Governor Bill Richardson issued Executive Order 2010-27 creating a task force on statewide electricity transmission planning. Its job was to prepare recommendations and steps to enhance the statewide electricity transmission grid, including any appropriate collector systems, construction financing, and cost-recovery options. This is the Task Force’s report and recommendations.
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Note: RETA and EMNRD would like to thank Carl Huslig, ITC Corp., for his contribution of valuable text to this document.
New Mexico Electricity Transmission Planning Report

SUBMITTED BY GOVERNOR RICHARDSON’S TASK FORCE ON STATEWIDE ELECTRICITY TRANSMISSION PLANNING

EXECUTIVE SUMMARY OF RECOMMENDATIONS

The Task Force’s ten recommendations are:

1. The most important recommendation that ranks above all others is that the New Mexico Governor’s Office should organize and host a “Southwestern States Transmission Summit” comprising staff from southwestern governors’ offices, utility commissions, and stakeholders. The summit would address interstate transmission line development and, ideally, lead to an ongoing working group process.

2. The New Mexico Governor’s Office, the Energy Minerals and Natural Resources Department (EMNRD), and the Renewable Energy Transmission Authority (RETA) should assist the interstate transmission line proposals currently planned in the state.

3. RETA should maintain regular dialogue with the federal agencies and congressional delegation regarding transmission development in New Mexico.

4. RETA should be actively involved in the Southwest Area Transmission Group’s renewable collector system process currently underway and in other western transmission planning efforts.

5. The Task Force process should be continued to further policy discussions and technical analyses, as merited.

6. Consider establishing RETA as the statewide independent transmission planning authority for all transmission lines greater than 240 kilovolts (kV) with at least 50 percent of the line intended for export of the power out-of-state. Since RETA is also a transmission project developer, potential conflict of interest issues would need to be addressed. This would require a statutory amendment.
7. Amend RETA’s statute to make it easier to utilize its eminent domain authority for projects in which it does not have a financial interest.

8. Identify a reliable recurring revenue source to fund RETA’s operations; $1 million per year should be considered a minimum. One option is to assess five cents per megawatt-hour (MWh) charge on all electricity generated or sold in the state.

9. The Task Force made no recommendation on the 5-year, 10-year, and 20-year collector systems developed in a Los Alamos National Laboratory (LANL) study. In furtherance of developing viable collector system proposals, however, the Task Force recommended that LANL’s identified Phases II and III be pursued.

10. With respect to transmission development cost-recovery for intrastate lines, it is recommended that the state bear a portion of the cost of developing lines intended to export power out-of-state in the interest of the economic development and job creation associated with constructing and operating both the transmission lines and the renewable energy projects enabled by the transmission lines. One option is to place a small transmission development assessment on electric customers’ bills as is done elsewhere in the country.

   Note: Utilities and consumer advocacy groups opposed placing a transmission assessment on customers’ bills.

Note: Due to the diverse interests represented on the Task Force and the sensitive and complex nature of the transmission issues that were addressed, the Task Force did not reach consensus on all of the recommendations included in this report. Where consensus was not reached, it is noted in the report along with the reasoning of those opposed to the recommendation.
INTRODUCTION AND BACKGROUND

Governor Bill Richardson issued Executive Order 2010-027 (Appendix A) on July 12, 2010, which created the “Governor’s Task Force on Statewide Electricity Planning.” The Executive Order emphasized the development of New Mexico’s renewable energy resources, and recognized that “…a robust and reliable electricity transmission system is essential for serving in-state customers as well as developing New Mexico’s energy export potential…” A 26-member Task Force was formed that had its initial meeting on August 2, 2010. The Task Force met a total of four times and addressed a variety of issues associated with transmission development in New Mexico.

Per the Executive Order, the charge of the Task Force was to “…prepare recommendations for Governor Richardson and RETA regarding opportunities and steps to enhance the statewide electricity transmission grid, including any appropriate collector systems and financing and cost-recovery options, on a 5-year, 10-year, and 20-year year planning horizon.” Furthermore, the Executive Order provided that “The Task Force shall present preliminary options for the Governor’s and RETA’s consideration no later than November 1, 2010…”

The Task Force primarily focused on the development of an intrastate transmission collector system designed to accommodate the development of 5,200 megawatts (MW) of renewable energy for export to out-of-state markets. However, it is of little benefit to be able to deliver the power to the state line (e.g., Arizona, Colorado, Oklahoma, etc.) if there is not an interstate transmission line to take it from there to market. Therefore, some suggestions for facilitating interstate transmission line development are included in this report.

In accordance with the Executive Order’s three main charges of the Task Force, this report is organized as follows:

Steps to Enhance the Statewide Transmission Grid – includes a general discussion of actions the Governor’s Office, the New Mexico Legislature, the Public Regulation Commission (PRC), and/or RETA can take to facilitate both intrastate and interstate transmission line development.

