

MINUTES

(Subject to approval by the subcommittee)

SUBCOMMITTEE ON GENERATION INVOLVING RENEWABLES AND CONVENTIONAL ENERGY SOURCES

SEPTEMBER 18, 2006, MEETING JOINT FINANCE APPROPRIATIONS COMMITTEE ROOM STATEHOUSE, BOISE

Present were Co-chairmen Senator Tom Gannon and Representative Eric Anderson. Subcommittee members present were Senator Elliot Werk, Representative Bob Nonini, and ad hoc members Bob Neilson, Courtney Washburn, Neil Bradshaw, David Barnaby and David Hawk. Subcommittee members Senator Mike Jorgenson, Representative Wendy Jaquet and ad hoc member Ralph Williams were absent and excused.

Members of the public attending the meeting were IPUC commissioner Paul Kjellander, Dan Pfeiffer, representing the IPUC, Jess Byrne and Kathleen Trever, representing the Idaho DEQ, Ken Miller, representing the Northwest Energy Coalition, Jerry Ward, representing the ISDA, M. Ester Ceja and Doug Paddock, representing the Snake River Alliance, Rich Rayhill and Dar Olberding, representing Ridgeline Energy, Brenda Tominaga, representing the IGWA and ILPA, John Lindsay, Marilyn Whitney and Bruce Hallbert, representing the Idaho National Laboratory, Mike Heckler, representing Windland, Arne Olson and Bill Eastlake, representing E3, Gerry Galinato, representing the Idaho Energy Division, John J. Williams, representing the BPA, Gary Gould, representing the Shoshone - Bannock Tribes, Rich Hahn, representing Idaho Power, Ron Williams, representing the Idaho Consumer-Owned Utilities Association, Russell Westerberg, representing PacificCorp, Pat Sullivan, representing PNGC, and Neil Colwell, representing Avista Corp.

Co-chairman Anderson called the subcommittee to order at 9:20 a.m. **Representative Anderson** read the mission statement for the Energy, Environment and Technology Interim Committee and commented that the subcommittee would seek to reach consensus on formulating a plan for Idaho's energy needs. **Co-chairman Gannon** added that he hoped consensus could be achieved and cautioned that the subcommittee should not try to fix what had not been broken. **Senator Gannon** also announced the addition of **Ron Williams**, representing the Idaho Consumer-Owned Utilities Association, to the subcommittee's agenda.

A. PRESENTATIONS:

1. **Bruce Hallbert, Idaho National Laboratory (INL).**

Bruce Hallbert of the Idaho National Laboratory addressed the subcommittee on Nuclear Energy's Resurgence in the United States. A copy of **Mr. Hallbert's** power point presentation

is available in the Legislative Services Office. Reasons for the resurgence of nuclear energy in the United States, as stated by **Mr. Hallbert**, include that nuclear energy is environmentally clean, the price volatility of fossil fuels, the availability of good nuclear energy reserves in North America and friendly countries, and economic factors. In response to a question by **Senator Werk**, **Mr. Hallbert** stated that there are sufficient uranium resources in the United States to initiate a nuclear energy resurgence and that there are enough resources in the United States, Canada and Australia, along with the improving technology in reprocessing nuclear waste, to sustain the nuclear energy resurgence.

Mr. Hallbert presented a graph showing a relationship between energy production and GNP. A graph on demand showed that demand for energy is increasing in both the industrialized and developing nations. The graph indicated that the increase in demand in the industrialized countries is expected to be 55 quads (1 quad equals 11,000 tons of coal every two hours) over the next 25 years. **Mr. Hallbert** stated that the developing nations are competing for energy. **Mr. Hawk** asked whether the increased energy demand in the industrial nations might be diminished by an increase in energy price due to competition by developing countries. **Mr. Hallbert** replied that the graph presented the best information available but that such projections are always subject to change.

Addressing the table on international nuclear electric production, **Mr. Hallbert** stated that the United States was first to produce electricity through nuclear energy and still has the most (103) nuclear electric power plants. France is second with 59 nuclear power plants and generates 88% of its electrical needs from nuclear power. The United States currently gets 20% of its base load, electrical energy from nuclear power, which is the biggest electricity power source next to fossil fuels. In the United States, nuclear power has a 92% capacity factor, which represents a significant improvement over the last 20 years. In response to a question from **Senator Gannon**, **Mr. Hallbert** stated that the 92% capacity factor takes into consideration preventive maintenance and since nuclear reactors cannot be refueled online, this capacity factor is close to the maximum possible. In response to **Mr. Bradshaw**, **Mr. Hallbert** clarified that the 92% capacity figure represented power availability, not efficiency.

