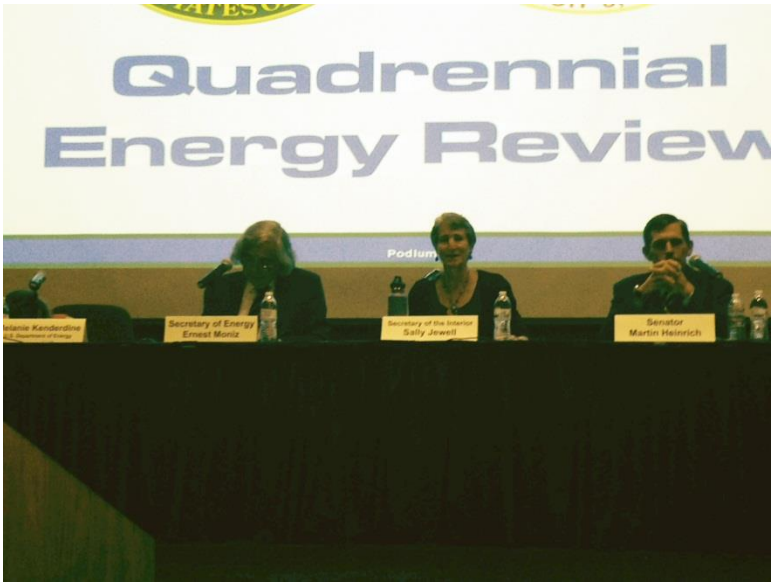
Summary of Presentations and Comments
At the
Quadrennial Energy Review

Stakeholder Meeting #10: Santa Fe, NM
State, Local and Tribal Issues
August 11, 2014

Opening Remarks



Melanie Kenderdine, Director, Office of Energy Policy and Systems Analysis and Energy Counselor to the Secretary, U.S. Department of Energy

The U.S. Department of Energy (DOE) is undertaking the analytical work for the Quadrennial Energy Review (QER) and is responsible for the stakeholder outreach process. Ms. Kenderdine introduced Secretary Moniz, Secretary Jewell and Senator Heinrich.

The Honorable Martin Heinrich (D-NM), United States Senate

Main Points:

1. New Mexico, with significant traditional and renewable resources, is at the heart of the energy sector.
2. New Mexico will also continue to experience the very real effects of climate change. The energy planning conversation will be inextricably linked to climate change as infrastructure adjustments are made to adapt to the new energy climate.
3. The energy sector is expecting to see more projects that utilize renewable resources seamed together with natural gas.

4. New Mexico will be at the front edge of the changes to the transmission system necessary to manage the nation's changing energy portfolio.
    a. New Mexico has one of the only fully integrated grid storage systems. Development of such integrated grid storage is the way of the future.
5. Transmission is critical to the State for New Mexico to reach its full potential, especially on the renewable side of the equation. Enormous resources are currently untapped because they are located in areas without sufficient transmission capabilities, both due to lack of transmission infrastructure and lack of capacity on existing infrastructure.
    a. Recently we have made significant progress on the SunZia Transmission Project and New Mexico's Renewable Energy Transmission Authority (RETA) has been working to expand other transmission opportunities in the State.
6. New Mexico will not see the investments made and jobs created unless we develop the transmission capabilities to get the energy to market.

The Honorable Sally Jewell, U.S. Secretary of Interior

Main Points:

1. Issues that are faced in permitting, especially across state lines, and through differing jurisdictions are not easily solved. Creating a strategic focus to help solve these issues is essential to an energy future that is more sensible, less complicated and less bureaucratic than our energy past.
2. One of the Department of Interior's (DOI) roles is upholding trust and treaty obligations to our Alaskan natives and American Indian tribes. I am very excited to see so many tribal leaders here today.
3. We have tremendous potential for conventional (oil and gas) and renewable development in the tribal regions.
    a. The White House Council on Native American Affairs energy subgroup is working to understand the issues across tribal lands and put forward solutions that will work for all stakeholders. We realize that the issues and solutions will vary regionally and we will work together with the interested parties to find the needed solutions.
4. We have seen a continued increase in permits to tap into domestic oil and gas resources. Going forward we must continue to use the Bureau of Land Management (BLM) appropriately to approve permits while continuing to perform inspections and uphold regulations to ensure the environment is well taken care of.
5. Since 2008, the BLM has approved over 2,700 applications for permits to drill. They have reduced the average processing time per permit to its lowest level in 8 years.
6. The DOI and my predecessor, Ken Salazar, along with President Obama, have focused on standing up renewable energy projects. This is a mission that I will continue to promote.
    b. Since President Obama took office, we have initiated 29 utility scale solar projects, 11 wind power projects and 12 geothermal projects on public lands. When completed they will have added 20,000 jobs and generated 14,000 megawatts of power, enough to power 4.8 million homes.

7. We must continue the efforts being made to bring energy potential to market. We worked to find solutions that will allow the SunZia Transmission Project to move forward.
    c. We created the Rapid Response Team for Transmission (RRTT) which enables us to work with states more effectively to run a parallel rather than sequential permitting process.
8. It is important to recognize that our country depends on a clean and healthy environment as much as it does on pipelines and transmission cables.
    d. We have the opportunity to use technology to develop our energy sector in a way that is compatible with the environment and in a way that will protect sacred and conservation sites.