5-year, 10-year, and 20-year Transmission Collector Systems – focuses on an intrastate collector system that would enable renewable energy development for delivery to both in-state and out-of-state electricity markets. LANL was retained to evaluate “looped” and “radial” collector system arrangements and provide an assessment of costs and economic benefits. The LANL collector systems focused on exporting the renewable electricity to western markets via the Four Corners area electricity hub.

The Task Force concluded that the “stand alone” collector systems addressed by LANL needed to be evaluated in a more detailed and broader context – including the inclusion of one or more of the proposed interstate transmission lines, specific transmission and generation operational concerns, and possible export of the power north and east via the Southwestern Power Pool, which the Tres Amigas project would enable.
Therefore, the Task Force made no formal recommendations on collector systems at this time, but recommended the analyses continue into Phases II and III noted in the LANL study.

**Financing, Cost Recovery and Cost Allocation** – discusses various options for financing and recovering the costs of transmission development. The most significant issue discussed was the extent to which (if at all) in-state retail electricity customers should fund a portion of intrastate transmission line development intended to serve both in-state needs and out-of-state export to stimulate in-state renewable energy economic development and job creation. The Task Force did not reach consensus on this issue.

**New Mexico’s Strategic Location in the Nation** – The United States has three transmission interconnection systems serving the nation: the Eastern Interconnect, the Western Interconnect (Western Electric Coordinating Council – WECC), and the Texas Interconnect (Electric Reliability Council of Texas – ERCOT). For the most part, these interconnections operate separately. New Mexico happens to “straddle” both the Eastern and Western interconnects affording it the opportunity to export power both eastward and westward. The state is also adjacent to ERCOT. Thus far, the majority of the focus on exporting New Mexico’s renewable energy out-of-state has been on western markets like Phoenix, San Diego and Los Angeles. However, there are significant opportunities to export power to eastern markets particularly as more and more states adopt renewable portfolio standards.

**Note:** Tres Amigas is a proposed project located near Clovis, New Mexico, that would physically connect all three interconnections to enhance interstate conveyance of electricity into and out of New Mexico.

The map below shows the three national transmission “interconnections” with the Eastern Interconnection further divided into the various “Regional Transmission Organizations” (RTOs).

**Note:** A portion of eastern New Mexico is part of the Southwestern Power Pool RTO.
**STEPS TO ENHANCE THE STATEWIDE TRANSMISSION GRID**

**Interstate Transmission Development**

**Priority Recommendation** – The New Mexico Governor’s Office should organize and host a southwestern states (e.g., New Mexico, Arizona, Utah, Colorado) “Transmission Summit” involving the states’ governors’ offices, utility commissions, transmission providers, load-serving entities and environmental entities. The intent should be to facilitate the development of transmission lines across state borders and eliminate existing bureaucratic, economic and other barriers to interstate transmission lines. Conceivably, the Transmission Summit would be the beginning of a multi-state transmission working group.

A multi-state RTO is common in the eastern United States. RTOs plan, finance and cost-allocate transmission lines that cross multiple state lines. A portion of eastern New Mexico, in Southwestern Public Service Company’s service territory, is part of the Southwestern Power Pool RTO. In her presentation to the Task Force, former federal Energy Regulatory Commissioner Suedeen Kelly emphasized that New Mexico should consider being part of a multi-state RTO. Some Task Force members strongly support the area of New Mexico not covered by the Southwestern Power Pool RTO be covered by a newly established southwestern states RTO, while other members felt the Federal Energy Regulatory Commission’s (FERC) existing “Notice of Proposed Rulemaking” on cost-allocation for multi-state transmission lines is the preferred avenue to resolve this issue.

**Should New Mexico form an RTO?** If FERC’s proposed rule on interstate transmission line cost recovery does not become a formal rule then, yes, the state should consider establishing an RTO for the southwestern United States that addresses cost recovery on a broader, regional basis. The Southwestern Power Pool has been a very successful model for this.

**Note:** Concerns were raised by the Task Force regarding the potential additional costs to the ratepayer that may occur under an RTO framework. This would need to be carefully evaluated and considered before moving forward with becoming part of an RTO. The Task Force suggested that one alternative to an RTO could be the establishment of transmission development that focused on an interstate compact among a number of states. These interstate issues would be the focus of the Transmission Summit discussed above.

The Task Force recommends that the New Mexico Governor’s Office, EMNRD, and RETA should promote and assist, as appropriate, with the siting, permitting and achieving general support for the proposed interstate transmission lines and current projects in the state such as SunZia, Tres Amigas, Centennial West Clean Line, Southline, High Plains Express, etc. The Governor’s Office should direct EMNRD and RETA to assist with promoting these projects and dedicate the necessary staff resources to facilitate the development of these projects, as appropriate and as requested by the developing entity.

