Center for American Progress

Clean Energy from America's Oceans

Permitting and Financing Challenges to the U.S. Offshore Wind Industry

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Introduction and summary

For 87 days in the spring and summer of 2010, an undersea gusher of oil continuously reminded Americans of the toll energy development can take on our oceans.

Approximately 3,500 oil rigs and platforms were operating in U.S. waters at the time of the BP disaster. There were also over 1,000 wind turbines generating clean, renewable electricity off the coastlines of northwestern Europe. But not a single windmill yet turns in the strong, abundant winds that abound off our shores.

Clearly wind power cannot immediately replace the energy we still must generate from the oil and gas produced on the outer continental shelf. But America's unwillingness to clear the way for permitting a proven, commercially scalable, clean source of energy is a major black eye for a nation that purports to be a leader in technological development.

Denmark constructed the first offshore wind facility in in 1991. In the intervening two decades 10 other countries installed offshore wind farms—eight nations in northern Europe, plus Japan and China (see chart).

Nations embracing wind energy

Current offshore wind capacity in megawatts, Europe, China, and the United States

Offshore wind capacity in megawatts (MW)	Europe (United Kingdom, Denmark, The Netherlands, Belgium, Germany, Sweden, Ireland, Finland, Norway)[1]	China	United States
Installed	2,946	102[2]	0
Under construction	3,000	2,300[3]	0
Permitted	19,000	13,600[4]	488[5]
Total	**24,946 MW**	**16,002 MW**	**488 MW**

Note: One megawatt roughly equates to the amount of electricity needed to power 300 American homes.

Unfortunately, in the United States, lack of a clear regulatory structure, inconsistent messages from other ocean stakeholders, congressional budget battles, opposition to specific project siting, and instability in financial markets have all played a role in preventing domestic offshore wind from becoming a reality.

No permitting process existed when America's first offshore wind developer, Cape Wind, began efforts to build a wind farm off the New England coast. It was 2005 before Congress acted to define a clear permitting process for offshore wind facilities and to extend key financial incentives to help the industry develop. Then it was nearly six more years—over a decade in total—until Cape Wind at last received the final green light from the Department of Interior to begin construction.

That decision was announced on April 19, perhaps not so coincidentally just one day before the first anniversary of the BP oil disaster. Yet, in a move achingly typical of the three-steps-forward-two-steps-back cycle that has plagued U.S. offshore wind development, the Department of Energy stepped in less than a month after getting the Interior Department's green light to say that the project's application for a key piece of financial assistance would be put on hold, potentially stalling the project yet again.

This brief will provide an overview of offshore wind permitting and financing in the United States, update the status of a few key projects, and ultimately make recommendations on how to clear a few of the remaining hurdles to promoting offshore wind development:

- Increase government investment in offshore wind to make it more financially palatable
- Shape transmission rules to allow for a robust offshore grid
- Ensure the federal "Smart from the Start" program, which is designed to expedite offshore wind, is smart through the finish
- Engage stakeholders early in the process of identifying wind energy areas in "Smart from the Start"

These recommendations will allow America to catch up to other nations currently at the vanguard of technological development. These countries are reaping the economic and employment rewards of creating a new industry while simultaneously reducing their carbon footprint and making great strides toward a clean, renewable energy future.

Current notable U.S. offshore wind projects

Here is a rundown of the offshore wind energy projects currently underway in the United States. Some are further along in the process than others. But none has even begun construction, much less produced even a single kilowatt of electricity.

Cape Wind, Massachusetts

Cape Wind made the first attempt to jumpstart the U.S. offshore wind industry. It initially applied for a permit to build an offshore wind farm in 2001, before a process for such applications even existed. Fully a decade later the project at last received the final permit required to begin construction on April 19.

Since its inception, Cape Wind has battled challenges from opponents led in large part by one of the infamous billionaire Koch brothers, Bill Koch, a coal and petroleum coke baron. Koch, owner of a multimillion-dollar home and private yacht club on the south side of Cape Cod within sight of the proposed project, drummed up any excuse to block it—contributing millions of dollars to a group called the Alliance to Protect Nantucket Sound. The group played upon cape residents' fears that the wind farm could adversely impact migratory bird and marine mammal populations, cause radar interference, make ferry traffic unsafe, spoil Native American religious ceremonies, close off fishing and yachting grounds, or reduce the value of their seaside property.

