with United States Steel ([X](http://seekingalpha.com/symbol/x)), AK Steel Holding Corporation Co ([AKS](http://seekingalpha.com/symbol/aks)), Arcelor Mittal ([MT](http://seekingalpha.com/symbol/mt)) and Nucor ([NUE](http://seekingalpha.com/symbol/nue)) **being potentially exposed to these developments**. Right now, these steel shares are being bought under the general theory that slightly better economic numbers in the U.S. will lead to higher steel consumption and prices, yet these effects I've been describing, from auto and residential production in China, to shipbuilding, are much more important than any increased demand on U.S. soil. It's thus not a surprise that, as I have written earlier, steel prices are already falling.

**Lack of regulatory clarity and speed with federal permitting destroys investment decisions in OSW broadly and in ship-building specifically**

**Bondaref 12**

[Joan, analyst with Blank Rome LLP, “Is the Time Right to Expedite Offshore Wind”, North American Wind Power, July, p. <http://www.nawindpower.com/digitaleditions/Main.php?MagID=2&MagNo=31> //wyo-tjc]

**While well intentioned**, the U.S. Department of the Interior’s (**DOI) “Smart from the Start” program has not produced a lease since the program was announced in 2010.** (Cape Wind, which was awarded the first commercial lease for wind energy development along the Outer Continental Shelf in October 2010, was grandfathered**.) If the DOI waits too long** to award leases, **it will** find itself in the middle of an election campaign and **face the possibility that leases will be delayed even further** should a new administration and new Congress come to Washington, D.C**. It may also find itself faced with the loss of developers that lose heart in the slow but methodical leasing process**. For example, **in May, Gamesa** – **citing the U.S. market’s uncertain offshore future – pulled out of its joint arrangement with Virginia-based Newport News Shipbuilding. Gamesa’s actions should serve as a warning to federal** and state **agencies**.

**U.S. shipbuilding is declining now, it is key to U.S. primacy, commercial industry is key**

**NDU,06**

“National Defense Univeristy” The Industrial College of the Armed SHIPBUILDING 2006Forceshttp://www.dtic.mil/dtic/tr/fulltext/u2/a475378.pdf, accessed 12/2/12,WYO/JF

**The United States is a maritime nation, with 95,000 miles of coastline**, a 3.4 million square mile exclusive economic zone, and over 350 official ports of entry (USCG Maritime Strategy for Homeland Security, 2002, p. 7). **In addition, 95% of U.S. trade travels by sea. Thus, the economy and the security of the nation depend on the maritime domain**. Furthermore, **as a global leader, the U.S. must be able to deploy forces globally to achieve national objectives**. Therefore, **the U.S. needs commercial and military ships, and shipbuilding is a vital, strategic industry**. Despite its importance, **the U.S. shipbuilding industry is a mere shadow of its former state, and some experts believe that the industry is in crisis.** **Southeast Asia now completes the majority of new commercial ship construction; as a result, the U.S. shipbuilding industry has significantly consolidated**. Only a few yards engage in commercial production, and six yards owned by two companies (Northrop Grumman and General Dynamics) complete most large naval shipbuilding. Although U.S. naval shipbuilding yards currently meet national security needs, the prices of naval vessels are high and increasing to the point that the U.S. Navy may not be able to afford the systems needed to meet mission requirements. In addition, there are concerns about the industry skilled labor and engineering workforce.

**Robust maritime industry key to military readiness**

**AMP 2012**

(American Maritime Partnership, “U.S. TRANSCOM General Says Domestic Maritime Industry is "Fourth Arm of Defense”, 5-22, <http://www.americanmaritimepartnership.com/news/2012/052212%20NMD.html>, DOA: 7-13-13)

**U.S. TRANSCOM Commanding General William Fraser III today said maintaining a strong domestic maritime industry is critical to the defending the homeland**, describing the sector as the "fourth arm of defense." The Air Force General's remarks came at a National Maritime Day celebration at the Washington Navy Yard.¶ "**Maintaining a national maritime industrial base and strong partnerships with the commercial maritime industry is critically important to the Department of Defense**," Gen. Fraser said. "**A strong commercial American industry is particularly important during times of budget cuts."¶** General Fraser's remarks came on the 79th anniversary of National Maritime Day, which annually recognizes the men and women of the U.S. merchant marine for their contributions to American commerce and the U.S. military. In 1933, Congress designated May 22nd as American Maritime Day to commemorate the U.S.-flag steamship SAVANNAH embarking on what was the first-ever transoceanic voyage under steam power in 1819.¶ This historic voyage was the first of many maritime milestones attributed to the U.S. merchant marine. In the decades that have followed, **American companies and mariners have pioneered innovations such as the containership, self-unloading vessel, articulated tug-barge units, railroad-on-barge carfloats and many other breakthroughs**.¶ The Jones Act, the federal law that promotes the U.S. merchant marine of skilled seafarers and U.S.-flagged vessels, has made these innovations possible**. By maintaining a viable domestic maritime industry, this law enables the flow of domestic waterborne commerce and supports a naval and military auxiliary in times of war or national emergency.¶** Today, **the maritime industry is the most economical form of domestic transportation**, moving more than 1 billion tons of cargo annually at a fraction of the cost of other modes. This efficient transportation mode helps the economy run smoothly and sustains nearly 500,000 jobs. It is also good for the environment as ships and tug/barge units use less fuel and produce fewer emissions than land-based modes of transportation.¶ **The maritime sector plays an indispensible national defense role**, **fulfilling key support functions for the U.S. military. During Operations Enduring Freedom and Iraqi Freedom (2002-2010), U.S.-flag commercial vess**els, including ships and seafarers drawn from the domestic trades, **transported 90 percent of all military cargoes moved to Afghanistan and Iraq.**