It is recommended that RETA be directed to establish regular dialogue with the appropriate federal agencies such as the Bureau of Land Management (BLM), Department of Defense (DOD) and the appropriate congressional delegation on interstate transmission projects in New Mexico.
RETA should also be actively involved in the Southwest Area Transmission Group’s renewable collector system process currently underway and with other western transmission planning efforts.

**Continue the Transmission Task Force**

While the primary emphasis of the Task Force was on the development of an intrastate transmission collector system, there was also recognition that facilitating large-scale, multi-state interstate transmission lines is critical to transport New Mexico’s renewable energy to distant markets.

The Task Force members and stakeholders appreciated the forum to discuss their concerns and ideas for resolving New Mexico’s transmission constraint. Due to the intense complexity of the technical, economic, and policy issues surrounding transmission line development, most members indicated support for continuing some form of the Task Force process as a means to continue the dialogue and analyses.

**Establish an Independent Planning Authority (IPA) for Transmission Line Development**

New Mexico promoted development of its renewable energy resources by implementing a Renewable Energy Portfolio Standard (RPS) to expand renewable energy generation for in-state ratepayers by focusing on developing thousands of megawatts of the state’s wind and solar resources for export to out-of-state markets. Just as the export of New Mexico’s oil and gas resources has created jobs and stimulated economic development during the past 100 years, exporting New Mexico’s world-class wind and solar resources can do the same for the next 100 years and beyond. According to the Western Governors’ Association’s “Western Renewable Energy Zones Report,” New Mexico has over 27,000 MW of renewable energy generation potential. By comparison, New Mexico’s RPS standard (the amount of renewable energy that must be generated and used in-state) is approximately 2,000 MW in 2025. Therefore, New Mexico could potentially sell and export 25,000 MW of its renewable energy resources.

New Mexico needs a high voltage transmission grid supported by a new transmission development framework to achieve its economic development goals. Under the old transmission development regime, traditional, vertically-integrated utilities designed their transmission systems to transmit electricity short distances from their generating plants to consumers. In-state utility business models focus on meeting in-state load (customer demand for electricity) in a cost-effective manner, as opposed to developing “merchant” renewable energy projects for exporting power out-of-state. New Mexico should include a focus on renewable energy export in its long-term economic development plans.

At present, New Mexico needs a robust transmission system that will transmit electricity over long distances and that accommodates variable and numerous sources of electricity generation. Developing a high voltage transmission grid that addresses security and reliability issues while assisting renewable energy development will benefit the state by:
 Encouraging rural economic development;

- Facilitating compliance with the state-mandated RPS;
- Positioning New Mexico as an energy exporter; and
- Preparing the state to take advantage of opportunities associated with new technologies such as electric vehicles and smart grids.

A new transmission development framework should not replace the old transmission development regime. It should be designed to support and complement the existing system and serve the public good by providing a high voltage transmission (230 kV and above) backbone to facilitate renewable energy development and encourage rural economic development.

New Mexico could benefit from an IPA to ensure that transmission planning for the state is done on an independent and nondiscriminatory basis in the best interest of the state and to coordinate with siting and cost recovery. RETA’s enabling statute could be amended to identify RETA as the IPA for the state. Projects identified and approved by RETA would be deemed as serving in the public’s interest.

Increasing grid capacity provides operational flexibility to respond to system conditions and enables the interconnection of additional generation resources. The current practice of building to meet the immediate needs of a specific wind farm or other new generator is inefficient, not forward-thinking, and expensive in the long term since these assets have a 50-year life span and more renewable energy generation facilities will come on-line over time.

**Expand RETA’s Funding and Enabling Authority**

It is recommended that RETA’s statutes be amended to make it easier to utilize its Eminent Domain authority for projects in which it does not have a financial interest.

As discussed above, consider amending RETA’s statute to make it the central IPA for state-wide transmission project planning for lines equal to or greater than 230 kV if at least 50 percent of the power is being exported to out-of-state markets. RETA could only assume this responsibility if sufficient funds were added to its budget to accommodate the additional technical resources that would be necessary.

The Task Force agreed that RETA needs a reliable and sufficient source of funding to adequately accomplish its existing mission. At a minimum, a budget of at least $1 million per year is necessary and more should it also become an IPA as previously recommended.

There was not agreement on the source for securing the funding for RETA. However, one option discussed by the Task Force was to levy a five cent/MWh charge on retail electric customers (equating to approximately
an additional three cents per residential customer per month) which would generate roughly $1.2 million per year by 2015. RETA currently operates on approximately $565,000 per year. An increase in funding would allow RETA to begin hiring consultants and working toward the long range plans as set forth in this report.

Another option discussed was for RETA to receive funding through the state’s General Fund appropriation process, but the success of securing adequate funds in this manner is questionable.

