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Obama administration plans energy source revolution

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With a multitude of alternative energy sources requiring extensive research and funding in order to compete with gasoline internal combustion engines, the winner of the alternative energy race will not be determined by speed or endurance but rather by the ability to clear hurdles, energy experts said earlier this week.

The Center for Energy, Economic and Environmental Policy hosted a New Jersey Hydrogen Learning Center panel discussion Monday on the new Obama energy policy. Held at the Special Events Forum at the Edward J. Bloustein School of Planning and Public Policy on the College Avenue campus, the event was designed to inform attendees on the new direction the hydrogen policy would be taking over the next four years.

One of the state's toughest problems is that the government must recognize they don't know the answer to the energy question and the state cannot handle the problem alone, said Kenneth M. Esser, chief energy adviser to Gov. Jon S. Corzine. Ultimately though, each state is looking out for itself, Esser said.

"If Texas asks us to help them with a wind project … that ultimately has no benefit for New Jersey," Esser said. The fact that such a project wouldn't be able to assist New Jersey residents would be a major deterrent to the state's involvement, he said.

"Now, is that putting the blinders on … and missing the big picture? Absolutely," he said. Esser's presentation emphasized that one of New Jersey's main concerns are volatile energy prices, with peak usage increasing at an alarming rate.

In order to address this, the state intends to provide a 20 percent reduction in total usage by 2022, adjusted for growth. The reduction would bring New Jersey 5 percent below its current usage levels, Esser said. In order to meet this goal, the state intends to get 30 percent of its energy from renewable sources, turn to more efficient engineering in buildings and possibly turn to nuclear energy.

"The jury is still out on [nuclear energy]" Esser said, adding that every energy source has its downside. "The fact is that today we do not have that silver bullet," he said.

The elusive silver bullet may come in the form of one of the simplest elements — hydrogen, said JoAnn Milliken, the Hydrogen Program Manager at the United States Department of Energy.

Hydrogen fuel cells would be most useful in the transportation sector, where fuel cells have the possibility to reduce the projected 12 million barrels of oil used per day to less than one million, Milliken said.

The current goals of the hydrogen program are to reduce costs and increase range and durability of the fuel cells to the point where they will be competitive with internal combustion engines, she said. The largest obstacle in the Hydrogen energy field is the solution is not cost-effective yet.

Currently, the price per kilowatt from a fuel cell is down to 73 from 275 in 2002, but the program hopes to reduce that further to $30 per kilowatt, though some industry leaders believe anything less than $50 per kilowatt will be competitive, Milliken said.

Also presenting was Clinton J. Andrews, associate professor at the Bloustein School. Andrews' presentation focused on the multitude of possibilities, each with unique benefits and costs.

For example, raising the automotive industry's fuel economy's requirements to just 40 miles per gallon is possible almost immediately and will provide enormous savings to the American oil consumption, while hydrogen fuel cells are not yet ready for commercial use and therefore give almost no immediate reduction in oil usage. Current lithium-ion batteries provide 86 percent efficiency, as compared to 25 percent efficiency of hydrogen cells, when considering conversion from grid to motor.

Andrews emphasized the importance of using diverse energy solutions based on locality. For example, solar grids would be far more effective in Texas than in Maine, so it makes little sense to require each state to individually provide 20 percent of its energy from renewable sources.

Andrews discussed the role of the state and federal government and said he thinks the federal role is to lay out the groundwork. Sponsoring fundamental research at a significant and stable level is key for the federal government, as well as adopting standards for the hydrogen industry and subsidizing state level experiments, he said.
The crowd consisted of students, professors, alumni and representatives from the automotive and energy companies. Joshua Yearsley, a School of Engineering junior, found it interesting to see how the policy has changed from the Bush Administration to the Obama Administration.

The nation is undergoing a cultural shift to being green, a byproduct of the Obama campaign as well as widespread interest from many Americans, he said.

"Gas prices are going to go back up," he said. "I definitely see the interest in renewables as long term."