

The Energy Policy Institute

**TRANSMISSION SITING AND PUBLIC LANDS: OPTIONS FOR  
IMPROVEMENT AND THE GATEWAY WEST CASE STUDY**

*January 2011*

The Energy Policy Institute is an integral part of the Center for Advanced Energy Studies, which is a public/private partnership between the Idaho National Laboratory, Boise State University, the University of Idaho, Idaho State University, and private industry.

<http://epi.boisestate.edu>

***TRANSMISSION SITING AND PUBLIC LANDS: OPTIONS FOR IMPROVEMENT AND THE GATEWAY WEST CASE STUDY***

David Solan  
*Boise State University*

DISCLAIMER: The work described in this paper was supported by the Western Governors' Association (WGA). While this document is believed to contain accurate and correct information, neither the WGA, nor the Energy Policy Institute (EPI) as part of the Center for Advanced Energy Studies (CAES) nor any institution thereof (Boise State University, Idaho State University, University of Idaho, and the Idaho National Laboratory), nor any of their employees, makes any warranty, express or implied, or assumes any legal responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe on privately owned rights. Reference herein to any specific commercial product, process, or service by its trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the WGA or member institutions of EPI and CAES. The views and opinions of the author expressed herein do not necessarily state or reflect those of the WGA or member institutions of EPI and CAES.

ACKNOWLEDGEMENTS: The author would like to thank employees of the following organizations for discussing their roles and challenges in transmission planning, siting, and permitting with the author and Energy Policy Institute staff: the Bureau of Land Management, the Council on Environmental Quality, Idaho Power, Rocky Mountain Power, the Idaho Office of Energy Resources, and the Idaho Public Utilities Commission. Participation does not imply that any of these organizations endorse the contents of this study.

This page intentionally left blank

## ***Purpose***

The Western Governors' Association requested that the Center for Advanced Energy Studies' Energy Policy Institute conduct a study to provide options for improvement relating to the planning, siting, and permitting of electric transmission lines on federally-owned and administered public lands. Specifically, the Energy Policy Institute was requested to utilize the proposed Gateway West transmission line project as a case study to identify and examine difficulties arising from siting interstate transmission lines, and to discuss potential options to overcome these challenges. The case study pays particular attention to the Idaho portion of the project. The options discussed primarily focus on, but are not limited to, federal government actions.

The author presented preliminary results and options at the Western Interstate Energy Board's State-Provincial Steering Committee meeting in San Diego on January 11, 2011.

## ***Executive Summary***

The proposed Gateway West transmission project illustrates many of the difficulties that are prevalent in siting transmission lines in the western United States. A joint project of Idaho Power and Rocky Mountain Power, the proposed Gateway West line would run more than 1,100 miles between Wyoming and Idaho, traversing both private and federally-owned public lands administered by the Bureau of Land Management (BLM). The project has been subject to a number of delays in the National Environmental Policy Act (NEPA) process. Despite the scoping process being completed on schedule in the summer of 2008, BLM has yet to issue the Draft Environmental Impact Statement (DEIS). The DEIS was originally scheduled for release in 2009. It has since been rescheduled three times, with a present target of the first quarter of 2011. BLM is not likely to meet this target. As the NEPA process falls further behind schedule, the timetable for anticipated construction of the project also stretches out and its future is uncertain.

There are opportunities to improve the siting process as it relates to public lands. The options presented in this study are aimed at federal agencies, state and local governments, and utilities and project proponents. The options are also presented within the current planning, permitting, and siting framework.

Specific actions discussed for the federal level are focused on performance management and accountability to the public. The options discussed for the federal level are aimed at driving the

process toward decision points, in particular the formal release of the DEIS so that it is available for public comment. These options include

- **Forming NEPA Rapid Response Teams;**
- **Developing performance measures for project and process schedules;**
- **Setting reporting standards for the performance measures;**
- **Designing explicit processes for input from staff;**
- **Discussing project progress at regularly scheduled management meetings at the agency and interagency levels; and**
- **In addition to individual 216(h) projects, publishing a unified report on proposed transmission projects subject to NEPA, and making it publicly available.**

At the state and local level, the following option is presented:

- **Providing local governments and municipalities with resources to assist in developing comprehensive plans and zoning ordinances that account for the siting of transmission facilities; these resources could also help to coordinate with neighboring jurisdictions.**

