

The following Action Plan provides detailed strategies and specific actions, serving as a technical guide for implementing the recommendations of The Plan. These action plans are intended to be living documents, being revised and updated as Together North Jersey works with various partners on implementing recommendations in The Plan.

**TOGETHER NORTH JERSEY** Focus Area 11: Transition to a Clean Energy Economy

**What and why.** Almost all commercial activity and modern home life in North Jersey is made possible by our energy infrastructure. Our need for electricity, natural gas, gasoline and other sources of energy have many economic, environmental and political implications that directly affect quality of life in the region. Currently, our energy infrastructure is heavily dependent on fossil fuels and is the single largest contributor to greenhouse gas (GHG) emissions in the North Jersey region.

Fortunately, there are significant opportunities to improve the way we generate and use energy. By using existing technologies, adopting new policies and taking advantage of market mechanisms that are already known and proven, we can transition to a more sustainable energy infrastructure. This will allow our region to benefit from energy that is cleaner, more affordable, more secure and more reliable, without the emissions that contribute to climate change, harm public health and degrade the environment.

**How.** Implementation of the following strategies can reduce overall energy consumption and replace the use of fossil fuels with more sustainable alternatives, such as solar, wind and other renewable energy sources by increasing conservation and efficiency; modernizing energy infrastructure, including generation plants, high-voltage transmission lines, substations, and distribution lines and meters that connect individual customers; and reducing petroleum use in the transportation sector.

**TOGETHER NORTH JERSEY** Strategy 11.1: Reduce energy use through conservation and increased efficiency

**What and why.** The easiest way to reduce our energy use in North Jersey is to change the way that we use energy—in our homes, in our offices and in our cars. This applies not only to individuals, but to companies, government agencies, schools, local businesses and any other organizations that consumes energy. Our region should work with state officials and power utilities to expand and revamp the existing NJ Clean Energy Program to offer stronger and more effectively targeted rebates, low or no interest financing and energy audits. Municipalities can improve energy efficiency by incorporating more aggressive “green design” standards (such as LEED and Energy Star) into local codes and ordinances. Our region and state should also invest in creating a “clean energy economy” through training and job development, financing solutions and building private investor confidence.

	<u>Actions</u>	<u>Suggested Responsibility:</u>	<u>Timeframe:</u>
1.	Protect, and expand funding sources (like the Societal Benefit Charge) that can be used to incentivize the adoption of efficiency solutions by consumers. Identify and participate in other market-based initiatives that make additional funding streams available, especially those that capture out-of-state revenues.	NJ Legislature, NJ-BPU, PJM, regional efforts and organizations	Short term

2.	<p>Protect and expand the existing NJ Clean Energy Program (CEP), and improve its operation and effectiveness. Specific steps include:</p> <ul style="list-style-type: none"> <li>• Directly incentivize consumer adoption of building efficiency solutions (both residential and commercial) that target reductions in space and water heating, and electricity consumption;</li> <li>• Target high impact areas including, but not limited to lighting, improved building controls, building envelope improvements and HVAC equipment;</li> <li>• Ensure effective and complimentary integration between CEP and related utility programs.</li> </ul>	NJ –BPU, Utilities	Short term
3.	<p>Identify regional opportunities for collaboration, especially market mechanisms, policy initiatives, regulatory frameworks and planning activities. Participate in those initiatives as appropriate to: leverage regional investments that benefit NJ; increase market scale; minimize dislocations between states; provide best practice examples and market experience: develop leadership and advocacy; and amplify impact and influence.</p>	Governor’s Office, support from: NJ-BPU, PJM, FERC, Utilities, NFPs	Short term
4.	<p>Invest in consumer awareness for both energy conservation and energy efficiency solutions. Promote success stories, celebrate success, reward leadership and innovation.</p>	NJ-BPU (through the Clean Energy Program)	Short term
5.	<p>Develop and promote active demand management solutions, with a particular focus on reducing peak demand to reduce grid strain (and reduce distribution system investment needs), improve power quality and availability and leveling system load to improve generation asset utilization. This may include interactive storage technology, synergistic integration with distributed generation and development of regional/ISO markets for peak-reduction and/or capacity management services.</p>	NJ –BPU, PJM, Utilities, Industry	Medium term
6.	<p>Create statewide alignment of local policies that encourage the incorporation of increasingly aggressive “green design” standards (such as LEED and Energy Star) and high performance building practice into codes, ordinances and standards, especially for new construction.</p>	NJ-DCA, support from local governments	Short term
7.	<p>Develop local programs (in collaboration with the NJ CEP), through organizations and municipal governments that make consumer adoption of conservation and efficiency solutions easy and cost effective. Leverage the potential of aggregation in procurement of these services and solutions.</p>	NJ-BPU, support from NJ-DCA, NFPs, local governments	Short term

