

# Understanding the State's Energy Master Plan

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Governor Corzine recently released the final version of a New Energy Master Plan for the State. The goal of this plan is to move New Jersey toward a responsible energy future with adequate, reliable energy supplies that are both environmentally responsible and competitively priced. The plan identifies long-term actions and immediate investments that will help to ease energy costs in the short term, create jobs, grow clean energy businesses and establish the clean energy industry as a cornerstone of the State's economy.

This plan illustrates what our energy circumstances would look like in 2020 assuming that no changes are made. It also provides an "alternative scenario" that reflects the changes made through the Energy Master Plan. To develop the energy picture of the future, the State worked with the Center for Energy, Economic and Environmental Policy (CEEPP) and the Rutgers Economic Advisory Service of the Center for Urban Policy Research (R/ECON™) in the Bloustein School at Rutgers University.

The "business as usual" scenario lists the following challenges the State will face if we continue our current course of action.

*CHALLENGE 1: Growth in the supply of electricity has not been keeping up with the growth in demand.*

According to the Plan, "Larger homes, more computers, plasma televisions and other devices have grown our demand significantly and are likely to continue to fuel higher demands that are not matched by growth in the capacity to satisfy those demands. *PJM Interconnection*, which operates the regional transmission system and administers regional wholesale electricity markets, projected in January 2008 that peak demand in New Jersey will continue to grow from 2008 through 2018 at an annual rate of about 1.75%. This projected growth in peak demand is about 2-1/2 times as fast as supply has grown in recent years." To further exacerbate the situation, competition entices suppliers to sell power to the most lucrative arenas, including Metropolitan New York markets, which takes power supplies away from New Jersey.

*CHALLENGE 2: The price of energy has increased substantially over the past few years and has become increasingly volatile. These trends are expected to continue.*

We are all aware of the dramatic increases and instabilities in the cost of both natural gas and oil. The price of oil per barrel has jumped from \$55 per barrel in the beginning of 2007 to \$140 in July of 2008 and down to \$100 at the end of September. Further, as stated in the plan, "For several reasons, New Jersey electricity prices are expected to continue increasing. Most importantly, New Jersey's electric generation fleet has

changed over time, to become more reliant on power plants fueled by natural gas, which are more expensive to operate than plants using cheaper fuels.”

*CHALLENGE 3: Without action, our contribution to global warming and other pollutants will continue to increase.*

The power plants that supply New Jersey’s electricity account for about a quarter of our greenhouse emissions. To meet the increasing demand for electricity, the power grids are being upgraded. However, “...much of these electricity imports would come from coal power production and would result in an increase in our contribution to global warming.”

*CHALLENGE 4: The State has much less authority over the supply and price of electricity than it used to.*

Through the results of restructuring the New Jersey electric industry, the electric utilities have divested their generation assets to third parties or to a utility affiliate. There is no regulation of the generation of power and no single entity is empowered to plan the generation, transmission, sale and use of electricity. According to the Plan, “Along with the diffusion of planning responsibilities and dependence on market forces, we have seen that new generation capacity is not getting built at nearly the pace needed to keep up with growing demand.”

The plan states: “If nothing is done to address the challenges in the ‘business as usual’ scenario, the State will consume 97,800 GWh of electricity and 542 trillion BTUs of natural gas or heating oil. This total energy consumption will cost customers more than \$30.7 billion in 2020, which is 96% more than the total annual energy expenditures in 2005. Greenhouse gas emissions would increase, with carbon dioxide emissions totaling 84 million metric tons in 2020, about 7% more than the 2005 levels. The 2020 greenhouse gas target requires greenhouse gas emissions to be at 1990 levels by 2020 or 72.8 million metric tons for the electricity and heating sectors.”

### *The Roadmap*

In response to these challenges, the State provided five goals to ensure that we use energy more efficiently, reduce our ever-increasing demand for energy and produce clean and local energy. Another intention is to create New Jersey based jobs to implement the action items of the plan and reduce total energy expenditures for New Jersey residents.

*GOAL 1: Maximize energy conservation and energy efficiency.*

Governor Corzine has directed the reduction of energy consumption by at least 20% by 2020. This would yield annual electricity savings of nearly 20,000 GWh per year and annual heating savings of nearly 110 trillion BTUs. This reduction in energy consumption will result in significant cost savings and thereby fuel economic growth in the state.

