

## **Powering New Jersey's Future: Defining our Energy Needs and Solutions**

### **Date:**

November 12, 2008

The participants in the first discussion on the role of green technology in New Jersey's economic future were:

- Hon. James J. Florio, Florio, Perrucci, Steinhardt & Fader LLC
- Hon. Jeanne Fox, President, New Jersey Board of Public Utilities
- Anne E. Hoskins, Vice President, Federal Affairs and Policy, PSE&G
- James S. Lanard, Head, Strategic Planning, Bluewater Wind
- Jeff Tittel, Executive Director, Sierra Club of New Jersey

The conference was opened by Richard W. Lloyd, Executive Director, State Government Affairs, Johnson & Johnson, and President, Board of Advisors, Council on State Public Affairs.

Both panels were moderated by Rebecca Perkins, President of the Council on State Public Affairs

Lloyd: I'm pleased to welcome you all to the Council's inaugural conference. Our topic today is energy policy. It's a topic of concern to Johnson & Johnson. We have over 10,000 employees in this state, and we're a very environmentally concerned company. We've set environmental goals for the past 15 years, and we believe it's good for the "green" world – both monetarily and environmentally. We've been able to significantly reduce the environmental impact on our operations and products, reducing Co2 emissions nearly 13 percent from 1999-2007, and we also use solar power in many of our facilities. There's probably never been a more crucial time to discuss our state's future. That's why this conversation is being held today. I'm now going to turn the conference over to Rebecca Perkins, who will lead the discussion.

**Perkins: What we hope to do today is encourage a conversation. The people on this dais represent perhaps the biggest collective group of knowledge about energy in New Jersey. Governor Florio, you were the governor when the first energy master policy was written in NJ. Can you give us a brief discussion on energy policy in NJ? What were your goals as governor?**

**Florio:** Our economy in New Jersey, and in our entire nation, is captive to oil prices. There's nothing more powerful than an idea whose time has come, and the time is now here. We have to have systemic change, which is a good thing. Our foreign relations are impacted by overdependence, and the ramifications of it have driven people to say we've got to change this. Environmental components have now brought it home to us that we're overly dependent on foreign sources and on fossil fuels, so all those things are driving us to focus on how we change that overdependence and reliance on fossil fuels. When the price came down, we lost interest. It's not just price, it's foreign policy, it's the environment, so we're going to continue on this pattern of trying to change our reliance and go into alternative sources.

**Perkins: Against this backdrop of increased prices, we also have increased demands. Jeanne, as head of the BPU, where are we in New Jersey?**

**Fox:** It's a worldwide demand. We have become accustomed to world energy supply as the US energy supply and it isn't that way anymore. Today's it's a leadership issue pushed by climate change. It's probably the biggest issue for the world as a whole. The economy, the lack of security to this country, the prices that it drives up, how that impacts our economy, in addition to climate change –that's significant. NJ is a small part of that. We have somewhat more costly electricity because of environmental regulations, such as air quality. The pricing system has to be modified, but it's tied to supply and demand for the world.

**Perkins: Anne, what is PSEG's perspective?**

**Hoskins:** We see climate change requiring the way we produce energy. We're focusing on energy efficiency, looking at renewables, and also focusing on the need for clean central station power, which is a critical component. This is very complex, not something that's just a New Jersey, or a regional, issue. We need to have a portfolio of options in front of us.

**Perkins: Jeff, are things looking good for environmentalists?**

**Tittel:** Absolutely. But the biggest problem we have to face is to make sure that choices in front of public are not only transparent, but are real choices. In promotion of green energy and green jobs, the same people who got us into this energy mess are trying to con the American people with corn-based ethanol or clean coal, which doesn't exist. We need to free up the market in innovation for our country to be world leaders. We can grow our economy and reduce pollution from a variety of sources. We support off shore wind, which some in the environmental community oppose. I look at energy as being in the same place we were with cellular technology 25 years ago.

**Perkins: Jim, Bluewater Wind is a supplier. What's the feasibility of wind energy in NJ?**

**Lanard:** New Jersey's energy master plan proposes a thousand megawatts of offshore wind by 2012. That's a very aggressive standard, leading the nation in pushing for offshore wind and very exciting for our industry. We need multiple wind parks developed simultaneously to create the critical mass so we can develop this industry. We want a great economy here in New Jersey, and the way we're going to do that is by building multiple parks to have economy of scale to build facilities like turbine manufacturing, towers and foundations. There is a great opportunity here, it is cutting edge, and with the leadership here, we've basically jumped over Delaware, where Bluewater has a contract to sell power for over 100,000 homes. New Jersey's commitment is basically 5 times the size of Delaware's. We'll be using NJ union workers, building operation and maintenance facilities. Also, we will know on day one when we start spinning our turbines what the price of electricity is 25 years later. Wind power provides stable pricing, a key ingredient in energy policy.