**Readiness is key to deterring global wars**

**Spencer, 00**

Policy Analyst at Heritage, 9/15/ 2000, [Jack, Heritage Backgrounder #1394] (PDCL1741)

Military readiness is vital because declines in America's military readiness signal to the rest of the world that the United States is not prepared to defend its interests. Therefore, potentially hostile nations will be more likely to lash out against American allies and interests, inevitably leading to U.S. involvement in combat. A high state of military readiness is more likely to deter potentially hostile nations from acting aggressively in regions of vital national interest, thereby preserving peace.

**Heg creates peace, world without leads to catastrophe war**

**Kagan, 12**

Why the World Needs America --- Foreign-policy pundits increasingly argue that democracy and free markets could thrive without U.S. predominance; If this sounds too good to be true, writes Robert Kagan, that's because it is [Wall Street Journal](http://search.proquest.com/docview.lateralsearchlinkbypubid%3Alateralsearch/sng/pubtitle/Wall%2BStreet%2BJournal/%24N/10482?t:ac=920985495/fulltext&t:cp=maintain/resultcitationblocks) [New York, N.Y] 11 Feb 2012: C.1. Lexis, accessed 2-15-2012,WYO/JF

If and **when American power declines, the institutions and norms that American power has supported will decline, too**. Or more likely, **if history is a guide, they may collapse altogether as we make a transition to another kind of world order, or to disorder.** We may discover then that **the U.S. was essential to keeping the present world order together and that the alternative to American power was not peace and harmony but chaos and catastrophe -- which is what the world looked like right before the American order came into being.**

**U.S. seapower is key to deter Chinese hegemony and war in the south china sea**

**Cropsey, 12**

Dr. Seth Cropsey Hudson Institute “The U.S. Navy Shipbuilding Plan: Assumptions and Associated Risks to National Security” <http://www.hudson.org/files/publications/SethCropsey--USNavyShipbuildingPlan--Testimony041812.pdf>, accessed 12/20/12,WYO/JF

A nation burdened with massive debt whose ability to shape world events has been limited in tandem with its capacity to invest in research and technology will have more and more trouble finding markets. **China’s potential hegemony would not only force its neighbors’ to reconsider whether the U.S. is a reliable ally. It would also become an increasingly powerful magnet for trade** in the region—**at the expense of U.S. commerce. Unlike the U.S. whose seapower has protected global sea lanes that other states have used to their benefit China** has a different set of values. It views with suspicion a liberal trading system notwithstanding the benefits received from it. **China’s friends include Iran and North Korea. Beijing is a poor candidate to support the international order that has been the keel of U.S. foreign and security policy** for a century. **Waning U.S. seapower is an invitation that China will regard as a complement to its rising military and navy in particular. It foreshadows a coercive resolution of territorial disputes in the South China Sea**, the likelihood of an increased regional arms race, and the troubling international perception that the U.S. is—or has—abandoned its role as a great power. American seapower is the strategic keel of our foreign and security policy. **Reducing it would be an exercise of history-making shortsightedness. Restoring it would be an act of statesmanship from which Americans and all who cherish political liberty would benefit for the remainder of this century. Thank you.**

**CONFLICT IN THE SCS ESCALATES TO FULL-SCALE NUCLEAR WAR**

STRAITS TIMES 1995

[staff, “Choose Your Own Style of Democracy”, May 21, p. ln// wyo-tjc]

In his speech, Dr Mahathir also painted three scenarios for Asia.

**In the first -the worst possible scenario -Asian countries would go to war against each other, he said. It might start with clashes** between Asian countries **over the Spratly Islands** because of China's insistence that the South China Sea belonged to it along with all the islands, reefs and seabed minerals. **In this scenario, the United States would offer to help** and would be welcomed by Asean, he said. The Pacific Fleet begins to patrol the South China Sea. **Clashes occur between the Chinese navy and the US Navy. China declares war on the US and a full-scale war breaks out with both sides resorting to nuclear weapons.**

**Thriving OSW industry jumpstarts shipbuilding and port improvements throughout the United States- leadership now is crucial to avoid the US shipping industries and ports from being locked-out of global competition**

