

**Testimony of Reid Detchon
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**“The Future of the Grid: Proposals for Reforming National Transmission Policy”
Subcommittee on Energy and the Environment
Committee on Energy and Commerce
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Mr. Chairman, thank you for inviting me to testify today on this important and timely subject. I am the Executive Director of the Energy Future Coalition, a non-partisan public policy group, supported by foundations, that works to bring together business, labor, and environmental groups around common energy policy objectives.

The Energy Future Coalition was formed seven years ago, in the wake of the 9/11 attack, because of concerns that U.S. energy policy was not adequately addressing issues of national security and climate change. The condition of the nation’s electric power grid was an immediate topic of concern and the focus of one of our initial working groups. Since that time, we have advocated for advanced transmission and smart grid technologies, and have applauded action by this Committee and Congress as a whole on these issues in the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, and the American Recovery and Reinvestment Act of 2009.

A year ago, it became apparent that, thanks in part to the advocacy of T. Boone Pickens, a new groundswell of support was emerging for modernizing the nation’s transmission grid and expanding it to serve stranded large-scale renewable energy resources. Without such steps, it would be challenging to meet a meaningful and robust national renewable energy standard, such as the 25x’25 target that we have long supported.

Accordingly, the Energy Future Coalition, in partnership with the Center for American Progress and later the Energy Foundation, began a series of listening sessions with a diverse group of stakeholders, including federal agencies, grid operators, transmission companies, utilities, and environmental organizations, to determine where the areas of agreement and disagreement were. We found broad support for changes in Federal law to facilitate the development of transmission projects to bring stranded renewable energy resources to market – such as wind in the Great Plains, solar in the desert Southwest, and offshore wind in the East.

Out of this stakeholder dialogue, we crafted a vision statement for the National Clean Energy Smart Grid, which I will describe in some detail. We concluded that dramatic transformation of the nation’s electricity system will be needed to achieve the nation’s renewable energy, energy efficiency and climate change goals, and that rethinking the way electricity transmission is planned, sited, and supported will be critical to this process.

Our vision statement, attached in full, has been endorsed by some 55 organizations, a list of which is also attached. These include the AFL-CIO, the Council on Competitiveness, and the Digital Energy Solutions Campaign, along with renewable energy advocates, including the American Wind Energy Association, the Solar Energy Industries Association, and the Geothermal Energy Association, and environmental groups, including the National Wildlife Federation, Natural Resources Defense Council, Sierra Club, National Audubon Society, the Wilderness Society, and the Union of Concerned Scientists.

What brought these environmental groups to the table and ultimately to agreement was the imperative of action to address with urgency the growing global climate crisis. Time is running out for the world to avoid serious harm from climate change. Scientific reports show that the levels of carbon dioxide in the atmosphere are rising faster than anticipated and that the effects are already far-reaching – on temperature patterns, extreme weather events, glacial melting, and acidification of the oceans. Further delay in responding to these warnings increases the risk of a catastrophic and irreversible shift in the global climate system. In this race against time, we must rethink old ways of doing business – even when they have served us well in the past.

Mr. Chairman, you understand this challenge very well, and we owe a great debt of gratitude to you and Chairman Waxman for the leadership and acumen you have shown in advancing H.R. 2454, the American Clean Energy and Security Act of 2009. You have set the appropriate long-term target for greenhouse gas emissions reductions – more than 80% by 2050.

The changes in our energy system needed to reach this goal are profound. We need to begin planning today to reach those reductions by 2050, and one thing is clear: We cannot deliver that much low-carbon energy without changes to the grid. Low-carbon electricity will be expected to power not only our homes and businesses, but also an increasing portion of our vehicle fleet.

The system we have today for planning, permitting, and financing transmission lines was not designed to respond quickly to a challenge of this magnitude – moving many thousands of megawatts of renewable energy from remote areas to load centers. Our discussions with those who must deliver on that promise – renewable energy developers and transmission companies – identified inadequate transmission infrastructure as a key obstacle to project development and focused on three principal obstacles to rapidly deploying new transmission capacity for renewable energy: planning, siting, and cost allocation. Of these, planning turned out to be the linchpin, as our group concluded that better planning could reduce the difficulty of siting new lines and provide the basis for an equitable allocation of costs.

It is not obvious today what specific changes will be needed to support the coming transformation of the U.S. electricity system. What is obvious is that we need a planning system that identifies what is needed in the national interest, and a regulatory structure that allows those projects to get built in a timely way – whether that means long-distance

cross-country lines, offshore collector systems, or a combination of local renewables, demand reduction, and transmission.