For utilities and project proponents, the following option is presented:

- **Incorporating social risk into route selection through use of innovative decision support tools.**

In the conclusion of the study, a legislative option to substantially change the existing framework is discussed:

- **Providing financial “Standby Support” for regulatory or NEPA process delays.**

## ***Background and Difficulties with Siting Transmission Lines in the West***

The proposed Gateway West transmission line project is subject to many of the difficulties of siting electric transmission lines in the western United States. Proposals to site long transmission lines are almost certain to route lines across both private and public lands. Under the best of circumstances siting and constructing transmission lines is a difficult process due to public opposition. Frequently cited examples of public opposition to transmission lines include property rights concerns, viewshed quality, perceived health effects, and the perception of who benefits from the project (Friedman & Keogh, 2008; National Commission on Energy Policy, 2006; Wasserstrom & Reider, 2010). Routing across private lands in more rural areas, particularly in states such as Idaho and Wyoming, is controversial because many landowners and localities are protective of private property rights and values. The general local opinion is that the benefits of the built transmission lines are almost entirely accrued by the load centers and markets external to the locality through which they are routed. Due to this perception, a number of localities prefer that lines that cross their jurisdictions be sited on public lands. In other words, if the benefit is for the public in the wider region, then it should logically be sited on public lands (Cassia County Board of Commissioners, 2009).

Complicating matters, overlapping jurisdictions between the federal, state, and local governments may be confusing and duplicative, particularly when public lands are involved, and there is a heavy coordination burden among government entities. Almost half of the lands in the westernmost eleven states are federally-owned or administered by the federal government (Federal lands in Idaho, 2010). Companies' proposals to route lines across federally-owned or administered public lands also trigger the NEPA environmental review process. The NEPA process is often quite controversial among the public and cooperating agencies. It is often subject to significant delays during the scoping process and before the release of the Draft Environmental Impact Statement because of complexities and competing priorities in the management of public lands. Because there are so many competing priorities that originate from Congress, court decisions, and directives from the Administration, as well as within the federal land management agencies themselves, managers and staff at the line level may have the opportunity to cause delays by exercising judgment about what actions they deem most important despite countervailing goals and objectives. This occurrence has been cited in other agencies with competing priorities thrust upon them (Solan, 2009).

Another significant problem is the lack of familiarity with the process from players involved; it has been a generation or more in many areas since electric transmission infrastructure was built. Personnel in state and local agencies may be unfamiliar with their own roles in the process (Energy Policy Institute, forthcoming 2011), causing delays or misunderstandings.

Likewise, in the private sector there is a dearth of personnel with experience in planning and siting interstate lines in the present milieu that requires extensive communication and interaction with the public and local officials. In private industry, surveys show that workers with the most tenure in transmission siting tend to believe the process is more difficult than before, evidence that it was easier to operate under the old rubric of “decide-announce-defend” versus that of “avoid-anticipate-communicate” (Vajjhala & Fischbeck, 2006, p. 17).

Finally, utilities which are regulated by the states and mandated to protect the interests of ratepayers are obligated to seek least cost paths for transmission line routes. While there can be a number of potential least cost paths, most companies and their subcontractors view route planning as primarily an engineering operation and do not differentiate between public and private lands, nor systematically account for social risk in routes that may trigger public or political opposition in a given area.

### ***The Proposed Gateway West Transmission Line Project***

A joint effort between Idaho Power and Rocky Mountain Power, the proposed line of approximately 1,100 miles would traverse both public and private lands between the Windstar substation near Glenrock, Wyoming, and the Hemingway substation near Melba, Idaho. Consisting of eleven line segments, the proposed line crosses about 500 miles of public land managed by BLM, of which 300 miles is located in Idaho and 200 miles in Wyoming. BLM is the lead federal agency for the project and is the agency responsible for developing the DEIS (BLM, 2010; Idaho Power and Rocky Mountain Power, 2010).

According to the project’s proponents, the purpose of the project is to “supply energy to customers and improve electric system reliability by enabling delivery of electricity from existing and new generating resources, including renewable resources such as wind” (Idaho Power and Rocky Mountain Power, 2010). Idaho Power’s service area is already at full capacity and using all available resources from the Pacific Northwest during peak demand on certain summer days (Idaho Power, 2009, p. 8). A number of transmission studies have found that adding transmission in the region, particularly Wyoming, is more cost-effective than building generation and transmission in other areas to meet the needs of load centers in the West. Because of its importance to the region, “the Gateway West Project is independent of, and would be built regardless of, any particular new generation project” (BLM, June 2008, p. 7).