Cape Wind has alleviated many of these concerns over the years, to the point that *The Daily Show* lampooned these efforts in 2007 and pointed out that the opposition has largely boiled down to a desire to protect the views from multimillion-dollar oceanfront homes. A poll conducted in September 2010 revealed that 69 percent of Massachusetts residents now support the project, while just 20 percent oppose it.

Still, before the glow had faded from Cape Wind's major victory in receiving its permits to begin construction, the developer's most recent setback came in the form of an announcement by the Department of Energy that its loan guarantee application had been put on hold.

Fisherman's Energy, New Jersey

Generally speaking, fishermen are among those most concerned about offshore wind farm development. But Fishermen's Energy is a company formed by commercial fishermen who, according to their website, have "chosen to view offshore wind as an opportunity for us and for our fellow citizens, rather than as a threat to our traditional fishing businesses."

Daniel Cohen, a New Jersey commercial fisherman, launched the project. Phase I would install six turbines in New Jersey state waters less than three miles off the coast of Atlantic City—if it's permitted. Cohen has avoided much of the federal permitting process that hampered Cape Wind by targeting an area within state jurisdiction.

Fishermen's Energy received its final state permits on May 6, 2011, and it announced the completion of its one-year avian and marine mammal monitoring surveys to determine whether its installation would have any effect on such populations, a regular part of the

permitting process. The results of their surveys remain pending, and if all goes well, the project will stay on track to being construction in 2012. It will vie with Cape Wind for the mantle of America's first offshore wind farm.

NRG Bluewater, Delaware and others

NRG Bluewater Wind is one of the most aggressive offshore wind companies in the United States. It is currently trying to develop farms in Delaware, Maryland, New York, and New Jersey. The company has responded to additional requests for proposals to construct facilities in wind energy areas identified by the Interior Department (see below) in Rhode Island and North Carolina, and it is exploring additional options in the Great Lakes and Canada.

Its Delaware proposal is perhaps farthest along in the process. Bluewater began its planning in summer 2006, and it was awarded exclusive rights to negotiate a lease agreement with the Bureau of Ocean Energy Management, Regulation, and Enforcement, or BOEMRE, for the Delaware wind energy area that BOEMRE has identified in federal waters.

Bluewater's case prompted BOEMRE to develop and issue a final rule eliminating redundant reviews for projects with no competing bids, which is expected to shave 6 to 12 months off its federal permitting process. Bluewater also has a power purchase agreement in place with Delaware-based Delmarva Power requiring electricity generation to begin no later than 2016.

Bluewater's efforts were fueled by Delaware's legislatively mandated renewable portfolio standard requiring 10 percent of the state's energy to be generated from renewables by 2018 as well as a mandate for Delmarva to use energy generated from a Delaware-based project.

Despite these motivating factors, Bluewater announced last week that it was slowing its development schedule because of concerns about future federal funding.

Lake Erie Energy Development Corporation, Ohio

Lake Erie Energy Development Corporation, or LEEDCo, is a nonprofit enterprise seeking to build a pilot-scale wind farm near Cleveland in Lake Erie. The company shows that the Northeast and mid-Atlantic states don't have a monopoly on offshore wind development.

LEEDCo ramped up efforts to make offshore wind a Midwestern reality after a 2007 report found that offshore wind was viable in southern Lake Erie. They were buoyed by an Ohio state law mandating that the state get 12.5 percent of its energy from renewable sources.

The last official act of outgoing Gov. Ted Strickland was to grant the company exclusive development rights to a portion of the lakebed, which is controlled entirely by state interests. This is noteworthy because this exempts LEEDCo's project from the cumbersome federal permitting process. Construction is tentatively scheduled to begin in 2012.

DeepC Wind Consortium, Maine

All existing offshore wind facilities are in water less than 100 feet deep. Yet some European companies are developing floating offshore wind turbines designed to operate in deeper water, typically further from shore. Such siting means the turbines would not be visible from land, and the projects would also be able to take advantage of stronger, more consistent winds.

Maine is unique among Atlantic coast states because it has areas of deep water (greater than 300 feet) within its three-mile state jurisdictional boundaries. Researchers at the University of Maine in Orono, where there is a robust advanced composites laboratory, recognize that this geographic anomaly combined with their technical expertise makes Maine an ideal location to develop and test deepwater offshore wind technology.

