

Wednesday, May 9, 2007

HOUSE ALTERNATIVE ENERGY Rep. McGregor: 614-644-6002

Wed., May. 9, 2007

EDUCATIONAL TESTIMONY

The committee received educational testimony from Rayola Dougher, an economist with the American Petroleum Institute; Amy Gomberg, environmental advocate for Environment Ohio (EO); and Dale Arnold, director of energy services for the Ohio Farm Bureau (OFB). Dougher presented the oil industry perspective on biofuels, while Gomberg and Arnold promoted the development of wind energy.

Dougher blamed the current high gas prices on low levels of inventories combined with regional refinery outages. She said refinery utilization is currently around 88 percent, whereas they should be at 92 percent.

Dougher said, "Our nation needs ALL sources of commercially viable energy, as well as greater commitment to energy efficiency and energy conservation." She added that "Almost 50 percent of all gasoline now produced in the U.S. includes ethanol," and "our companies have long been pioneers in developing alternatives and expanding our utilization of existing sources of energy." Dougher reviewed future U.S. energy demand forecasts, and the benefits and limitations of ethanol, biodiesel (mono-alkyl esters) and renewable diesel (non-esters), mentioned a variety of other biofuels options, and urged the committee to leave the playing field as open as possible. She indicated the following:

- Biofuels will become a larger fraction of U.S. motor fuels.
- Petroleum based and alternative fuels continue to advance with sustained environmental improvements.
- Federal or state mandates should not pick winners and losers.
- State mandates conflict with the federal program and limit refiner's flexibility.

Dougher responded to questions about US refinery capacity, competition from overseas refineries, and other states' biofuels mandates.

Gomberg said EO and OFB are members of the Ohio Wind Working Group that includes 20 other businesses, universities, utilities, government agencies, non-profit and other organizations members. She indicated an onshore wind energy resource of 66,000 MW and a Lake Erie offshore potential of 68,000 MW. Gomberg cited the clean energy, manufacturing job potential, new business opportunities, rural economic development, and energy independence benefits of wind energy. She claimed wildlife habitat impacts are minimal with proper siting. Saying that renewable energy standards have worked to generate wind energy in Texas, and new business and jobs in Pennsylvania and Colorado, Gomberg urged the committee to consider a renewable energy standard for Ohio. She said, "Ohio has the technological know-how, manufacturing base, and wind energy potential to generate at least 10-20 percent of our electricity from wind within the next decade."

Arnold called wind energy "the pioneer and trendsetter." He said interconnection to the electric power grid is a key issue involving the following:

- On-site generation used with utility power to control energy costs as well as manage risk.
- Smart metering to control peak demand and the utility charges they create.
- Distributed generation to meet peak load requirements for customers in that area.
- Net metering to allow businesses and farms to sell their excess power to electric utilities.
- Stand-by rates that encourage the use of on-site generation.

Arnold discussed a 2006 Public Utilities Commission of Ohio (PUCO) staff report on customer friendly interconnection standards. He said that a March 28, 2007 commission findings and orders is now implementing many of its recommendations, but that more work needs to be done.

Bryan Starry, JW Great Lakes Wind; Paul Hoag & Tom Williams, North Coast Wind & Power, LLC; Nick Tichich, Gamesa Energy USA; and Kevin Sheen, Everpower Renewables; assisted Gomberg and Arnold in

responding to questions about the role of coal and PUCO, interconnection discussions with utilities, siting and construction standards for wind turbines, public acceptance, standby rates, and state incentives. Arnold said education is effective in addressing public concerns about set-backs, hazards, noise, visual pollution and siting of wind turbines. He agreed with Rep. Latta that the wind farm at Bowling is an excellent demonstration for public acceptance.

Chairman McGregor displayed an ODNR siting map of Lake Erie showing depths, shipping lanes and biological corridors that would need to be considered in siting offshore wind power. He noted that the state has ownership of its portion of Lake Erie, and that it would be up to the state to decide whether to charge nominal or commercial amounts for siting wind turbines on the lake.

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Wed., Apr. 25, 2007

The committee heard a vision of Ohio's energy future from Dr. Henry Cialone, president of the Edison Welding Institute. Chairman Jim McGregor noted that Dr. Cialone was recommended by the Ohio Academy of Science.