8.	Develop combined heat and power (CHP) and heat pumps (especially geothermal, which is a renewable resource) incentives and markets, and increase adoption by residential and commercial building owners. These two technologies affect both building heating and electricity generation in a linked way.	NJ-BPU, support from NJ-EDA Energy Resiliency Bank, Utilities	Medium to long term
9.	Promote the adoption of both conservation and efficiency measures, and include educational content in NJ schools that instill both conservation practices and energy awareness in students through participation in the Sustainable Jersey certification program.	Sustainable Jersey, with support from Local School boards	Medium term
10.	Invest in market development for the NJ “clean energy economy”, which will be needed to provide efficiency solutions to consumers long term. Pursue training and job development, creation of new financing solutions, elimination of barriers, and build the policy and market confidence that increases private investment.	State – EDA, support from NJ-BPU, NJ-DCA, PJM, NFPs	Medium term
11.	Consider energy market structure issues, including the current framework for regulated entities, so as to encourage utility participation in energy-use-reduction initiatives, without reducing the economic motivation for consumer investment in energy reduction and distributed generation solutions.	NJ-BPU, support from PJM, utilities	Medium term
12.	Set specific goals for energy reduction in state buildings; <ul style="list-style-type: none"> <li>• Mandate comprehensive audits for all state government buildings and implement the recommendations to the greatest extent possible;</li> <li>• Ensure appropriate energy efficiency solutions are available on the state contract to facilitate procurement at the state and local level.</li> </ul>	NJ Legislature, with support from NJ-DCA, NJ-BPU	Medium term
13.	Set specific state goals for energy efficiency achievements <ul style="list-style-type: none"> <li>• Develop and implement ongoing methods and processes for objective evaluation of progress and program effectiveness;</li> <li>• Conduct assessment of best practices from national examples;</li> <li>• Use the results from all assessments to drive improvements in program design and adjustment of state policies and goals as needed.</li> </ul>	NJ-BPU, support from Utilities, NFPs	Long term



### Strategy 11.2: Transition to carbon-free electricity generation, including increased use of renewables


**What and why.** Today, much of our electricity is generated from fossil fuels, which results in significant GHG (and other) emissions and leaves our region vulnerable to supply disruptions.

Fortunately, North Jersey possesses vast renewable energy resources, in particular biomass and solar, that have the potential to replace most of our fossil fuel use in North Jersey and the state as a whole. We must take a wide range of actions to utilize renewable energy assets more fully, resulting in a much cleaner, more affordable, less vulnerable supply of electricity. Our region should make greater use of distributed generation (energy produced on site, for example from solar panels). North Jersey should also implement changes in the energy market structure, including how energy is priced and sold to consumers in order to make alternative generation more competitive.

	<u>Actions:</u>	<u>Suggested Responsibility:</u>	<u>Timeframe:</u>
1.	Invest in consumer awareness about the benefits and use of renewable energy. Promote success stories, celebrate success, reward leadership and innovation. Ensure that NJ schools include educational content that instills renewable energy awareness and use in students.	NJ-BPU, support from NJ-DOE, NFPs, NJ-DCA, Local Governments	Short term
2.	Increase the existing NJ Renewable Portfolio Standard (RPS), and set a goal for NJ to be 80% carbon-free goal by 2050, consistent with the Global Warming Response Act. Specifically mandate the increased use of in-state renewable energy resources and the development of the necessary market-based mechanisms to realize and economize these goals.	NJ Legislature, support from: Governor's Office, NJ-BPU, NJ-EDA	Short term
3.	Set strategic goals for development of known in-state renewable resources (within the expanded RPS) that can be accessed with proven or emerging systems. For example, establish goals for solar (both distributed and wholesale) and marine resources (both large scale wind and wave energy) at 15 and 30 TWhRs, respectively, by 2050.	NJ Legislature, support from: Governor's Office, NJ-BPU, NJ-EDA	Short term
4.	Expand the use of distributed (behind the meter) generation, which delivers benefits through the increased use of renewable energy (especially solar), improved resiliency, better local power quality, and when combined with other grid integration advancements (see the "grid upgrade" strategy), improved overall grid operation. Use market based incentives such as fair net metering and ISO ancillary services to incentivize DG. Ensure that market frameworks, interconnection policies, rules, processes, and siting conditions (especially zoning) are supportive.	NJ-BPU, Utilities, PJM, Industry	Short term
5.	Encourage the accelerated development of key enabling technologies, including electricity storage (at both grid-scale and DG-scale), "islanding" capability for all DG applications and a more complete and resilient fleet of distributed back-up capacity (especially for strategic facilities).	NJ-BPU, Utilities, PJM, Industry, federal DOE	Medium term