**Bondaref 12**

[Joan, analyst with Blank Rome LLP, “Is the Time Right to Expedite Offshore Wind”, North American Wind Power, July, p. <http://www.nawindpower.com/digitaleditions/Main.php?MagID=2&MagNo=31> //wyo-tjc]

**Europe has been at the forefront of renewable energy** **and**, in particular, **offshore wind**. Like the DOD, Europe has made a commitment to renewable energy and set a more ambitious goal of having 20% of its energy consumption from renewable sources by 2020. Each member of the European Union (EU) has a national action plan to achieve this goal, and Europe is well on its way to meeting its objective. In 2009, wind constituted 7.7% of renewable energy sources in Europe. **This has also resulted in the creation of over 1 million new jobs, according to a recent report** by market research firm EurObserv’ER. **One burgeoning market in Europe that the U.S. should emulate is the offshore supply and support vessel industry**. **Innovative designs for new support vessels**, such as catamarans and crew-transfer vessels that can perform well in high-sea states, **have come online and can be deployed rapidly to new and existing offshore wind farms.** One U.K. company is building 25 crew-transfer vessels a year. Smart U.K. boat builders that are working in the offshore wind industry have also entered into licensing agreements with U.S. boat builders, which not only will bring jobs to a flagging industry, but also should enhance support for offshore wind. **Similarly, European port owners and operators are reaping the benefits of offshore wind farm projects**. How European ports have positioned themselves as “epicenters” of offshore wind operations and support bases is discussed at length in the September 2011 issue of North American Windpower (“U.S. Ports Model Themselves After European Counterparts,” page 50). **Instead of working to stymie offshore wind farms for fear of interference with shipping traffic, U.S. ports should focus on the new jobs and financial opportunities that would be created by similar projects in the U.S**. **To ensure that these high-tech, high-paying jobs come to the U.S., it requires leadership at the federal** and state **level**s. **The U.S. should do what it can to bring about the development of this clean industry, and not sit by while other regions such as the EU, India and China take over what could be a strong manufacturing base and job market for years to come**.

**Ship building is key to national security, commerce and critical infrastructure**

**DTIC, 04**

“SHIPBUILDING” <http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA435479>, accessed 11/28/12,WYO/JF

**The national security of the U**nited **S**tates **is highly dependent upon the maritime industry**. **We have historically been dependent upon ocean-borne commerce**, and that commerce has always required robust Naval protection. **The shipbuilding industry is a key component, and has been designated as part of the nation’s key/critical infrastructure**. The reasons are obvious when we look at the maritime impact upon both the commercial and military viability of the U.S. Water-borne shipping is key to the economic stability and growth as 95 percent of U.S. international commerce travels via the sea.xxviii Historically, we have committed to the building and sustainment of a capable naval force to protect these vital commercial interests. Whether defending our global commerce from the Barbary Coast pirates in the 1800s, or performing international Freedom of Navigation missions ensuring our ability to carry on commercial trade and military operations through internationally agreed sea lanes, a strong Navy and Coast Guard have always been essential pieces of our national defense infrastructure. **The ability to project American power around the world is dependent upon sea power.** **Roughly 95 percent of sustainment supplies** for Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) **transited to the Middle East via sealift and this level of support is to be expected for future long-term contingencies**.xxix Commercial shipping sources and the government-controlled fleets of Military Sealift Command and the U.S. Army provides the preponderance of immediate fast sealift, afloat pre-positioning, and Ready Reserve capabilities. **The need to sustain a powerful fleet of carrier battle groups has been proven** by the need to project power ashore from secure and independent bases, and the vast number of non-combatant evacuations of U.S. and foreign nationals from global “hot spots” over the last 50 years. **The need for the U.S. to maintain a strong maritime industry and naval force structure is undisputed. However, we believe some significant policy changes must be implemented to maintain this national asset**.

**Offshore wind would lead to massive investment of funds toward ship building**

**MCTC, 10**

Massachusetts Clean Energy Center, “Port and Infrastructure Analysis for Offshore Wind Energy Development”online, accessed 10/26/12,WYO/JF

**No purpose-built wind turbine installation vessels exist** that are compliant with U.S. coastwise trade laws (i.e., "Jones Act"). These laws require vessels to be U.S.-built, U.S.-owned, and U.S.-operated. **A small number of Jones Act-compliant vessels that are currently operating in the Gulf of Mexico** could be used to construct the first-generation U.S. offshore wind farms. These vessels lack the efficiency associated with purpose-built wind turbine installation vessels, such as the ability to transport multiple sets of turbine components and the ability to rapidly jackup, pre-load the legs, erect the turbines, and jack-down**. In order to economically and efficiently achieve GW-scale deployment of offshore wind in the United States, a fleet of purpose-built, Jones Act-compliant vessels will be needed**. The industry recognizes this fact and is taking steps to develop the vessel infrastructure. NRG Bluewater Wind, for example, has teamed with the Aker Philadelphia shipyard to develop three purpose-built wind turbine installation vessels. (Bluewater Wind 2009b). **Future wind turbine installation vessels are expected to focus on improving construction efficiency through faster transit speeds, larger payload capacity, and ability to erect turbines in higher wind speeds and larger sea states.** Some firms are developing designs that accommodate the transport and installation of fully assembled turbines (see Figure 3-18).