The Honorable Ernest Moniz, U.S. Secretary of Energy

Main Points:

1. The QER attempts to weave together the many varied interests that come together over energy.
2. In the first year of the QER, we are focusing on our energy infrastructure. This has proved to be a critical piece of the puzzle. Some examples include:
    a. Natural gas and propane shortages during the past winter's polar vortex
    b. Lack of infrastructure to move renewable electricity to market
    c. Impacts of increased transportation of oil by rail
    d. Water stress in California and its impact on energy infrastructure in the region
3. As the above mentioned issues are regional by nature, to succeed we will need to come up with regional solutions. Today's goal is to get regional input on state, local and tribal issues that need to be understood as we put forward a comprehensive strategy to develop our nation's energy sector.

Audience Questions and Answers

Q: Is the timeframe for the off ramp from current coal-based resources flexible? We believe that we need additional time in certain regions in the state.

Secretary Moniz:

- This is a question in regard to the active rulemaking at the Environmental Protection Agency (EPA). Comments are being actively sought by the EPA and this will be an issue that they will be the ultimate decision makers on.

- The EPA plan establishes state by state goals for carbon intensity. Each state has the flexibility to reach these goals in ways that work best for them. There is also the opportunity to form regional partnerships to get more efficient plans in place. Until the state compliance plans come forward, it will not be entirely clear on how each state will address this issue. Energy efficiency programs appear to be a likely component of each state's energy plans.

Secretary Jewel:

- To echo what Secretary Moniz said, your comments both in this process and the EPAs rulemaking are crucial to the decision making process. We have heard your concern and are working on reducing the impact to coal generation facilities. A good example is the discussion between the Bureau of Reclamation and President Shelly of the Navajo Nation regarding the Navajo Generating Station, which is threatened by the aforementioned rulemaking.

Senator Heinrich:

- We are all focusing on making sure changes are achievable, flexible and responsive to the local, state and regional situations. The EPA is aware of the complexities surrounding the issue. We will continue to press this going forward.

Secretary Moniz:

- I would like to make stakeholders aware of the Third Climate Assessment Report, which had a very strong focus on the regional impacts from global warming. While impacts are regional, we all understand that the solution must be international. The United States must be a leader in initiating change. Since the proposed EPA Power Plant Rule came out, leaders from many other countries have specifically recognized the leadership the United States has displayed in proposing this rule.

Q: Can legislative action be another route to help Indian tribes in developing their energy portfolio?

Senator Heinrich:

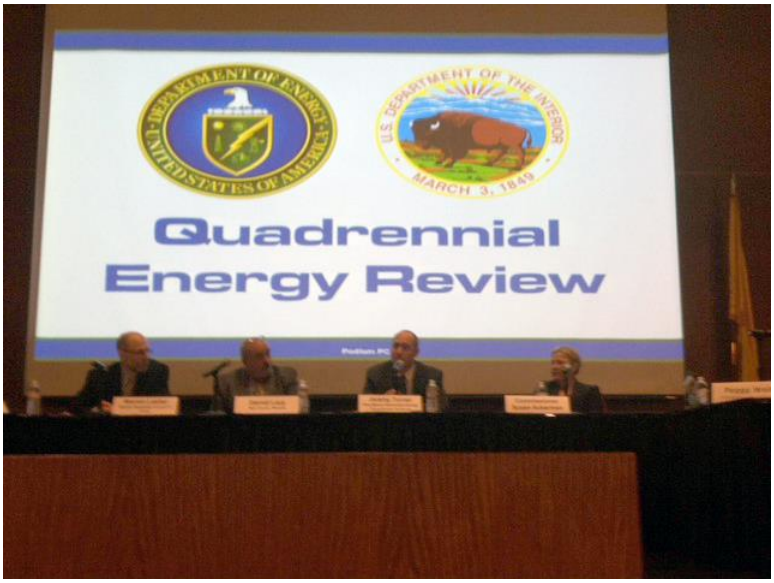
- There was a recent change in leadership in the Senate Energy and Natural Resources Committee and recent action has yet to receive a mark-up in the Senate. There is growing recognition that tribes are part of the energy solution. To be able to address the challenges we face today, we must meet with tribes as sovereign equals, in addressing everything from production to transmission of energy.

- I am hopeful that after the election, the Senate Energy and Natural Resources Committee will be able to move forward on a number of bills currently bottled up in the Committee.

Panel I: Electricity Transmission, Storage and Distribution: Jurisdictional Issues and Policy and Regulatory Priorities

*NOTE: All speaker presentations are posted on the QER webpage at: **www.energy.gov/qer***

Presenter Name: Honorable Susan Ackerman
Affiliation: Chair, Oregon Public Utility Commission



Main Points:

1. The energy industry has become increasingly fragmented in the past 25 years. The fragmentation varies regionally because each region has differences in geography, resource base, culture and economic goals. These differences will not change over time.
    a. The introduction of new technology and the addition of unconventional players will provide additional consumer choice and will work to keep the industry fragmented.
2. While plans will vary state to state, we are all planning on moving toward a less carbon intensive industry.
3. Many of the new resources are intermittent and require new things of the grid such as new technology, applications planning and probably back-up from traditional generation.
4. We are on track to under-invest in grid innovation. Tools, technology, applications analytics and reforms that can enhance the efficiency and reliability of the grid do provide great value to society. Unfortunately like many public goods, individual investors cannot obtain the value needed to make the business case to fund many of these grid innovation projects. The DOE can help fund these types of innovative technologies.
    a. Synchrophasors are a great example of such innovative technology that will require continued DOE support. They greatly expand grid visibility, but do not currently bring home the monetary benefits to offset the costs associated with deployment and application development.
5. As we increase the amount of distributed generation and intermittent distributed generation on the system, we must ensure that we do not cause reliability issues that will first locate in the distribution system and will roll up to the grid.
    a. Need to work on improving operator visibility at the distribution system level.

b. Need two-way communication of information.
c. May need to rationalize Federal Energy Regulatory Commission (FERC) and state regulatory jurisdictions.