**Perkins: There are some who would say that offshore wind power is unproven and untested.**

**Lanard:** In Europe there are 28 operating wind parks right now, operating since 1991. We traveled to Denmark to inspect them. There's a great history of offshore wind in Europe, and studies on environmental protection issues, so we know how operations and maintenance will go. We will go further out than ten or fifteen miles, and our turbines will appear about half the size of one's thumbnail and as thin as a toothpick on a clear winter day. On a hazy day, you won't see any of the wind park 30 per cent of the time. We avoid major migratory flyways. There will still be a bird issue, but we know from Danish studies that birds do a lot of avoidance. Radar tracking studies show that birds fly around the turbines.

**Hoskins:** One of the big challenges that will require cooperation with state regulators, environmentalists, and federal regulators is that we're really in uncharted waters. How will the rules be written? In New Jersey, wind energy has to be offshore, because there are very few places within the NJ land area. We've really got to pull people together. We haven't had lot of success in US – there's been a lot of opposition. There are tradeoffs with every option you talk about today, and we need to be very focused, particularly on wind energy to find a path we can get moving on, particularly with the 2012 effective date.

**Tittel:** I find it very interesting that many studies show that wind stanchions will act as barrier reefs, encouraging sea life and plants. When you look at wind, you have to look at the big picture – if we don't do it, what are the other options? If we reopen the coal plant in Cape May, the mercury and other things coming from it will have a bigger environmental impact. From our perspective, wind is the most cost-effective, environmentally friendly way to really meet our energy needs for the future.

**Fox:** The issue is how much wind energy can we supply? No one says more than 20 percent of our national supply. We don't have storage yet, for solar or for wind, and the issue of getting the federal government to invest in research on storage is critical. Gov. Corzine's energy master plan calls for 13 per cent of NJ's energy to be supplied by offshore wind by 2020. I think it's reasonable and very doable, and it can be located where there is great demand. Our electricity is priced by FERC and PJM. We're hurt by congestion pricing in the grid system. We're paying billions of dollars because we don't have enough transmission lines for electricity from the West. These wind sites will be along the coast where we have demand, distributing the resources where the demand is.

**Perkins: How much of the change that's required to support the Governor's energy master plan can happen in the state and how much is dependent on what will happen in Washington?**

**Florio:** It would be very helpful if we had an overall energy framework to facilitate regional considerations, but we can be very proud that NJ is on the leading edge, so we're prepared. Both Presidential candidates agreed that we had to do something, so I assume there will be support down the road, but I don't think we should wait for those things to happen, and we're not. Regulated utilities have been very forthcoming in NJ, very collaborative and cooperative. They're all into energy conservation, demand response initiatives, alternative energy, and most importantly, capacity. We all have a full understanding that growth projections aren't going to be met unless we deal with our energy infrastructure. I think the new administration is committed to that.

**Lanard:** Bluewater Wind represents projects from Massachusetts to Maryland, and we're working to form a Congressional caucus for offshore wind to lobby the administration, not so much to lobby for it, but to make sure that offshore wind gets its fair share in the competition for energy dollars. We need to make sure that regulatory agencies are fully staffed. The entire process will require intense review. We need to look at new generations of energy development for wind, such as larger turbines and floating turbines. We can't get above 20 percent of our energy requirement because of the intermittent nature of wind. If you had energy storage, you could use stored energy through battery packs or hydrogen, so the curve would stay flat. This is what we're looking at, I think, in our lifetime. It's just not economical yet.

**Hoskins:** PSEG is investigating compressed storage, where the concept is to take power from wind that's created at night and store it in salt caverns. We're very excited about this technology, figuring out how to commercialize it. Another good opportunity is hybrid electric vehicles. The exciting thing about hybrids is that they can serve as a storage facility, and also help deal with pricing issues by charging at night when it's less expensive.

**Tittel:** Right now the federal government stands in the way, with other programs out there such as transmission corridor regulations put forth by DOE which can undermine our attempts at green power. It promotes and permits power lines around the country to move dirty power instead of clean power. Many federal efforts could be undermining us, such as proposals to have offshore oil drilling and gas drilling in Pennsylvania, which would undermine efficiency and our goal of renewable energy. The new administration has to come forward with progressive programs to move us in the right direction and also stop bad things that are happening.