**\*\*\*Advantage Two**

**The power grid is fragile and facing future collapse**

**Heyes 8-15-12**
J.D. Heyes is a writer for Natural News.com August 15, 2012
Overloaded US power grid stretched to capacity; Will America follow in India's footsteps?
<http://www.naturalnews.com/036808_power_grid_collapse_outages.html#ixzz23glXL83u>, accessed 11/7/12,WYO/JF

**Could the U.S. really suffer the kinds of widespread power outages that struck two-thirds of India's billion-plus population** recently? **Absolutely, say experts, and fixing the problem won't be cheap**. While **the nation's power infrastructure is referred to as a "grid," suggesting seamless interconnectivity, "the network more closely resembles a patchwork quilt stitched together to cover a rapidly expanding nation,**" the Washington Post reported. Experts note that the U.S. really doesn't yet face the kind of issues with its electrical infrastructure that left about 670 million Indians without power in what became the largest outage in history. But, at the same time, **industry analysts say the nation's grid is definitely showing signs of aging**. And, they say**, it's stretched to capacity**. More often than not, **the grid falls victim to decrepitude rather than, say, the forces of nature, as in tornadoes and powerful storms. Nonetheless the grid is beginning to fail,** say experts, who fear that such failures that caused blackouts in New York, San Diego and Boston could become ever more common as the country's demand for power grows exponentially. To fix the problem, industry analysts say it will take a multi-billion, multi-year investment if we're to avoid more frequent large-scale outages in the future. **More plants needed**, but the delivery system is weak "I like to think of our grid much like a water system, and basically all of our pipes are at full pressure now, and if one of our pipes bursts and we have to shut off that line, that just increases the pressure on our remaining pipes until another one bursts, and next thing you know, we're in a catastrophic run and we have to shut the whole water system down," Otto J. Lynch, vice president of Wisconsin-based Power Line Systems, told the Post. The problem in India and similar developing nations with growing pains is one of power generation. **The country is stuck with old and aging coal-fired power plants and is meeting resistance internally to atomic plants**. **Recently, a number of plants shuttered suddenly, leaving customers without power once more.** In the U.S., the problem is somewhat different. Though **more plants will be needed** in the future, to be sure, the larger problem is that the system of delivery is beginning to fail more frequently. The network of steel towers and power lines that span the country, along with the power transmission stations those lines feed, are the "pipes" of the system that Lynch spoke of. Electricity storage is difficult and besides, most [electricity](http://www.naturalnews.com/electricity.html), the Post said, is used within a second of it being produced. The system is designed to shunt power to regions where it is most needed, at the push of a button or, in a growing number of systems, when a computer managing the grid senses the need to shift power. The system is further designed to go around bottlenecks or other interruptions that could slow down the electrical flow. Tens of billions needed to update, upgrade power grids Towers themselves are designed to withstand large gusts of wind but increasingly, towers are collapsing when they shouldn't, and that's a symptom of the aging electrical infrastructure, analysts note. "The aging of equipment explains some of the equipment failures that lead to intermittent failures in power quality and availability," says a report by the American Society of Civil Engineers, released earlier this year. "The capacity of equipment explains why there are some bottlenecks in the grid that can also lead to brownouts and occasional blackouts." To keep the country's [power grid](http://www.naturalnews.com/power_grid.html) operational - and reliable - an additional investment of about $107 billion would be needed by 2020, the ASCE said. Once considered an indulgence, electricity is now a necessity for modern life. "Electricity was primarily a luxury when the majority of our grid was built 50, 60 years ago," Lynch told the Post. "Most people didn't require computers to do their jobs every day. They didn't need the Internet access. iPhones didn't need to be charged, and communication was all hard-wired, so you could still make a phone call when the electricity was out."

**Meltdowns are likely after a black-out: an outage will take days to recover- the best plants in the US can last 16 hours without external power**

[**Cappiello**](http://search.boston.com/local/Search.do?s.sm.query=Dina+Cappiello&camp=localsearch:on:byline:art)**, 11**

Dina, staff writer, “NRC casts doubt on US reactors’ blackout plans” <http://www.boston.com/news/nation/washington/articles/2011/04/29/nrc_casts_doubt_on_us_reactors_blackout_plans/?camp=pm>, accessed 10/24/12,WYO/JF

