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Breakout Session 2A: The Energy - Water Nexus

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overwrote prior case law on the subject. This definition included private developers as being municipalities.

Under Washington law, a perfected water right certificate cannot be perfected based on system capacity, but must be perfected based on beneficial use. The 1993 Act overrode this law for municipalities. The 1993 law also allowed municipalities to expand their areas of water service without going through an actual change process. The Tribes see this as bad because the municipalities have no need to show they are not injuring other users. They only have to show that the change is consistent with a land use plan. This has taken a water adjudication process and turned it into a planning process. Most Tribes and individuals are left out of such planning procedures. Mr. Arum is concerned that this law is poorly premised on the fact that water is still abundant in the state of Washington. However, this is not true, as most basins are fully appropriated.

Generally Mr. Meyer and Mr. Arum provided two very different views of municipal water supply planning, however both were able to agree upon the fact that inevitably in water supply planning, one party will be harmed, be they municipalities, farmers, Indian Tribes, or the physical environment. They agreed that there is no perfect answer to satisfy all parties. However, they were also in agreement that there was some need for change in both of their states.

Kathlyn Bullis

BREAKOUT SESSION 2A: THE ENERGY – WATER NEXUS

Christopher Ellison, of Ellison, Schneider & Harris, L.L.P. and moderator of the panel, opened the discussion noting that connections between energy and water exist in a variety of fashions. As examples, he noted that nineteen percent of California's electricity use is for water related purposes, and that in the year 2000 electrical generation accounted for thirty-nine percent of water withdrawals. Mr. Ellison stated that because of the connection between energy and water uses, any changes in water use will effect energy use, and vice versa. Because of this connection, and because of society's expanding need for more water and more energy, there is a real need to address the interplay between the sometimes competing uses.

John Merson, the Water for Energy Project Lead for Sandia National Laboratories, spoke next regarding the technical ties between energy and water use. Mr. Merson began by discussing the use of water in generating and producing energy. He first stated that when it comes to energy production, increased water use is often a tradeoff to increased or more efficient energy production. As an example, he spoke about new methods of cooling processes used in electrical generation plants, which withdraw less water but actually consume more water. He then talked about the need to develop alternative energy sources to fossil fuels and how nearly all of the alternative energy

sources require a comparatively large demand of water compared to existing fossil fuel production. He referred to oil shale development, which results in large withdrawals of groundwater in order to access the oil. Then Mr. Merson pointed out that the connection exists in reference to producing more water. He noted that our clean fresh water use meets our existing supply, and that to treat or reuse additional fresh water we must use additional energy. Because of the technical connection between our water and energy uses, Mr. Merson explained that a balance of water use interests must be weighed against the energy use interests to determine the efficacy of any project. Furthermore, he notes that because of the connection between the uses, the future development of either use is constrained, which will lead to conflicts.

Finally Jim Caldwell, Former Assistant General Manager of Los Angeles Department of Water and Power, ended with a case study of the Los Angeles water and energy demands. Mr. Caldwell's case study highlights that Los Angeles, which faces considerable water and energy shortages in the future, can transition energy consumption into renewable energy sources, and change consumption patterns of water use to meet its future needs. Mr. Caldwell noted that this case study shows that these plans are also economically viable. From the energy side, Mr. Caldwell first outlined the three major renewable energy sources that Los Angeles should develop: the Tehachapi Wind Resource Area, the West Mojave Desert for solar energy production, and the Salton Sea basin for geothermal energy production. Mr. Caldwell notes that among these areas, Los Angeles could reasonably supply sixty percent of its electricity demand with renewable energy. This would result in about an eighty percent carbon-free electricity supply. And as Mr. Caldwell noted, this is all possible based on current technology. On the water side, Mr. Caldwell outlined the three major water conservation measures that Los Angeles should develop: standards for further reductions of appliance fixture water use, increase drought tolerant landscaping, increase water recycling measures, and improve groundwater storage of storm runoff. Mr. Caldwell pointed out that by implementing these measures, Los Angeles could see a fifty percent increase in effective water supply. Mr. Caldwell noted that the proposed energy and water use improvements, if paired together, would solve both the energy and water problems facing Los Angeles. On the other hand, Mr. Caldwell warned that attempts to increase water supply that ignore energy demands, such as using desalinization plants would result in a greatly increased energy burden on Los Angeles. Similarly, energy supply projects that ignore water demands, like nuclear plants, would result in an increased water burden on Los Angeles.

Ryan McLane