Presenter Name: Jeremy Turner
Affiliation: Executive Director, New Mexico Renewable Energy Transmission Authority (RETA)

Main Points:

1. RETA was established to help move along the construction of transmission projects. RETA has the ability to plan and finance projects. Planning is a very important aspect in the establishment of additional transmission capacity. Without proper planning, we tend to band-aid our issues.
    a. We have recently commissioned the Los Alamos National Laboratory (LANL) to review our existing infrastructure and determine what minimal build-out we can take on to export about 5200-5500 megawatts of power from New Mexico.
2. The necessary incentives do not exist in the current environment for utilities to build additional transmission and merchant-based transmission developers like RETA and Clean Line Energy are there to fill the void.
    a. Without a proper cost recovery system, utilities will not venture into transmission development.
    b. Merchant-based transmission developers have a different backing and face different time horizons on investments.
3. RETA believes that public-private partnerships are the correct way to move forward. These partnerships will allow the industry to start laying the framework and the groundwork to actually get transmission built.
4. We must acknowledge tribal communities, and acknowledge that we must ask for permission and to develop infrastructure collaboratively with the tribes on their lands.
5. RETA would like to see closer coordination with FERC and the other regulatory agencies. At the FERC level there is a desire to build more transmission, but the necessary rules are not in place to allow such development to occur.
    a. The RRTT team discussed by Secretary Jewel is a good first step in addressing the coordination issues.
6. RETA would like DOE to look at the financial incentives for transmission. If we can make the projects more economical and put greater timelines in place, where people know exactly what they are investing in and for how long, then we can start to address our infrastructure needs.

Presenter Name: Darrell Lacy
Affiliation: Department Director, Nye County, Nevada

Main Points:

1. Nye County is a hot spot for renewable energy.
2. There are three components to developing the renewable energy potential in the region:
    a. Transmission;
    b. Access to land;
    c. Power purchase agreements and reliable financing means over a long period of time.
3. The rural geography and various regulatory agencies with control over land in the county make it difficult to install new transmission lines.
4. Nye County attempts to help provide developers with expertise on how to navigate the regulatory environment associated with developing generation and transmission facilities on federally controlled lands.
5. Transmission lines through your district do not do you any good if you do not have any access to it. We need a coordinated energy project and program from the federal government to assist in linking renewable generation with the necessary transmission.

Presenter Name: Warren Lasher
Affiliation: Director of System Planning, Electric Reliability Council of Texas

Main Points:

1. Texas was faced with a conundrum. We had a lot of wind potential, but no transmission to the areas with a lot of wind. The Texas State legislature stepped in and passed a bill in 2005 that effectively required the Public Utility Commission of Texas (PUCT) to designate certain zones known as competitive renewable energy zones or CREZ, and then ordered transmission lines to serve those zones and get power to load centers.
2. The PUCT staff worked their way through the right-of-way permitting for 72 new circuits.
    a. By the end of 2013, almost 3,600 miles of new right of way to bring renewable energy to the load centers in eastern Texas had been established.
3. Three things were responsible for success of the project:
    a. The size of Texas makes it conducive to these types of transmission projects. It is large enough that there are a range of resources, but small enough that the affected parties can get together and discuss and work through issues.
    b. Texas worked through cost allocation and benefits issues, allowing involved parties to see the benefits from the process.
    c. Texas had a large vision, but took small steps to reach that vision. This approach allowed Texas to maintain the capability to change course if difficulties arose, or if there were new ideas that could be incorporated into the process.

Panel Questions and Answers

Q: How can we work on further coordination? Is there a federal role for enhancing coordination?

Susan Ackerman:

- At the state level, there is no substitute for integrated resource planning, in terms of finding a power supply that is the lowest cost, least risk, and lowest carbon and is environmentally responsible and reliable.

- The federal government has helped with coordinated planning at the wholesale level through their funding of the Western Governors' Association. Coordination will occur on a region by region basis, but federal assistance and funding of such coordination is helpful.

Jeremy Turner:

- The RRTT is a perfect example of how the federal government can help with coordination efforts. It still needs a bit more time and more funding, but is a step in the right direction.

- I would like to see closer coordination between the departments on what their priorities are, and what they want versus what they need. From an investor's standpoint the more definitive timeline we can provide an investor, the more likely it is that they will stay with the project for the long term.

Darrell Lacy:

- A lot of projects that were working through the process have now been put on pause while investors try to understand what the impact of Section 111(d) of the EPA proposed rule (Clean Power Plan) will be.

Warren Lasher:

- In Texas we see the opportunity for significant research and development to increase our ability to model and analyze the implications of some of the changes that are being made to the grid, specifically, increasing the amounts of renewable generation. This is an area where the federal government can really push things forward by working with the national labs and other industry research groups.

Susan Ackerman:

- There are legitimate issues in the permitting and siting processes. But, sometimes projects fail for a reason. Many times it comes down to the economics. There is so much of a movement in our region towards distributed generation; the lines that are needed to get across multiple states to reach renewable generation would not pay for themselves.