**The nation’s top nuclear regulator cast doubt** yesterday **on whether reactors in the United States are prepared for the type of days-long power outage that struck a nuclear power plant in Japan. The Nuclear Regulatory Commission has required reactors to cope without power from either the electrical grid or emergency diesel generators for four to eight hours. After that time, it assumes some electrical power will be restored.** Chairman Gregory Jaczko of the NRC questioned whether four hours is enough time, even though it is unlikely a nuclear power plant would lose power from both the grid and generators as the Japan plant did. Requirements put in place after the Sept. 11 terrorist attacks are expected to lengthen plants’ ability to withstand a blackout. “**Four hours doesn’t seem to be a reasonable time to restore offsite power** if you lost the diesels immediately,’’ Jaczko said at a commission meeting at the NRC’s Rockville, Md., headquarters. “**In the event there is a station blackout that is externally driven, I’m not convinced that in that situation four hours’’ is enough time to restore power.** An Associated Press investigation last month examined the risk to the nation’s 104 nuclear reactors to a complete loss of electrical power. In the United States, such a “station blackout’’ has happened only once, at the Vogtle Electric Generating Plant in eastern Georgia in 1990. There, power was restored in 55 minutes. **The Japan disaster showed that it could be days before the electricity needed to pump water and keep the radioactive core from melting can be turned back on.** The Fukushima Daiichi plant had capacity for eight hours of emergency battery power. When that elapsed, the plant operator struggled to find other ways to cool the cores without onsite or offsite power**. “It wasn’t the earthquake or the tsunami that caused the Fukushima nuclear catastrophe — it was an electricity outage. A blackout shouldn’t cause a meltdown**,’’ Representative Edward Markey, Democrat of Malden, said in a statement. He has filed legislation that includes expanding the time reactors are required to cope without power. **Of the 104 nuclear reactors in the United States, 87 can cope for four hours without power or emergency generators**. Another **14,** including the Pilgrim Nuclear Power Station in Plymouth, Mass., **can cope for eight hours, and three can last for 16 hours**. Most reactors rely on batteries for this power source. Markey’s bill calls for a comprehensive approach to improving the safety of the nation’s nuclear plants. It would include requiring reactors to have at least 72 hours of capacity for battery generators. The bill also calls for 14 days of power from backup diesel generators to be available. Currently, plants are required to have seven days of such power available. As part of a review initiated after the Japan disaster, the nuclear commission is looking at whether the blackout rule needs to be updated. At the time the rule was written in the 1980s, the commission assumed electrical power could be restored in 50 minutes to two hours. The NRC added an additional two hours to that time as a safety buffer. Since then, plants have lost offsite power for longer periods of time. In every case, diesel generators kicked on and supplied electrical power, sometimes for days. There also are agreements with power grid operators that nuclear power plants get first priority as power is restored. “We have a high expectation you will restore offsite power, restore emergency diesels or use alternate sources,’’ said Pat Hiland, director of the NRC’s reactor regulation engineering division. But Jaczko, the NRC chairman, pointed out that the blackout regulation is designed to deal with a situation where even diesel generators do not work, as in the case of the Fukushima Daiichi plant in Japan. A top staffer told NRC commissioners yesterday that the Japan situation “has definitely improved’’ in recent weeks. Bill Borchardt, NRC’s executive director for operations, said that while there are still many unanswered questions about equipment failures and other problems at the facility, the situation is “certainly not as highly dynamic’’ as it was. Overall, Japan is “making progress,’’ he said

**Meltdowns cause extinction**

**Lendman, 2011**

(Stephen, Research Associate of the Centre for Research on Globalization, 03/ 13, “Nuclear Meltdown in Japan,”, The People’s Voice <http://www.thepeoplesvoice.org/TPV3/Voices.php/2011/03/13/nuclear-meltdown-in-japan>, accessed 10/12/12,WYO/JF