6.	Create “smart control” protocols that allow advanced DG assets to integrate with the grid in a more controlled, interactive way, including the capture of revenue streams associated with related services (ISO or utility-directed ancillary services, demand response and capacity markets). These advancements increase the amount of intermittent renewable energy that can be integrated safely, provide local resiliency value, improve power quality, enable load leveling and help with broader grid integration (see the “Grid Upgrade” strategy).	NJ-BPU, Utilities, PJM, Industry, federal DOE	Medium term
7.	Encourage the development of large scale “grid supply” (i.e. wholesale) solar projects. In addition, develop new “community solar” provisions that allow solar-asset sharing for customers that cannot develop solar on their own property. Ensure that market frameworks, interconnection policies, rules and processes, coordination between local and ISO authorities and siting conditions (especially zoning) are appropriately supportive. Target high priority application areas, such as landfills, brownfields, and large canopy arrays for prioritized development, but not in such a way as to limit development in other segments or undermine farmland preservation and open space goals.	NJ-BPU, support From: NJ Legislature, Governor’s Office, Utilities, PJM, Industry	Medium term
8.	Develop and implement the rules, policies, and market mechanisms necessary to ensure development of off-shore renewable energy resources, particularly large-scale wind and wave energy capture. Facilitate actions required by federal authorities (BLM leases, FERC, etc), and coordination with regional actors (ISOs).	NJ-BPU, support from Governor’s Office, Federal BLM, FERC, PJM, Industry	Medium term
9.	Develop local programs, through community institutions and municipal governments that make consumer adoption of renewable energy easy and cost effective. Encourage municipal energy aggregation with renewable content, facilitated procurement programs, community solar projects and other similar mechanisms. Ensure state-wide alignment of supportive local policies, especially regarding codes, ordinances, standards and permitting/inspection processes.	NJ-EDA, support from NFPs, NJ - BPU, NJ-DCA, Governor’s Office, Utilities, Industry	Medium term
10	Encourage utility participation in renewable energy growth, especially distributed generation, without reducing the economic motivation for consumer or third party investment or harming the growth of emerging competitive markets.	NJ-BPU, NJ Legislature, Governor’s Office, Utilities/Industry	Medium term

11	Use public art installations as innovative, creative ways to bring clean energy generation to our communities in an aesthetically pleasing manner. Partner with organizations such as Local Arts Generator Initiative (LAGI) to implement this approach.	Local governments, nonprofits, industry	Medium term
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## Strategy 11.3: Modernize and upgrade the region’s power infrastructure

**What and why.** North Jersey’s current power grid—the generation plants that produce power, high-voltage transmission lines, substations, and distribution lines and meters that connect individual customers—is fairly traditional. North Jersey will need to transition to a more sustainable, more flexible and more reliable energy infrastructure in order to accommodate a growing mix of more sophisticated solutions, including energy efficiency technologies, renewable energy sources and distributed generation. Our power grid must also be made more resilient to weather events and flooding. Important improvements include improved electricity storage, more sophisticated control mechanisms that help manage both generation and consumption of electricity, and revised regulatory frameworks that specifically enable this new “Grid 2.0” architecture. A key component of this strategy is fostering a New Jersey market for technological solutions that address electricity storage, resiliency and smarter management controls.