The original schedule for the project was very aggressive, with the NEPA process envisioned to be completed in an expeditious manner. The scoping period was to occur in the summer of

2008, and the DEIS was to be issued in early 2009 (BLM, June 2008). By that schedule, the Final EIS and the Record of Decision would possibly have already occurred. The scoping period did happen according to schedule. However, the issuance of the DEIS has repeatedly slipped from the original 2009 goal, to the summer of 2010 (Bureau of Land Management, 2010a), to the last quarter of 2010 (Bureau of Land Management, 2010b), and now to a target of the first quarter of 2011 by the calendar year (Bureau of Land Management, 2010c).

Delays in the project schedule have occurred due to a variety of factors. To some measure the applicants saw the NEPA process as a forum or mechanism for extensive public engagement beyond their own efforts, while some local governments and property owners chose not to participate in the scoping process because they did not believe or obtain information that the proposed route or alternatives might impact them. Both assumptions turned out to be somewhat erroneous. Although a main purpose of NEPA is encouraging collaboration between citizens, stakeholders, and government agencies to arrive at better informed decisions, (CEQ, 2007), "it is rarely realized" (CEQ, 2007a, p. 1). The scoping portion of the NEPA process does not compel participation nor ensure that all viewpoints are considered, and in this case significant public opposition was encountered after the scoping was finished. Subsequent to the scoping period and the initiation of resource surveys along the proposed route, the applicants engaged in a wider array of public meetings and outreach concerning the proposed route, and made some modifications. A number of local governments in Idaho petitioned for cooperating agency status, and they proposed alternative routes of their own design, which were then included in the NEPA process.

According to the BLM project manager, on the federal side there are four main reasons that complicate and extend the most recent delays prior to the issuance of the DEIS. First, comments from the scoping process must be adequately addressed in the DEIS. Second, the DEIS must account for potential land use amendments (more than 30 of them), which include the visual resource management system, against all of the alternative routes. Third, there needs to be a consistent analysis for sage grouse management; this is potentially the most problematic and requires a framework analytical structure agreed upon between federal and state officials. Finally, Secretary Salazar's issuance of Order 3310 on December 22, 2010, relating to "wilderness characteristics," will almost certainly lead to a delay of some degree. At a minimum Order 3310 requires the development of formal guidance by BLM within 60 days of the order "that defines and clarifies how public lands with wilderness characteristics are to be inventoried, described, and managed..." (Salazar, 2010). A project the length of Gateway West will almost assuredly trigger some level of review for wilderness characteristics in regard to the public lands it is proposed to traverse.



The issuance of the DEIS is important because it is one of the key inflection points that drives the NEPA process to a final decision. Furthermore, issuance of the DEIS and completion of the NEPA process is important because it will have an impact on the final siting decisions in Idaho not only on public lands, but on private lands. Recent proposed transmission projects, including Gateway West, have spurred local government mistrust and opposition to utilities' plans to site facilities on private property. In Idaho, localities have the authority to permit and site infrastructure in their jurisdictions. As a result of recent project proposals, a number of localities have informally or formally adopted policies that stipulate electric transmission infrastructure be routed on public lands rather than on private property within the individual jurisdiction.

Unlike many states, Idaho has no centralized state authority that makes the final decision on transmission line routes and siting for all cases. The Idaho Public Utilities Commission (IPUC) does have backstop authority to preempt permitting and siting decisions at the local level if the decisions were in conflict with standing PUC orders (e.g. the proposed route is arbitrarily long and expensive for ratepayers) and the affected local government has been allowed to appear in defense of its decision. To the author's knowledge, the IPUC has never exercised its backstop authority in regard to transmission lines, although in at least one case there were hearings held on the subject and a negotiated settlement was reached before the IPUC had to render a decision.

### ***Options for Improvement***

The options discussed are primarily focused on management and performance at the federal level and within the current planning, permitting, and siting framework. Options are also reviewed for improvements by local governments and for project proponents. A strategic element in these options is to move expeditiously to inflection or interim decision points so that processes do not stall. Of particular importance are the stated deadlines for action regarding 216(h) projects once the DEIS is issued (discussed below). In this manner, final decisions will be made in a reasonable time period, based on sound science, and with ample opportunity for public participation and comment. Ultimately, all participants in the process need to trust and accept the final outcomes that the system delivers.

