



Powering Progress

The modern electric grid is one of the 20th century's great achievements.

This didn't happen by chance. For more than a century, the mission and mandate of utilities were closely aligned with a major goal of society: Providing universal access to an around-the-clock supply of reliable, affordable power.

Over time, as our larger community goals have changed, energy companies such as PSEG have evolved to remain aligned with them – for example, by reducing global emissions of carbon dioxide and

other greenhouse gases. Today, the role of the utility is evolving further as we adjust to meet the changing expectations of customers. At PSEG, our vision of the future is one where customers use less energy, the energy they use is cleaner, and its delivery is more reliable and more resilient than ever.

In October 2018, PSEG took a significant step toward this vision, proposing a Clean Energy Future program, which calls for historic investments in energy efficiency, electric vehicle infrastructure, energy storage and smart meter technology. If approved, the programs would help New Jersey make tremendous leaps toward a cleaner and greener energy supply that is more reliable, more resilient and costs customers less.

The energy industry is undergoing a revolution, brought on by shifting customer expectations and new, disruptive technologies. At PSEG, we do not fear disruption. In fact, it is our 116-year-old company's ability to adapt to disruptive forces that allows us to lead the industry into this exciting new reality.

Utilities should play a central role in making that reality available for all customers. With their expertise in managing distribution networks and longstanding customer relations, utilities are in a unique position to provide universal access to these benefits.

LOCAL REACH, GLOBAL IMPACT

In the future, we should use less energy, use cleaner energy, and strive to be as reliable and resilient as possible. Here's how we will do it:

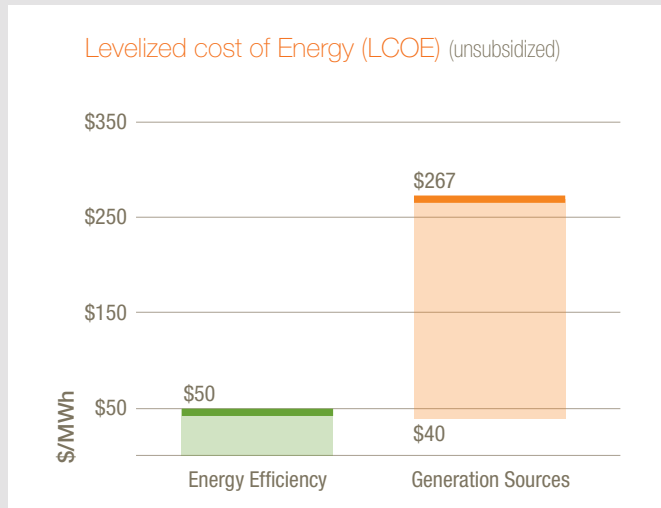
- **Energy Efficiency:** Upending the utility business model to help customers save energy and money.
- **Clean Energy:** Getting to zero carbon by generating electricity from cleaner sources.
- **Connected Customers:** Using technology to increase reliability and help customers manage their energy use.
- **Momentum to Modernize:** Upgrading the existing electric grid to increase reliability, resiliency.

**FOR MORE ABOUT THESE PRINCIPLES,
VISIT [PSEG.COM/POWERINGPROGRESS](https://www.pseg.com/poweringprogress).**



AFFORDABILITY OF EFFICIENCY

ENERGY EFFICIENCY COSTS LESS THAN ANY OTHER SOURCE OF ELECTRICITY – WHETHER TRADITIONAL SOURCES OF GENERATION, SUCH AS NUCLEAR OR COAL, OR RENEWABLES.



Energy Efficiency

PSEG believes that energy efficiency needs to become a central mission for utilities. Energy efficiency is unmatched in providing environmental and economic value. It delivers clean energy benefits similar to solar or wind, but at a fraction of the cost. In fact, energy efficiency can play a vital role in reducing participating customers' bills.

While New Jersey has set ambitious public goals for renewable energy, it has been less aggressive in pursuing energy efficiency – and it shows. On the 2018 national energy efficiency scorecard, New Jersey ranks No. 18, up from No. 23. That is a significant improvement – the largest for any state during the past year – due largely to the state's new energy efficiency targets, established by Gov. Phil Murphy and the Legislature.

However, when it comes to actual energy savings, New Jersey ranks No. 28. Why the discrepancy? Because although New Jersey was rated higher for its new energy efficiency policies, the state has yet to

implement those policies in order to achieve actual energy savings.

In many states that rank above New Jersey, policymakers have embraced the role of the utility in delivering universal access to energy efficiency, and have adjusted their regulations to encourage the spread of energy efficiency. That's where PSEG's energy efficiency proposal can make a difference.