Cialone said "a new era of green industrialization" could "lead Ohio back to our manufacturing future." He said that the proper legislative role is not to pick winners and losers in the market, but to remove manufacturing and process obstacles that trap products in a "Valley of Death" between prototype development and successful commercialization. Cialone said the political mandates are;

- Remove administrative and regulatory barriers that slow down advanced energy projects and technologies.
- Adequately fund engineering and manufacturing research to support industry development.
- Help mitigate some of the pre-competitive and early stage risk of developing advanced energy industries.

Cialone defined advanced energy as not only wind, biofuels, solar, fuel cells and hydroelectricity; but also advanced coal combustion, coal-to-liquid technology, advanced batteries and next generation nuclear power. He recommended three key opportunities for Ohio:

- Lake Erie wind power. He argued that Lake Erie is so large and so shallow that thousands of windmills could be located virtually out of sight from the shore while creating a wind power industry in Ohio with worldwide distribution.
- Moving fuel cells to market by developing welding technology that can mass produce prototype fuel cells that now take PhDs hundreds of hours to produce.
- Ohio's real role in ethanol production by focusing on cellulosic ethanol rather than the already maturing and limited corn ethanol industry that is already impacting the food market.

In response to Rep. Latta, Cialone said his first choice would be wind power in the short term and cellulosic ethanol five years out. He discounted Sierra Club concerns raised by Rep. Fende about Lake Erie wind power as technological problems that can be worked out, not show stoppers.

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Wed., Apr. 18, 2007

Dr. Bobby Moser, vice-president for agricultural administration at Ohio State University's (OSU) College of Food, Agriculture, and Environmental Science (CFAES), gave an overview presentation on Ohio's Home-Grown Energy: Biomass. He was assisted by Dr. Steven Slack, director of OSU's Ohio Agricultural Research and Development Center (OARDC); Dr. Matthew Roberts, assistant professor of agricultural, environmental and development economics at OSU; and Dennis Hall of OSU's Ohio BioProducts Innovation Center (OBIC).

Moser said biomass is abundant, renewable, carbon-neutral and the only sustainable source of hydrocarbons. He said it can fill the gap between energy demand and petroleum availability in the near term and lead to sustainable fuel systems if coupled with conservation and increased vehicle efficiency.

Moser indicated the use of soybeans (for biodiesel) and corn (for ethanol) are limited because of their

competition for food supplies, but that lignocellulosic biomass (like trees and switchgrass) have tremendous potential to displace up to 50 percent of U.S. gasoline consumption. He said the food crop competition could be addressed by investing in research to increase crop yields. Moser said other large sources of biomass are municipal solid waste (MSW), crop residue, livestock manure and food processing waste.

Roberts said lignocellulosic biomass can be produced on marginal or buffer land unsuited for corn or soybean production, but at greater transportation cost. In addition to using biomass to produce fuel and generate electricity, Moser and Hall said the use of biomass as feedstock for bioproducts has the potential to combine Ohio's two largest industries (the \$79.6 billion agriculture industry and the \$49 billion chemical, plastics and rubber materials industry) in displacing petroleum to produce high value products. Moser said Ohio has huge potential to provide biomass, and the scientific capabilities to convert that biomass efficiently based on an ecological paradigm of production efficient, environmental compatibility, economic viability and social responsibility.

In response to Fende, Roberts said current federal policies could realistically result in up to 35 percent of corn production used for ethanol in five years, indicating there is a risk of stress from a one or two-year shift from livestock feed. He said construction costs for ethanol plants are in the range of \$2 to \$2.50 per gallon of capacity.

Slack indicated that an OARDC pilot biogas co-digestion power plant scheduled to start-up this summer will convert waste from 125 dairy cows to electricity and heat. He noted that another pilot plant utilizing municipal solid waste is scheduled to start operation about the same time in Akron. Moser added that power generation from animal waste should be feasible with 750 to 1,000 cows, but that the price received in Ohio is relatively low due to competition from coal. In response to Lundy, Roberts advised that Ohio should focus on emerging technologies like lignocellulosic plants rather than on maturing markets such as ethanol. He concurred with Moser that lower corn prices in the Plains states lead to their early development of ethanol industries in order to add value to their corn production.