Reuters said **the 1995 Kobe quake caused $100 billion in damage**, up to then the most costly ever natural disaster. This time, **from quake and tsunami damage alone, that figure will be dwarfed**. Moreover, **under a worst case core meltdown, all bets are off as the entire region and beyond will be threatened with permanent contamination**, making the most affected areas unsafe to live in. On March 12, Stratfor Global Intelligence issued a "Red Alert: Nuclear Meltdown at Quake-Damaged Japanese Plant," saying: **Fukushima Daiichi "nuclear power plant in Okuma, Japan, appears to have caused a reactor meltdown."** Stratfor downplayed its seriousness, adding that such an event "does not necessarily mean **a nuclear disaster," that already may have happened - the ultimate nightmare short of nuclear winter.** According to Stratfor, "(**A)s long as the reactor core**, which is specifically designed to contain high levels of heat, pressure and radiation, **remains intact, the melted fuel can be dealt with. If the (core's) breached but the containment facility built around (it) remains intact, the melted fuel can be....entombed within specialized concrete"** as at Chernobyl in 1986. In fact, **that disaster killed nearly one million people** worldwide from nuclear radiation exposure. In their book titled, "Chernobyl: Consequences of the Catastrophe for People and the Environment," Alexey Yablokov, Vassily Nesterenko and Alexey Nesterenko said: "For the past 23 years, it has been clear that there is a danger greater than nuclear weapons concealed within nuclear power. **Emissions from this one reactor exceeded a hundred-fold the radioactive contamination of the bombs dropped on Hiroshima and Nagasaki."** "No citizen of any country can be assured that he or she can be protected from radioactive contamination. **One nuclear reactor can pollute half the globe.** Chernobyl fallout covers the entire Northern Hemisphere." Stratfor explained that if Fukushima's floor cracked, "it is highly likely that the melting fuel will burn through (its) containment system and enter the ground. **This has never happened before,**" at least not reported. If now occurring, "**containment goes from being merely dangerous, time consuming and expensive to nearly impossible**," making the quake, aftershocks, and tsunamis seem mild by comparison. Potentially, **millions of lives will be jeopardized**. Japanese officials said Fukushima's reactor container wasn't breached. Stratfor and others said it was, making the potential calamity far worse than reported. Japan's Nuclear and Industrial Safety Agency (NISA) said the explosion at Fukushima's Saiichi No. 1 facility could only have been caused by a core meltdown. In fact, 3 or more reactors are affected or at risk. Events are fluid and developing, but remain very serious. **The possibility of an extreme catastrophe can't be discounted**. Moreover, independent nuclear safety analyst John Large told Al Jazeera that by venting radioactive steam from the inner reactor to the outer dome, a reaction may have occurred, causing the explosion. "When I look at the size of the explosion," he said, "it is my opinion that there could be a very large leak (because) fuel continues to generate heat." Already, Fukushima way exceeds Three Mile Island that experienced a partial core meltdown in Unit 2. Finally it was brought under control, but coverup and denial concealed full details until much later. According to anti-nuclear activist Harvey Wasserman, Japan's quake fallout may cause nuclear disaster, saying: "**This is a very serious situation**. If the cooling system fails (apparently it has at two or more plants), **the super-heated radioactive fuel rods will melt, and** (if so) **you could** conceivably **have an explosion**," that, in fact, occurred. As a result, massive radiation releases may follow, impacting the entire region. "**It could be, literally, an apocalyptic event.** The reactor could blow." If so, Russia, China, Korea and most parts of Western Asia will be affected. Many thousands will die, potentially millions under a worse case scenario, including far outside East Asia.

**Grid failures cascade outward- the impact is worse than a nuclear explosion**

**Latynina, 03**

[America in the Dark Yulia Latynina, Novaya Gazeta (liberal semi-weekly), Moscow, Russia, Aug. 18, 2003. http://www.worldpress.org/Americas/1579.cfm//uwyokb]

**The scariest thing about the cascading power outages** was not spoiled groceries in the fridge, or elevators getting stuck, or even, however cynical it may sound, sick patients left to their own devices without electricity-powered medical equipment. The scariest thing of all **was chemical plants and refineries with 24-hour operations, which,** **if interrupted, can result in consequences even more disastrous and on a larger scale than those of an atomic bomb explosion**. So it is safe to say that Americans got lucky this time. Several hours after the disaster, no one could know for certain whether the power outage was caused by an accident or someone’s evil design. **In fact, the disaster on the East Coast illustrates just one thing: A modern city is in itself a bomb, regardless of whether someone sets off the detonator intentionally or by accident.** As I recall, when I was writing my book Industrial Zone, in which business deals were bound to lead to a massive industrial catastrophe, at some point in time I was considering making a cascading power outage the cause of a catastrophe. Back then, I was amazed and shocked at the swiftness of the process. **Shutting down at least one electric power plant is enough to cause a drop in power output throughout the entire power grid.** **This is followed by an automatic shutdown of nuclear power plants, a further catastrophic drop in power, and finally a cascading outage of the entire grid system.** To start with, the electric power plant may burn out because of just about anything. In Ekibastuz [Kazakhstan] under the Soviet regime, a large hydroelectric power station was burned to the ground because of the negligence of one extremely smart worker, who used a wrench to unscrew the cap from a pressurized oil vessel. A stream of oil shot up to the ceiling; the worker got scared and dropped the wrench, which hit against the steel floor and created a spark that set the stream of oil on fire. Then the lights went off. Which brings us back to our main thesis. In order to destroy a modern city, one does not need to have nuclear weapons, because the modern city is in itself a weapon. **The city infrastructure is an infrastructure with dual purpose. Why should terrorists need chemical weapons if their enemies already have chemical plants? Why should terrorists need nuclear weapons if their enemies already have** skyscrapers and **airplanes with tanks full of fuel, which can be hijacked with** the help of **a penknife?** Why would they need sophisticated military technologies and stolen explosives if the KamAZ truck that blew up the hospital in Mozdok was carrying a load of, let us say, fertilizer? So-called dictatorship regimes and terrorists themselves have long since figured that out.