The DeepC Wind Consortium seeks to develop, build, and deploy a 30 megawatt pilot-scale deepwater offshore wind farm within state waters. It is comprised of universities, nonprofit groups, and industry organizations. It is funded by grants from the Department of Energy, the National Science Foundation, and other groups.

The state has pitched in on this effort, identifying three offshore wind test areas that could serve as test sites for this new technology.

While this project is not as far along as some of those discussed above, it merits mention as America's first serious effort to expand into deepwater offshore wind generation, an area where the United States could still become a world leader.

Atlantic Wind Connection, Mid-Atlantic coast

The Atlantic Wind Connection, a conglomerate funded primarily by renewable energy financier Good Energies, internet powerhouse Google, and international investment firm the Marubeni Corporation, is a project designed to construct undersea transmission lines to connect up to 7,000 MW of offshore wind energy capacity to the mid-Atlantic's power grid.

Think of this project as a power strip on the ocean floor 15 to 25 miles offshore, running approximately 300 miles from New Jersey to Virginia, with connections to the mainland at several locations. Individual farms would then simply "plug in" to the strip rather than building their own cable to shore.

This project would eliminate some regulatory hurdles, bypassing some review by the Federal Energy Regulatory Commission, and state and local permits required to run the transmission cables from the beach to an onshore connection point. This would dramatically reduce the time needed to get a project to the construction phase and cut down on the initial overhead costs developers have to bear. What's more, locating this project 15 to 25 miles off the coast will avoid disturbing oceanfront views since the turbines will be beyond the horizon from the beach.

On May 20 the Federal Energy Regulatory Commission approved an above-market return on equity of 12.59 percent that will attract investors and help the project move forward. Still, the project has a ways to go before construction can begin, including securing a lease, conducting an environmental assessment, and attracting investors—though the participation of Google makes the latter hurdle a bit easier to clear.

Administration efforts to streamline permitting

One of Secretary of Interior Ken Salazar's primary goals when he took over the department in the early days of the Obama administration was to speed up permitting of offshore wind energy facilities in the United States. In April 2009, he suggested offshore wind farms could replace 3,000 coal plants, stipulating at the time that the energy potential off the Atlantic seaboard alone is greater than America's entire generation capacity.

"It is not technology that is pie-in-the-sky," said Secretary Salazar at the time, "it is here, and it is now." Of course, by "here" he clearly meant Europe.

The largest-scale effort to follow through on Secretary Salazar's goal was "Smart from the Start." The program, launched in November 2010, is designed to expedite development of wind farms off the Atlantic coast and largely mimics a program that proved successful in the United Kingdom.

It looks at data relevant to offshore wind farms, including average wind speed, water depth, wave height, seabed geology, and other factors to determine appropriate wind energy areas, or WEAs. In effect, these are delineated areas of the ocean where conditions are favorable to development that have been pre-approved for leasing. Such areas have been identified off the coasts of Massachusetts, New Jersey, Delaware, and Maryland. Now, a second round of planning is in the works.

The Bureau of Ocean Energy Management, Regulation, and Enforcement, or BOEMRE, began conducting environmental assessments after the program's launch. Barring any setbacks the Department of Interior is expected to offer leases in WEAs by the end of this year.

In so doing, however, the administration must walk a fine line between expediting, permitting, and ensuring all stakeholders' opinions are considered. The area first identified off the coast of Massachusetts, for example, was contested by fishermen who argued construction of wind farms in the proposed area would result in a de facto closure of some of the region's prime scallop grounds.

Turbines are generally spaced one-half to one-third of a mile apart, and the farm would not necessarily be closed to navigation. But fishermen would be unable to operate while dragging trawls or dredges within the farm's boundaries due to safety concerns. This is no small debate. Scallops comprise the nation's second-highest value fishery. The catch in 2009, for instance, was worth more than $375 million.

A few months after the initial announcement, BOEMRE agreed to reduce the size of the Massachusetts WEA by more than half, from 2,900 square miles to approximately 1,300, after hearing comments from fishermen, members of the Massachusetts congressional delegation, and the Commonwealth's Gov. Deval Patrick.

While some are quick to criticize BOEMRE for failing to engage stakeholders early on, the Massachusetts situation shows the agency has at least proven adaptable. In many ways this is precisely how such a system should work. Make a proposal, listen to feedback, and change the proposal as necessary.

