

HOUSE COMMITTEE ON ENVIRONMENT

April 12, 2005 Corvallis, Oregon

2:00 P.M. Tapes 35 - 38

MEMBERS PRESENT: **Rep. Gordon Anderson, Chair**

Rep. Bob Jenson, Vice-Chair

Rep. Mary Nolan, Vice-Chair

Rep. Phil Barnhart

Rep. John Lim

Rep. Diane Rosenbaum

MEMBER EXCUSED: **Rep. Bill Garrard**

STAFF PRESENT: **John Houser, Committee Administrator**

Mike Reiley, Committee Assistant

MEASURES/ISSUES HEARD:

Future and Alternative Energy Sources – Informational Meeting

These minutes are in compliance with Senate and House Rules. Only text enclosed in quotation marks reports a speaker's exact words. For complete contents, please refer to the tapes.

TAPE/#	Speaker	Comments
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TAPE 35, A

003	Chair Anderson	Calls the meeting to order at 2:06 p.m.
008	Ed Ray	President, Oregon State University (OSU). Welcomes the committee to OSU. Explains land grant universities.
054	Chair Anderson	Commends the work being done at universities in fields such as science. Notes the support of the legislature and governor for higher education. Introduces himself.
072	Rep. Lim	Introduces himself.
076	Rep. Rosenbaum	Introduces herself.
080	Rep. Nolan	Introduces herself.
084	Rep. Jenson	Introduces himself.
090	Rep. Barnhart	Introduces himself.
103	Chair Anderson	Opens the informational meeting on future and alternative energy sources. Describes the development of solar, wind and other forms of alternative energy. Introduces Michael McGarey.

FUTURE AND ALTERNATIVE ENERGY SOURCES – INFORMATIONAL MEETING

152	Michael McGarey	Manager, State Programs, Nuclear Energy Institute (NEI). Begins PowerPoint presentation “Nuclear Energy: A Vital Energy Resource for the Future” (EXHIBIT A).
195	McGarey	Continues summarizing the PowerPoint presentation addressing re-licensing nuclear facilities (EXHIBIT A, Page 5).
230	McGarey	Summarizes the “Steady Increases in Nuclear Capacity” (EXHIBIT A, Page 6).
244	McGarey	Summarizes the safety performance of the nuclear industry (EXHIBIT A, Page 7).
258	McGarey	

Summarizes “Growing U.S. demand for electricity: The need for more electricity” and “Nuclear power’s environmental benefits” (**EXHIBIT A, Page 8**).

- 287 McGarey Summarizes “Nuclear energy’s contribution to cleaner air” (**EXHIBIT A, Page 9**).
- 300 McGarey Summarizes nuclear energy’s environmental benefits (**EXHIBIT A, Page 10**).
- 338 McGarey Summarizes the quotes regarding nuclear power (**EXHIBIT A, Pages 11, 12**).
- 362 McGarey Summarizes the U.S. need for and development of new nuclear plants (**EXHIBIT A, Pages 13, 14**).

TAPE 36, A

- 033 McGarey Summarizes “New Generating Capacity: Estimated Power Costs” and “Industry innovation: The plants of the future” (**EXHIBIT A, Page 15**).
- 058 McGarey Summarizes “Generation IV Technology” and describes public opinion toward nuclear power (**EXHIBIT A, Pages 16, 17**).
- 141 McGarey Summarizes “What Is Our Brand?” (**EXHIBIT A, Page 18**).
- 146 Rep. Barnhart Asks about the disposal and storage of spent fuel and facility decommissioning, replacement and lifespan issues.
- 157 McGarey Answers that new nuclear projects are working to reduce waste, but acknowledges that disposal is an issue. Explains the work being done to store nuclear waste at Yucca Mountain in Nevada.
- 172 Rep. Barnhart Asks about decommissioning and lifespan of nuclear facilities.
- 179 McGarey Answers that the Trojan nuclear facility is being disassembled and decommissioned on schedule.
- 192 Chair Anderson Asks if Trojan is being considered for rebuild.