Most of the nuclear energy power plants are in the eastern United States, according to **Mr. Hallbert**. Among the indications of a nuclear energy resurgence are the passage of enabling legislation, particularly the Energy Policy Act of 2005, increases in nuclear engineering enrollment, significant financial investment, and the energy demand picture. The Energy Policy Act of 2005 provides loan guarantees for the initial movers and an improved licensing process that encourages standardized, certified designs and minimizes opportunities for stops or delays if the utility building the nuclear power plant performs as promised. According to **Mr. Hallbert**, this will also have a significant impact on costs. **Mr. Hallbert** stated that the utilities have responded to the Act by announcing 14 new nuclear power plant sites, involving 26 new plants.

The new reactors planned for construction in the United States are third generation light water reactors. The first generation reactors have now been decommissioned. The second generation reactors are light water types and are in operation today. This third generation reactor

type has been in operation outside the United States. They are generally smaller than the second generation reactors, with production capacities between 1000 and 1600 MW.

According to **Mr. Hallbert**, nuclear energy is cost competitive. Currently, nuclear energy costs \$1.72 per kilowatt-hour and the price is coming down. This compares to \$1.80 per kilowatt-hour for coal, \$5.77 per kilowatt-hour for natural gas, and \$5.53 per kilowatt-hour for oil. **Mr. Hallbert** noted that the \$1.72 cost for nuclear power does not include capital costs. In response to **Mr. Barnaby's** question regarding the cost of nuclear power if capital costs were included, **Mr. Hallbert** replied that he did not know but believed that the cost would still be competitive. In response to **Senator Werk**, **Mr. Hallbert** replied that the cost figure did not include the cost of waste disposal and reactor decommissioning, but stated that the federal government is responsible for nuclear waste storage. **Senator Werk** commented that the citizens end up paying for storage in the end.

Regarding safety, **Mr. Hallbert** stated that nuclear energy has a good OSHA safety record. He agreed with **Senator Werk** that the nuclear energy OSHA accident rate reflected worker safety rather than the environmental impact of nuclear accidents.

Regarding emissions, **Mr. Hallbert** represented that nuclear energy is the lowest in carbon emissions. Responding to **Senator Gannon**, **Mr. Hallbert** stated that the carbon emissions related to nuclear energy are related to the production process rather than from the nuclear fuel itself.

Addressing resources, **Mr. Hallbert** presented a slide that showed 1,653,510 metric tons of uranium in the United States, 1,927,000 metric tons in Australia, 751,000 metric tons in Canada, 758,170 metric tons in Russia, and 911,000 metric tons in China. According to **Mr. Hallbert**, these reserve estimates may be low. **Mr. Hawk** wondered whether all these reserves would be available for mining given environmental concerns. **Mr. Hallbert** stated that he did not have an answer regarding the amount of exploitable reserves but was confident that the reserves could be exploited and noted that the utilities were not concerned. **Mr. Hawk** commented that the utility executives may be in error.

The answer to the question of whether there was a nuclear option for Idaho is not clear, according to **Mr. Hallbert**. Nuclear power could be part of a diverse energy portfolio. There is risk associated with being the first mover and the prudent course may be to watch what is happening back East where large base load advanced light water reactors are being built. **Mr. Hallbert** commented that those doing the best with nuclear power are those with experience and recommended that if Idaho chose to go the nuclear route, it would be sensible to partner with the experienced Eastern utilities. **Mr. Hallbert** also noted that there needs to be a consumer base to consume the power generated by a large nuclear power plant but recognized that excess power could be sold outside the state. **Representative Anderson** asked how big the footprint for a nuclear power plant would be? **Mr. Hallbert** replied that the nuclear plant footprint, having a very small core but with redundant safety features, would be in the same order as a coal plant.