It is clear that without a dedicated, consistent and reliable revenue stream, RETA will be hampered in its efforts to protect the state’s interest and begin constructing a robust, reliable transmission network capable of exporting New Mexico-generated renewable energy. If a permanent funding stream can be identified, the state’s overall economic picture has the potential to improve dramatically. Considerable infrastructure advancements could be made as New Mexico struggles to catch up to other state’s transmission development efforts.

**Bottom line:** RETA needs sufficient staff and technical resources to successfully accomplish its mission. If RETA accomplishes its mission to build transmission lines to export New Mexico’s renewable energy, the return on investment to the state will be substantial.

**Give the State a Role in the Siting and Permitting of Larger Transmission Lines**

One important observation by a number of Task Force members was that the State of New Mexico should have an important role in siting transmission lines. Allowing private companies to place lines throughout the state has the potential of creating environmental and economic harm and would not facilitate the coordination of multiple line proposals to minimize impacts. Transmission corridors established by the state could ensure that the state’s interests are taken into consideration for all transmission line projects.
THE LOS ALAMOS NATIONAL LABORATORY (LANL) STUDY: 5-YEAR, 10-YEAR, AND 20-YEAR TRANSMISSION COLLECTOR SYSTEMS

EMNRD and RETA commissioned a study (Appendix B) by LANL to examine the econometric data on the impact related to the development of a collector system and enhanced transmission lines for New Mexico’s renewable energy resources. The study was provided to the Task Force.

The Task Force found the LANL study helpful, but concluded that a broader and more thorough analysis of collector systems was needed. The LANL study focused on exporting power to the Western Interconnect through the Four Corners hub. However, given that New Mexico is strategically positioned between the Western and Eastern interconnects, the Task Force emphasized the importance of evaluating collector systems that also could export power to the Eastern Interconnect. There are a host of existing interstate transmission line proposals for New Mexico and all of them must be taken into consideration when designing and evaluating collector system concepts; for example, the Tres Amigas project near Clovis proposes to link the three interconnects in the nation.

The Task Force analyzed and discussed the LANL study, but did not make any recommendations on the study’s specific collector systems. Members did conclude and recommend that further research as identified in the LANL report’s Phases II and III is necessary and should be pursued.

The study analyzed two types of transmission collector system upgrades – one with a “looped” configuration and one with a “radial” configuration – over a 5-year, 10-year, and 20-year planning horizon to accommodate additional renewable energy development for delivery to both in state and out-of-state markets.

LANL, in collaboration with RETA, analyzed a variety of possible transmission upgrades over the next 20 years to export power generated by 5,200 MW of renewable generation capacity. Two collector systems were analyzed by applying LANL’s independent technical judgment, tools and expertise. Both plans identify opportunities to invest in grid upgrades that create substantial economic development. The plans are intended to serve as examples of different design approaches: 1) a looped transmission design, identified by the study as “Collector Plan 1,” which consists of upgrades to 345-kV lines, shunts and transformers; and 2) a radial transmission design, identified as “Collector Plan 2,” consisting of upgrades to 115-, 230-, and 345-kV lines, shunts and transformers. Each plan is built-out over 5-year, 10-year, and 20-year timelines through a phased series of transmission upgrades. Both plans are judged by LANL to be technically feasible designs which can potentially create immediate and long-term economic benefits for New Mexico.

The economic findings in the LANL study focused on the direct, indirect and induced jobs created by the construction and operation of the 5-year, 10-year, and 20-year collector systems, and on the sales of renewable energy from the 5,200 MW of new renewable energy projects enabled by the transmission upgrades. Some Task Force members expressed concern about using renewable energy sales as an indicator of in-state job creation. It was suggested that another approach is to estimate the construction, operation, and
maintenance jobs associated with the new renewable energy projects. Regardless of methodology, it is important to account for the jobs created by the construction of transmission infrastructure. Without transmission infrastructure, renewable projects will go to other states along with all the jobs they would have created.

The LANL study defines jobs in terms of Full Time Employee (FTE)-years, meaning that one job is one FTE for one year. In order to estimate the average number of annual jobs for the 20-year (2030) collector system, the total FTE-years in 2030 are divided by 20. For Collector Plan 1, the average number of annual jobs created is 1,240; for Collector Plan 2, the average number of annual jobs created is 1,050. In addition to jobs, the LANL study revealed that $67 million to $78 million in tax revenue would be generated over the 20-year planning horizon.

The transmission collector systems in the LANL study focus on the general structure and location of the two systems. The study also focuses on upgrades to the existing transmission system, its progress and capacity to accommodate new renewable energy development.

The collector systems do not focus on their specific locational alignments. RETA has been spearheading a “Transmission Corridor” process that does focus on specific alignments. For more information on that process, visit RETA’s website at www.nmreta.org. In addition, the New Mexico Subcommittee of the Southwest Area Transmission Group, a committee of WestConnect, is embarking on a “New Mexico Renewable Collector System” initiative. Future activities of RETA or other entities will need to be closely coordinated with this effort.