PSEG's Clean Energy Future proposal contains a six-year, \$2.8 billion energy efficiency component – the largest such program ever proposed in New Jersey. The proposal would create 22 new programs designed to help residential and business customers reduce their energy consumption by using energy efficient equipment, technologies and strategies. If approved, the proposal would:

- More than triple New Jersey's current statewide energy efficiency savings, reducing CO₂ and other emissions equal to removing 320,000 cars from the roads for a year and putting the state on track to meet its ambitious carbon-reduction goals;
- Save 40.6 million megawatt-hours of electricity and 675 million therms of natural gas;

Rank		2017 Energy Savings
1st	Vermont	3.33%
2nd	Rhode Island	3.08%
3rd	Massachusetts	2.57%
5th	Connecticut	1.62%
13th	New York	1.17%
28th (tie)	Pennsylvania	0.55%
28th (tie)	New Jersey	0.55%

NEW JERSEY FALLS BEHIND

ON THE LATEST NATIONAL ENERGY EFFICIENCY SCORECARD, NEW JERSEY RANKS NO. 28. WHAT ABOUT THOSE STATES THAT RANK HIGHER? THEY HAVE CONCRETE GOALS FOR ENERGY EFFICIENCY.

- Create approximately 5,000 jobs; and
- Save participating customers billions of dollars on their energy bills.

In the past, any energy savings enjoyed by customers cut into utilities' revenues, creating a disincentive to invest in programs that benefit customers who reduce their energy use. Today, PSEG is working with regulators at the New Jersey Board of Public Utilities to introduce a new regulatory system known as "decoupling." More than two dozen states have adopted decoupling, which ensures that utilities can bring in enough revenue to keep energy grids running reliably and efficiently, no matter how much electricity they sell.

Energy efficiency is a quadruple win – providing for a cleaner environment, job creation, investment opportunities and the potential for lower customer bills. The cheapest, cleanest kilowatt-hour is the one that's never used.



Clean Energy

Solar and wind energy have helped satisfy the need for energy that doesn't pollute the environment. PSEG has earned a reputation as one of the most progressive utilities in the country for supporting clean energy, and we're committed to helping New Jersey meet its ambitious clean energy goals.

We support Gov. Phil Murphy's clean energy agenda, which will allow New Jersey to reap the combined benefits of power generated with solar, offshore wind and nuclear – working together toward the goal of a 100 percent clean energy supply by 2050.

To get there, it will mean increasing our development of renewable energy sources, encouraging the continued use of zero-carbon nuclear, and phasing out fossil fuel power plants.

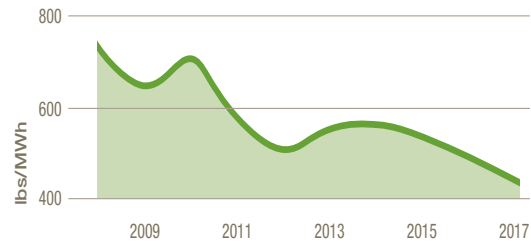
Already, PSEG is drastically transforming its generation portfolio: We have invested nearly \$2 billion to develop solar farms in New Jersey and around the U.S. In 2017, we closed our last two coal-fired New Jersey power plants, and we have worked with the state to preserve the Salem and Hope Creek nuclear plants, which represent 90 percent of the state's carbon-free electric generation.

We also have committed to eliminating 13 million tons of CO₂-equivalent emissions by 2030. We are doing so despite the fact

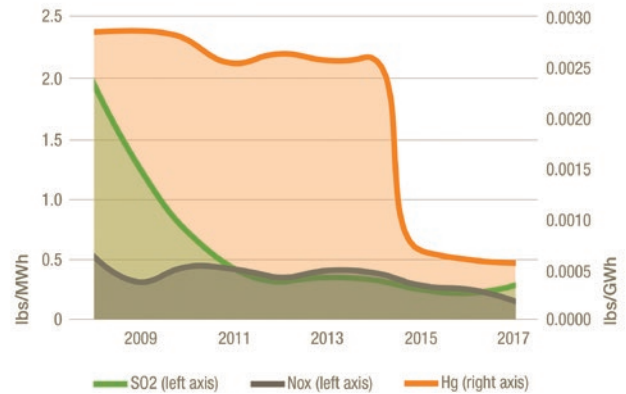
REDUCING AIR EMISSIONS

PSEG'S GENERATION FLEET HAS SIGNIFICANTLY REDUCED ITS EMISSION RATE FOR CO₂ AND OTHER POLLUTANTS.

PSEG Electricity Generation CO₂ Emission Rate



PSEG Electricity Generation Emission Rates



that we already have one of the smallest carbon footprints of any utility in the U.S.

And because the transportation sector is New Jersey's largest source of air pollution – gasoline combustion vehicles are responsible for more than 50 percent of New Jersey's emissions – PSEG's Clean Energy Future program includes a \$364 million proposal to encourage wider electric vehicle adoption by building EV charging infrastructure at home, at work and on the road.



Connected Customers

Customers are growing more reliant on the grid as the world trends toward greater connectivity.

As other sectors, such as the retail industry, create innovative new customer experiences, utility customers want the same level of service from their energy providers.