As to the future of nuclear power, **Mr. Hallbert** discussed the advanced concept “Freedom” reactor that is being developed with the goal of producing high-efficient electricity and hydrogen. The hydrogen could then be used for transportation. The Freedom reactor would have a deeper burn of the nuclear fuel and could be developed on a modular scale for “drop-in” construction. According to **Mr. Hallbert**, such a reactor would have lower capital and operation costs. The Freedom reactor would have a smaller output, around 600 to 700 MW, than today’s nuclear power plants. **Mr. Hallbert** also stated that hydrogen produced through nuclear fission would cost \$1.40/kg which is equivalent to a gallon of gasoline.

The Global Nuclear Energy Partnership is focusing on using spent nuclear fuels as a fuel source to reduce waste and to minimize proliferation, according to **Mr. Hallbert**. Under this partnership, fuel supplier nations would supply the nuclear fuel to user nations to be used in fast burner reactors. The fuel would be returned once it is spent.

Mr. Hallbert stated that there are currently 48,000 metric tons of nuclear waste, which would cover a football field five feet deep. Over 90% of this is useable, but not in today’s light water reactors. In response to **Senator Werk**, **Mr. Hallbert** stated that this use of the current nuclear waste is real, not theoretical. Fast spectrum reactors are currently in place, although some aspects have yet to be proven and the realization of the use of the current waste is still 25 to 30 years down the road. At the current rate of nuclear waste production, **Mr. Hallbert** stated that Yucca Mountain will be filled by the year 2020, which does not take into consideration the increasing rate of nuclear waste production. If this nuclear waste could be reprocessed for use as nuclear fuel, then the total amount of nuclear waste would begin to be reduced by the year 2040 and the rate of production of such waste would begin to slow by the year 2020.

Mr. Hawk commented that there are currently 126 high level nuclear waste storage sites in the United States. The federal government has spent \$4 billion to develop Yucca Mountain. However, less than 5% of Nevada residents could locate Yucca Mountain on a map. **Mr. Hawk** expressed the hope that Yucca Mountain would be opened as a nuclear waste depository and that the waste could be reused. However, he stated that onsite storage may be the rule.

Mr. Bradshaw asked **Mr. Hallbert** for his opinion on nuclear power in Idaho, since the cost of nuclear power does not include construction or waste disposal. **Mr. Bradshaw** asked whether **Mr. Hallbert** recommended that Idaho wait and see or whether he saw nuclear power as an integral part of Idaho’s energy future? **Mr. Hallbert** recommended greater engagement with the utilities that are currently moving forward with nuclear power to see if the economic conditions could transfer to Idaho. **Mr. Hallbert** stated that nuclear power plants need to run at nearly 100% and there must be a market for the output. Overall, **Mr. Hallbert** stated that nuclear power is a good option for Idaho. It is clean and the federal government is working on the waste disposal issue. **Mr. Bradshaw** asked whether Idaho should wait until the waste issue is sorted out. **Mr. Hallbert** replied that Idaho should wait, not because of the waste issue, but on the economic issues that are being addressed by the first movers in the East. According to **Mr. Hallbert**, no one is waiting because of the waste issue.

Mr. Hawk noted that none of the IRPs submitted to the Idaho Public Utilities Commission from the Investor Owned Utilities (IOU) had commented on nuclear power. **Mr. Hallbert** replied that Idaho Power may comment on nuclear power in its next IRP. The focus of the current IRPs has been on peaking power sources such as natural gas and wind. When looking at future base load needs, the focus has been on coal. Idaho, however, is ripe for considering nuclear power. The IOUs have invested in coal power plants as joint venturers, which may serve as a model for nuclear power, and nuclear power meets environmental concerns.

Mr. Barnaby asked whether the water consumption of the new and future nuclear reactors would be the same as in the current reactors, about one gallon per kilowatt-hour. **Mr. Hallbert** did not recall the figures on water consumption but believed that they would not be substantially different. He does believe that the new turbines are more efficient and there may be some water savings there.

Senator Gannon asked how big the fourth generation reactor that the INL is planning to build will be? **Mr. Hallbert** replied that Senator Craig is supporting a Freedom reactor demonstration project for the INL and that the Department of Energy recently released a RFP for a 600 to 700 MW demonstration plant. The power produced from this plant may be commercially available, but the program managers would be the ones who could better address this issue.

