Energy Working Group Session Proceedings
PNWER Annual Summit – Big Sky, Montana
Monday, July 13 2:00 p.m. - 5:00 p.m.

Co-chair: Senator Cliff Larsen, Montana State Legislature
Co-chair: Dan Kirschner, Executive Director, Northwest Gas Association

Speakers:
Greg Schnacke, Executive Director, Governmental Relations, Denbury Resources
Mike Monea, President, Carbon Capture and Storage Initiatives, SaskPower
Peter MacConnachie, Senior Sustainability Specialist, Suncor Energy
J.R. Tolbert, Senior Director, State Policy, Advanced Energy Economy
Tim Baker, Policy Advisor for Natural Resources, State of Montana Governor's Office
Chris Scolari, Policy Advisor, Energy and Waste, Western Governors' Association
Chris Hodge, Senior Vice President, Commercial Operations, NaturEner
Michael Cashell, Vice President, Transmission, NorthWestern Energy

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Discussion Topics

The Energy working group session can be broken down into several parts. In the first segment, Greg Schnacke and Mike Monea spoke on the carbon capture process and CCS best practices. Following, Peter MacConnachie presented on his experiences and advice in communicating with the public and how to positively change public perception. J.R. Tolbert and Tim Baker delved into the intricacies and challenges with EPA's Clean Power Plan. Finally, Chris Hodge and Michael Cashell took part in a panel on energy transmission practices and improvements.

Greg Schnacke of Denbury Resources opened the proceedings with a presentation on the subject of enhanced oil recovery (EOR). His company focuses on oil recovery using carbon dioxide as part of the tertiary recovery process. Schnacke expanded on EOR best practices and the carbon capture process. The potential for further exploitation and recovery of resources even immediately following primary oil recovery is tremendous with the use of EOR. Schnacke stated that EOR using carbon dioxide produces nearly as much oil as the primary and secondary recovery. Schnacke emphasized that there is process and manner to go about EOR that has proven successful in both capture and storage capacities. The risks involved are lower and there is a long-term viability. Areas of the PNWER region and Rocky Mountain region, in particular, offer 2.8 – 6.6 billion recoverable barrels via EOR practices. The Wyoming oil fields offer potential for the Montana region, and one of Denbury Resources' targets is the Cedar Creek Anticline Area in eastern Montana. Accessing CO_2 requires separation facilities and pipelines to move CO_2 to oil fields, so a strategic advantage is gained with the growth and control of CO_2 sources and pipeline infrastructure.

In brief, the CO_2 EOR process involves securing CO_2, transporting via pipeline, injecting into oilfields, and capturing and storing the CO_2. In the EOR process, CO_2 is injected into the oil field via injection wells, where it then dissolves into the oil, reduces its viscosity, and increases the ability for production wells to recover the oil. Some CO_2 remains trapped in the oil field, but the rest is recaptured and sent back to a storage facility to be recycled.
Worth noting, is that the federal government considers CO_2 a pollutant, whereas Denbury considers it a commodity. Schnacke maintained that new EPA performance standards for CO_2 emissions puts Denbury Resources in conflict with their objectives.
Ultimately, Schnacke concluded that CO_2 EOR is an economical and technically feasible way to promote safe and secure the carbon capture and storage (CCS) of man-made CO_2 when done so under a proven regulatory system.

When asked about the cost-per-mile of CO_2 injection, Schnacke stated that he had never seen a model done in such a way. Another inquiry arose as to whether there were significant savings in energy/resource field patterns versus oil fields "here and there". Schnacke commented that when there is a pattern and close proximity in resources, there is an advantage due to the reduction of infrastructure costs. Furthermore, the Cedar Creek oil field addition would be a big deal for Denbury Resources and EOR as it is a major oil field.

Mike Monea of SaskPower presented on his experience with commercial CCS facilities. The Boundary Dam CCS facility, a 6 month old project, served as the primary case study. Monea described the plant construction process. In short, the plant is exceeding expectations, supplying Canada, North Dakota, and more with many tons of CO_2 for EOR at 99.9% purity rate. It is further exceeding MW's predictions and emitting 900,000 tons fewer of CO_2 emissions than initially predicted.
Monea outlined three main points for CCS success: 1) people need to see that it works, 2) it must have social acceptance, and 3) it must be cost-competitive with other acceptable energy forms. Monea advocated for a proactive effort by companies in helping the public understand CCS. The public perception on CCS in regards to cost, health, are environmental risks must be addressed before companies can move forward with CCS construction. Furthermore, the many different energy alternatives can appear more appealing to many than CCS facilities. People need to see that CCS projects work.
Monea pointed out that it is not a case of competing energy forms. Each is needed. The overarching goal is to clean up all forms of energy and reduce emissions.

In regards to questions of whether the project was subsidized, Monea responded that it was. Without subsidization, the plant would cost the same as a gas plant, but Monea was emphatic in stating that the plant will pay for itself.
A Montana representative inquired if SaskPower had ever explored coal to liquid possibilities. Monea replied by stating that coal to liquid works great for military

powers without oil or gas resources, but is not a good option for North America, rich in other resources.
Monea also responded to a question about the percentage of CO_2 captured by the CCS plant. The plant captures 90% of CO_2. It could capture 100%, but that number would not be efficient.