Those expectations are driving a digital transformation that reimagines today's energy grid as a network connecting homes and businesses

MORE THAN 70 MILLION
AMERICANS HAVE
SMART METERS



with a universe of clean energy sources and services, using data to help customers adjust their energy use in whatever manner suits their needs.

At PSEG, we're calling this network the Energy Cloud, an \$800 million component of the Clean Energy Future program. The core of the Energy Cloud is a two-way digital communication network, enabled by the introduction of smart meter technology.

The Energy Cloud will:

- Shorten power outages by quickly determining where specific problems are occurring on the electric grid, enabling quicker restoration;
- Improve safety and avoid outages by increasing the ability to detect and fix issues before they become problems;
- Work with Smart Home assistants such as Amazon's Alexa to give customers the ability to manage their own energy spending or reduce their household's carbon footprint; and
- Provide customers with access to customized products and services that fit their specific needs.

According to our estimates, such network improvements could save customers approximately \$2 billion over the next 20 years.

PSE&G'S \$4.1 BILLION 'CLEAN ENERGY FUTURE' PROPOSAL INCLUDES:

- \$2.8 billion for energy efficiency programs for all customers that would triple New Jersey's current energy efficiency savings.
- \$800 million to install 2.2 million smart meters to modernize our network and improve reliability and customer service.
- \$364 million to install electric vehicle charging infrastructure in single- and multifamily homes, businesses, government buildings, fleet facilities and along major travel corridors.
- \$180 million to develop 35 megawatts of energy storage to jump-start New Jersey's efforts to achieve its energy storage targets.
- Creation of approximately 6,000 jobs over the life of these programs.





Momentum to Modernize

Even as our company evolves, we realize that the existing energy grid remains essential to our mission. We have invested heavily in modernizing New Jersey's electric and gas infrastructure, and we are committed to ensuring that the state's energy network continues its momentum toward modernization.

PSEG's modernization programs include:

- Our Gas System Modernization Program, which reduced methane emissions by replacing 510 miles of aging cast-iron and steel gas pipe with more durable plastic. A second phase will begin in 2019 and replace nearly 1,000 additional miles over five years.
- Our Energy Strong program increased grid resiliency after Superstorm Sandy by improving critical electric and gas infrastructure so as to prevent service disruptions during future extreme weather events. A second phase has been submitted to the New Jersey Board of Public Utilities for renewal and approval.
- Our Clean Energy Future program will increase our commitment to renewable energy, achieve ambitious targets for energy

modernizing
OUR infrastructure
will
add \$30 billion
nearly
into the **New Jersey**
economy by **2020**

efficiency and energy storage, and encourage electrification of the transportation sector.

We estimate that modernizing our infrastructure will add nearly \$30 billion into the New Jersey economy by 2020, supporting thousands of jobs to build and operate new facilities, as well as additional jobs that will result from the enhanced economic activity.

The end result will be a stronger New Jersey economy, and a more reliable, resilient and cleaner energy grid.





Powering Progress

PSEG's founder, Thomas McCarter, committed our company "to develop the State of New Jersey and to make it a better place to live." Our mission remains to provide energy in ways that make the state and the communities we serve better places to live and to work.

As corporate citizens, we have a responsibility to ensure all customers have access to affordable, reliable and sustainable energy. We also have a responsibility to partner and innovate with governments and industry to ensure that, together, we are driving New Jersey and its communities forward.

PSEG is committed to an energy future that is based on helping customers use less energy and spend less on their bills, while also reducing our collective impact on the environment.

We are taking bold steps toward a low-carbon future. Our Clean Energy Future proposal calls for historic investments in energy efficiency, electric vehicle charging infrastructure, utility-scale energy storage capabilities and technology that will help New Jersey make great strides toward a better, cleaner tomorrow.

Utilities should leverage technology to help make our grid more reliable and resilient, and to give customers the tools they need to help customize their energy use in whatever manner suits their needs – whether that's cutting costs or reducing their carbon footprint.

The U.S. must accelerate its transition to carbon-free resources. Greater use of battery storage will help intermittent renewables, such as solar and wind, better serve our customers' 24/7 energy needs. We also must preserve our existing climate-friendly sources, such as nuclear power, which safely supplies more than a third of New Jersey's electricity and more than 90 percent of its carbon-free electricity.

Transportation is the largest source of greenhouse gases, which makes electrifying vehicles – cars, trucks, buses and trains – an environmental imperative. Utilities should lead the drive to electrify the transportation sector by investing in a universal EV-charging infrastructure.

Even as utilities evolve, we also must not neglect the networks that reliably provide the energy needed to power our homes and businesses. That's why we must continue to invest in modernizing the nation's aging electric and gas energy infrastructure.

Priorities are changing in New Jersey and indeed around the world – change that is evident in a reinvigorated focus on clean energy and mitigating the damaging impacts of climate change.

Building a sustainable, low-carbon energy future may be the largest civic works project ever undertaken. PSEG accepts responsibility for playing a leading role in powering that progress.