Key conclusions extracted from the LANL study and maps of the two collector systems evaluated are outlined in the next few pages.
## LANL Study: Key Conclusions

<table>
<thead>
<tr>
<th>Feature</th>
<th>Collector Plan 1</th>
<th>Collector Plan 2</th>
<th>LANL Report Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total renewable energy development potential (MW)</td>
<td>Nameplate 5,200 MW; Injected 2,790 MW; Four Corners hub export 1,302 MW by 2030</td>
<td>Nameplate 5,200 MW; Injected 2,790 MW; Four Corners hub export 1,137 MW by 2030</td>
<td>Table 2, page 11; Table 8, page 26</td>
</tr>
<tr>
<td>Total line miles of transmission corridor developed over 10- and 20-year horizons</td>
<td>By 2015: 297 miles By 2020: 603 miles By 2030: 841 miles</td>
<td>By 2015: 382 miles By 2020: 633 miles By 2030: 849 miles</td>
<td>Tables 3, 4, pages 19, 20; Tables 5, 6, 8, 22</td>
</tr>
<tr>
<td>Total cost of installed transmission corridor upgrades over 20-year horizon</td>
<td>$1,344,522,280 Annual bond cost is approximately $152,158,400</td>
<td>$1,032,679,080 Annual bond cost is approximately $116,867,300</td>
<td>Tables 4, 6, pages 20, 24; Table 9, page 30</td>
</tr>
<tr>
<td>Renewable energy sales at 20-year horizon (gigawatt-hours [GWh])</td>
<td>Exported: 5,800 GWh In-state: 4,950 GWh Cumulative export by 2030: 67,200 GWh</td>
<td>Exported: 4,500 GWh In-state: 6,250 GWh Cumulative export by 2030: 45,900 GWh</td>
<td>Appendix A; Table 10, page 31</td>
</tr>
<tr>
<td>Jobs created (temporary and permanent); Gross State Product [GSP] gain for New Mexico’s economy</td>
<td>Total Avg. # of jobs over 20 years: 1,240 Temporary: 495 Permanent: 745 Cumulative GSP gain by 2030: $3,311,292,900</td>
<td>Total Avg. # of jobs over 20 years: 1,050 Temporary: 420 Permanent: 630 Cumulative GSP Gain by 2030: $2,803,147,500</td>
<td>Tables 9/10/11, pages 30, 31; Table 15, page 34</td>
</tr>
<tr>
<td>Electricity assessment incurred by each Collector system (dollars per month), 100% recovery at 20-year horizon</td>
<td>Residential: $3.76 per month Commercial: $32.68 per month Industrial: $595.51 per month</td>
<td>Residential: $2.89 per month Commercial: $25.14 per month Industrial: $458.17 per month</td>
<td>Table 13, page 33</td>
</tr>
<tr>
<td>Tax revenue accrued from each Collector system</td>
<td>By 2015: $22,397,900 By 2020: $46,331,700 By 2030: $78,566,700</td>
<td>By 2015: $20,600,400 By 2020: $35,873,100 By 2030: $66,994,900</td>
<td>Tables 9, 10, pages 30, 31</td>
</tr>
</tbody>
</table>
Map of Collector System Plan 1: “Looped System”
Map of Collector System Plan 2: “Radial System”
FINANCING, COST RECOVERY AND COST ALLOCATION RECOMMENDATIONS: INTRASTATE TRANSMISSION LINES

Financing

It is expected that any cost recovery scenario would involve public/private partnerships. RETA could issue bonds to finance at least a portion of the line and reduce the overall cost burden since it does not have a profit motive. Renewable projects have traditionally secured financing through tax-incentives for renewable energy generating facilities in the form of the federal Production Tax Credit (PTC) and the Business Energy Investment Tax Credit (ITC).

- **PTC** is a 2.1¢/kWh (or 1.0¢/kWh for some technologies) tax credit based on the amount of electricity produced and sold by the taxpayer for qualified energy facilities;
- **ITC** is a tax credit equal to 30 percent of the qualified project costs for certain qualified renewable energy projects;
- Most renewable energy project developers do not have sufficient tax liabilities to utilize the tax credits so they partner with a tax credit-motivated equity investor to improve the economics.

In addition, federal Clean Renewable Energy Bonds, which provide an interest-free financing mechanism for public entities to construct renewable energy projects, have been used as well as Department of Energy (DOE) Loan Guarantee Programs.

