Monte Vista - Energy Listening Session Summary

The third listening session was held in Monte Vista on Wednesday, July 31, 2013. The session was attended by 26 industry participants and four staff from partner agencies. The attendees are listed in the table below. Please note that this summary does not reflect the opinion of the State of Colorado, but rather provides a summary of comments from attendees that were with businesses and other non-state agency organizations.

State and Regional Profile – Discussion Points

- Mining activity in Creed is expected to grow significantly in the near future.
- Additional data for energy jobs on a county by county basis would be helpful.
- There is very little oil and gas development in the San Luis Valley (SLV).

Energy Efficiency Trends – Discussion Points

- San Luis Valley Rural Electric Co-op (SLVREC) has 12,000 meters and 7,000 customers. Agriculture and ranching make up a large share of the customer base.
    - Rebate programs are available for retrofits on both residential and commercial properties, including replacement of appliances and equipment. The rebates are implemented with support from Tri-State and involve no surcharge on SLVREC customers.
    - A new metering system is being implemented to help manage energy consumption. This will allow energy information to be delivered to customers in a timelier manner.
    - SLVREC has a heavy irrigation load. The use of "smart meters" for agriculture irrigation uses may not be used effectively for certain tariffs.
- Additional education to consumers is important to expand appropriate energy efficiency improvements. Energy efficiency is not just replacing equipment with more efficient equipment. Providing information to consumers is a key piece to understanding cost and making energy decisions.
    - Utilities are very important for energy efficiency education.
    - After a consumer receives an energy audit there are challenges to then planning for an improvement and then paying for the improvement. In many cases the consumer is educated, but either the need is simply not there or the upfront cost to upgrade or replace prevents the customer from implementing a project. The San Luis Valley (SLV) includes some of the poorest counties in the state.
- Energy efficiency means many things to people in the region. On a large scale, it includes using generation capacity efficiently. Utilization of capital assets is important and new investment needs to be cost effective. Energy efficiency at the customer level trickles down through the entire infrastructure. All of this affects the energy efficiency of the system while also driving costs.
    - The current industry practice is to have a utility system operate below 75% of capacity. It may be possible to carry double what SLVREC carries today on the existing infrastructure.
- Some programs do not align what customers are seeking for energy efficiency improvements and the more cost-effective improvements that would actually provide greater benefits for the utility

and customer. The "low hanging fruit" should be identified in program development to provide the most cost-effective energy saving method or application.

- Large agriculture operations in the region may face very high upfront capital expenses to improve the efficiency of multiple center pivot irrigation systems. These high expenses are a barrier to making energy improvements. In addition, a farm may be unwilling to implement other conservation practices or run irrigation during discounted off-peak periods if it means risking the quality of the crop.
    - There is an interest in learning more about drip irrigation systems and their potential for energy savings.
- Energy efficiency involves a process of evaluating redundant transmission uses. There are efficiencies to be gained in developing and transmitting energy in the community in order to use the energy where it is generated.
- Programs that focus on income levels result in barriers for energy efficiency. Low income customers may be renting and therefore not able to make energy efficiency improvements with incentive funds. In other cases, some customers have income that is slightly too high to qualify for incentives.
- More attention is needed to help small businesses that rent offices save on energy.

Advancements in Energy Production – Discussion Points

- The SLV has the potential to power the entire region with solar energy installed locally.
- Solar resources in the SLV create opportunities beyond power generation. These resources can support R&D and manufacturing activities in the region.
- Concentrated solar thermal projects being planned for the region would result in significant water savings on land currently used for farm irrigation operations.
- The proposed SolarReserve project would use concentrated solar thermal technology for two solar farms each having 100 MW of capacity. The technology can store energy as heat to produce electricity at night. The existing transmission infrastructure will allow up to 100 MW of new generation on the system, but may result in some reliability issues for the system without new transmission. A second 100 MW project would require increased transmission infrastructure.
- There are opportunities for the region's residents to install direct use heat storage technologies on homes and businesses.
- Geothermal resources in the region would involve low-temperature energy production technologies. Attracting additional R&D activities from multiple sources should be a priority to support the development of these types of resources.
- Additional energy resources in the region include micro-hydro and woody biomass.
    - Woody biomass boilers could use feedstock from spruce beetle kill and timber from fire.
- Attracting new manufacturing to the region may be difficult due to transmission constraints and lack of reliable power to meet a new facility's energy demands.
- There are currently several barriers to attracting energy, manufacturing, and R&D facilities to the region. These barriers include limitations to the region's transportation infrastructure, education system, and workforce. In addition, SLV's proximity to New Mexico presents challenges to distributing power outside the state to potential markets.

