

**United States Senate**  
**Before the Committee on Energy and Natural Resources**

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*Oversight Hearing On The State of The Nation's Transmission Grid*  
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Senator Bingaman and Honorable Members of the Committee, my name is Jim Hoecker.

Thank you for the opportunity to testify this morning on the current status and future of the electric transmission system. I am especially honored to have the opportunity to return before this Committee for the first time since my service on the Federal Energy Regulatory Commission (“FERC”).

Today I appear before you as Counsel to WIRES, the Working group on Investment in Reliable and Economic electric Systems. WIRES is a new national coalition of both publicly-owned, investor-owned, and cooperatively-owned transmission providers, customers, and services companies. To my knowledge, WIRES is the only private sector group exclusively dedicated to promoting investment in the electric transmission system and educating policymakers and the public on the benefits derived from the grid.

WIRES was formed in part to remove electric transmission investment from the shadow cast by competitive markets and competitive generation over energy policy conversations and to emphasize that, even though transmission providers have been skilled in finding ways to serve larger and more distant loads utilizing their existing assets, the need for more transmission is real. When the transmission systems became more fully integrated a half century ago, we had no plasma TV’s or energy-hungry computers; no one seriously conceived of the possibility that automobiles would be plugged into the electric system; large-scale regional bulk power markets were only a blip on the horizon; few people were concerned about the consequences of

greenhouse gases in the atmosphere; and extensive deployment of “location-constrained” wind, solar, biomass, or geothermal technologies for electric generation – not to mention low-carbon forms of coal generation – was a fantasy.

Transmission providers now find themselves playing catch-up. We do so while facing growing challenges: a level of competitive commerce that tests the limits of the grid’s capabilities; persistent transmission constraints in many areas; a projected one-third increase in electricity demand by 2030, on top of a 34% increase in demand between 1992 and 2007; and the practical challenge of linking major renewable and low-carbon resources to consumers many hundreds of miles away. Transmission expansion has naturally become a priority for the renewable energy industry and for states with renewable portfolio standards. In addition, technologists have discovered transmission’s critical importance. For instance, Andrew Grove, former CEO of Intel Corporation, recently observed that “[m]ost everything runs on electricity. A big exception is the transportation sector. . . .If we don’t convert a large portion of the transportation sector to electricity, we cannot make real progress toward energy resilience.” Such a transformative switch to plug-in vehicles would compound the challenge of satisfying the consumers’ escalating demand for electricity and necessitate a stronger transmission system to deliver power on demand. By expanding the high voltage “backbone” network and ensuring that it becomes a “smart grid,” we can empower consumers to control their own carbon footprint, enable companies to make optimal use of existing assets, and help drive energy efficiency and demand response.

Mr. Chairman, we need a strong electric transmission grid to be on the Nation's list of top priorities for investment in infrastructure. I do not know whether commentators like David Brooks are right in anticipating that this will be an era of "epic legislation," but I agree with him that energy and infrastructure must be two of our top national priorities. The future of the grid is an important part of that policy discussion. America's competitiveness and the success of public and private efforts to promote clean energy resources and curb greenhouse gas emissions will depend in part on upgrading and expanding the transmission grid. While the Energy Policy Act of 2005 provided a necessary push in the right direction in the form of financial incentives, infrastructure corridor designations, and regulatory coordination, Congress, federal and state regulators, and other policymakers must maintain this new focus on the state of the Nation's grid, which is after all among the most complex machines ever built and one on which the Nation depends every day.

My testimony this morning describes WIRES' most recent work on transmission. Most notably, WIRES commissioned a "White Paper" from an independent Blue Ribbon Panel to ascertain what disinterested experts would find is the best way to determine who should pay for expansions of the grid in most circumstances. That paper is attached to my testimony. WIRES also participated in the Department of Energy ("DOE") proceedings that resulted in the first National Interest Electric Transmission Corridors ("NIETC"). I discuss our views in support of that initiative and our doubts about its long-term success. Finally, WIRES conducted a brief examination of the factors which are escalating the cost of developing new transmission facilities. It conveys the urgency of moving forward in developing the grid. It too is attached.

I also wish to mention another WIRES report that will be forthcoming in about six weeks. It will identify the “best practices” for integrating location-constrained clean energy sources, especially wind power, into the grid. WIRES is currently examining how several states have gone about integrating wind and other location-constrained resources into the existing grid. The states of Texas, California, Colorado, Minnesota and others have developed and implemented renewable energy “zones” and operational and regulatory protocols for moving those resources to market. WIRES believes we will all learn from having this information and these experiences distilled in one place. We will ensure that you receive copies.