But ultimately, this is an inefficient, even backwards way to act that has raised hackles among offshore wind proponents and detractors alike. The latter group complained that they had insufficient input before the boxes were drawn, while the former has cried foul because they feel there was inadequate review of the opponents' claims of hardship.

In fact, both sides have a legitimate argument, and the solution must be a careful review process that includes all stakeholders from the outset, and hopefully this first round of WEA identification will inform later rounds and defuse some of the inherent conflict among stakeholders.

In another signal of support for offshore wind development, BOEMRE also finalized a rule two weeks ago that will shave six months to a year off the permitting process when only one company submits a bid for a lease in a given wind energy area. Of course, it's common sense to exempt a bid from a competitive review process when it's not competing with anything. And such situations are unlikely to arise as offshore wind energy establishes a foothold in the United States. Still, the agency should be credited for recognizing and eliminating this redundancy.

Meanwhile, coordination among federal agencies has in some cases started to grow organically as BOEMRE has accelerated efforts to facilitate offshore wind development. The secretaries of energy and interior appeared together and issued joint statements on the identification of the WEAs in February 2011. And just last week the Department of Interior and the National Oceanic and Atmospheric Administration, or NOAA, announced the signing of a memorandum of understanding establishing a formal role for NOAA in the review process for offshore oil and gas facilities. It also includes provisions calling for more NOAA involvement in offshore renewables permitting.

Unfortunately the agencies have not always been so collaborative. Less than a month after Secretary Salazar convened his press conference in Boston last month to announce the issuance of the final permits that signaled a green light for construction of the Cape Wind project, the Department of Energy dealt the group a blow by announcing that it was placing on hold Cape Wind's application for a loan guarantee.

These two departments stood together just months earlier on high-profile announcements supporting offshore wind development. Yet their subsequent announcement of fundamentally contradictory decisions within weeks of one another speaks to the communication and coordination gap that still exists between the two agencies.

The fragmented piecemeal policies have led Cape Wind down a decade-long path. And the company is still unable to begin construction on America's first offshore wind farm while other countries in Europe and Asia install upward of 3,000 MW of offshore wind energy generation capacity.

The Obama administration, with policies like "Smart from the Start," has made significant strides toward clearing the hurdles that delay development of the abundant offshore wind energy potential lying just beyond our shores. But Congress, which effectively forced the Energy Department's hand by slashing funding for the loan guarantee program, must give the U.S. wind industry the opportunity to tap into this resource.

Cost and financing concerns

All of the previously mentioned projects are extremely expensive. But first-of-a-kind technologies built in challenging conditions will be costly. And their scale—roughly the same as a midsized power plant—will necessarily require large investments. Because of these factors, the price tag on Cape Wind, for example, will be in the range of $2 billion to $3 billion.

In the infrastructure realm, though, $2 billion to $3 billion is not an outlandish investment. After all, this is about one-third of the cost of expanding Washington, D.C.'s metro system to Dulles Airport. But electricity projects are different because they're paid for entirely out of electric rates, which affect every household.

Consumers used to paying 16 cents per kilowatt hour (the current average rate for residential consumers in New England) will naturally balk when their local utility starts buying power that costs more than 20 cents per kilowatt hour and passing all of these new costs along to them. This creates enormous challenges for offshore wind development, and it is a tremendous barrier to widespread public embrace of these projects.

This dynamic has been at play with other renewable energy technologies. Onshore wind farms, for example, were initially very expensive, but their costs have declined so much that they're now cost competitive with other generation resources.

The challenges offshore wind faces are not insurmountable. There are at least three points cheap power advocates overlook when they assume that offshore wind will increase electricity rates: government can share in investments to lower the costs of power; costs will improve as more projects get built; and wind power plays a unique role in electric systems that causes overall power prices to decline.

The government can play a role in offshore wind investments. Today offshore wind projects are eligible for the same federal tax incentives available to onshore wind, such as the production tax credit, which gives a tax credit of 2.2 cents per kilowatt hour to wind energy generators. These incentives substantially lower the cost of wind power to the consumer. On top of these direct investments, government can play a role in financing wind power projects by providing loans or loan guarantees that lower the cost of debt for developers. Offshore wind is a new technology, which makes traditional lenders hesitant to lend to project developers. By guaranteeing a project's debt the government lowers the costs of financing these projects, which can make a big difference in the affordability of the power. Government financing support may be critical for some offshore wind projects. NRG Bluewater Wind has announced that it may not move forward without a loan guarantee.