  - There currently is not a solar training program happening at the universities in the area.
- If new transmission is developed for the region an important issue to address will be "rate stacking." Each transmission line involved in moving power to market may require a separate rate for its use. In some cases carrying the energy to market will require going through multiple transmission lines, each with its own rate, which will create a rate stacking scenario. A rate stacking scenario may make the energy too expensive to sale in some markets.
- The price of power from coal power plants could be significantly lower than from some type of solar power plants. The local economic development impact from projects will involve different factors including agricultural acres out of production and property taxes. The impact of new production on energy rates will influence businesses looking to locate to the region; higher energy prices would hurt the region's ability to attract these businesses.
- The prices for solar PV being bid to utilities dropped significantly in 2012 making it competitive with other sources of energy.
- A community development fund could be considered for investment in renewable energy projects.
- There is a need for continuity of permitting within a multi-county region that respect each county's 1041 powers and provides one standard form.

Federal and State Regulations – Discussion Points

- During the 2013 legislative session agriculture stakeholder groups provided potential amendments to SB13-252 that sought to allow Rural Electric Associations (REAs) to pool projects for a given area and change the adoption rate to match growth.
- Federal Energy Regulatory Commission (FERC) standards for distribution reliability are important for understanding the management of REA systems.
- Utilities may have to deal with lengthy Environmental Protection Agency (EPA) regulations and processes that continue beyond when an agreement is reached among stakeholders. Tri-state has gone through an EPA process in Colorado for regional haze improvements for the Craig Power Plant. Tri-state reached an agreement with the state on the level of improvements involving collaboration; however, the process has allowed for lawsuits from other parties on the agreement.
- Woody biomass resources should be explored further in the region to determine costs on collecting the biomass feedstock, and to make for a more streamlined decision-making process in the collection of the feedstock.
- Air permitting rules for biomass projects are perceived as difficult to navigate.
- The Public Utilities Commission (PUC) is currently considering the SolarReserve project as a Section 123 resource. This is an important decision for the future of the project.

Infrastructure Stability and Modernization – Discussion Points

- Some SLV citizens live off grid by using solar and other resources.
- Smart grid development will require protection of consumer privacy and it raises cyber security issues. The implementation of smart grid technologies for the region is a balancing act between the need and cost; it will be challenging for the region to install new infrastructure that will pass on higher costs to customers.

- Irrigation systems are important to the region. State net metering allows for 25kW system on irrigation and other commercial applications; however, the region could explore systems larger than 25 kW that may be cost effective for irrigation in the region.

Alternative Fuel Vehicles – Discussion Points

- The opportunity exists for agriculture producers to use biodiesel in the region.
- An electric vehicle charging infrastructure in the region could use solar powered stations.
- Alternative fuel vehicles are generally viewed as an urban opportunity. The SLV may not have the market scale in terms of population or cars traveling through the region to implement these systems.
- Natural gas vehicles could be fueled by natural gas lines at homes with future equipment installed.

Energy Technology R&D – Discussion Points

- The SLV has had a series of partnerships with NREL which have resulted in data collection on solar resources.
- Adams State University may need curriculum to support energy R&D and energy project development activities. The region is currently lacking in science and technology training. The state entities that oversee curriculum development could be a resource to develop policies or guidelines on a new type of energy R&D and development curriculum.
- There is currently a great distance between the existing research institutions and the SLV. The state's research labs could benefit by expanding their presence into the region.
- Barriers to attracting R&D companies and jobs to the region include: a lack of housing, a lack of jobs for two income couples, a lack of roads, and a lack of broadband communication infrastructure.

Business Development – Discussion Points

- Locally produced potatoes are a potential feedstock for energy production that could be examined in the future.
- Unsustainable groundwater use in the region is driving many economic development issues in the valley.