### **Who Pays For Regional Transmission Projects?**

Transmission today operates in a new and challenging environment. The highly balkanized wholesale power markets of the past, which consisted of local monopolists that built facilities largely to serve customers within their service territories, has given way to broad regional markets that cross service territories and state boundaries. Where transmission investment was once only a candidate for monopoly rate base, today such costs can be allocated to users of regionally-interconnected systems who can be very diverse. In both bilateral utility and organized (i.e., markets run by regional transmission organizations (“RTOs”)) markets, the disputes over cost allocation and cost recovery, and the procedural delays occasioned by these disputes, are legendary.

There are numerous ways to allocate costs. At one end of a spectrum of approaches is so-called participant funding which seeks to allocate costs of a transmission upgrade or expansion

to immediate “cost causers” such as interconnecting generators even if facilities may have regional reliability or economic benefits. At the other end of the spectrum is the “socialization” of costs, meaning a broad allocation of all project costs to the perceived beneficiaries of the project across the market or region served. Different perceptions of the equities and the reliability or economic benefits of a grid expansion have often chilled transmission investment. The debate over cost allocation remains largely unresolved.

WIRES’ Blue Ribbon Panel of five experts from academe, utility operations, and the economic consulting world produced a short but powerful analysis in October 2007. This “White Paper” is remarkable for its clarity and flexibility. It is attached to this testimony but let me summarize its main points.

Rather than choose the best practice from among competing cost allocation approaches, the Blue Ribbon Panel ultimately decided to articulate fixed principles for determining the benefits of new transmission investments and for allocating the costs efficiently and equitably among those who benefit from a transmission enhancement. Such principles could be applied in all markets and in a variety of circumstances. The Panel’s White Paper relies on regional transmission planning as the key and, if that process can be advanced either by states acting together or at the federal level, policy makers and grid operators should quickly find that regional transmission can be responsibly developed, states the Panel. The paper concludes that methods of allocating costs based on regional consensus or private settlement agreements, while expedient, may not support a sustainable and viable environment for attraction of capital

into transmission projects. The White Paper also finds that the debates over cost allocations often simply serve as proxies for disagreements over other issues such as siting.

At bottom, the Panel's paper concludes that a sound cost-recovery policy must have one critically important foundation or pre-condition: clear, consistent and principled regulatory policy and oversight. Good cost allocation, it asserts, should be based on: (1) establishing a credible process for deciding which transmission investment should proceed, with the process based on inclusiveness and transparency; (2) assuring that regulation provides an adequate definition of the geographic footprint(s) of physical, regional electricity market(s) to be served in the transmission planning and expansion policy; (3) establishing a credible and principled "transaction chain", linking those that ultimately benefit from open-access transmission – *e.g.*, customer loads – with the responsibility to pay for transmission investment; (4) using "rules of thumb" related to the size of the transmission asset(s) being proposed as the basis for presumptions about who should pay; and (5) clarifying the regulatory jurisdiction for recovery of transmission investment costs to ensure appropriate price signals and consistency with national policy for non-discriminatory access to transmission.

The Panel thereby arrived at ten principles to guide the allocation of costs of new network transmission investment in all areas of the United States. Although admittedly favoring the broadest equitable allocation of costs among the regional beneficiaries of a project, the paper does not recommend a one-size-fits-all method of cost allocation.

Principle 1. All viable methods of allocating the costs of new network transmission require a study of who benefits from, and who should pay for, an upgrade or expansion of the grid, unless regulators establish as policy that certain types of facilities presumptively benefit the entire market or region. In either case, sound planning processes are critical to that determination.

Principle 2. Network transmission investments should be analyzed using a single standard (or unit of measure) that combines reliability and economic values without distinction, as the basis for cost allocation..

Principle 3. The appropriate standard of measurement of the benefits of transmission is aggregate societal benefits within the geographic region being examined.

Principle 4. Sound transmission planning (to analyze benefits and costs and the distribution of benefits for the purpose of allocating costs) should incorporate a number of features:

Principle 4A. Transmission planning and analysis should be done on a regional level – tending toward larger regions as a general rule. While the overall planning process must encompass a large region, the planning studies cannot lose sight of the impacts on sub-regions.