Our group recommended enlarging the scale of the planning process to the two principal power grids in the United States – the Western Interconnection, which comprises the states of Washington, Oregon, California, Idaho, Nevada, Utah, Arizona, Colorado, Wyoming, and portions of Montana, South Dakota, New Mexico and Texas; and the Eastern Interconnection, which includes the remaining states in the Lower 48, excluding Texas. The reasons were straightforward:

- Long-distance transmission to support development of some major renewable energy resources will cross state and regional boundaries.
- Planning for transmission to support the renewable energy requirements contained in state and national legislation must occur on a broad regional basis, and the benefits of such investments will be shared on a broad regional basis.

This interconnection-wide planning process should build upon, not replace, the current engagement of stakeholders (including States, grid operators (ISOs/RTOs), utilities, consumer and environmental interests, and landowner groups) and be supported by federal agencies, with adequate funding support to do the necessary analysis.

A sound approach to transmission planning is not, by itself, sufficient. Without authority to address cost allocation and siting for projects that are determined to be needed in the transmission planning process, planning is only a paper exercise. Under our approach, the cost of new transmission for renewables would be broadly shared by ratepayers – just as the economic, environmental, and security benefits of renewable energy are widely shared. This mechanism would also lower the cost of capital to developers and thus the cost to consumers.

Under our approach, transmission projects identified in the plan would be subject to a single consolidated certification process administered by the Federal Energy Regulatory Commission. However, we would give a special role to States in proposing siting- and mitigation-related conditions to be imposed on such certificates.

The process should reflect clear policy goals (such as carbon reduction targets, renewable electricity and energy efficiency standards, environmental protection, and economic development), provide clear guidance on how to plan, pay for, and site facilities, and provide the financial, administrative and technical support needed to achieve those goals quickly.

Some observers have expressed concern that local renewable resources would be displaced by distant renewable resources made artificially cheaper by new transmission. This argument is easily addressed:

1. To meet the renewable energy and emissions reductions goals of H.R. 2454, we will need all the renewable energy we can get, at least cost. This is not an either-or choice.
2. Some of the stranded renewable resources may be local – for example, offshore wind in the East. They, too, will need transmission.
3. Transmission planning should take into account both Federal and state renewable energy requirements (including any state policies concerning use of local renewable energy resources) and should use delivered prices as the basis for planning decisions.

What are some of the benefits of a modernized grid?

- According to the Department of Energy, obtaining 20% of U.S. electricity from wind in 2030 would reduce electric sector CO₂ emissions by 25% – the equivalent of taking 140 million cars off the road – while creating 500,000 jobs and \$450 billion in economic impact.
- Almost 300,000 MW of proposed wind projects, more than enough to meet 20% of our electricity needs, are waiting to connect to the grid because there is inadequate transmission capacity to carry the electricity they would produce. California alone has over 18,000 MW of wind plants and almost 30,000 MW of solar plants waiting to connect to the grid.
- The Electric Power Research Institute estimates that making the grid smarter with modern control technology could reduce electricity consumption by 5-10%, carbon dioxide emissions by 13-25%, and the cost of power-related disturbances to business (estimated to be more than \$100 billion per year) by 87%.

These investments in transmission are not only essential to respond to climate change, they are also good investments in renewing America's economic growth and reducing the cost of the energy we need:

- Transmission planners in the Eastern Interconnection asked what it would take to get 20% of their power from wind, and found that an \$80 billion investment in new high-voltage transmission lines would reduce electricity costs by \$41 billion per year by 2024 – an annualized benefit-to-cost ratio of more than three to one.
- An analysis of the benefits and costs of building transmission in Texas by the grid operator, ERCOT, found that an investment of \$4.9 billion in transmission for wind power would save \$1.7 billion per year in fuel costs, repaying the initial investment in 2.9 years.
- The U.S. transmission grid requires significant investment to replace aging infrastructure and to address capacity issues under any scenario. The choice is not whether to invest or not invest in transmission, but whether we should invest

purposefully with a clear national strategy or maintain a piecemeal system that lacks vision.

- Even a substantial transmission expansion requires a relatively modest investment compared to the scale of the power system, the scale of annual sales, and most importantly the economic, reliability, and environmental benefits that it would deliver.

Our discussions with stakeholders concluded that a national Clean Energy Smart Grid is an economic, environmental, and national security imperative – vital to renewing America’s economic growth, strengthening national security, and addressing the threat of global climate change. Investments are needed in both transmission and in smart grid technologies to make the system more reliable, resilient, and secure, to accommodate renewable power and enable more energy efficiency by individuals and businesses.

