Eagle - Energy Listening Session Summary

The second listening session was held in the Eagle Public Library in Eagle, CO on Wednesday, July 24. The session was attended by 12 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

- Coal production has declined in Colorado in part from low-cost natural gas and recent state regulations.
  - The decline in production may not continue as the price of natural gas is rising. At the current price, deep shale natural gas wells may not be economical and sustainable.
  - HB10-1356 has resulted in the state converting electric coal capacity to natural gas.
  - At least one-third of coal production goes to local power plants.
  - Coal mining has developed more efficient operations and a good workforce that must now operate in a global market.
- Building construction is an important part of the region's economy that results in energy jobs for installing HVAC systems and other energy related equipment.

Energy Efficiency - Discussion Points

- Holy Cross Energy's 2% customer surcharge plays an important role for energy efficiency and distributed renewable energy projects in the region. More than half of the surcharge is used to provide energy efficiency rebates that are structured for commercial and residential customers. The surcharge was established for a five-year period beginning in 2013. It is anticipated that near the end of the five-year period Holy Cross will assess areas to re-channel the funding to insure it is targeting the appropriate types of projects.
- Local organizations in the region are important to supporting energy efficiency awareness and a network of over 140 contractors. The number of energy efficiency firms in the region has increased in the last five years. Many of these firms are locally based in the region; however, several lighting companies come to the region from the Denver area. Important opportunities and challenges for the region's energy efficiency network include the following items:
  - The utility energy efficiency programs are critical to the energy efficiency market.
  - Key drivers of energy efficiency projects include incentives (state, federal and utility), utility engagement, and increased awareness.
  - There is a concern that energy efficiency activity will begin tapering off in the near future without sustained effort to keep incentives funded.
- Mining facilities are large energy loads for the region and are working to reduce energy consumption. Some recent trends for the regions mining operation include:
  - Mining companies have become more aggressive in reducing energy consumption.
  - The state's mining sector is participating in a Colorado Department of Public Health and the Environment (CDPHE) program that involves implementing best practices protocols for energy

efficiency. The state program involves sharing innovations and collaborating with others in the industry.

- The region has a large building stock that is 30-40 years old that provide an opportunity for energy efficiency improvements.
- Small business owners that rent space in commercial buildings have difficulty connecting building owners to energy efficiency programs. Developing a program that provides benefits to both owners and renters could be a solution for the renter market involving building owners purchasing new equipment, and the renter receiving a lower lease rate.
- It is challenging to access financing for some types of energy efficiency projects that are larger than residential energy efficiency improvements. The commercial PACE program being developed by the state will be an important to program to support projects that currently lack financing.
- The Metro Listing Service (MLS) for residential real estate sales currently does not provide accurate or valuable information on energy costs for most homes listed. The MLS should be examined for how the information can be more accurate and useful for marketing energy efficient homes.
- The creation of "energy coaches" is needed to support the regions homes and business to streamline the retrofit process and provide long-term follow up on projects. A type of "concierge service" for energy efficiency should be considered to guide homeowners in the region in making energy efficiency improvements.

Advancements in Energy Production – Discussion Points

- The benefits of Biomass Energy projects go beyond providing renewable energy to the region. Additional benefits for the region include forest restoration, local community development, and long-term local employment opportunities.
- Biomass electric plants provide a low-cost renewable base load energy source for the region.
- The Evergreen Clean Energy biomass electric plant being developed in Gypsum, CO is currently under construction and will have a capacity of 11MW. The project's feedstock will be primarily from beetle kill forests and provide electricity to Holy Cross Energy under a power purchase agreement.
- Biomass electric facilities could be located strategically throughout the region where there is adequate feedstock and local electric infrastructure.
- Colorado has the potential to lead the nation in biomass energy projects because of the beetle kill problem. The beetle kill forests in the region have increased the potential for wildfires that will be both destructive and costly. The development of additional biomass energy projects is a potential solution to reduce the region's wildfire risk.
- Barriers to biomass energy development include the following:
    - Lack of long-term purchasers of power that will result in project financing.
    - The current state of financing is not as strong as it has been in the past. Bank financing remains difficult to secure in the current environment.
    - Proof of feedstock is sometimes an issue for financing; a developer may be required to prove that the project will be able to continually generate power with the current feedstock resource.
    - The development of mid-size facilities can create challenges. It is important that a facility be small enough to fit within the local environment, but large enough to provide economies of

scale to create a competitive energy price. Mid-size projects may be too large for local financial institutions and not large enough for large investors.
  - Short-term construction financing is difficult to obtain currently.
  - Some utilities are not willing to work with small power producers.
- There is presently limited wind data in the region to allow for wind development. The region may have developable wind resources on some ridge lines. The geography of the region is difficult for wind development and land owners don't have site specific data.
- Holy Cross Energy will meet their renewable energy goal of 20% after the Gypsum biomass electrify facility comes online. Other renewable projects on Holy Cross Energy's system include 1 MW of community solar, 3 MW of net metered solar, and a coal mine methane capture project. They will be examining other opportunities for renewable energy development in the future.
- There is a concern that utility compliance with Colorado SB13-252 may occur from out of state renewable energy projects and by purchasing renewable energy credits (RECs), rather than through development of new renewable energy projects in Colorado.
- Over the last two years two major coal plants have come on line in the U.S. that use all available technologies in order to come close to being zero emission plants. However, they do not have carbon capture sequestration technologies installed. Collaboration is occurring between the U.S. coal industry and Chinese entities to expand research on coal power.
- The Craig Station coal power plant has been involved in a pilot program with Tri-State G&T to examine carbon capture sequestration technologies. The Craig Station was built to allow for carbon capture sequestration technology to be added to the plant in the future.
- Colorado's Western Slope region is natural gas focused and producers compete nationally with Marcellus shale and other regions of the country, but producers will have to remain economic al to stay competitive. A challenge to remaining competitive are duplicative regulations (involving both state and federal regulations) being considered on federal lands in the region. Thesefederal land regulations are becoming more difficult to navigate. The state could be working with the federal government on reducing duplicative regulations.
- A first of its kind vortex micro-hydro system was deployed on private property in the region. The technology is a fish friendly and low volume system. The project took over two years to get through regulations to be able to operate the facility. In the region there are some low volume ditches with a significant drop in elevation that could be viable for micro-hydro applications. An existing challenge for micro-hydro development includes a complicated water rights process to navigate. Low volume ditches with a significant drop in elevation could be a viable application.