Costs will come down. Future offshore wind projects will cost less than current ones. But we can't skip ahead in time. We have to invest in learning how to lower the cost of power. For onshore wind the costs decline by between 9 and 17 percent every time the cumulative installed capacity doubles. To see how this lowers costs, let's assume that the same relationship for offshore wind is 10 percent and work through a simplified example. Say the first installed project is 400 megawatts and costs $2 billion. Just by incorporating lessons learned from that project—which would be substantial, since developers will learn so much from seeing something done for the first time—the next 400 megawatt project would cost $1.8 billion. Then, when the installed capacity doubled again (from 800 megawatts to 1,600 megawatts) the cost would decline to $1.62 billion. The costs will quickly come down as we build the first round of offshore projects.

Offshore wind power can put downward pressure on power prices. In competitive markets, generators always offer to sell electricity at the marginal cost of generating power, which is roughly fuel costs plus operating costs. Wind turbines have zero fuel

costs and minimal operating costs, so they bid all of their power at essentially zero.[6] Nuclear power tends to have the next lowest bids, followed by coal power, and natural gas (though today's low gas prices have put gas ahead of coal in some places). The key insight here is that when more wind is bid into the market it reduces the need for the most expensive power. In effect, a kilowatt hour of wind—which costs zero cents—replaces a kilowatt hour from natural gas—which may cost as much as 30 cents—depending on the type of plant. This is variously known as "price suppression" or the "merit-order effect," which can already be observed in power markets in Texas. This ultimately means that consumers will pay less for power.

Charles River Associates, an energy consulting firm, studied this effect for Cape Wind. They found that, "With Cape Wind in service, over the 2013-2037 time period, the price of power in the New England wholesale market would be $1.22/MWh lower on average." Sure, this translates to just one-tenth of a cent per kilowatt-hour—the unit most consumers are familiar with paying—which sounds like a pretty small amount. But the scale is tremendous. Charles River found that these tenths of a cent added up to $4.6 billion over the life of the project and over the entire New England region.

Transmission and grid connection issues

Of course, all the money in the world can't make offshore wind a reality if the power system isn't ready for it. This means we need to upgrade existing grid connections and build new transmission to handle new wind power.

The simplest way for a single offshore wind farm to connect to the electric grid is to build a line from the project directly to the shore. But this will quickly prove inefficient as more and more projects come online. Each of those connections costs many millions of dollars, and they don't necessarily connect to the most robust parts of the onshore grid.

That's why the most innovative project in this space is the Atlantic Wind Connection mentioned earlier. A better way to approach the interconnection challenge is to build one offshore transmission line that's properly planned in the context of the existing grid. Then, each project would easily tie in to the line, saving all of the money from building a line to the shore.

This approach will cost billions of dollars, but the benefits will outweigh the costs. Building the Atlantic Wind Connection transmission line will cost about $5 billion, roughly equivalent to the cost of building single connection lines for each individual offshore wind turbine. But significant associated benefits make the single transmission line far more desirable.

For instance, having the transmission line already in place makes it much easier for offshore wind developers to build projects because they won't have to independently plan for grid connections. And having a simplified transmission connection will encourage the development of local wind manufacturing, which will also reduce project costs and increase local economic development.

These benefits are real, and they add up quickly. A Brattle Group study notes that "streamlined permitting and increased scale that allows local manufacturing and sourcing will reduce total offshore costs by approximately 20 percent."

Finally, all new transmission, onshore or offshore, contributes to the robustness of the existing transmission grid, which lowers power prices for all consumers. The Atlantic Wind Connection project will reduce transmission congestion and increase power flows, which Brattle estimates will save consumers hundreds of millions of dollars over its lifetime.

There are significant planning and permitting challenges facing the Atlantic Wind Connection, however. FERC recently approved an "incentive rate" for the project, which provides a slightly higher rate of return for investors. This recognizes the risky nature of this first-of-its-kind project.

The next step for the developers is to get the project approved by PJM Interconnection, which manages the transmission grid in the mid-Atlantic region. PJM is independently managed under rules set by its members, who include power generators, utilities, and other market participants. PJM's existing rules work against an independently owned large-scale project like the Atlantic Wind Connection. But there are opportunities for stakeholders to encourage PJM to adopt the plan, such as indicating that they will build new wind projects offshore if the line is built. A commitment to use the project would make approval much more likely.