The 55 stakeholders endorsing the common vision for a Clean Energy Smart Grid agreed on the following principal policy needs:

1. Interconnection-wide planning for transmission upgrades needed to efficiently and reliably move renewable power from remote areas to population centers, using a participatory and analytically robust process designed to engage all interested parties early and avoid later conflicts, minimize environmental impacts, and overcome the geographic and procedural limitations of current planning approaches.
2. A simple mechanism to pay for transmission investments and smart grid transmission upgrades identified as needed in the interconnection-wide plans, which would minimize individual economic impacts by allocating costs broadly among ratepayers.
3. Consolidated certification authority to expedite transmission projects identified as needed in the interconnection-wide plans to serve urgently needed renewable energy resources, with a special role for States in developing local impact mitigation requirements.
4. New policies to make electric grid security a priority, and to coordinate and pay for investments that will rapidly reduce the grid’s vulnerability to cyber and physical attacks and natural disasters.
5. Strong financial incentives for rapid deployment of smart grid distribution and metering technologies.
6. Education and training to create the workforce we will need to build, manage and maintain the National Clean Energy Smart Grid.

Recognizing the complex nature of the electric grid, its importance to the future of our economy, and its impact on our environment, these new policies and authorities should be developed and implemented in accordance with several key principles:

- Interconnection-wide grid planning should not duplicate or supplant already ongoing planning efforts at the utility and regional level, but rather should build on them.
- The interconnection-wide planning process should take into account: opportunities for improved end-use energy efficiency, customer demand response, clean distributed generation, and energy storage; opportunities to improve the efficiency of the grid; and opportunities to diversify and transform the Nation's power supply resources.
- New transmission plans should dramatically enhance our capacity to meet steep greenhouse gas emission reduction goals by targeting new clean renewable energy resources, and policy should seek to ensure that new transmission lines emerging from this process would not support development of new high-emitting generation.

Similar conclusions were also reflected in a white paper entitled "Wired for Progress," prepared by Bracken Hendricks for our partner organization in this project, the Center for American Progress, and available on the Internet at:

http://www.americanprogress.org/issues/2009/04/wired_for_progress2.0.html.

We have been gratified to see many of these recommendations reflected in H.R. 2211, introduced by Congressman Inslee – notably, a system of interconnection-wide transmission planning under strict timetables, supported by broad-based cost allocation and underpinned by consolidated federal siting authority. The bill gives preference to renewable energy by limiting access to new transmission lines built with these special authorities to energy generators whose greenhouse gas emissions are no greater than that of a single-cycle natural gas-fired combustion turbine – on the basis that gas-fired generation will be needed on the lines to address the variability of intermittent renewable resources.

Legislation should also address the security of the grid, especially against cybersecurity threats, the importance of which was recognized in Title XIII of EISA. It is vitally important that the electricity grid be capable of real-time management and instant correction, in order to minimize the risk of disruption and the time for recovery, if a terrorist attack on the system does occur. This will require the ability to monitor the status of the grid on a real-time basis, to instantly recognize and diagnose any unusual events on the system, and to respond intelligently with adaptive changes in power flows, generating unit operations, and load management.

The Defense Science Board's 2008 report on energy, "More Fight – Less Fuel," found that "critical national security and homeland defense missions are at an unacceptably high

risk of extended outage from failure of the grid.” The report warns: “Informed and capable saboteurs can inflict damage that would take down significant portions of the grid and other critical infrastructure for long periods and make restoration, even work-around measures, difficult, costly, time consuming and marginally effective. ... Armed with the right knowledge, a small number of people could shut down electricity over significant areas for an extended period of time, including power to critical DoD missions. The grid is not designed to withstand a coordinated multi-pronged or wide-area attack.”

This situation represents an unacceptable threat to our national security. Addressing it by modernizing the grid with smarter technology to serve a digital economy would pay immediate dividends. In the last Congress, the House Energy and Commerce Committee prepared draft legislation to address the cybersecurity threat in particular; that is a good place to start.

Mr. Chairman, you and your colleagues have taken an enormous step forward by reporting H.R. 2454, legislation that will begin the process of transforming our nation’s energy system to deal with the threat of global climate change and support a substantial expansion of renewable energy use. Expanding and modernizing our transmission grid is essential to that transformation. By addressing transmission directly and comprehensively, you can help ensure that our common goal of a clean energy future becomes a reality and is not left stranded by regulatory impediments. Our economy, environment, and national security deserve no less.

Thank you very much.