Actions to achieve this goal include:

- Transition the State's current energy efficiency programs to be implemented by the electric and gas utilities, and achieve the desired results while remaining cost effective. This transition will begin upon release of this plan.
- Increase energy efficiency in new buildings with a statewide building code that will make new construction at least 30% more energy efficient than buildings under current state code by the end of 2009.
- Increase energy efficiency in existing buildings through enhanced energy efficiency standards for new appliances and other types of equipment currently not covered by existing standards beginning in 2009.
- Increase awareness about the importance of energy conservation and energy efficiency upgrades by developing an education and outreach program for the public. This will result in a shift in the way the state's consumers think about and use energy

#### *GOAL 2: Reduce peak electricity demand.*

Electricity required during the hours of peak demand is more expensive than the electricity required during non-peak hours. To reduce these costs, the following action items are recommended to decrease peak demand by 5,700 MW by 2020:

- Expand incentives for participation in regional demand response programs.
- Involve electric utilities in developing and implementing demand response programs.
- Target all commercial and industrial customers with a peak demand of 500 kW or greater for reduction in peak demand, and continue to develop incentives that achieve significant peak demand saving. The BPU's Office of the Energy Ombudsperson will be responsible for the targeting of these customers, and the BPU staff will also consider alternative rate structure designs that will assist in achieving the demand response goals articulated in this plan.
- Pilot different technologies (including advanced metering infrastructure) and rate structures for residential customers and customers with a demand of less than 500 kW.
- Monitor the results of all demand response initiatives through 2012 and implement the most effective mix of action steps to achieve a total peak demand reduction of 5,700 MW by 2020.

#### *GOAL 3: Strive to exceed the current RPS and meet 30% of the State's electricity needs from renewable sources by 2020.*

This renewable electricity supply will come from 900 MW of biomass capacity, at least 3000 MW of offshore wind capacity, 200 MW of onshore wind capacity and 2,120 GWh (approximately 1,800 MW) of solar energy production. Action items for this goal include:

- Change the solar energy goals from a percentage of 2.12% to a goal of 2,120 GWh by 2020. This will ensure that as a result of this plan reductions in energy consumption will not suppress the development of solar energy development in the State. The percentage requirement, given the energy reduction targets articulated in this plan, would result in approximately 1,300 MW of solar energy capacity installed compared to 1,800 MW with the revised GWh goal.
- Develop New Jersey's wind energy resources, including at least 1,000 MW of offshore wind by 2012 and 3,000 MW of offshore wind and at least 200 MW of onshore wind by 2020. An Offshore Wind Planning Group will be created to spearhead this effort.
- Develop 900 MW of biofuels and biomass, not involving incineration, as part of the State's 2020 RPS.
- Increase support for other renewable energy technologies including a 50 MW carve out for "new and emerging technologies."
- Increase the RPS for the years 2021 to 2025.

#### *GOAL 4: Develop a 21st century energy infrastructure.*

The State is committed to working with the utilities to improve our energy infrastructure. Our energy demands must be satisfied from existing in-state power plants: through the development of new in-state power plants, the development of power plants outside New Jersey or from a combination of these options.

The State will pursue the following action items to ensure that New Jersey's energy infrastructure is modern and reliable:

- Work with the electric and gas utilities to develop master plans through 2020 that will be responsive to the goals and action items in this plan. This will include the examination of smart grid technologies and modernizing the electricity grid to 21st century technologies.
- Foster development of 1,500 MW of new cogeneration capacity in New Jersey by 2020. Cogeneration development has for the most part stalled over the past decade. Through a series of actions including rebates and sales and use tax exemptions, the State will attempt to stimulate growth in cogeneration plants, which will provide an alternative energy source for commercial and industrial customers.
- Ensure a balance between energy supply and energy demand that is consistent with the State's greenhouse gas targets and provides energy at a reasonable price. This balance includes the support of fuel supply projects, such as liquefied natural gas, as long as they comply with the Department of Environmental

Protection's environmental standards, and consideration of nuclear energy technology if it is determined that additional base load supply is needed.

*GOAL 5: Invest in innovative clean energy technologies and businesses to stimulate the industry's growth in New Jersey.*

The Governor's Economic Growth Strategy declared the clean energy technology sector as a cornerstone of the Edison Innovation Fund. To help attract and grow the clean energy sector in New Jersey, the following action items were identified:

- Expand efforts that encourage the development of clean energy technologies by expanding the Edison Innovation Fund to invest in innovative clean energy technologies and provide support to business incubators that support clean energy business development.
- Develop timely and industry recognized job training programs to ensure that a New Jersey based workforce will be used to implement the action items articulated in this plan.
- Establish the Energy Institute of New Jersey to support the basic and applied energy research efforts at colleges and universities in the State.

*What does this mean?*

The plan concludes:

"These goals and action items will effectively result in approximately \$30 billion in total energy savings between 2010 and 2020 for its consumers, while stimulating \$33 billion worth of investment into the State's energy infrastructure and creating 20,000 jobs by 2015. To supplement these efforts, the State will provide timely and industry recognized training to ensure that these jobs are provided locally, while implementing programs that encourage the growth of clean energy businesses. These efforts will not only stimulate New Jersey's economy, but it will also provide the State with a 21<sup>st</sup> century energy infrastructure."

The plan also calls for the continuation of shared stakeholder processes and the institution of a State Energy Council to balance the supply and demand of energy with the environmental and economic principles of the State. If the goals and objectives of this plan are fully implemented, the reductions in greenhouse emissions and the increase in energy savings "...will build the foundation for an environmentally and economically responsible energy environment in New Jersey."

To read the New Jersey Energy Master Plan in its entirety, visit <http://www.nj.gov/emp>.