**Federal Level – “Walk the Talk” Through Performance Measures and Public Accountability.** Frequently, provisions in federal law are not acted upon, do not have the intended effects, or are subject to court rulings. For example, the designation of priority transmission corridors (216(a); 368) provided for in the Energy Policy Act of 2005 and the Federal Power Act has not yet facilitated the siting of needed transmission facilities.

Present Administration priorities include the development of renewable electricity generation facilities and construction of the transmission lines required to move electricity to load centers and to provide stability for the electric grid. The Administration's strong interest "to expedite the siting and construction of qualified electric transmission infrastructure in the United States" was demonstrated in the execution of the October 2009 Memorandum of Understanding among nine federal agencies (MOU, 2009, p. 1). The MOU sets timelines for actions among the signatory agencies and departments for section 216(h) of the Federal Power Act as amended by the Energy Policy Act of 2005, which specifically addresses "Coordination of Federal Authorizations for Transmission Facilities," for certain projects (Public Law 109-058 , 2005). The trigger to start the clock and countdown for many actions is the issuance of the DEIS. In some ways, this priority challenges longstanding modes of operation and a consensus-driven organizational culture at federal land management agencies, where long deliberation to "get things right," non-discriminating inclusiveness in decision-making, and frequent delay in processes may be the norm.

To address these issues, the federal land management agencies need to "walk the talk" or put words into actions through performance measures and public accountability. The Department of Energy's Office of Electricity Delivery and Reliability has taken a step in the right direction by tracking qualifying 216(h) projects on simple individual forms which are publicly available on its website (Office of Electricity Delivery and Energy Reliability, 2010). Better still would be the development of a publicly available quarterly report that would track all of the 216(h) projects and provide graphics that track the actual progress of specific NEPA processes against original schedules and timelines. A sample performance measure would be "days in process" or "days behind schedule" to complete certain interim processes such as scoping or issuance of a DEIS. The report could be reviewed at interagency meetings chaired by the Council on Environmental Quality or DOE's Office of Electricity Delivery and Reliability.

Still, not all proposed transmission lines requiring a NEPA process are designated as 216(h) projects, including Gateway West. And, it is a frequent occurrence at the federal level that Administration and interagency priorities do not reach down through federal departments and agencies to the field and line management levels within particular agencies. If progress is to be made, similar metrics should be developed at the individual agency level, and regular management meetings held to measure progress against schedules, to ensure that priorities reach down to the appropriate levels. This can be done for each transmission line project that initiates the NEPA process. Management meetings at which the metrics are discussed provide the opportunity to identify problems and learn how best to address them. Ideally, individual agencies would apply what has been learned and share the knowledge with the other federal

land management agencies at the regular interagency meetings suggested above or at other venues.

Other options federal agencies should consider include the formation and deployment of rapid response teams and the formal design of internal processes that streamline or eliminate duplicative input from similar sources or from all levels of the organization. Rapid response teams comprised of experts could assist with the requirements of Order 3310, as well as with particularly sticky NEPA processes or coordination with proponents, and state and local governments. Streamlining input helps to avoid competing staff perspectives in consensus-driven organizations by requiring input from only a certain level of the organization (such as a district office), and it also lessens the chance of “multiple bites of the apple” by staff that may use informal processes to drive home a particular viewpoint.

In summary, the options discussed in this section are aimed at improving federal performance within the existing siting framework, and to provide accountability to the public and at the intra-agency and interagency levels. The options included the following:

- **NEPA Rapid Response Teams;**
- **Developing performance measures for project and process schedules;**
- **Setting reporting standards for the performance measures;**
- **Designing explicit processes for input from staff;**
- **Discussing project progress at regularly scheduled management meetings at the agency and interagency levels;**
- **In addition to individual 216(h) projects, publishing a unified report on proposed transmission projects subject to NEPA, and making it publicly available.**

**State and Local Level.** The option presented in this section is primarily targeted to the situation in Idaho where local governments have siting authority and there is no centralized state authority to make siting decisions for all transmission lines. Local governments and municipalities need to make best efforts to ensure transmission and electricity generation facilities are included in comprehensive plans and zoning ordinances. There should not be an option for local governments and municipalities to opt out by excluding transmission facilities from the comprehensive plans or identifying corridors that are infeasible or prohibited by federal or state law. One option is to provide “capacity-poor” rural communities and local governments financial resources or consultants to assist in planning or to coordinate with neighboring jurisdictions. However, the present economic situation and the governmental fiscal situation make this a difficult proposition.