	<u>Actions:</u>	<u>Suggested Responsibility:</u>	<u>Timeframe:</u>
1.	Implement comprehensive, cross-program evaluation and planning processes to avoid primary supply dependencies that create unsafe vulnerabilities. Given the many changes expected across the overall energy architecture, especially as motivated by CO2 reduction, sustainability, and resiliency drivers, it will be crucial to proactively avoid excessive dependence on any single primary energy resource (solar, natural gas, etc.). Ensuring a balanced supply reduces strategic vulnerabilities, but also helps reduce cost spikes that can result from compounding uses (in the winter, for example, when using natural gas for both heating and electricity generation).	NJ-BPU, support from PJM	Short term
2.	Set specific goals for grid integration, reliability and resiliency improvements, and include the need for these solutions in other initiatives that promote distributed generation and renewable energy. Pay particular attention to extreme weather and climate change threats to energy availability.	NJ-BPU	Medium term

3.	Identify the grid enhancements necessary to enable integration of DG and energy efficiency solutions easily and cost effectively, such as the need for more intelligent demand management solutions to reduce peaking, and consumer demands for more choice and reliability. Invest in those enhancements as needed, with a focus on affordability, universal access, public safety, accommodation of solutions from a diverse competitive market, and high levels of reliability and resiliency.	NJ-BPU, federal DOE/Labs, Utilities, PJM, FERC, Industry	Medium term
4.	Assess and address the impacts of the emergence of electric mobility, and begin proactive planning for that transition and its impact on the public grid. Engage the regulated entities to aggressively promote electric vehicle adoption, which will increase grid use by about a third, and which will offset reductions in volume resulting from other changes. Ensure energy support for highly reliable, and more resilient, public transportation systems. See Focus Area 7.	NJ-BPU, support From: NJ-DOE, regional planning authorities, Utilities	Medium term
5.	Envision, enable and promote the development of a “new economy” for advanced solutions with full grid interoperability, with a particular focus on policies, business models, interconnection and control protocols, and revenue streams that motivate investment. Steps include: (1) ensure strong compensation for net metering and other interconnection methods that enable these advance technologies, and support for other interconnection and revenue models (like ISO ancillary services or the capacity markets); (2) ensure the availability of secure long term funding sources for strategic investments, such as the NJ Energy Resiliency Bank; and (3) assess the changing role of regulated entities, and remove barriers to their proactive engagement with advanced implementation of the “new grid”, in cooperative partnership with non-regulated market participants.	NJ-BPU, support from NJ-EDA, Federal DOE/Labs, Utilities, PJM, FERC, Industry	Medium to long term
6.	Assess the linkages between the existing natural gas distribution infrastructure (NGDI) and the electricity grid on a more comprehensive basis, and be proactive in managing potential impacts and making the necessary investments.	NJ-BPU, support from Utilities	Medium to long term
7.	Ensure proactive planning and increased investment to (1) complete equipment upgrades and reconfigurations, (2) remove assets from high threat areas (especially for flooding), (3) enhance transmission and distribution capacity where needed and (4) implement advanced metering, measurement and controls.	NJ-BPU, support from: Utilities, PJM	Long term

8.	Invest in innovation and accelerated adoption of several technologies of particular importance, including (1) electricity storage (both distributed and centralized), (2) resiliency capability (especially islanding protocols and local backup generation), (3) smarter controls so that storage, distributed generation, demand management, and renewable energy sources can be managed as an integrated part of the infrastructure under both regional (PJM) and local (distribution utility) control, and (4) provide support for well managed micro-grid architectures.	NJ-BPU, support from Federal DOE/Labs, Utilities, PJM, FERC, Industry	Long term
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## Strategy 11.4: Reduce transportation petroleum use.

**What and why.** A significant proportion of our region’s energy use comes from the transportation sector (cars, trucks, buses and trains). Today transportation is heavily reliant on fossil fuels. There are many things our region must do to reduce petroleum use in the transportation sector. We should adopt policies, make investments and provide incentives that: reduce congestion delays from roadway incidents; improve traffic flow with better highway access management; and reduce miles traveled driving alone by encouraging ridesharing. Our region should also work with state officials and the private sector to speed the adoption of new vehicle technologies, especially electric, hybrid and other alternative fuel vehicles. This should be done by implementing incentive programs, investments and other measures to encourage the purchase and use of these vehicles by individuals and fleet owners and significantly expanding the number public and private electric vehicle charging stations and alternative fuel vehicle refueling stations available in our region and statewide.