- **Title XVII of the Energy Policy Act of 2005** allows the DOE to guarantee loans in support of debt financing for projects in the United States that employ energy efficiency, renewable energy, and advanced transmission and distribution technologies that constitute new or significantly improved technologies, (e.g., Section 1703 loan guarantee program);
- The loan guarantee gives the debt a AAA rating and allows the borrower to borrow at lower rates;
- Four conditional loan guarantees have been made to date;
- **Revised DOE Loan Guarantee Program** opened for applications in July (e.g., Section 1705 program);
- Projects must break ground by September 30, 2011; Applicant is lender, not renewable developer;
- DOE requires a first priority lien on all of the project assets;
- DOE will agree to share proceeds of a foreclosure with other lenders;
- **National Environmental Policy Act (NEPA)** – DOE has to be comfortable with environmental impact of the project;
- DOE will only guarantee 80 percent of the loan which itself must be no more than 80 percent of project cost;
Tax-exempt bonds do not qualify for a loan guarantee from the DOE; 
- Taxable bonds are allowed; DOE would have senior lien and bondholders would have a subordinate lien; 
- Prevailing wage rules and buy American steel; 
- Rating requirement of BB for loans over $25 million.

Other forms of finance more specifically for transmission have included, or may include, one of the following: 
- Taxable Revenue Bond Financings; 
- Master Limited Partnership; 
- Real Estate Investment Trust; 
- Private Activity Bonds; 
- Rural Utilities Service.

The Task Force did not spend a considerable amount of time on the issue of finance because, if the broader policy discussion of cost recovery is addressed, the market will dictate what financing options are available to RETA, utilities or private developers. Once policy changes are made, more advantageous financing options may be available but as it currently stands, most transmission providers are dependent on the taxable bond market.

Who Pays for Cost Recovery and Cost Allocation

One of the keys to solving the transmission constraint problem is to address and resolve how capital costs get paid (i.e., cost recovery and cost allocation). The Task Force focused a significant amount of time on this issue, and it is clear that there are a number of varied ideas and interests surrounding the subject of cost recovery. In addition, the ideas differ based on interstate vs. intrastate cost recovery options.

It was agreed that in the absence of an RTO that covers all portions of the state, cost recovery in the west for multi-state transmission lines should be decided by FERC, based on its recent Notice of Proposed Rulemaking (NOPR) addressing this subject. FERC is attempting to address interstate transmission line cost recovery which may take a number of years to resolve.

This report’s recommendations are focused on intrastate transmission lines and cost recovery options for lines that remain within New Mexico’s border. A complete in-state transmission collector system not only facilitates the gathering of renewable energy for export out of state, but also enhances in-state system reliability as well. In an attempt to move beyond the status quo, this report recommends steps that can be taken to address cost recovery on intrastate lines to encourage development in New Mexico prior to formal FERC action.
According to a document provided to the Task Force, and written by Steptoe and Johnson, LLP, there are various transmission cost allocation methods used in the United States and around the world.

Transmission costs can be allocated:

**Between Load and Generation** – A threshold question is whether to assess costs to load (i.e., electric customers) or generation. The general practice among RTOs in the United States is that load pays transmission costs. A contrasting view, which has been implemented in some other countries, is that generators use transmission to deliver energy to customers and therefore are beneficiaries that should be allocated some transmission costs.

**Assessed to Load by Amount of Usage** – Allocating costs based on the annual MWhs of consumption and/or generation, regardless of location or peak usage, is a simple way to spread costs over a wide base under the implicit assumption that beneficiaries are difficult to identify.

**Assessed to Load by Peak Consumption or Generation** – This method also spreads costs to all users of the transmission system based upon their maximum amount of load or generation, which is usually measured at the system peak, without regard to location.

**By Flow-Basis** – Power flow models that are used to plan future transmission and to determine locational marginal prices in energy markets can be used to identify users’ physical impacts on the transmission system by their location or the amount of power flows they affect. The “beneficiary pays” concept can be applied using this flow-based method.

**By a Monetary Impact Basis** – This is a form of beneficiary pays (those who directly benefit, pay) that assigns costs to those parties who receive a monetary gain, such as through changes in energy prices or production costs. This method is compatible within or between organized wholesale markets that use locational pricing, where economic benefits of proposed projects can be estimated through market simulations.

**Beneficiary Pays Approach vs. the Use of Public Funds**

It is recommended that steps be taken to address in-state cost recovery for certain transmission lines to encourage development in New Mexico. For transmission lines that are either wholly or partially intended to export renewable energy out-of-state, there were two contrasting perspectives on the Task Force. Some members preferred the beneficiary pays approach meaning that the transmission developer initially bears the cost burden and recovers that cost over time via the out-of-state consumers that receive the power. Other members thought it justifiable to use public funds to partially pay for the costs of developing transmission lines designed for exporting power out-of-state or those lines with at least a partial power export component to create economic opportunities for the state.
The beneficiary pays principle is basically the transmission development environment in existence today. It is the lack of transmission development that led to the creation of the Task Force. The beneficiary pays principle has failed to achieve export-oriented transmission infrastructure developed in the state. It has also failed to support overall statewide transmission planning and construction in an efficient and cost-effective manner.