### **Utility and Project Proponents – Account for Social Risk in Route Selection.**

Because state government regulated utilities are required to keep costs down for their rate payers, utilities are obligated to seek least cost paths. While there can be a number of potential least cost paths, many project proponents approach route planning as solely an engineering endeavor. By approaching route selection in this manner, they do not differentiate between the type of land ownership (public or private). Accounting for potential public opposition is also *ad hoc* if it is done at all. Proponents and their environmental consultants tend to view route alternatives in terms of binary “opportunities” or “constraints,” or “go” and “no go” areas based on established exclusionary zones when they are selecting a potential corridor or route. Logically, delays and controversies with the public arise from proposed routes that run through these “go” areas. Project proponents are more careful than in the past to keep the public informed about proposed routes. However, if sub-optimal route selection leads to alternative selections that run through areas in which the public was not previously consulted, the proponent earns the public’s mistrust and may court additional opposition to a project.

Both environmental consultants and research organizations, including the Center for Advanced Energy Studies’ partners, are working to develop innovative decision support tools that integrate Geographic Information System and social data into route selection, and which are complementary to the engineering studies. By incorporating decision support tools that account for social risk or levels of opposition from the public, utilities can help to avoid delays, save money, and maintain trust.

**Standby Support for Regulatory or NEPA Process Delays.** This study focused on options for improvements within the current planning, permitting, and siting framework. Formally altering NEPA is particularly difficult because the NEPA process is designed to be flexible so that it is relevant and applies to a wide variety of situations. The author of this study judges that there will be no significant movement to amend NEPA on the legislative front in the near future, and the present Administration will put most of its efforts into following through on its commitments to the Memorandum of Understanding and to the planning activities it proposed and Congress funded through stimulus funds.

However, although not the focus of this study’s analysis, there are certainly improvements that can be made if the system were substantially altered or amended through legislation or a change in the Code of Federal Regulations. There have been no shortage of recommendations or draft bills to “put teeth” in the designation and expedited siting of priority transmission lines, or to establish the Federal Energy Regulatory Commission as a national planning and siting organization with preemption authority beyond the limited backstop authority it was provided

in the Energy Policy Act of 2005, and as determined by the courts in the *Piedmont Environmental Council v. FERC* case.

One option that has not yet been given serious consideration for transmission siting is standby support for regulatory or NEPA process delays for designated priority projects. There is an analog for such a proposal. In the Energy Policy Act of 2005, Section 638 provided for financial standby support for regulatory and legal delays for nuclear power plant permitting and operation. Like long interstate transmission facilities, nuclear power plants cost more than a billion dollars, and unreasonable regulatory delays threaten the viability of proposed projects. Under Section 638, a specified amount was set that required the federal government to pay a project proponent if unreasonable delays occurred and the project proponent had fulfilled its obligations. Funds for standby support would either be appropriated or collected from another source (Public Law 109-058 , 2005).

In considering standby support for proposed electric transmission facilities, the proposed performance measures in this study could be utilized to inform a decision about a reasonable duration to complete a NEPA process. If financial standby support were needed, utilities ratepayers' would be protected from escalating costs that would normally be passed along to them. Standby support for priority transmission line projects may be a legislative option for the future.

