

NEW JERSEY ENERGY MASTER PLAN

Frequently Asked Questions

Q: What is the overall purpose of the Energy Master Plan?

A: The overall priority of the EMP is ensuring that New Jersey electricity and heating fuel customers will receive a reliable supply of electricity and heating fuels at a reasonable price, consistent with the State's environmental priorities. The greenhouse gas emission limits included in the Global Warming Response Act became a major driver in the development of the EMP. This planning effort recognized that the State cannot simply dictate this result, because fuel suppliers, power plant owners, PJM, the FERC, and other countries all may make decisions that can help or hinder our efforts.

For these reasons, this Energy Master Plan has been crafted with full recognition of what the State can do directly to affect the reliability and cost of energy; what the State is constrained to do indirectly to influence the decisions of PJM, the FERC, and power plant owners and developers; and what factors are outside the State's control. The Plan analyzes New Jersey's current energy challenges and projected future challenges, while proposing a series of actions to shape an energy future that addresses our economic and environmental needs - some that are already underway, some that are clearly constructive and necessary, and some that reflect hard choices deserving of thoughtful and thorough public debate.

The Energy Master Plan lists a series of goals and action items that will put the State on track to successfully meet the energy challenges facing it, while developing the clean energy industry as a cornerstone of the State's economy.

How is New Jersey's energy future altered through this Energy Master Plan?

Unless New Jersey acts decisively to reduce energy demand and increase supply of low carbon emitting, reliable and reasonably priced energy the state faces an increasingly costly and unsustainable energy future. If no action steps are taken, and the "business as usual" scenario is pursued, in 2020 New Jersey's homes and businesses will use 97,800 GWh of electricity and over 542 trillion BTUs of natural gas and heating oil at a cost of \$30.7 billion.

However, the series of action items proposed in this Energy Master Plan will effectively reduce the State's energy consumption 20% by 2020, contribute to the goal of reducing greenhouse gas emissions to 1990 levels by 2020, and ensure that the energy infrastructure provides reasonably priced and reliable energy to New Jersey's homes and businesses. The DEP's report in response to Executive Order 54 and the Global Warming Response act will also expand on the measures that need to be taken to ensure that the State is on target to meet its 2020 and 2050 greenhouse gas targets. All future policies concerning energy generation will be evaluated to ensure that they are consistent with these targets.

In addition, the actions in this Plan will also help save the State and its consumers, money between now and 2020. It is estimated that, if the action items in this Plan are fully implemented, by 2020 New Jersey's homes and businesses will use 78,300 GWh of electricity and approximately 443 trillion BTUs of natural gas and heating oil, and save more than \$30 billion in its total annual energy expenditures between 2010 and 2020.

Q: Now that the EMP is final, how will it be implemented?

- A: In order to effectively implement the recommendations outlined in this plan, the Governor will establish a State Energy Council to ensure that the goals and action items in the EMP are being achieved. Specifically, this council will be responsible for:
- Conducting an annual review to be submitted to the Governor of progress made towards achieving the goals and action items in the EMP.
 - Identifying regulatory and statutory changes that are necessary to meet the energy challenges facing the State.
 - Updating the Energy Master Plan every three years.

Activities such as monitoring and ensuring an appropriate balance between energy supply and demand will be one of the responsibilities charged to this body. If this balance is threatened, the Council will issue a report to the Governor identifying the reason for this imbalance, and the potential solutions to resolve this challenge. This council will ensure that all of the goals and action items in the Energy Master Plan are being achieved, and that energy challenges threatening the environment, reliability and affordability of energy are addressed in a timely and comprehensive manner.

The Council will include the following 12 members: Governor's Office; Office of Economic Growth; Board of Public Utilities; Department of Environmental Protection; Department of Transportation; Department of Community Affairs; Economic Development Authority; Department of Labor and Workforce Development; Department of Treasury; Commission on Science and Technology; Department of the Public Advocate; Director of Energy Savings in the Department of Treasury.

The Council will be advised by a stakeholder group and will meet quarterly. The stakeholder group will consist of business, environment, consumer, energy and community leaders from across New Jersey. This body will be appointed by the Governor and will play a critical role in the development and implementation of the State's energy policies.