Principle 4B. Transmission planning and analysis should include all of the demand loads (existing and anticipated) and all of the supply resources (existing and anticipated) located within the geographic region for which planning is taking place.



Principle 4C. Transmission planning should occur in a process that is open, transparent, and inclusive, and conducted by a credible entity without particular attachment to specific interests or market outcomes in the region.

Principle 5. Transmission investments involving “baskets” of projects that satisfy these standards and which emerge as a net societal benefit (to either the region or sub-regions) through the results of robust transmission planning processes should presumptively be candidates for broad, or socialized, cost recovery across the region benefiting from the project(s).

Principle 6. As a rebuttable presumption in transmission planning exercises, the larger the size of a new facility, the greater its potential to serve the broadest segment of interstate commerce and therefore the larger the region that should support it.

Principle 7. The costs of new investment should be allocated to customers in the benefiting region.

Principle 8. New transmission investment should be supported in federal or other wholesale rates, as appropriate, and not be included in retail rate base subject to regulation by the various states. To the extent that existing transmission assets can be removed from retail rate base and transferred to federal or wholesale rates in an orderly and coherent manner it would be useful to do so.

Principle 9. On a going-forward basis only, cost allocations for new transmission should be subject to periodic review to determine whether beneficiaries from the investment have changed in any major ways that distort cost responsibility. Established transmission cost allocations should otherwise be rebuttably presumed just and reasonable.

Principle 10. Free entry of transmission investment should be permitted, to the extent that the proponents are willing to pay for such investment and that such investment does not adversely impact the network in ways that are not addressed by the proponents.

In sum, the White Paper sets forth the best way to decide who pays for transmission at all levels and in all markets and regions. It is necessary to identify beneficial transmission enhancements through thorough and open planning, to provide credible (if not precise) determinations of whom benefits from an investment, and to adhere to these principles for allocating costs when serving distinctly regional needs -- irrespective of conflicting stakeholder interests or the political environment surrounding a specific project. If followed, the Panel's principles could significantly reduce litigation and other process impediments to new transmission.

Policy makers agree. During the July 17, 2008 FERC open meeting, Commissioner Phillip Moeller recognized that such principles could be instrumental in timely planning of the grid in the Pacific Northwest and elsewhere. “[C]ontroversial aspects of the [open access transmission] planning process, such as cost allocation, may delay the process since there is a

misperception of winners and losers. While some think of cost allocation as a zero-sum game, I do not. Benefits greatly exceed the costs for the majority of participants in nearly all cases. The Blue Ribbon Panel Report . . . contained some excellent cost allocation principles and I remain interested in any feedback.”

### **Facilities Siting and National Interest Electric Transmission Corridors.**

Facilities siting is an intractable problem that often leaves all parties dissatisfied and the long-term interests of electricity consumers ignored. Congress sought a balanced approach to siting transmission facilities when it adopted Section 216 of the Federal Power Act in 2005. That provision allows FERC to site transmission as a “back-stop” to state procedures, and grant any necessary federal rights of eminent domain, ONLY (1) if the facilities are located within broadly-defined corridors designated by DOE as experiencing significant market inefficiency, high prices, and threats to reliability that should be resolved through enhancement of the transmission system; (2) after states have had the opportunity to consider a project under their traditional authority to site facilities (or lack of such authority) and have failed to act in a timely manner; and (3) pursuant to its own subsequent review, including environmental analysis under the National Environmental Policy Act and applicable laws, to ascertain what the public interest requires.

The DOE carried out its responsibilities by designating two National Interest Electric Transmission Corridors (“NIETC”) – one in the Mid-Atlantic Area (Docket No. 2007-OE-01), and another in the Southwest Area (Docket No. 2007-OE-02). WIRES supports DOE’s action. The NIETC process and these designations must be viewed in perspective. These designations

provide a context within which states can engage with citizens and local or regional utilities in planning to meet our infrastructure needs. They do not site facilities. They are not determinative of the outcome of transmission siting or planning processes. They do not, and will not, take property. The process does not preempt or undermine protection of environmentally or culturally sensitive areas or assets. A designation does not pick winners and losers or specify a required route for any line. Any suggestion that designations should be made more specific would place DOE in the role of a “super” transmission planner, a role DOE is not prepared to fulfill by virtue of its expertise, resources, or legal authority.