195	McGarey	Answers no.
196	Chair Anderson	Asks about technology and rebuilding facilities.
201	McGarey	Explains the closure of the Trojan nuclear facility.
208	Chair Anderson	Asks about safety.
210	McGarey	Notes the work being done on safety issues on nuclear power and its effect on countries in the developing world.
231	Rep. Barnhart	Asks about the new standardized systems and lifespan in constructing nuclear facilities.
245	McGarey	Notes that it would likely be a 40-year initial licensing with a 20-year renewal. Stresses the importance of standardization.
256	Rep. Jenson	Asks about problems related to nuclear waste storage at Yucca Mountain in Nevada.
268	McGarey	Notes the opposition of elected officials in Nevada and appropriation issues related to Yucca Mountain. Explains the standards associated with Yucca Mountain.
308	Rep. Rosenbaum	Asks about state specific figures for public support including Oregon in Mr. McGarey's presentation.
315	McGarey	Answers that he is unsure.
322	Rep. Lim	Acknowledges the economic benefits of nuclear power, but expresses concern about safety. Cites the examples of Three Mile Island and Chernobyl.
351	McGarey	Notes that the Three Mile Island accident was 27 years ago and was not similar to Chernobyl. Reiterates the importance of nuclear power in the U.S. energy portfolio.
405	Chair Anderson	Asks about cost per kilowatt hour compared to other forms of energy, safety issues and the role of nuclear power in America's energy future

and generating hydrogen and desalinization. Introduces Thomas Tanton.

TAPE 35, B

- 014 Thomas Tanton Institute for Energy Research. Explains that there was not an energy crisis in California in 2001, it was a capacity crisis. Begins summarizing PowerPoint presentation (**EXHIBIT B, Page 1**).
- 081 Tanton Summarizes “U.S. Carbon Dioxide Emissions”, “Hubbert’s Peak”, “Resourcefulness” and “World Crude Oil” (**EXHIBIT B, Page 2**).
- 134 Tanton Summarizes “Hydrocarbon Usage & Potential Supply”, “U.S. Retail Gasoline Prices”, “Natural Gas Prices”, and “U.S. Refinery Utilization” (**EXHIBIT B, Page 3**).
- 205 Tanton Summarizes “U.S. Emissions Comparison”, “Oil Spills in U.S. Waters”, “Renewable to Carbon-energy Era: U.S.”, “Wind Power: The Next Big Thing” (**EXHIBIT B, Page 4**).
- 255 Tanton Summarizes “Intermittency of Wind: System Load vs. Wind Generation – Summer”, “State Legislator’s Energy Creed”, “Forecast of World Energy Demand” and “Conclusions” (**EXHIBIT B, Page 5**).
- 290 Rep. Lim Asks about the difference between energy output between Mr. Tanton and Mr. McGarey’s presentation.
- 303 Tanton Explains the difference between the two.
- 354 Glenn Montgomery Sustainable Business Liaison, Oregon Economic Community Development Department (OECD). Discusses the governor’s task force on climate change and notes that its report is forthcoming.

TAPE 36, B

- 012 Charles Carlson Cascade Grain. Submits and begins summarizing PowerPoint presentation (**EXHIBIT C, Page 1**).
- 028 Carlson Summarizes “Regional and Community Benefits” and ethanol usage (**EXHIBIT C, Page 2**).

065	Carlson	Summarizes ethanol use, benefits, and opportunities (EXHIBIT C, Page 3).
084	Carlson	Summarizes “World Ethanol Production” and the “U.S. Petroleum Industry 2004” (EXHIBIT C, Page 4).
135	Rep. Barnhart	Asks where the materials will come from that will be used in the facility.
141	Carlson	Answers that the Pacific Northwest exports 20-25 percent of its corn out of the country. States that local and Midwest corn would be used in the facility.
151	Rep. Barnhart	Clarifies that part of the stream of corn for export travels through the Port of Portland.
156	Carlson	Answers yes. Explains pricing concerns.
161	Chair Anderson	Asks if it will be five years before cellulose technology for ethanol production is feasible.
165	Carlson	Answers that the process takes time.
180	Gail Achterman	Director, Institute for Natural Resources, OSU. Submits and summarizes prepared testimony and information regarding renewable energy technology (EXHIBIT D). Discusses the work being done at OSU in renewable energy technology. Introduces the panel.
335	Alan Wallace	Director, Motor Systems Resource Facility, OSU. Submits and reads prepared testimony regarding ocean energy research (EXHIBIT E).
405	Wallace	Begins summarizing PowerPoint presentation regarding ocean energy research.