**OSW solves the advantage:**

**And OSW solves East Coast electricity demand- drops prices and solves grid congestion that creates cascades**

**Marcacci 12**

[Silvio, Principal at Marcacci Communications, a full-service clean energy public relations company based in Washington, D.C., Clean Technica, “Offshore Wind On The Atlantic Cost Could Create 300,000 Jobs And $200 Billion In Economic Activity”, p. online//wyo-tjc]

**Beyond creating new jobs and economic activity** building and operating all these new turbines, **plugging offshore wind into our nation’s grid can increase reliability and lower utility prices**. **Offshore winds blow strongest during the day and in heat waves – precisely the points when demand** for electricity **is highest and the risk of power shortages most acute**. **In addition, the greatest potential wind power lies along** some of **the East Coast’s biggest cities**. **Grid congestion has constrained the ability of cheaper power to reach these demand pools and created** some of **the highest power prices in the country**. But **if these population centers could tap into steady electricity being generated just offshore, growing demand could be met cheaply**. In fact, **New York State**’s grid operator recently **found consumers save $300 million in wholesale electricity costs for every 1 GW of wind** on the grid.

**OSW is uniquely key to solve electricity demand in the United States- it overcomes issues with transmission costs, intermittency, and load capacity factors all because it is on the water\*\***

**Schroeder 10**

[Erica, J.D. from University of California, Berkeley, School of Law, 2010. And Masters in Environmental Management from Yale School of Forestry & Environmental Studies, “Turning Offshore Wind On”, California Law Review, p. ln//wyo-tjc]

Many of the most compelling benefits of offshore wind are similar to those of onshore wind, though **offshore wind has its own unique set of benefits**. To start, **wind power generation can help meet the growing energy demand in the United States**. The U.S. Energy Information Administration predicts that **the demand for electricity in the United States will grow** **to 5.8 billion MWh** in 2030, **a 39 percent increase** from 2005.58 **The more that wind power can help to meet this demand, the more diversified the United States’ energy portfolio will be, and the less susceptible the nation will be to dependency on foreign fuel sources and to price fluctuations in traditional fuels**.59 In addition, **wind power benefits the United States by creating a substantial number of jobs for building and operating the domestic wind energy facilities**.60 In an April 2009 speech at the Trinity Structural Towers Manufacturing Plant in Iowa, President Obama predicted that if the United States ―fully pursue[s] our potential for wind energy on land and offshore,‖ wind power could create 250,000 jobs by 2030.61 **Once a wind project is built, it involves only minimal environmental impacts compared to traditional electricity generation. Wind power emits** **negligible** amounts of traditional a**ir pollutants, such as sulfur dioxide and particulate matter, as well as carbon dioxide and other greenhouse gases.**62 Lower emissions of traditional air pollutants means fewer air quality-related illnesses locally and regionally.63 **Lower greenhouse gas emissions will help to combat climate change**, effects of which will be felt locally and around the world.64 According to the International Panel on Climate Change (IPCC), the effects of climate change will include melting snow, ice, and permafrost; significant effects on terrestrial, marine, and freshwater plant and animal species; forced changes to agricultural and forestry management; and adverse human health impacts, including increased heat-related mortality and infectious diseases.65 The U.S. Energy Information Administration estimates that the United States emits 6 billion metric tons of greenhouse gases annually, and it expects emissions to increase to 7.9 billion metric tons by 2030, with 40 percent of emissions coming from the electric power sector.66 Thus, if the United States can get more of its electricity from wind power, it will contribute less to climate change, and help to mitigate its negative impacts. **Furthermore, wind power does not involve any of the additional environmental costs associated with nuclear power or fuel extraction for traditional electricity generation, such as coal mining and natural gas extraction.67 Wind power generation also does not require the water necessary to cool traditional coal, gas, and nuclear generation units**.68 **Moreover, offshore wind power has certain attributes that give it added benefits** compared to onshore wind. **Wind tends to be stronger and more consistent offshore**—both benefits when it comes to wind power generation.69 This is largely **due to reduced wind shear and roughness on the open ocean**.70 Wind shear and roughness refer to effects of the landscape surrounding turbines on the quality of wind and thus the amount of electricity produced.71 While long grass, trees, and buildings will slow wind down significantly, **water is generally very smooth and has much less of an effect on wind speeds.**72 In addition, **because offshore wind projects face fewer barriers**—both natural and manmade—**to their expansion, offshore developers can take advantage of economies of scale and build larger wind farms that generate more electricity.**73 **Importantly, offshore wind also could overcome the problems that onshore wind faces regarding the distance between wind power generation and electricity demand**. That is, **although the United States has considerable onshore wind resources in** certain areas, mostly in **the middle of the country, they are frequently distant from areas with high electricity demand, mostly on the coasts**, resulting in transmission problems.74 **By contrast, offshore resources are near coastal electricity demand centers**.75 In fact, **twenty-eight** of the contiguous forty-eight **states have coastal boundaries, and these same states use 78 percent of the United States’ electricity**.**76 Thus, offshore wind power generation can effectively serve major U.S. demand centers and avoid many of the transmission costs** faced by remote onshore generation.77 **If shallow water offshore potential** (less than about 100 feet in depth) **is met on the nation’s coasts, twenty-six of the twenty-eight coastal states would have sufficient wind resources to meet at least 20 percent of their electricity needs, and many states would have enough to meet their total electricity demand**.78

**Wind uniquely solves blackouts in the Northeast because it creates inherent resiliency against disruptions, their design does not create cascades and it allows instantaneous power-up after a crisis, cutting the length of the blackout down dramatically**