Some Task Force discussion focused on maintaining the status quo (beneficiary pays), which provides little incentive for development to actually occur. The discussions in this report represent an effort to move beyond status quo and examine the options for utilizing public funds to develop transmission infrastructure for the greater economic good of the state. This concept utilizes public funds (e.g., ratepayer-generated funds or General Fund revenues), similar to that of the state’s highway system, to at least partially finance the development of building new transmission within New Mexico.

There are some who suggest that generating revenue from electric ratepayers does not create state “public funds” in the same manner as generating revenue from taxpayers that contribute to the state General Fund. However, a small “transmission development assessment” on electric customers’ bills would not be a “rate rider” similar to an energy efficiency rate rider placed on bills under the Efficient Use of Energy Act. With rate riders, the revenue goes to the utility for a specific purpose and those revenues are not “public funds.” A transmission development assessment on bills would be similar to the existing gross receipts tax levied on electric bills that contributes to the General Fund. The only difference is that the public funds generated by a transmission development assessment on ratepayer electric bills would go specifically to develop transmission lines in the public interest rather than into the General Fund. This is an established approach to funding transmission lines by RTOs.

One consideration is to generate revenue from the New Mexico ratepayer for certain larger-scale collector lines, meaning those that serve multiple developers, are 230 kV or higher voltage, and have at least a component for exporting power out-of-state. One option to accomplish this is for RETA, particularly if RETA were to become the state’s IPA, to spearhead these efforts in conjunction with private parties as a public/private partnership financing model. As the IPA, RETA could ensure that projects interface with statewide, long range planning efforts at the Southwestern Area Transmission Group regional planning group level.

Another option is to provide the existing utilities or RETA with incentive ratemaking authority to engage in export-related projects. This concept encourages the appropriate sizing of transmission lines to effectively move power from renewable resources which are typically located some distance away from load centers. California has attempted to address this issue and has provided rate recovery for utilities to build larger lines through their Location Constrained Resource Interconnection Process (LCRIP). In the California Independent System Operator (CAISO) organization’s LCRIP process, costs of transmission lines are borne by the ratepayer until developers begin utilizing the line and eventually cover the full cost of financing and operating the line. In other words, ratepayers’ contributions decrease over time and eventually are eliminated. Similarly, this approach could be used for the projects as described above where certain efforts would be backed initially by the New Mexico ratepayer, with the ratepayer obligation decreasing as usage of the line begins to occur. This would enable the state to build out a reliable, robust transmission grid with appropriately sized larger lines during the initial development stage and not have to rebuild lines when the demand fully exists. This
approach minimizes impacts to the environment, community and ratepayer in the long run as projects are appropriately sized for future use.

The Task Force recommends that a portion of the cost of export-oriented transmission infrastructure be borne by the state – a minimum of 50 percent is suggested. As discussed, this could be accomplished by a flat charge assessed to all ratepayers in New Mexico or as a slight increase to the gross receipts tax. Section 5 of the LANL Study evaluates the option of an additional surcharge on electric consumers and its impacts on commercial, residential and industrial rates (Table 13 of the LANL Study). At 50 percent cost recovery, the average monthly impact to residential bills is 80 cents to $1.88. In addition to enhancing transmission system reliability, another prime justification for having the ratepayer participate in cost recovery is the significant economic development and job creation associated not only with the construction and operation of the transmission system but from the 5,200 MW of renewable energy development enabled by such a system.

An alternative revenue generation approach is through a slight increase to the statewide gross receipts tax meaning the overall costs are spread among New Mexico residents and out-of-state visitors minimizing the overall monthly impact to in-state residents.

The Task Force did not reach consensus on whether it was appropriate or acceptable to ask in-state ratepayers or taxpayers to shoulder all or a portion of the cost of an in-state transmission collector system. Significant opposition to this concept was raised by incumbent utilities and consumer advocacy groups.

Another alternative to using state funds for a project would be to establish a “backstop authority” allowing for recovery of development costs where a project is abandoned. This would not be a direct obligation of the ratepayer unless, for reasons beyond control of the utility or RETA, a project is abandoned. Abandonment of a project may occur due to environmental or other regulatory issues. In these instances private developers may have already spent considerable funds to advance a project with limited ability to recover the entire investment. FERC does provide the ability to recover a portion of these types of costs, but an additional step may need to be taken at the state level to ensure proper development of transmission within the state. Under this scenario the at-risk capital would be eligible for full recovery by the New Mexico ratepayer. There is legal precedent for this option and without directly obligating the ratepayer. This option would likely be more favorable to the New Mexico Legislature.