**Fox:** The transmission line issue is major. Congress passed a law to allow FERC and DOE to do transmission corridors, and we are in one of them. Many big companies are pushing hard for transmission lines. Customers pay for the cost of these lines. We have been arguing at the BPU at a national level for about three years now that we should look at alternatives to transmission lines before they're approved, and FERC say they don't have jurisdiction or authority. We should look for alternatives before we play for these lines to bring us dirty power, which probably won't be allowed to operate in a few years.

**Florio:** we're going to have to have enhanced transportability and it can be benign. There is a movement for more distributed generation, more capability of locally generated power which wouldn't require long transmission areas. Micro grid systems are in place, where internal systems of distributed generation are connected within the overall grid. One of the resources that NJ hasn't talked about a lot is low-head hydro. We have 600 dams in this state, many owned by the state and in need of repair, and there's new technology coming forward to allow for generation of electricity out of these low small dams that can add up to a substantial amount of the contribution for overall electricity. Since these dams need repair, you can generate revenues to pay for the repairs. Maybe there's some attractiveness in converting that type of hydroelectricity into a Class 1 renewable. Or maybe give some benefits of a class 2 renewable that would approach the benefits of Class 1.

**Tittel:** Sewer plants are also a source for hydro. Other states are looking at it. Los Angeles encases its sewer plant in glass, and all the methane from that facility runs a 640 megawatt power plant. Now they're adding hydro to the discharge. With transmission lines, better insulation and putting lines underground will help save power. We can put up solar panels on sound barriers - we just have to think out of the box.

**Perkins:** Let's talk about feasibility, both in terms of technology, the economy, and the legislative environment. What would have to happen for all these things to be put into place?

**Fox:** The energy master plan is pretty detailed, and the implementation plan is very detailed. What we haven't talked about is energy efficiency for new construction – new building codes, new appliance standards, and then getting into existing buildings and facilities, homes and businesses. They use a huge amount of the energy in our state. Cutting peak demands is an absolute necessity. NJ is way behind neighboring states on demand response. We need to do better on that.

**Perkins: How much of the demand for efficiency is attitudinal, and how much can be mandated legislatively?**

**Fox:** That's a real good question. Mandating legislation is a tough thing, because you can't get into people's homes. You can mandate prospectively, through building codes. The Legislature has to do that, and DCA can do things that will be cost effective. Utilities can be helpful, and we need a trained workforce for that.

**Tittel:** It's about education. Most people don't realize that for every dollar you invest in energy conservation, you'll save four dollars.

**Hoskins:** PSE&G has been very involved. We have a petition before the Board now that's a \$46 million project for carbon abatement. It's not easy. Customers want to save money, but how do you make that happen? We need to change the mindset, and we need the business community in the state to come along on this. We want to treat this as an investment, to train the workforce and do the audits. There's a sense that it's just a passthrough, and we don't agree. If we're serious about efficiency, renewables, and clean central station power, we need to put our resources behind it. Business users and the leaders in the state need to be willing to say, yes, we're willing to invest in energy efficiency.

**Florio:** That raises the issue that no one wants to talk about – decoupling. How is it that we ask the utilities, which have traditionally made money by selling more power, to now induce people to conserve and run against their financial interest, unless you change the formula to provide a profit incentive? No one has yet provided a formula with variables in the formula to have everybody win by conserving. You can't ask the companies to undertake financial self-destruction by taking on policies that cause them problems, but you also want to make sure that consumers are treated fairly. If we're going to have a real commitment to conservation, someone's going to have to do that.

**Fox:** It's been tried unsuccessfully, where an electric utility has decoupled what they're selling from what they're making, and the customers lost. We did something very creative a few years ago with New Jersey Natural Gas Company and South Jersey Gas Company. They're happy, their shareholders are happy, and their customers are happy. They came in with a traditional decoupling petition, and we negotiated to a win-win. It would be possible with the electric companies, and we're actually talking to utilities now on how we can do that. If they're making an investment, they need to earn a return. The question is, how do we do that?

**Florio:** The big difference between gas and electricity is that gas companies can store gas that they save and make money down the road. You can't store electricity.

**Tittel:** We support the concept, but electric companies can make money through efficiency, but where does the return go? We may have to change rate structure so that people who are doing the right thing won't see a rate increase, but people who aren't will see their rates go up. You don't want to see people penalized for doing the right thing.

**Fox:** We just approved Jersey City Power and Light's petition with a differential rate for summer for residential customers, day versus night. I think it's a smart thing to do. We also are talking about the size of electricity use. If you have a McMansion and several large screen tvs, perhaps you should be paying more if you're using more electricity than the average residential company. On the business level, it's actually \$11 saved for every dollar invested. So to get at big dollars, we really need to get at the business community. The Board is interested in cost benefit. Is it worth this cost for the benefit to the customers? I think it's doable, we just have to figure out what it is.