**Elisa Wood, 11/1**

“Hurricane Sandy Uncovers Strength and Simplicity of Renewable Energy Systems” <http://www.renewableenergyworld.com/rea/news/article/2012/11/hurricane-sandy-uncovers-strength-and-simplicity-of-renewable-energy-systems?cmpid=WNL-Friday-November2-2012>, accessed 11/5/12,WYO/JF

**Wind** **and solar are relatively safe forms of energy, a feature** that **we** tend to **overlook until a disaster hits like the "superstorm" that disabled New York City**'s power grid this week. Unlike fossil fuel plants, **they require no combustible fuels** to generate electricity. **And there is no danger that they will leak radiation** as did the Fukushima-Daiichi nuclear plant following last year’s tsunami in Japan. Hence, the Northeast’s wind and solar farms evoked little public anxiety this week when Hurricane Sandy hit – unlike the nuclear and fossil fuel infrastructure. Safety officials kept a careful eye on the nuclear power plants and three were shut down in New Jersey and New York. And the smell of natural gas in any flooded areas drew quick attention from those who understood the danger. These anxieties speak to a larger difference between renewables and conventional generation. Specifically, **wind and solar operate under simpler systems that are prone to fewer problems**, say renewable energy advocates. Simple Design, Simple Operations First of all, wind and solar do not need additional energy inputs to produce electricity or cool a reactor, said John Kourtoff, president and CEO of Toronto-based Trillium Power Wind. There is no need for natural gas, oil or coal to be excavated, transported and applied to the system. Instead, they produce electricity by taking advantage of a form of energy that is already available – wind and sun. Second, **they mimic nature in design, so they tend to be more resilient and withstand natural disasters better,** he said. “R**enewables at their core are simple bio-mimicry based on nature. This simple and closed aspect makes them successful when storms and natural disasters happen,** whether hurricanes, earthquakes, or tsunamis,” Kourtoff said. He pointed out **that last year’s tsunami in Japan devastated a nuclear plant, but** [**wind turbines**](http://www.renewableenergyworld.com/rea/news/article/2011/05/the-dangers-of-energy-generation) **near the shore suffered no harm**. **Wind** and solar **farms mimic a natural cell-like structure, so** they are less likely than conventional power plants **to succumb to a cascading failure**, according to Kourtoff. **You lose a blade on a wind tower and you don’t lose the whole wind farm** — just like you don’t kill a flower if a petal comes off. But **for more complex energy systems**, like fossil fuel and nuclear plants, **failure in one part can bring down the entire production facility in a cascade**, he said. “You can put a spike through a solar panel yet the rest of the solar farm runs because it runs on a cellular-like model. If one cell is not operational, the others continue to operate,” he said. He calls nuclear and fossil fuel plants industrial age technologies, and recent wind and solar, “Renewables 2.0,” designs that have grown simpler, with fewer moving parts and more efficient functioning. Kourtoff also likened wind and solar design – at least in philosophy – to the products created by Steve Jobs, which emphasized simplicity, elegance and human appeal. “Why do people like Apple products? They like them because of the simplicity of design. People see beauty in simplicity, in nature. You never hear anyone say, ‘Look at that beautiful nuclear plant.’ But if you see wind turbines moving gracefully in the water, they look beautiful,” Kourtoff said. **The simplicity also offers practical benefits. “In terms of renewable energy, it can certainly help the grid come back quickly from weather situations like Hurricane Sandy**,” **said** Carol **Murphy, executive director, Alliance for Clean Energy** New York. “It can take nuclear plants a week or more to come back online. **Wind** and solar, like other **generators, do shut down during extreme weather conditions, but they can be back up and produce power quickly**.” **How Did Renewables Weather the Storm?** Based on early assessments, **renewable** energy **facilities seemed to fare well during Hurricane Sandy. ISO New England** said it **received no reports of any damage to wind** or solar **facilities** from the storm. Iberdrola Renewables, which **owns wind farms in Massachusetts, New Hampshire, New York and Pennsylvania, reported few problems**. “We monitored the situation through the night and shut down sites as a precaution to protect equipment from extreme winds. Inspections today have revealed minimal damage so far. We are very satisfied with the response of our people and the performance of the sites through an exceptional event,” said Jan Johnson, Iberdrola Renewables’ communications director. Long Island suffered some of the most severe destruction, wiping out service to most of the Long Island Power Authority’s 1.1 million customers. But the island’s 32-MW Long Island Solar Farm appears to have come through fairly well. Nothing “catastrophic” happened at the facility, according to Matt Hartwig, spokesman for BP Alternative Energy, which operates the solar farm. “They are beginning their assessment, which initially shows damage to the fence around the facility as well as some module damage, the extent of which is not yet known.” New York, Connecticut and other hard hit areas happen to be in various stages of devising long-term energy plans. We’ll soon see if Hurricane Sandy – and lessons learned about renewable energy performance in storms – will add a new dimension to policy decisions about the future role of wind and solar.