Again, neither option is recommended for interstate transmission lines, and would not resolve this issue in the absence of an RTO or until FERC makes a decision based on the pending FERC NOPR.
Rationale for Using Public Funds to Stimulate Transmission Line Development

Whether it is through a small special transmission line assessment on New Mexico electric customers’ bills, the use of severance tax bond funding, gross receipts taxes, or another public source, there are a host of public benefits that accrue by using public funds to develop transmission lines which, in turn, enable thousands of megawatts of renewable energy projects to be developed in the state.

The benefits to New Mexico are many and will initially include jobs, income, and manufacturing arising from construction of new high-voltage transmission lines and increased renewable energy development. These benefits will continue during the 30-year to 50-year life of the transmission system and the associated renewable energy projects with jobs, income, and taxes. These benefits include:

- Increased property taxes for local governments;
- Wind and solar farm development will bring new jobs both directly and indirectly from construction;
- During operations, the transmission system and renewable energy projects will require permanent positions directly and indirectly;
- Reducing congestion and outages on the transmission system will reduce costs to the consumer;
- Economies of scale cost savings are also present in development of fewer but larger high voltage lines. Such savings will be passed on to consumers;
- Fuel source diversity minimizes volatile price swings of certain fuels which has a direct impact on the consumer;
- High voltage lines are more efficient, resulting in cost savings to consumers through less line loss;
- Increased gross receipts and income tax revenues to the state.

The cost of a robust transmission system to the consumer is comparatively small as transmission represents between 5 to 10 percent of the end use bill according to a recent federal Energy Information Administration study. New Mexico’s neighbors to the east in the Southwest Power Pool (Southwest Power Pool, "The Benefits of a Transmission Superhighway," April 28, 2010) have found they can build $700 million of transmission improvements with only an 88 cent charge on the average monthly residential electricity bill. Texas has found that significant transmission improvements will pay for themselves in two to three years (Texas Study: Benefits of Wind Transmission Outweigh Costs, "Renewable Energy World," April 11, 2008). Colorado estimates that $100 million in construction for new transmission will add only 32 cents on a monthly residential bill ("Connecting Colorado's Renewable Resources to Markets, 2007").
CONCLUSION

As with all investments, there are costs associated with funding transmission line development and there are also significant costs for not investing in transmission infrastructure (i.e., foregone opportunities). Costs for not expanding the transmission grid are high when considering limitations on economic investment in the state and in outages, curtailments and other results of a constrained transmission system. Renewable energy projects that ultimately locate in other states because of New Mexico's inadequate transmission infrastructure represent billions of dollars of lost in-state capital investment. In addition, losing new business because of energy delivery problems could be devastating for the future of the state.

New Mexico is poised to be a leader in building a 21st century transmission infrastructure that can accommodate thousands of megawatts of renewable energy economic development. To achieve this, New Mexico must modernize its approach to transmission line development to enable the timely construction of a new high voltage transmission grid in the state. Community needs and technologies are changing and the electricity infrastructure in New Mexico must also change to accommodate new energy sources. The high-voltage transmission grid is the economic backbone for the future. A new transmission grid is the key to assuring reasonably priced, secure, and reliable energy for the future and to stimulate economic development via renewable energy development and export. It is critical that we position New Mexico as a leader in what many call the new energy economy. Otherwise, transmission and renewable energy developers may bypass New Mexico and cut the state out of the economic development and job creation benefits described in this report.

APPENDICES

A Executive Order 2010-27
B LANL Transmission Study
C Task Force Agenda, Minutes and Presentations
E Stakeholder Comments Received on Draft Report
E Stakeholder Comments Received on Cost Recovery at Beginning of Task Force Process
### GLOSSARY

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tr>
<td>BLM</td>
<td>Bureau of Land Management</td>
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<tr>
<td>CAISO</td>
<td>California Independent System Operator</td>
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<td>DOD</td>
<td>Department of Defense</td>
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<td>DOE</td>
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<td>EMNRD</td>
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<td>ERCOT</td>
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<td>FERC</td>
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<td>FRCC</td>
<td>Florida Reliability Coordinating Counsel</td>
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<td>FTE</td>
<td>Full Time Employee</td>
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<td>GSP</td>
<td>Gross State Product</td>
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<td>GW(\text{h})</td>
<td>Gigawatt-hour</td>
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<td>IPA</td>
<td>Independent Planning Authority</td>
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<td>ITC</td>
<td>Investment Tax Credit</td>
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<td>kV</td>
<td>Kilovolts</td>
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<td>kWh</td>
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<td>LANL</td>
<td>Los Alamos National Laboratory</td>
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<td>LCRIP</td>
<td>Location Constrained Resource Interconnection Process</td>
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<td>MRO</td>
<td>Midwest Reliability Organization</td>
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<td>MW</td>
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<td>NEPA</td>
<td>National Environmental Policy Act</td>
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<td>NPCC</td>
<td>Northeast Power Coordinating Council</td>
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<td>Notice of Proposed Rulemaking</td>
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