Peter MacConnachie of SunCor Energy presented on energy infrastructure and its interaction with core values. There tends to be a general distrust of big oil, and this, combined with low interest in energy matters among other things, leads to a dislike of oil companies. However, there can oftentimes be a discrepancy between people's proclaimed core values and actual energy consumption, according to MacConnachie. MacConnachie emphasized the importance of educating people regarding energy and its tradeoffs. Many campaigns call for changes to energy systems. However, it is not possible to snap one's fingers and immediately change infrastructure. MacConnachie noted that cooperation between companies and the public is key in order to facilitate mutual understanding. This understanding begins with getting past the "us versus them" mentality. MacConnachie and SunCor has worked with vast number of organizations and engaged in collaborative efforts in order to produce positive cooperation.

J.R. Tolbert of Advanced Energy Economy addressed the EPA's Clean Power Plan and the role of advanced energy. Within the past decade, the EPA has been focused on carbon emissions and new proposed regulatory standards on CO_2. In 2014, the EPA proposed a new regulatory process on carbon emissions for the existing power sector. This raises several question for states on reliability, flexibility for state planning, and cost-effectiveness of compliance to the new clean power plan. Several main concerns follow. In regards to reliability, states are concerned with resource adequacy assurance, gas-electric interface facilitation, and clean energy integration. Furthermore, states are concerned that flexibility with planning be allowed to states. States wish to have liberties in the designing of new plans, freedom in certain compliances and requirements, etc. Additionally, the cost-effectiveness of compliance options are another concern for states. The cost of clean energy is continually decreasing, and states would like freedom in taking advantage of new opportunities and cheaper options.

In close relation to the previous presentation, **Tim Baker** addressed the proposed Clean Power Plan and its implications for the state of Montana. Baker spoke extensively on Section 111(d) of the proposed plan, which requires the EPA to create regulations for energy sources which cause significant air pollution to the endangerment of the public welfare. This requires states to develop plans for pollutants which have no national air quality standard, which are then subject to EPA approval. As state policy advisor, Baker stated that the Montana governor's office believes in a transparent, stakeholder driven process as the key to moving forward with this issue. He then outlined the model that Montana has envisioned for creating a stakeholder process. The process involves creating a council of 20 who represent various sectors. The council then work towards a solution, taking regular

breaks to gather feedback from the public and stakeholder panel. This repeats several times before the council presents their solution to the governor.

Chris Hodges of NaturEner opened the session's panel on energy transmission by outlining the operations of his company regarding renewables and the market of transmission and discussing how to best manage energy transmission and innovation challenges. The Montana region is especially relevant as a major energy player within the transmission market. Whereas commodity markets are more complex and difficult, Hodges sees transmission markets as clear and open. However, the different regional markets are each presented with different challenges. Furthermore, transmission of energy is becoming capacity constrained moving forward, and issues arise with transmission flow due to scheduling complications and protocols. Regarding renewables, there are complications on such matters as capacity limitations and the cost of integration. Lack of liquidity in intra hour transmission markets also pose problems. Despite this, Hodges sees future growth in renewable integration throughout the western region, positively affecting many of the PNWER state members.

Regarding questions on intra-hour markets, Hodges revealed that, moving forward, NaturEner is interested in developing products that work in smaller increments of time.

To close out the session, **Michael Cashell** expanded on energy transmission of renewable resources and the challenges and successes that his company NorthWestern Energy (NWE) has experienced. NorthWestern is a major service provider within the state of Montana, servicing hundreds of thousands of customers, and maintaining thousands of miles of transmission lines. Cashell began by speaking on the Mountain States Transmission Intertie (MSTI), a project proposed around 2007 in order to deliver renewable energy from Montana to various western states. In short, the project was proposed in response to a need for new transmission capacity, but received public opposition, was delayed for many years, and was ultimately shelved. There were many policy issues that played a part in this, including a lack of coordinated and comprehensive regulatory process, ambiguity regarding state finances and policies, and even local issues such as eminent domain rights.

Throughout the process, NWE learned several lessons. In regards to siting, permitting, and environmental issues, there needs to be better cooperation and communication among all entities and a stronger understanding of the agencies to approach and regulations that must be faced will prevent excessive delays. Additionally, the public must be approached and engaged in order to keep stakeholders informed. A dialogue must be initiated between all involved parties. Currently, NWE is engaged in a successful transmission line project near Big Sky, MT, involving both private and public lands. The success comes in part due to a strong relationship with all parties. Cashell noted that despite the project's success, it is important to remember that all projects take time.

When asked if the new clean power plan will have potential for renewable energy, Cashell replied by saying that this was most definitely the case and that renewables are here to stay.

No further discussion was brought forward and the session was adjourned.

Action Items

1) Host a joint-meeting of Energy working group and Environment working group to discuss regional response to 111(d) (Clean Energy Plan).
2) Convene a collaborative symposium between the environmental community and energy distributors to facilitate discussion.
3) Host a discussion on how individual legislatures/policy makers can encapsulate keypoints of working group discussions and disseminate information abroad.
4) Ask Western Governors' Association to present at PNWER event to discuss what they are doing among federal agencies to promote and advocate for better coordination of transmission of energy.