Harmonizing offshore wind with other ocean uses

Concerns about wind turbines' impacts on tourism, real estate values, and bird, fish, or marine mammal populations dominated the debate and fueled opposition in the early days of offshore wind. These apprehensions still exist, but the bulk of scientific data gathered from existing facilities suggests they may be less detrimental than initially feared.

The greatest lingering impact is how offshore wind will be integrated with other existing uses of ocean space, particularly fisheries. Fishermen are accustomed to relatively free rein over offshore areas with the ability to move from one area to the next as they follow the fish. Offshore wind farms in other countries have not banned boats from transiting through areas where farms are located. But fisherman are concerned that due to safety considerations offshore wind farms will become de facto "no-go" areas for fishing boats, particularly those pulling large trawl nets.

Fishermen's concerns have already affected attempts to issue permits for offshore wind farms. As discussed above, BOEMRE took more than half of its Massachusetts WEA off the table after fishermen, members of the state's congressional delegation, and the governor all petitioned the agency to keep turbines out of an area of prime scalloping grounds worth millions of dollars in annual harvest. A portion of the initial WEA also included heavily trafficked shipping lanes traversing the ocean south of the islands of Martha's Vineyard and Nantucket.

That BOEMRE failed to acknowledge these clear conflicts in drawing the initial boundaries suggests that a more comprehensive planning process is needed.

Minimizing these inherent conflicts—not just between offshore wind developers and fishermen, but among all users of ocean space—is the fundamental principle behind a new initiative being treated as a central provision of the National Ocean Policy announced by the Obama administration by executive order in July 2009.

A major part of this initiative was the release of an interim framework for coastal and marine spatial planning, also known as CMSP. CMSP's ultimate goal is to create a management environment that takes into account the needs of all industries and users of ocean space, and cuts through the bureaucratic red tape and miscommunications that currently exist among the more than 20 federal agencies and 35 coastal states that all have a role in managing ocean space or activities.

Some states, chiefly Massachusetts and Rhode Island, already implemented principles of CMSP to assist in managing the three-mile strip of ocean that falls within their states' jurisdictions. Massachusetts finalized a legislatively mandated Ocean Plan in 2009 that created a comprehensive blueprint for using the state's ocean and coastal resources.

Meanwhile, Rhode Island began working on the concept of CMSP as far back as 1983. The Rhode Island Coastal Resources Management Commission has developed a Special Area Management Plan encompassing its state waters as well as some contiguous federal ocean space. The commission's subsequent report and interactive mapping tool show the potential benefits of using a tool like CMSP to bring diverse data into a single, centrally accessible source to inform collaborative management decisions.

These two states have even taken the process a step further and used the data from their independent efforts to identify a potential wind energy development area in federal waters south of both states' southern coastlines.

Not all reactions to implementing CMSP have been positive. Opponents equate the process to "ocean zoning" that will inevitably result in the partitioning of the ocean into single-use boxes. While the process must not devolve into the ocean equivalent of a land-grab, new uses of ocean space, including offshore renewable energy projects, are emerging.

The ocean is a public trust resource. We are all ocean stakeholders, and as a nation, we must figure out how to effectively and efficiently slot them into what will rapidly become a crowded marine environment.

As mentioned above, fishermen are used to having the ocean to themselves. Any move to compromise their access will be met with resistance—particularly when they feel their interests are not adequately represented. BOEMRE's swift action to revise its initial Massachusetts WEA speaks well of CMSP's long-term potential, but for the concept to gain political traction such considerations must be taken into account before the lines are drawn on the map, not after.

Recommendations for accelerating offshore wind development

Increase government investment in offshore wind

The federal government can help make offshore wind projects financially successful through investment.

All offshore wind projects are eligible for the production tax credit. This credit is set to expire in 2012, and it needs a long-term extension to provide the stability that this market needs.

Congress should also extend the Section 1603 Treasury cash grant program, which allows developers to take a cash grant instead of a tax credit. This option is very similar to the tax credit, but it increases economic efficiency and allows for greater accountability and oversight. The advantages of a cash grant over a tax credit are discussed in depth in the CAP report, "America's Hidden Power Bill."

In addition to these direct incentives, the government can create a long-term financing tool to address the many financing challenges these innovative projects face. Congress should pass a bill creating a Clean Energy Deployment Administration that would provide loans and loan guarantees for breakthrough clean energy technologies.