Q: Do existing authorities for siting, permitting and planning allow the United States to achieve its long term goals? If not, what can we do to enhance or change the existing authorities to achieve our goals?

Susan Ackerman:

- I am not sure that the federal government wants to, or should take over siting responsibility from states and localities. Some change may be necessary, but such a shift in responsibilities would be very difficult.

Jeremy Turner:

- We should focus on identifying issues up front and finding solutions in a timely manner. Increased interagency coordination and this review through the QER is a perfect opportunity to work towards this goal.

Darrell Lacy:

- FERC could take the lead for the involved federal agencies to help align the agencies various priorities and timelines.

Warren Lasher:

- The federal government can help by establishing a plan that acknowledges and works to provide solutions for delays in the permitting and siting process.

Q: How do we finance these major infrastructure projects? Are there lessons learned from the CREZ project that we can apply to future initiatives?

Warren Lasher:

- Texas is a fully deregulated market, which allows generators to build anywhere they want. While you give something up when you go to that type of a construct you also gain a lot. In Texas all transmission is paid for by load using a cost ratio based upon usage and peak hours.

Jeremy Turner:

- RETA is working to make state authorities eligible for private activity bonds, which essentially would make transmission projects tax exempt. This is one thing that we need to continue to look into. We also need to open up master limited partnerships, which have been used for decades in natural gas pipeline financing.

Susan Ackerman:

- I am concerned about the notion that consumers and load pay for everything if there isn't some other kind of economic test of whether such projects are a good financial decision. There still needs to be a role for reliable power to consumers at affordable prices, regardless of everything else that we are doing here.

Q: What is one specific recommendation that you would give the QER Task Force on the issue of infrastructure challenges and jurisdiction?

Jeremy Turner:

- I would recommend that they work on closer coordination among the federal agencies to head off issues off up front. Work among departments, figure out where problems will exist and deal with them early on in the process.

Darrell Lacy:

- I agree with Mr. Turner. Get the federal agencies together, put an agency in charge and give that federal agency the ability to hold the other agencies accountable to timelines.

Warren Lasher:

- I think the QER Task Force should focus on research into how much it is actually going to cost to reliably run the system with the new technologies that are being introduced, and what do we need in order to maintain reliability. These are issues that are not easy to analyze right now. I also would stress the importance of investing in people. Invest in people that can tackle these challenges.

Susan Ackerman:

- DOE is doing a lot to drive innovation in the industry. DOE should continue to identify the gaps where particular analysis needs to be done and technology that needs to be developed and find ways to provide funding for exactly that.

Q: We have just a few moments to get some final thoughts on today's discussion.

Jeremy Turner:

- I hope to see a plan put in place that we can work towards, much like the CREZ project in Texas. Plans should be adopted in a formal fashion so that we don't lose all the momentum generated by the QER review.

Darrell Lacy:

- As more renewable resources come on the grid, we must work on the issues of reliability and backup generation to deal with the intermittent loads. Region-wide transmission grids and energy storage will be more critical than ever.

Panel II: Oil and Natural Gas Infrastructure: Jurisdictional Issues and Policy and Regulatory Priorities

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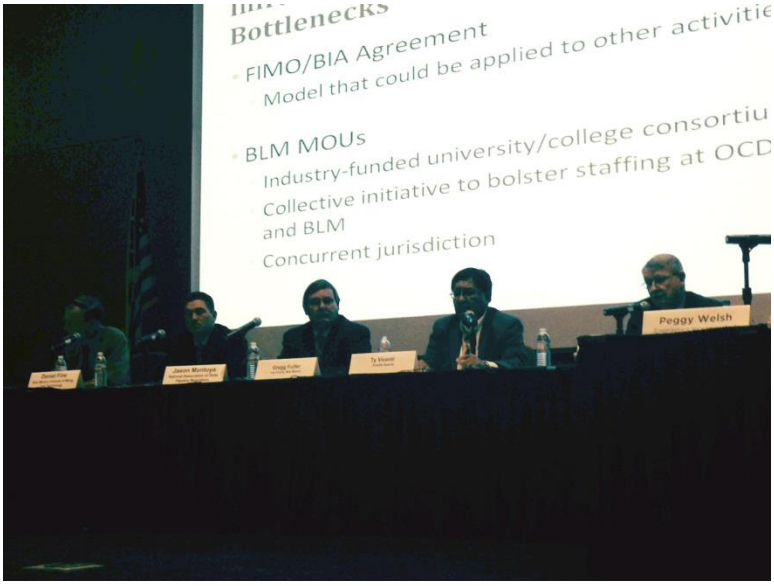

Presenter Name: David Martin
Affiliation: Cabinet Secretary, New Mexico Department of Energy, Minerals and Natural Resources

Main Points:

1. There has been a dramatic increase in oil and gas production in New Mexico.
    a. The Northwest portion of the State faces a lack of rail to get oil and natural gas to the rest of the State.
    b. In the Southeast there is a lot of truck traffic due to the amount of production, which raises safety and road usage (wear and tear issues).
2. All of the oil and natural gas needs to be moved out of the State to be refined.
3. We hope to establish new relations between the State and federal agencies to provide a framework of inter-governmental harmonization and asset deployment.
4. We need Congress to adequately fund and staff the BLM field offices in oil and gas producing areas.
5. If new federal rules are implemented, steps need to be taken to make sure the infrastructure is in place in the field offices to support those regulations.