2. Mike Heckler, Windland Incorporated.

Co-chairman Anderson stated that the information handout from Windland Incorporated provided to the subcommittee by **Mr. Heckler** would be entered into the record. This one page sheet of information is available at the Legislative Services Office.

3. Rich Rayhill, Ridgeline Energy.

Rich Rayhill, representing Ridgeline Energy, addressed the subcommittee regarding HB 816, introduced into the 2006 Idaho Legislature, which provided for an “in-lieu” tax on wind energy of electricity producers of \$.002 per kilowatt-hour. This legislation, modeled after legislation enacted in Minnesota and North Dakota, passed the House but eventually died in the Senate Local Government and Taxation Committee. The counties were unhappy with the proposed legislation, according to **Mr. Rayhill**, because of the requirement in the legislation that 50% of the tax collected be paid into a county property tax relief fund. **Mr. Rayhill** represented that the Senate committee requested that this bill be brought to the Interim Energy Committee for review.

Mr. Rayhill stated that Idaho Power received three wind energy responses to its RFP last year and chose a proposal submitted by an Oregon venture because of the positive support and incentives that Oregon provides. As a result, royalties, property taxes, as well as the potential for economic development, are going out of Idaho. According to **Mr. Rayhill**, Idaho has more wind potential than does Oregon. Ridgeline Energy has a 65 MW wind energy plant in Eastern Idaho.

According to **Mr. Rayhill**, the Idaho wind energy producers are asking that the property tax reduction issue be resolved. The new legislation would change the method of taxation on producers of wind energy from an ad valorem tax to a tax on production. New legislation would remove the 50% property tax relief fund requirement, take the tax outside the county budget caps, and allow Idaho wind energy producers to compete.

Mr. Hawk commented that the bill supported by the wind producers is an example of policies (the view from 5 feet) following strategies (the 10,000 foot view) and that the subcommittee should deal with policies. **Representative Anderson** stated that incentives may be part of the process and should be part of the dialogue, although this specific bill may not be the one the subcommittee should endorse. **Mr. Hawk** agreed that the subcommittee needs to propose actions to be implemented, and he is not necessarily opposed to the wind producers' bill, but just has not read it. **Senator Werk** noted that the siting subcommittee got bogged down in specifics and that the proper level of incentives be general, not specific.

3. Ron Williams, Idaho Consumer-Owned Electric Utilites.

The Idaho Consumer-Owned Electric Utilities Association is composed of 21 municipal and cooperative utility systems, according to **Mr. Williams**. The Association is supporting an act, which would enable these utilities to participate as joint owners or power purchasers in joint electric generation and transmission projects. A copy of the Association's proposed act is available in the Legislative Services Office.

Mr. Williams informed that the proposed act is in response to a 1980 Idaho Supreme Court decision that questioned the authority of consumer-owned utilities to enter into power supply contracts. According to **Mr. Williams**, the proposed act would allow these utilities to acquire generation and transmission services at cost. In response to a question by **Senator Gannon**, **Mr. Williams** said that voter requirements are covered elsewhere in Idaho Code and that the proposed act clarifies an ambiguity on the authority issue.

4. Arne Olson, Energy, Environment and Economics, Inc. (E3).

E3, the Energy, Environment and Technology Interim Committee's retained consultant was represented by **Arne Olson**. **Mr. Olson** presented a power point presentation titled "Generation Subcommittee, Day Two," a copy of which is available from the Legislative Services Office. **Mr. Olson** stated that the goal was first to achieve consensus on high level policy statements and then reach consensus on specific action items.

The power point slide on "Draft Policy Objectives" listed five such objectives:

1. Ensure a secure, reliable and stable energy system for the citizens and businesses of Idaho;
2. Maintain Idaho's low-cost energy supply and ensure access to affordable energy for all Idahoans;

3. Protect Idaho's public health, safety and natural environment and conserve Idaho's natural resources;
4. Promote sustainable economic growth, job creation and rural economic development through investments in Idaho's energy infrastructure; and
5. Provide the means for Idaho's energy policy to adapt to changing circumstances.

Mr. Hawk suggested that these "Draft Policy Objective" items be changed to bullet points rather than presented in a numbered order so they could be considered as a whole. **Mr. Hawk** stated that the full committee could then change the order, add items, or delete items. **Senator Gannon** stated that he did not want the items ordered. **Representative Anderson** noted that there were no numbers assigned these items in the computer printout.