## Works Cited

- Bureau of Land Management. (2010, July 22). *BLM Announces Schedule Change for Release of the Draft Environmental Impact Statement for the Proposed Gateway West Transmission Line Project Transmission Line Project*. Retrieved December 27, 2010, from [http://www.blm.gov/wy/st/en/info/news\\_room/2010/july/22gatewaywest.html](http://www.blm.gov/wy/st/en/info/news_room/2010/july/22gatewaywest.html)
- Bureau of Land Management. (June 2008). *Gateway West transmission line project information packet for public scoping meeting*. Bureau of Land Management.
- Bureau of Land Management. (2010, January). Gateway West transmission line project mailer.
- Bureau of Land Management. (2010). *Schedule*. Retrieved December 27, 2010, from Gateway West transmission line project: [http://www.wy.blm.gov/nepa/cfodocs/gateway\\_west/schedule.php](http://www.wy.blm.gov/nepa/cfodocs/gateway_west/schedule.php)
- Bureau of Land Management, Wyoming. (2010). *About this project*. Retrieved December 16, 2010, from Gateway West transmission line project: [http://www.wy.blm.gov/nepa/cfodocs/gateway\\_west/index.php](http://www.wy.blm.gov/nepa/cfodocs/gateway_west/index.php)
- Cassia County Board of Commissioners. (2009, May 4). Letter to Walt George, BLM Project Manager, Re: Gateway West transmission line proposal.
- Council on Environmental Quality. (2007). *A citizen's guide to the nepa: having your voice heard*. Washington, DC: Executive Office of the President.
- Council on Environmental Quality. (2007a). *Collaboration in NEPA: a handbook for NEPA practitioners*. Washington, DC: Executive Office of the President.
- Energy Policy Institute. (forthcoming 2011). *Electric transmission siting in Idaho*. Energy Policy Institute.
- Federal lands in Idaho*. (2010). Retrieved December 27, 2010, from Digital Atlas of Idaho: <http://imnh.isu.edu/digitalatlas/geog/publrecre/text/fedx.htm>
- Friedman, J., & Keogh, M. (2008). *Coordinating interstate electric transmission siting: an introduction to the debate*. The National Council on Electricity Policy.
- Idaho Power. (2009). *2009 Integrated resource plan*. Idaho Power.
- Idaho Power and Rocky Mountain Power. (2010). Retrieved December 12, 2010, from Gateway West transmission line project: <http://www.gatewaywestproject.com/default.aspx>
- Memorandum of Understanding Among Departments and Agencies Regarding Coordination in Federal Agency Review of Electric Transmission Facilities on Federal Land*. (2009, October 23). Retrieved December 12, 2010, from <http://www.whitehouse.gov/files/documents/ceq/Transmission%20Siting%20on%20Federal%20Lands%20MOU.pdf>

National Commission on Energy Policy. (2006). *Siting critical infrastructure: an overview of needs and challenges*. National Commission on Energy Policy.

Office of Electricity Delivery and Energy Reliability. (2010, December 28). *List of 216(h) qualifying projects*. Retrieved January 7, 2011, from <http://www.oe.energy.gov/1480.htm>

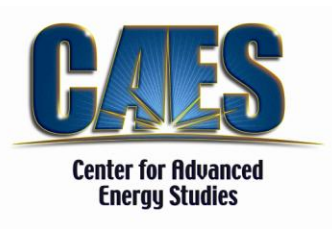
*Public Law 109-058*. (2005, August 8). Retrieved December 20, 2010, from [http://www.epa.gov/oust/fedlaws/publ\\_109-058.pdf](http://www.epa.gov/oust/fedlaws/publ_109-058.pdf)

Salazar, K. (2010, December 22). *Order No. 3310 Subject: Protecting wilderness characteristics on lands managed by the Bureau of Land Management*. Retrieved January 6, 2011, from [http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications\\_Directorate/public\\_affairs/news\\_release\\_attachments.Par.26564.File.dat/sec\\_order\\_3310.pdf](http://www.blm.gov/pgdata/etc/medialib/blm/wo/Communications_Directorate/public_affairs/news_release_attachments.Par.26564.File.dat/sec_order_3310.pdf)

Solan, D. (2009). The EPAStat quarterly report and lessons learned. *Public Performance and Management Review*, 33 (2), 222-240.

Vajjhala, S. P., & Fischbeck, P. S. (2006). *Quantifying siting difficulty: a case study of U.S. transmission line siting*. Washington, DC: Resources for the Future.

Wasserstrom, R., & Reider, S. (2010). *Electric transmission and carbon reduction: a survey of environmental leaders and state regulators*. Center for Energy Economics and the Terra Group.



The Energy Policy Institute is an integral part of the Center for Advanced Energy Studies, which is a public/private partnership between the Idaho National Laboratory, Boise State University, the University of Idaho, Idaho State University, and private industry.

<http://epi.boisestate.edu>

[www.caesenergy.org](http://www.caesenergy.org)