Presenter Name: Honorable Ty Vicenti
Affiliation: President, Jicarilla Apache Nation

Main Points:

1. The Jicarilla Apache pay tens of millions of dollars to the State of New Mexico. These payments are not coming back to the Jicarilla Nation from the United States Government. However, by being able to tax outsiders operating businesses on Jicarilla Apache land, we have been able to obtain the funding needed to provide housing, schooling, and other public services for our people.
2. New technology has allowed for increased production on lands already in production, and has opened up new land for potential production.

3. The Bureau of Indian Affairs' regulatory structure hinders projects and development of on reservation resources. The Jicarilla Apaches are in full support of recent conversations to expand tribal management to right-of-ways, as well as sub-surface leasing.
4. The development of comprehensive infrastructure for delivery of energy resources is the best way that we can achieve domestic industry independence.
5. Fred Vigil is in charge of the Jicarilla Apache Energy Corporation. You can contact Fred at 505-901-8549.

Presenter Name: Greg Fulfer
Affiliation: Lee County, New Mexico

Main Points:

1. Lea County sits on one of the largest oil and gas deposits in the world, based in the far Southeast corner of New Mexico. In 2013, Lea County had over 15,000 producing wells, produced over 43 million barrels and had close to 14,000 residents working in petroleum-related jobs with an average salary of $80,000 per year and paid over $900 million in federal, state and local taxes.
2. Revenue from natural resources allows us to invest in our community, while working to build a lasting infrastructure and a diversified economic base in the community.
3. We are facing a critical housing shortage. Residents have been living in hotels, which has driven up the price of hotel rooms in the area. As businesses look to move to the area, their workers are having a difficult time of finding housing or even hotel rooms. Affordable housing is an urgent challenge.
    a. The federal tax credits administered through the New Mexico Mortgage Finance Authority would be an avenue to bolster housing, if the right incentives were put in place.
    b. Legislation is needed to assist communities with shortages in workforce housing.
4. We are beginning to have public safety concerns over traffic and road deterioration due to use of heavy trucks involved in construction of oil and gas operations and the increase in population. There is a need for funding for road repairs.
5. We support the production tax incentives, the approval of liquid natural gas (LNG) exports and responsible approaches to endangered species and environmental regulation.
6. Federal agencies need to consider local impact when creating new policies. They must take into account local sensitivities and should not attempt to force a one size fits all solution across the country.

Presenter Name: Jason Montoya
Affiliation: Bureau Chief, Pipeline Safety Bureau, New Mexico Public Regulation Commission

Main Points:

1. The National Association of Pipeline Safety Representatives (NASPR) is constantly addressing issues regarding existing infrastructure, which is as a significant an activity as the permitting, siting, and building of additional infrastructure.
2. Addressing issues with existing infrastructure today will allow us to overcome them in future expansions.
3. NAPSR top priorities in 2014 are:
    a. Final rule regarding gathering lines
    b. Final rule regarding the integrity verification process
    c. Final rule regarding the application of integrity management requirements outside high consequence areas
    d. Final rule regarding damage prevention
4. Damage from excavation activities in the #1 cause of damages to underground pipelines.

Presenter Name: Daniel Fine
Affiliation: Director, New Mexico Center for Energy Policy, New Mexico Institute of Mining and Technology

Main Points:

1. Northern New Mexico is now the most significant oil and gas producing region in the State. Even with the soaring production, there was not an effort to build the infrastructure necessary to support such production.
    a. The bottleneck and issues at hand are: public safety, stranded oil, factors discouraging new production as well as investment.
2. We have created a situation where we are fully reliant on the highway and transloading (truck to rail transportation) systems to move the oil and natural gas.
    a. There is no regulatory authority (local, state, tribal or federal) over the transloading of oil. This is a gap that needs to be addressed.
3. Checkerboard jurisdictional issues exist among the Navajo tribe, Navajo allottee, Bureau of Indian Affairs Bureau of Land Management (BLM), state and local authorities that also prevent the state from realizing its full production potential.
    a. We need coordination among all of the parties involved to solve these issues.

Panel Questions and Answers

Q: What is the federal role with regard to regulating the oil and gas industry and in what areas need more clarity?

David Martin:

- There is certainly a role for the federal government, especially related to environmental impacts and threatened or endangered species. However, the state government can act more efficiently than the federal government as they have a better touch on local issues.

Ty Vicenti:

- I would like to extend the invitation to federal and state authorities to come out to the Jicarilla lands to see what our oil and gas production is really like. We have issues with the regulatory bodies, but we have always invited the federal and state agencies to come visit us and see what our concerns are. Communication with the federal and state authorities can improve through these types of visits.

Greg Fulfer:

- Companies many times are confused over the regulatory environment between BLM and other state agencies. Establishing a division of labor between BLM and the State would further the speed of our permitting.

Jason Montoya:

- Getting all the parties together to address issues and look for the areas with overlapping responsibilities between federal and state agencies would prove to be beneficial.

Daniel Fine:

- DOE has not undertaken a study in the past few years on the refining capacity of the United States. We have limited refinery capacity in the Western state production region and this is an area that could use some looking into by DOE.

Q: How can other states benefit from lessons learned in the infrastructure changes in New Mexico?