TAPE 37, A

004	Wallace	Describes power from ocean waves and available resources off Oregon coast.
021	Wallace	Describes a chart showing Average Seasonal Wave Power.

- 058 Wallace Describes OSU's novel direct drive buoy approaches. Including permanent magnet linear generator, permanent magnet rack and pinion generator, and contact-less direct drive generator.
- 084 Wallace Notes that the U.S. does not have a commercial energy project for wavepower. Describes ongoing efforts at OSU, including the proposed U.S. Ocean Energy Research & Demonstration Center.
- 110 Wallace Describes a Conceptual Wave Energy Park.
- 133 Dr. David Hackleman Department of Chemical Engineering, OSU. Submits and summarizes prepared testimony "Biofuels Research in the OSU College of Engineering" (**EXHIBIT F**).
- 250 Chair Anderson States that he was impressed by Dr. Hackleman's testimony before the House Agriculture and Natural Resources Committee on January 28, 2005 and notes that a videotape of the testimony is available (**NOTE: See the tape log from the March 10, 2005 House Environment Committee for the videotape of the testimony**)
- 257 Roger Ely Associate Professor of Bioengineering, OSU. Submits and reads prepared testimony regarding Fuel Cell Technology/Photobiological Hydrogen (**EXHIBIT G**).
- 361 Jan Auyong Associate Director, Sun Grant Western Regional Center; Assistant Director, Oregon Agricultural Experiment Station, OSU. Submits and summarizes prepared testimony regarding the Sun Grant Initiative (**EXHIBIT H**).

TAPE 38, A

- 010 Auyong Describes the western regional priorities and western regional expertise.
- 020 Auyong Discusses agricultural implications for Oregon in the Willamette Valley and statewide.
- 030 Auyong Cites and discusses the use of canola as a biodiesel crop in Oregon.
- 050 Auyong

		Discusses technological opportunities for Oregon and current activities including the OSU Biodiesel Initiative, biofuels research and Agricultural and Forestry Sciences.
068	Auyong	Describes the Western Regional Center projects and funding.
084	Auyong	Concludes by describing the Sun Grant Initiative.
097	Rep. Jenson	Asks about research into the use of biodiesel as a combustible agent in vehicles and practical applications.
112	Dr. Hackleman	Notes that biodiesel is being used and describes the research into the effects of biodiesel of engines and fuel standards.
128	Auyong	Points out that the OSU Extension Service is working on the production and awareness of biodiesel and allowing local communities to use their own biomass.
140	Rep. Jenson	Stresses the importance of identifying problems with biodiesel use in building a biodiesel industry in Oregon. Expresses concern about the effect of biodiesel use on manufacturers' warranties.
157	Dr. Hackleman	Answers that he knows a great deal about manufacturers' warranties. Notes that the issues with the warranties are not about biodiesel, but other factors.
166	Rep. Jenson	Speaks in favor of biodiesel. Urges the use of biodiesel over ethanol.
171	Rep. Barnhart	Asks for the status of the development of Dr. Ely's Photobiological Hydrogen energy system.
175	Ely	Answers that a prototype could be developed in five to seven years under the right conditions and with proper support that would cost \$5 million per year.
192	Rep. Barnhart	Asks for a clarification of the process.
194	Ely	Answers that the enzyme that produces hydrogen is sensitive to oxygen and describes the process.

Notes that the original intent of the committee was to examine recycling and notes the amount of wood waste and other materials that could be used in the development of biofuels. Compares the energy development to the development of the nanosciences. Commends the panel and the work being done. Closes the informational meeting. Adjourns the meeting at 4:45 p.m.

EXHIBIT SUMMARY

- A. Future and Alternative Energy Sources, Michael McGarey, 19 pp**
- B. Future and Alternative Energy Sources, Thomas Tanton, 5 pp**
- C. Future and Alternative Energy Sources, Charles Carlson, 4 pp**
- D. Future and Alternative Energy Sources, Gail Achterman, 15 pp**
- E. Future and Alternative Energy Sources, Alan Wallace, 2 pp**
- F. Future and Alternative Energy Sources, David Hackleman, 3 pp**
- G. Future and Alternative Energy Sources, Roger Ely, 2 pp**
- H. Future and Alternative Energy Sources, Jan Auyong, 2 pp**