Mr. Olson then addressed a table titled "Characteristics of Different Resource Types," a copy of which is available in the Legislative Services Office. The table lists energy resource types (Gas Combined Cycle, Pulverized Coal Steam, Coal Gasification, Nuclear, Wind, Geothermal, Run-of-River Hydro, Solar/Ocean Wave/Tidal, and Energy Efficiency) in columns across the top and 6 evaluation factors (Cost, Operations, Fuel Price Variability, Environmental Impact, Economic Development, and "Need" for Incentives) in rows along the left side. The intersection of each resource type and evaluation factor is labeled with an attribute and color coded with red, yellow, or green. In response to **Mr. Bradshaw**, **Mr. Olson** acknowledged that the color coding represented his evaluation and that the purpose was to spur discussion.

Mr. Olson noted that the "Need for Incentives" factor was new and represents the evaluation of whether development of the energy source will occur without state action. He said there was little need for incentive to encourage utilities to invest in gas combined cycle or pulverized coal energy and that wind energy is already reflected in the IRPs. However, coal gasification is new and untested and nuclear probably will not happen in the near future.

Mr. Hawk suggested and **Mr. Olson** agreed that Co-Generation should have been included in the table as an energy resource. **Mr. Hawk** noted that Co-Generation, which he described as a thermally balanced electricity source derived from using the waste heat generated in the industrial process, could be used for meeting peaking electric loads.

As represented in the table, nuclear power is listed as green ("low") for fuel price variability, yellow ("baseload") for operations, red ("high") for environmental impact and red ("high") for costs. **Mr. Olson** noted that with regard to environmental impact, nuclear power was a source of carbon free energy but had other environmental concerns. **Mr. Hawk** suggested that under those circumstances the environmental impact of nuclear should be yellow ("medium").

Mr. Neilson commented that the cost factor for an energy source (ex., geothermal) could change based on the specific technology. **Mr. Olson** agreed that geothermal uses water and may have site specific cultural (native American) issues.

Mr. Olson addressed the loading order of the resources that the State would like to promote. He

informed that the Northwest Power Act passed in the late 1980s listed as priorities: (1) Conservation; (2) Renewable resources; (3) Co-Generation from waste heat or generating resources of high fuel conversion efficiency; and (4) all other resources. Idaho's 1982 Energy Plan placed a high priority on conservation, renewable resources, generating resource of high fuel conversion efficiency, hydroelectric projects, and then all other resources in meeting the State's future electrical needs. California's Energy Action Plan II (2005) also endorsed a loading order of energy efficiency and demand response, renewable sources of power and distributed generation, and then clean efficient fossil-fired generation.

A "strawman" loading order for Idaho was proposed by **Mr. Olson** to the subcommittee. After discussion a consensus was reached by the subcommittee that the loading order recommended by the subcommittee be:

When acquiring resources, Idaho should give priority to:

1. Conservation, energy efficiency and demand response;
2. Renewable resources where applicable; and
3. All other resources.

The Idaho PUC shall ensure that its regulatory policies provide utility and ratepayer incentives that are consistent with this priority order.

Mr. Olson presented the "strawman" resource diversity recommendations to the subcommittee. After discussion, the subcommittee reached consensus that the subcommittee's resource diversity recommendations should be:

- C Idaho utilities shall acquire reliable, diverse, cost-effective and environmentally sound resource portfolios sufficient to meet their customers' long-term electricity needs.
- C Idaho utilities should have access to a broad variety of resource options consistent with Idaho's policy objectives, including both renewable and conventional resources.
- C Idaho utilities, including both the investor-owned and consumer-owned utilities, should conduct Integrated Resource Plans or programs that assess the relevant attributes of a diverse set of supply-side resource options and provide an opportunity for public input into utility resource decisions.

Mr. Olson presented two "strawman" transmission recommendations to the subcommittee. After discussion, the subcommittee reached consensus on one of the proposed recommendations: "The IPUC, Idaho's investor-owned utilities and the Bonneville Power Administration should work together to ensure that Idaho's Consumer-Owned Utilities have access to reliable transmission service for cost-effectively integrating new resources."