In the short term, Congress should also make sure that there is enough money in the Department of Energy Loan Guarantee Program to provide financing for projects that are ready to move soon, such as Cape Wind and NRG Bluewater.

Shape transmission rules to allow for a robust offshore grid

The Federal Energy Regulatory Commission, or FERC, recognizes the value of offshore wind, and it has allowed special "incentive rates" for transmission lines that encourage offshore development. These rates allow the project developers to charge more for the use of their transmission line. FERC should continue this practice.

FERC is also expected to issue new rules on planning, siting, and cost allocation that would allow for the costs of new transmission lines to be widely shared among all who benefit. These rules have been opposed by existing transmission owners who do not want new competition. Congress should protect these rules by passing legislation that would codify the proposed FERC methodologies.

Congress should also pass language about transmission siting and planning that was included in the original version of the American Clean Energy Leadership Act of 2009. The language gives FERC a role in siting controversial transmission projects, serving as a "backstop" when the traditional siting authorities are unable to reach decisions.

Ensure "Smart from the Start" is smart through the finish

Joint announcements like the roll-out of the "Smart from the Start" program made by Secretaries Salazar and Chu back in February are a good first step. But the program needs to be smart from start to finish.

No one wins when the Interior Department trumpets the finalization of permits for America's first wind farm only to have the Energy Department place a hold on the project's loan guarantee. Such a process merely evokes visions of Lucy yanking away Charlie Brown's football. Losers include the offshore wind industry, the thousands of American jobs it could potentially create, and the carbon-reducing potential of a move toward cleaner, more renewable energy sources.

The on-again, off-again nature of offshore wind permitting and development decisions leads to a lack of confidence among potential investors and dramatically affects developers' willingness to pursue a logical, proven source of domestic energy.

Federal agencies must to a better job of coordinating their efforts to ensure a robust environment for technological and economic development in the offshore renewable energy sector that can allow America to take advantage of commercially scalable clean energy development opportunities that lie just off our shores. BOEMRE, NOAA, the Department of Energy, and all other agencies with a role in ocean management must work together at every turn to get this nascent industry up and running here in the United States.

Engage stakeholders early in the process of identifying WEAs

Any initiative to introduce a new industry into our increasingly crowded ocean space will require tolerance and acceptance from stakeholders who may feel their current activities will be impinged upon by the interloper. In the case of offshore wind these

groups include fishermen, coastal landowners, recreational boaters, shipping companies, pilots concerned about radar interference, and conservationists fearing impacts on birds, fish, and marine mammals and amphibians.

Failing to acknowledge the concerns of these groups—including the political and legal realities that elected officials and the courts can and will impose potentially significant delays in the process—will only lead to a longer, drawn-out, contentious battle.

These fights can be minimized, if not eliminated altogether, by a comprehensive effort to inform stakeholders and actively solicit their opinions, and by demonstrating a willingness to adapt accordingly.

Conclusion

Securing cheap, clean, domestic, energy sources is a universal goal. And yet, as a country, we continue to drop one roadblock after another in front of one of the world's most proven renewable energy technologies.

More than 40,000 megawatts of offshore wind energy capacity have been permitted around the globe, yet the United States accounts for barely 1 percent of that, and we have yet to generate our first watt of electricity from this abundant, carbon-free source of power.

The longer we wait to begin developing this technology and creating the infrastructure and knowledge base that go along with it, the further we will fall behind the rest of the world, and the harder it will be to bring the economic development and environmental benefits to our own shores.

As Secretary Salazar said, the technology is now. It's past time for America to go beyond wishing it was already here.

Endnotes

1 All data courtesy of European Wind Energy Association, available at http://www.ewea.org/index.php?id=203.

2 "China to Boost Offshore Wind Power Generation," ChinaDaily.com, May 16, 2011, available at http://www.chinadaily.com.cn/china/2011-05/16/content_12520766.htm.

3 Ibid.

4 Categorized by Azure International as "in the pipeline."

5 Cape Wind and Fishermen's Energy projects.

6 Technically, wind power is often bid in below zero, because the operators can capture tax benefits by running the turbine. If the tax benefit is worth, say, 2 cents per kwh, it makes sense to pay the system 1.9 cents per kwh to take the power, and then earn a profit of 0.1 cents.