**Hoskins:** One of the things we're looking at is given the economy, credit crunch, job creation, we should all be trying to come up with a transformation of our regulatory system, have financials be as transparent as possible. We need to have rate increases happen on a more formulaic basis.

**Perkins: Governor Florio, as the politician, what do you think the prospects are for implementing these changes?**

**Florio:** Probably the single most significant thing we've done in this state is renewable portfolio standards. Mandate it – command and control is not in vogue nowadays, but the command and control dictate has driven this whole process. The most significant thing the nation could do is advance national standards. That's doable, and it would be in the national interest to have national renewable portfolio standards.

**Perkins: So it's got to start from the top. Would our panelists like to sum up?**

**Lanard:** We love what the Governor and his staff and the BPU are doing here. With 10-15 offshore wind parks proposed along the East coast, at a billion plus dollars per project, there's enough for the industry to collaborate.

**Hoskins:** We're also active in a solar effort. It's a \$100 million program, and now we're looking at the possibility of direct investment in solar energy. On the national level, PSE&G is very active in the national climate change debate. We were involved in REGGE as well. REGGE has been very important in kickstarting this effort and we very much want it to succeed but we also strongly believe that the answer is a national system. It will be a mistake if we end up with six or seven regional systems. The key is to get a price for carbon into the markets, so when companies like ours make investment decisions on whether to build or upgrade, the price signals will be correct. Until we get an accurate price on carbon, that's not going to happen.

**Tittel:** We have to channel innovation within government because there are a lot of barriers to moving forward. We have to fill these voids with the right types of power. On the federal level, the Obama administration will be taking the right positions, based on what they campaigned on. We recently did a study that found that if we implemented everything we're supporting, we could create 58,000 jobs in New Jersey.

**Fox:** The purpose of REGE -regional greenhouse gas emission standards -was to try to get a national program in place. It's very clear that emissions standards need to be economy wide and need to be national. We are already talking about how to adapt to climate change. Our country has to act. We have to be an international leader again, and we have to get our act together on carbon emissions or we have no right to be a world leader.

**Florio:** If we're going to have a statewide or national policy of sustainable growth and sustained prosperity, you've got to focus on the energy that's going to fuel that growth. A progressive energy policy such as we've talked about today is absolutely essential, and to get to that point, we have to have at the national level the same kind of thing Governor Corzine has done here in New Jersey – which is lift the level of awareness of the fact that energy permeates everything. Economic growth, jobs, good foreign policy, environmental sensibility, we're going to have to move in the direction we've talked about today. In a democracy, the consensus only forms when the population becomes sufficiently informed that they demand of their decisionmakers that these policies are incorporated. I think we're moving in that direction fairly aggressively with the new administration in Washington that's committed to do that. We will build the critical mass of public decision to have decisions made to fulfill the goals we've talked about today.

**Question: What is the role of nuclear energy in New Jersey?**

**Hoskins:** Right now, nuclear supplies about 50 percent of the electricity in New Jersey, so we are very dependent on nuclear. We have seen significant increases in efficiency in our power plants in the last eight years. Safety is our number one issue, and efficiency and safety are top priorities. We are looking to see if there is an ability to add a fourth plant. It's a very long process, about 10 years to develop a nuclear power plant. We are in the first phase and being very cautious – costs are very significant but when you view the options, we think it's going to take a clean central station power and nuclear is best option.

**Tittel:** We take the opposite view. I won't even go into environmental issues, and right now it's the most expensive way in the world to boil water. When you look at some proposed plants, the cost per kilowatt hour and cost to run is about 40 times more per year to operate than wind farms. Nuclear power is very expensive, and there's such a backlog to even get the steel to build the vessel, get permits, that it's at least

15 years from now. In 15 yrs, if we invested in renewables, we would be so far ahead of the curve that we could have solved our energy problems.

**Florio:** There are some changes taking place in the regulatory process to reduce some of the costs and there are new technologies to generate less waste. You can't cancel out the role of nuclear at some capacity in this country.

**Tittel:** Mining is extremely dangerous. We have uranium in New Jersey and we've passed regulations to ban mining because most of it is in the Highlands, where much of our water supply is located. The problem with uranium besides the waste issue is that there are only certain places where it can be safely stored. It's as limiting as oil. Unless we put research into breeder reactors, it's a longterm problem.

**Hoskins:** There are disposal and storage issues. We are working with the industry to see what the options are. I think it's a mistake to say that we have to create everything we need here in the US. We are part of a world economy, and there are some places with resources in other parts of the world.

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