Jason Montoya:

- Natural gas infrastructure capacity was severely stressed last winter during some of the coldest days that we have ever experienced in the region. Capacity constrains have been something that we have been looking into over the past year.

Greg Fulfer:

- We have faced a variety of infrastructure issues in attempting to support the booming oil and gas industry. Housing constraints are by far our largest issue. We have also seen significant deterioration of our roadways. We need to ensure that some of the revenue being generated by the region is reinvested back into the region.

Daniel Fine:

- In the Northwest we have a refining deficiency that is constraining New Mexico's production. Rail in Northern New Mexico is required to sustain the current production, but additional pipeline is also needed.

Ty Vicenti:

- The Jicarilla are in a remote area of the State and much of our infrastructure is in need of significant capital investment. We are also concerned over the environmental impact on the production process. We hope to see better regulations that will benefit all parties involved, while continuing to protect our environment.

David Martin:

- We think there is an opportunity for others to partner with the State and local colleges in the region.

Panel III: Vulnerabilities and Desirable Characteristics of the Future Energy System

NOTE: All speaker presentations are posted on the QER webpage at: ***www.energy.gov/qer***

Presenter Name: Honorable Ben Shelly
Affiliation: President, Navajo Nation

Main Points:

1. The Navajo Nation, like many states, remains concerned about the financial impact of transitioning away from non-renewable fuel sources.
2. We are however, committed to diversifying our energy portfolio, and recently passed the Energy Policy Act of 2013, a big step to enhancing energy security and a cleaner environment.
3. To develop our energy infrastructure we must partner with states and other outside entities.
4. Infrastructure is key element for our economic growth.
5. The federal government must work with the tribes from the onset of energy projects instead of working against the tribes at the tail end of projects.

6. I look forward to more streamlined efforts which will make it easier for us to attract the necessary capital to finance energy initiatives.
7. I would like to create a team that can actively participate in the energy field, instead of being a passive member of the audience. Our younger generations have been educated in these areas and are ready to assume a large role.
8. Many of our projects are shovel-ready. We need assistance in planting the initial seed, but we are ready to do our part.

Presenter Name: Randy Pacheco
Affiliation: Dean, School of Energy, San Juan College

Main Points:

1. The energy industry needs a qualified workforce in order to replace many of the soon-to-be- retired baby boomers.
2. We are having difficulty in attracting qualified workers, which can pass a drug screen and background check. Not a single advancement discussed today will be made without a qualified workforce.
3. Educational institutions need to work collaboratively with state and federal agencies to fill the demand for qualified skilled labor.

Presenter Name: Steve Catanach
Affiliation: Light and Power Manager, City of Fort Collins, Colorado

Main Points:

1. In 2009 the City Council of Fort Collins adopted a goal of reducing the city's overall greenhouse gas emissions by 20% below 2005 levels by 2020 and 80% by 2050.
2. To achieve these goals we have adopted some very aggressive energy efficiency and other programs that have set Fort Collins on the path of significantly reducing greenhouse gas emissions. We are now looking at resetting our goal to 80% below 2005 levels by 2030 by addressing not only the electricity sector, but also the heating and cooling, natural gas, transportation and waste environment sectors as well.
3. We see vulnerabilities in the physical environment, cyber environment and the business environment.
    a. Climate change poses significant physical threats to the system. We transitioned our system and are now 98% underground in the city, significantly reducing our vulnerability due to major weather events.
        i. This reliability allows Fort Collins to take advantage of major economic opportunities. We have a very high-tech industry in our community that is there due to the reliability of our electricity supply.
    b. The business environment is changing as customers have an opportunity to take some of their power generation into their own hands. We see it as critical to identify what our business is going to look like in the future, and what we are going to do to address the aggressive goals our City Council has set.

Presenter Name: Mike Mertz
Affiliation: Director, PNM Resources

Main Points:

1. We are concerned with both the significant traditional vulnerabilities (extreme weather events) as well as existing and emerging risks in the physical and cyber security arenas.
2. PNM Resources remains vigilant in ensuring the protection of our assets. We continually refine and adapt our programs to quickly detect vulnerabilities and protect our systems from a wide variety of treats ranging from coordinated nation states, to sophisticated cyber criminals to individuals with malicious intent.
3. Effectively sharing timely information with other utilities and federal agencies is critical to serving our customers with reliable, affordable and secure electricity. The federal government is in the position to help identify, evaluate and communicate threats while providing assistance in defending our systems and infrastructure from coordinated criminal and nation state threats.
4. While federal policy is necessary, we must ensure that any standards for the private sector do not inadvertently prevent new technology, but rather promote investments while providing utilities a clear path for rate recovery.
5. Policy should be technology agnostic as developing policy targeted only to specific threats simply cannot keep up with the always evolving cyber threat.
6. PNM Resources shares FERC's concerns to develop additional physical standards for critical infrastructure, and will continue to be active participants in the standards development process to achieve these goals.
7. We believe that operators should have considerable flexibility in implementing protective measures based on their familiarity with their own service areas, assets and the unique qualities of their customers. The one size fits all approach simply does not work in the security realm.
8. We believe that existing partnerships should be expanded to allow for better information flow between the private sector and the government. New partnerships should be explored to support financing mechanisms for resiliency and security investment, and government policy should be shaped to provide regulatory certainty so that utilities can continue to maintain a resilient, modern and secure grid.