Q: What departments and government agencies provided input for development of the EMP?

- A: Over the past year and a half, Commissioners and Staff from the followings departments and agencies have participated in the EMP process: the Governor's Policy Office and the Office of Economic Growth, the Board of Public Utilities, the Department of Environmental Protection, the Department of the Public Advocate, the Department of Treasury and State Office of Energy Savings, the Department of Labor and the Economic Development Authority to begin discussing possible action items.

Q: In addition to government agencies, who else had input into the EMP draft?

- A: The drafting of the EMP was an open and transparent process that sought to maximize public input. Hundreds of ideas, suggestions and comments were received at public meetings held around the state immediately after the announcement of the EMP. Since the announcement, a number of stakeholder groups met and offered recommendations on specific issues. These groups were comprised of representatives from energy companies, energy consulting firms, academics, consumer groups, business associations, non-profit organizations and members of the general public. Hundreds of other comments were received from a variety of sources through the EMP website. Every suggestion and comment was reviewed and given consideration as the final EMP was drafted.

Q: How does electricity demand vary over the day and year?

A: Electricity demand increases during the workday as more businesses, schools and industries open. Over the day the electricity demand increases until late afternoon at which time the load begins to decrease as businesses, industries and schools close for the day. This peak is more dramatic in the summer as temperatures increase with an increasing air conditioning load. In the winter there is a different peak in the evening as people come home and turn on the lights and other appliances.

Q: How is electricity delivered in New Jersey?

A: Wholesale electricity moves between 13 states coordinated by a regional transmission organization known as PJM, which serves approximately 51 million people and dispatches 164,900 MW of generating capacity over 56,250 miles of transmission lines.

Q: What is a Megawatt (MW)?

A: A megawatt (MW) is a unit of electric capacity or electric load. A MW is equal to 1,000 kilowatts (kW). Generators depending on size have rated capacities reported as MW, kW or watts. The load of electric equipment such as light bulbs, homes, businesses and industries are rated in kW or watts. The capacity of all the operating electric generators must match the required load at the time. PJM insures that this happens. An average home load is 2 to 4 kW.

Q: What are Megawatt-hour (MWh) and kilowatt-hours (kWh)?

A: A megawatt-hour (MWh) is a unit of measure of electric energy. A MWh is 1,000 kilowatt-hours (kWh). An MWh is the amount of electricity generated by a one megawatt (MW) electric generator operating or producing electricity for one hour. On an electric bill, electricity usage is commonly reported in kilowatt-hours. Ten 100 watt light bulbs left on for one hour use one kWh of electricity and at an electric rate of 11.5 cents per kWh this costs 11.5 cents.

Q: What is PJM?

A: PJM stands for the Pennsylvania, Jersey, Maryland Power Pool. It is the electricity control area (the electric grid) for New Jersey and all or parts of in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia.

All electricity essentially comes from PJM regardless of the state in which it was generated. PJM insures that there is enough power to meet expected customer electricity demand at all times plus an additional reserve margin above the peak demand is ready and deliverable in the control area and ensures the reliability of the electric grid and monitors the market to prevent market powers/manipulation.

Q: How does PJM dispatch electricity over the day?

A: Conventional nuclear or coal power plants are called on first because of their relative low cost to operate and ability to deliver power into the grid at all times and are called baseload plants. Others plants operate as "spinning" reserves waiting to be called on by PJM as the load increases during the day. They are backed off as the load decreases at the end of the day. Most natural gas plants operate in this manner because they have higher operating costs and can deliver energy quicker when called on by PJM. PJM insures the lowest cost electricity is dispatched first.

Q: What is the FERC?

A: The Federal Energy Regulatory Commission (FERC) is an independent federal agency that regulates the transmission of electric energy in interstate commerce and the sale of electric energy at wholesale in interstate commerce. The FERC does not regulate facilities used for the generation of electric energy or facilities used in local distribution.

FERC must approve any PJM proposed changes to the wholesale electricity markets or to PJM's transmission planning parameters, including cost allocations for such transmission.

FERC claims the authority to approve the siting of a transmission line where a state denies transmission siting approval or where the state takes more than one year to site the transmission line.