Federal and State Regulations and Incentives – Discussion Points

- Transporting wood feedstock on interstate highways faces costly regulations that could be addressed at the state level. Biomass facilities are currently unable to carry 250,000 pounds of wood in one load because it is considered a divisible load. These shipments of wood feedstock must be split into two loads involving two trucks that will arrive at a facility half full because of the transportation weight laws. There is currently not a process in Colorado to obtain a permit to carry a divisible load in one truck. This is a state level regulation that is associated with rules under the U.S.

Department of Transportation. Other states including Oregon have developed solutions to this issue for the logging industry and other sectors.

- There is a need to examine proposed regulations with a cost-benefit analysis before they are implemented or approved at the state level. State legislators could use an analysis to become more aware of a proposed bill's impact on businesses.
- Bonding authority is available in the state for construction of biomass projects. HB13-273 modified 2008 legislation for bonding authority, but the legislation only qualifies government entities to receive the bond financing. The bonding authority could better support biomass energy development by expanding bonding authority to private companies.
- Statewide solar permitting standards are being advanced in the state, but local permitting barriers persist in the region. In the region structural permits may not be necessary for PV panels that weigh roughly 2.5 pounds per foot when typical snow loads in the area are 100 pounds.

Infrastructure Stability and Modernization – Discussion Points

- Water use will be involved with energy production in the region and in other parts of the state. In developing energy projects more efficient use and reuse of water should be explored. The energy industry is looking for ways to recycle water, but faces a challenging permitting process to get to achieve the use of such technology.
- Water from natural gas production is currently hauled in trucks. The development of water pipeline systems could be explored as a more efficient process for water handling.
- Transmission constraints have been a constant issue for the state to examine when considering future development. A more effective perspective for future energy development could consider developing projects that can be integrated into the existing transmission system and not focus on new transmission. The question to consider in resource planning could be better framed as "What can be done differently within our existing systems?" This question could better align development opportunities with existing transmission systems.
- A number of Rural Electric Associations (REAs) in Colorado are moving to Advanced Metering Infrastructure (AMI), also referred to as "smart meters," for all customers.
- Upgrades to communication lines in rural parts of the state are important to advancing smart grid applications.

Alternative Fuel Vehicles – Discussion Points

- Local government fleets in the region are becoming highly aware of Compressed Natural Gas (CNG) vehicles. The region is planning for CNG stations to allow convenient refueling access from Denver to the state line along I-70.
- More than fueling stations are needed to increase the Alternative Fuel Vehicles (AFVs) market. Other important factors to advance the market include having auto dealers with AFV vehicles available in the region, trained mechanics who can service the vehicles, and customers with more knowledge of how the cars work. Some key education targets in the region for AFVs include customers, service technicians, and fleet managers on AFVs.

- A public–private partnership was the catalyst for the expanded CNG transportation options in the region.
- Liquefied Natural Gas (LNG) trucks are important to consider when planning for an expanded AFV infrastructure in the region.

Energy Technology R&D – Discussion Points

- Evergreen Clean Energy has worked with Colorado State University on wood burning biomass research issues.
- The National Renewable Energy Laboratory (NREL) has provided energy efficiency modeling for Eagle County that has been valuable. Through the Energy Smart program Eagle County partners with NREL.
- The Town of Vail and Eagle County have done emissions reduction studies with University of Colorado at Denver.
- When local organizations have contacted research institutions the experience has generally been challenging to identify the appropriate staff person or team to work with. There needs to be more communication in the energy industry to "connect the dots" between the state's research laboratories and business needs.

General Business Development – Discussion Points

- There is a lack of students generally involved and interested in engineering and energy subjects. The state could provide additional support to Science Technology Engineering and Math (STEM) education programs to increase the interest among students.
- Improvements to capital investment in the state could involve a more efficient permitting process that provides greater regulatory certainty. Specific improvements in the permitting process for energy could involve a "one stop shop" for permitting that would help to coordinate and navigate through the regulatory landscape. There is a state clearinghouse model for agriculture, where one staff person provides coordinating function for all permitting. The agriculture program is fee based - the agricultural sector is required to pay for the program's services. New legislation could develop a similar program for the energy industry that would allow the Colorado Department of Public Health and the Environment to collect a fee to fund a clearinghouse of permitting support to the energy industry.
- A sustained commitment to energy efficiency at the state and regional level is very important among local initiatives and small businesses.
- There could be an effort to look at business development opportunities on a larger, statewide scale. Many rural areas are looking to have businesses locate to their region. The state could benefit from economic development opportunities occurring in areas outside major metro areas.