Presenter Name: Frank McRae
Affiliation: Energy Resources Department, City of Mesa, Arizona

Main Points:

1. Achieving the goal of a long-term balance of creating energy economic development opportunities while also ensuring energy utility systems remain safe, reliable, secure and affordable, while at the same time remaining stewards of the environment, has been extremely challenging by events that disrupt our normal operating conditions.
    a. Extreme weather events such as haboobs and microbursts cause incredible high wind speeds which cause damage to our above-ground infrastructure.
    b. Long distance transmission lines are susceptible to fire created by drought conditions.

    c. High temperatures for extended periods of time will cause stresses on equipment such as transformers. As transformers age, high temperatures can cause them to catastrophically fail.
    d. Recent increases in attempts to compromise the security of our energy facilities and equipment, as well as breaches of cyber security systems, has begun to demand increasing attention from our utility management.
2. We have been working cooperatively with the federal, state and local authorities to take steps to identify and develop plans to address and remedy potential threats.
3. These steps require a significant capital investment. Municipal bonds are our single most important tool for financing investments, both for economic development and for providing a safe, reliable, secure, affordable and environmentally responsible energy utility system.
4. The single most significant and avoidable risk would be a new and unprecedented federal tax on municipal bonds. Even the threat of such a tax has already placed a strain on municipal markets. Raising rates is our only other realistic funding option. We recommend that DOE urge the President, the Office of Managing and Budget and the U.S. Department of Treasury to abandon their proposal to tax municipal bond.

Presenter Name: Jeffrey Pillon

Affiliation: Director, Energy Assurance, National Association of State Energy Officials (NASEO)

Main Points:

1. NASEO works with state energy directors and governors' energy advisors to address forward looking energy infrastructure policy set by governors and state legislators. These policies and programs are distinct from regulatory approaches that are oftentimes somewhat more reactive in nature.
2. When examining vulnerabilities, we must consider natural disaster, including those caused by extreme weather; failures due to aging and inadequate infrastructure; and the potential for human attacks, both physical and cyber. These events cost billions of dollars of economic losses and risk human life and safety.
    a. It is far less costly to mitigate these risks than it is to respond, recover and rebuild following disasters.
3. The impact of petroleum spending must be considered as one of the important economic risks and vulnerabilities of our system, given the history of price volatility and the global nature of oil markets and pricing.
4. The shift in our sources of domestic oil and gas supply has created new challenges to adapting the transportation infrastructure needed to move these resources to market.
5. NASEO has worked to support the National Infrastructure Protection Plan and Energy Assurance Planning activities supported by the DOE. This will help us to be better prepared to respond to energy emergencies and explore policies to improve resilience.
6. Though public-private partnerships, states are improving our nation's critical infrastructure and energy infrastructure. These efforts benefit greatly from the dialogue modeling efforts and initiative such as the QER. We look forward to continuing the state

collaborative work with the DOE and the strong support of the Secretary of Energy's efforts to improve our energy system reliability, resilience, economic competitiveness and environment to infrastructure planning and modernization.

Panel Questions and Answers

Q: How do we balance the need for environmental sustainability and infrastructure development in an affordable manner?

Steve Catanach:

- It is critical to understand the cost and consequences of not taking sufficient action. In Fort Collins we are looking at having to change how we manage storm water in our community as the amount of runoff from the Rockies may increase dramatically due to climate change.

Ben Shelly:

- Partnerships between the Navajo and local, state and federal governments can help achieve this balance. We have a partnership with PNM Resources that provides scholarships to help train our workforce to help meet the needs of the future.

Frank McRae:

- The city of Mesa employs an integrated resource planning process which puts all of the technical and economically feasible options on a level playing field. We conduct public outreach programs and obtain public input which allows us to get a good perspective of what our customers and what our City Council are looking for in terms of a resource mix. Further policy should be based around sound science and solid economic principles.

Jeff Pillon:

- I believe there is an opportunity to achieve this balance while cutting costs. These goals are not in conflict.

Mike Mertz:

- It is important that we consider all of the reliability impacts as we balance these goals. We must look at potential impacts to reliability when considering costs.

Q: How should all of the new data being harnessed by technological advancements be considered in this evolution to a new energy system?

Mike Mertz:

- From a technology perspective we can always do things better if we have more data to turn into usable information. We have to be careful that we are able to take the data and turn it into usable information.

Jeff Pillon:

- States need a lot more information because the complexity of the overall energy system is growing so dramatically that we need to be able to have the capacity within state governments to be able to look at the data and analyze and understand it correctly so we can make informed decision for policy purposes. It is important to develop tools that will transform this data into the information that Mr. Mertz mentioned.

Frank McRae:

- The way that data is gathered, stored, retrieved and archived is very important. Customer data should not be shared with outside entities unless permission is received from the consumer to share said data. Each time you gather data you create a potential avenue for someone who wants to breach your cyber security. The protection of data will become increasingly important as new technology is deployed.

Steve Catanach:

- As part of the Smart Grid Investment Grant program, funded by the DOE, we have deployed advanced metering infrastructure (AMI) throughout our system. The information that we are getting from the AMI allows us to have the opportunity to be much more proactive in the operation of our system.

Ben Shelly:

- We must make sure that data is accurate and used correctly as it can have significant impacts to future economic and policy development.

Q: What are the general needs and how can the representatives of the agencies participating in today's QER meeting ensure that we have a skilled workforce in the both the short and long term?

Randy Pacheco:

- One of my roles as Dean is to find individuals that are unaware of the energy industry and the opportunities that exist within the industry. We need to educate younger generations about the energy industry.