Mr. Olson presented a "strawman" affordability recommendation to the subcommittee. After discussion, the subcommittee reached consensus that this recommendation should be included as a footnote to the preamble of the subcommittee's report, stating: "It is important that

a baseline of affordable energy service is available to all Idaho households.”

Mr. Olson presented the “strawman” environment recommendations to the subcommittee:

- C The Idaho PUC and Idaho utilities should place a high priority on technologies that reduce emissions of harmful pollutants and minimize water consumption.
- C Idaho and Idaho utilities should prepare for the possibility of federal regulation of greenhouse gas emissions.

After discussion the subcommittee reached consensus on both of these recommendations.

Mr. Olson’s power point presentation titled “Energy Policy Levers” was presented to the subcommittee. A copy of this power point presentation is available in the Legislative Services Office. Included in that power point presentation was a list of “strawman” action items. After discussion, consensus was reached by the subcommittee on the following actions items:

- C Idaho utilities shall acquire all conservation that is cost-effective from the perspective of Idaho citizens.
- C Idaho should ensure that its public facility procurement rules provide appropriate incentives to allow full implementation of cost-effective energy efficiency and small-scale generation at public facilities.
- C Idaho should provide incentives for Idaho utilities to invest in “clean coal” facilities rather than conventional coal facilities.
- C Idaho and Idaho utilities should work with the INL to investigate the feasibility of bringing a “next-generation” nuclear facility to Idaho.
- C Idaho should examine whether it is appropriate to opt in to the EPA mercury cap and trade program for the purpose of attracting a “clean coal” facility to Idaho.
- C Idaho should offer an income tax credit for investment in energy efficiency and small-scale generation by Idaho businesses.
- C Idaho should provide a credit backstop to enable Idaho Energy Resources Authority to provide financing for independent renewables projects (thus providing a mechanism to implement SB 1192).
- C Idaho utilities shall offer voluntary “green pricing” programs that allow customers to support environmentally preferred and renewable energy resources.
- C Idaho should participate in regional efforts aimed at increasing the capability of the western transmission grid and bringing to Idaho the benefits of cost-effective remote resources.
- C [Idaho should enhance the ability of the Idaho Energy Resources Authority to provide low-cost financing to Idaho utilities for needed transmission upgrades.]
Note: the subcommittee asked that this item be placed in brackets because there wasn’t enough time to achieve consensus on the meaning of the word “enhance”.
- C Idaho should investigate the use of “dry cooling” technology for new thermal facilities.

After discussion, the subcommittee was unable to reach consensus on the following “strawman” action items:

- C Idaho should establish voluntary targets for the acquisition of high-priority resources by Idaho utilities.
- C Idaho utilities should comply with a voluntary Renewable Portfolio Standards of 15% of retail load by 2015.
- C Idaho utilities should acquire 1000 MW of renewable energy by 2015.
- C Idaho utilities should meet 75% of their load growth with conservation and renewables through 2015.
- C The Idaho PUC should allow recovery of the incremental cost of “clean coal” facilities relative to traditional coal steam facilities where the benefits to Idaho citizens outweigh the additional costs.
- C The Idaho PUC should determine the appropriate treatment of wind energy Qualifying Facilities as quickly as possible and return the maximum limit on PURPA Qualifying Facilities to 10 MW.
- C Idaho utilities shall report annually the source of electricity sold to retail customers (their “fuel mix”).
- C Idaho utilities shall offer net metering to facilitate investment in small-scale renewables by residential and small commercial customers.
- C Idaho utilities shall adopt the IEEE 1547 Standard for Interconnecting Distributed Resources with Electric Power Systems.
- C The state shall develop a uniform, statewide policy for insurance, credit and other requirements for net-metered facilities.
- C The Idaho PUC should investigate and report on mechanisms that provide utilities with appropriate incentives for construction of needed transmission facilities.
- C Idaho should create the Idaho Transmission Authority with a mandate to construct, own and operate transmission facilities that benefit Idaho ratepayers.
- C Idaho should establish and maintain an inventory of greenhouse gas emissions.
- C When evaluating resource investments, Idaho utilities should consider the full cost to Idaho citizens, including non-monetized “externalities.”

The meeting adjourned at 4:30 p.m.