Regional planning of electric transmission is once again key to achieving sound decisions on the merits of individual lines. If that process can be advanced either by states acting together or at the federal level pursuant to FERC’s Order No. 890, policy makers and grid operators will quickly find that regional transmission can be responsibly developed to achieve access to reasonably priced electric generation and to unlock the potential of the substantial new renewable and other resources that are located far from electricity customers.

WIRES believes that the NIETC process as it now exists is not an adequate or complete answer to what ails transmission investment. While it is a valid attempt to address the obvious mismatch between the interstate operation of the grid at the high voltages and the exclusive authority of states to determine if such lines are to be constructed, the lead-time for planning and constructing transmission – which is already substantial -- promises to remain so. For example, FERC recently received a first request for pre-filing consultation under its new back-stop siting rules after the states of Arizona and California reached an impasse, not about where facilities should be built or even about which state’s ratepayers should bear the costs, but about the very desirability of exporting electricity in interstate commerce. FERC’s careful process

will add approximately two years or more to the already considerable time this case has taken at the state level. When and if FERC acts on a completed application, the matter will no doubt be appealed. Next month is the third anniversary of EPAct and the second anniversary of DOE's congestion study mandated by the Act. Any constructive impacts from the NIETC process are still relatively distant.

The NIETC process may also fail to achieve its goals for two additional but related reasons. First, transmitting large amounts of remotely located renewable generation to load will unquestionably entail entirely new high-voltage network additions that will cross multiple jurisdictions in many circumstances. The need to take advantage of these domestic, "location-constrained" renewable and clean-coal resources will be central to any climate change and energy independence goals. Development of these generating facilities await some indication that transmission capacity will be available to them. Yet, DOE's focus in implementing NIETCs is transmission constraints and congestion that already exist. Thus, for good reason, the Western Governors have stepped up their efforts to identify renewable energy zones and use such determinations as the basis for planning transmission. However, these procedures represent potentially longer and more circuitous paths to developing a thoughtful regional transmission plan than FERC has already prescribed under Order No. 890. Second, upgrades or expansions to the grid may also be necessary to ensure electric reliability for our digital society, promote energy security, or meet economic development and demographic trends. Section 1221 of EPAct permits DOE to take these forward-looking factors into account when designating corridors but it has largely chosen not to do so. I am unsure whether this reflects a reading of the law or a practical decision about the difficulties of formulating future plans for integrating alternative energy resources.

In the final analysis, delay in selecting and building the right transmission in the right place to serve the right generation resources cannot be good for consumers.

### **The Challenge of Escalating Costs**

Transmission is generally the smallest component of the typical retail electric bill. Embedded transmission services may cost as little as a few mills in a 7-cent/kwh rate. This relative relationship is due to several factors, not the least of which is the high cost of most fuels and generation facilities and the large investment that integrated utilities routinely make in distribution facilities. Moreover, transmission infrastructure is aging and is often fully depreciated. The prospect of major new investments in the grid may not change this proportional relationship but it nevertheless represents a major, and in our minds necessary, future outlay of capital that must be recoverable.

U.S. companies will have spent about \$30 billion on transmission in the period 2006-2009, at a rate roughly double the annual expenditures at the beginning of the century. However, only 668 miles of high voltage transmission has been built across state lines since 2000. Economists project that we will need to spend well over \$200 billion on new transmission by 2030. That compares to as much as \$1 trillion that we will need to spend on distribution and new electrical generation in that time frame, however.

The industry recognizes the potential impact on consumers of such expenditures. Those consumer impacts could be exacerbated by increases in the cost of materials and human

resources. It is reasonable to expect that, as the Nation turns to the task of fixing many aspects of its basic infrastructure (water, roads, bridges, railways) over the next few years, the competition for materials, equipment, skilled labor, and capital to strengthen the grid will also strengthen. Investments in utility infrastructure internationally will place substantial additional pressure on the cost of these resources as well. WIRES therefore cannot emphasize strongly enough the need to plan grid expansions thoroughly and intelligently and to be as economically efficient as possible during the build-out. WIRES advocates taking maximum advantage of energy efficiency, demand response, and conservation to rationalize investments in the electrical system as a whole. Nonetheless, there is no substitute for having a reliable integrated high voltage system.

I have also attached the WIRES study illustrating the nature of the cost pressures currently on the transmission sector.

Thank you once again for your attention to this critical national priority.