Frank McRae:

- We encourage our personnel to pursue formal educational advancements. We promote leadership development though our leadership development program. We also provide the opportunity for our employees, who are not college graduates, or college bound to take college level courses in strategic planning, accounting and budgeting and project management so they can get the skills needed to bring them up to the supervisor and next level of management without having to complete a traditional degree program.

- We see our veterans as a real source of personnel potential. A program to help reconcile what the veterans are looking for and what we need would be a great benefit.

Steve Catanach:

- We have worked to revise our budget to allow for the double hiring of some positions in order to pass on knowledge as our aging workforce transitions out.

Ben Shelly:

- Direct funding for workforce development programs would greatly help the Navajo people. This will allow us plenty of time to put together the programs needed to train our workforce to fill the needed demand for skilled labor. We are engaged with the University of New Mexico to train our Navajos in all areas of trade.

Jeff Pillon:

- A number of state energy offices engage in energy education, conducting outreach to elementary and secondary education to inform students the level of importance of energy and how the energy system works. These programs are beneficial and assist in guiding younger generations towards careers in the energy sector.

Mike Mertz:

- We have a substantial number of folks that are ready for retirement. However, what we really need is to provide mid-level workers with moderate experience that can help guide the younger generation and fill the gaps that will be created with the retirement of the older generation. We continue to partner with universities to train our potential workforce on emerging systems and what systems will look like in the future. We also utilize training provided by the DOE. We need to rely on resources that are already out there that are capable of providing the training we need to get people who can hit the ground running.

Q: What is the one specific recommendation you would give to the QER Task Force? You may also provide any final remarks that you may have.

Ben Shelly:

- We need more control of our land to develop our energy potential. I would also request funding for one of our partners, Sandia National Laboratory.

Randy Pacheco:

- We need continued help in developing our workforce for the future.

Steve Catanach:

- DOE can provide a tremendous amount of knowledge and skill through the national laboratories and their research. The national laboratories can provide a knowledge base and can assist with future modeling and long term planning in order to assure that we are headed down the right path.

Mike Mertz:

- We would like a clarification on the roles and responsibilities of the federal government when it comes to protecting critical infrastructure.

Frank McRae:

- I would emphasize the importance of recognizing that utilities are a very capital intensive industry. Consider how initiatives or policies that threaten how costs are recovered and are spread amongst customers can impede investment.

Jeff Pillon:

- It is important that the QER Task Force takes a comprehensive, strategic look at all energy resources across all sectors. The overall landscape needs to be understood so that we don't solve a problem in one sector just to create a problem in another sector.

- Both the private and public sectors need to stay concerned over the evolving cyber threats to our energy systems. We need to work together to address this concern the best we can.

Ben Shelly:

- The Navajo Nation wants its people to have jobs. We need to create business and create jobs so that we can ensure our futures without the worry of significant federal intervention.

Public Comments

The public is allowed to sign up to provide comments, and each commenter is allowed five minutes in which to make them. Each commenter was asked to approach one of the standing microphones as their name was called, introduce themselves, their organizations and make their comments. On the stage representing the DOE were Kate Marks and John Richards, both Senior Advisors in the Office of Energy Policy and Systems Analysis.

The U.S. Department of Energy encourages everyone to file written comments at QERcomments@hq.doe.gov to

ensure a wide variety of public input into the QER process.

Public Commenter Name: Michael Curtis
Commenter's Main Points:

1. We need to establish a system that allows the elderly, fixed income, minorities and people impoverished to participate in the transformation into a new energy society.

Public Commenter Name: Dave Neal
Commenter's Main Points:

1. I would like to draw the QER Task Force's attention to the issue surrounding the rates charged by Native Americans for right-of-ways. There is no cap on these fees, and there is significant variation in the rates being charged by the various tribal entities.

Public Commenter Name: Tom Singer
Commenter's Main Points:

1. I would like to emphasize the need for the DOI to continue to move forward on completing its update of the BLM's methane waste rule before the end of this year.

Public Commenter Name: Joe Gracia
Commenter's Main Points:

1. I believe there is a major opportunity to develop community-need based energy development. All stakeholders should be involved in any solutions that are promoted or recommended by the QER Task Force.

Public Commenter Name: Xubi Wilson
Commenter's Main Points:

1. We need to look towards a long term and resilient future in terms of our energy planning, for the survival of people all across the United States.
2. Fossil fuels are not unlimited. We must develop a long term plan that focuses on transitioning away from existing fossil fuels.

Public Commenter Name: Commissioner Valeria Espinoza
Commenter's Main Points:

1. I look forward to participating in the evolving QER process. We are working on many developments within my region and I believe that I can contribute some of the lessons learned from our development to assist the QER Task Force.

Meeting Conclusion

DOE's Kate Marks expressed appreciation to everyone who took the time to present their views and participate in the process. She informed attendees of two upcoming meetings, August 21st in Cheyenne, Wyoming and September 8th in Newark, New Jersey, and that all

future information on the QER can be found on DOE's website at www.energy.gov/qer. Ms. Marks directed attendees to submit all written comments to QERComments@hq.doe.gov.

Ms. Marks mentioned that all of the available panelists' written statements from the meeting will be posted on DOE's website for all those interested in downloading a copy.

She thanked the hosts, the State Personnel Office, the Governor's office, the DOE and Energetics Inc. staffs, the panelists and attendees, and the meeting adjourned.