### Travel Optimization

	<u>Actions:</u>	<u>Suggested Responsibility:</u>	<u>Timeframe:</u>
1.	Expand intelligent transportation systems (ITS) and policies in accordance with the Regional ITS Architecture and Deployment Plan. Steps include (1) broaden the scope of incident detection and management, (2) set targets to restore “normal service operations” after roadway incidents (3) expand ramp metering, (4) set variable speed limits, and (5) install and utilize variable message signs.	NJDOT, support from NJTPA	Medium to long term



2.	Expand travel demand management programs to reduce vehicle miles traveled. Steps include (1) provide on-line access to carpool and vanpool matching with dynamic ridesharing capabilities, (2) develop new incentive programs for starting carpools and vanpools, (3) incentivize employer participation in employer trip reduction programs, (4) expand the use of shuttle services and broaden the scope of emergency ride home programs, and (5) provide funding or subsidies for regional telework centers and satellite offices	NJTPA, support from TMAs, NJDOT	Medium to long term
3.	Implement parking demand management policies and programs to encourage or mandate unbundling the full cost of providing parking. Measures include (1) price on-street parking at a rate consistent with encouraging “park-once” behavior (2) encourage parking cash-out for all employers meeting minimum size thresholds.	Municipalities	Medium to long term
4.	Develop and implement access management plans on arterial corridors or retrofit them. Measures include (1) develop corridor zoning overlay districts controlling access for new development, (2) remove driveways, (3) install medians and (4) enhance interparcel connections. In priority corridors, steps include (5) providing parallel access roads and (6) grading separate intersections when warranted by delay and/or safety concerns.	NJDOT, support from NJTPA, municipalities	Long term

## Advanced Vehicles

	<i>Actions:</i>	<i>Responsibility:</i>	<i>Timeframe:</i>
5.	Establish state goals for EV and AFV adoption, and implement authority and processes for measurement of actual adoption of EVs and AFVs. Track where EV and AFVs are registered and use annual reports to generate interest and educate the public and state legislatures about AFVs.	State Legislature, Motor Vehicle Commission	Short term
6.	Identify and adopt best practice standards and market regulations that promote vehicle efficiency (i.e. maximize miles per gallon, and minimize grams of carbon/mile). Implement leading frameworks, particularly advanced CAFE standards and the low/zero emission vehicle requirements pioneered in California. Participate in regional coalitions that increase scale and scope and leverage market influence, with a particular focus on encouraging the availability of “compliance vehicles” (especially EVs) in NJ.	State Legislature	Short to medium term

7.	Implement a package of incentives that encourage zero-emission vehicle adoption by commuters, particularly electric vehicles. Leverage experience from other states that have implemented these programs with success. In particular, offer rebates or tax credits to individuals or companies that buy or lease zero-emission vehicles	State Legislature	Short to medium term
8.	Identify and implement measures to encourage adoption of non-EV alternative fuel vehicles where appropriate, especially for fleet and other heavy duty vehicles. Require fuel vendors along the parkway and turnpike to sell high-quality bio-diesel.	State Legislature, NJ Turnpike Authority	Short to medium term
9.	Incentivize and support municipalities to develop and adopt alternative fuel readiness plans. Develop incentives for development of non-EV AFV refueling station, especially for fleet operators. Adopt standardized symbols to identify publicly accessible AFV refueling stations along major roadways.	NJTPA, support from TMA's, counties	Short to medium term
10.	Implement a variety of programs that encourage development of <u>public</u> charging infrastructure for electric vehicles across the region, with particular focus on the involvement of municipal governments. Measures include (1) financial assistance through grants and low interest loans for the installation of public charging stations; (2) require all publicly funded EV chargers, and encourage all privately funded EV chargers, to apply the Open Charge Point Protocol communication standard, and require/encourage that all public charging systems be registered on open directory systems; (3) establish standards and implementation programs for public charger signage; (4) local enforcement of EV-restricted parking spaces for recharging.	State legislature, support from: municipalities, private Industry	Short to medium term
11.	Incentivize, support, and promote the development of <u>private</u> EV charging infrastructure at commercial (for employees or visitors), and residential properties. Steps include (1) encourage municipalities to complete EV-readiness plans, conduct promotional events, solicit industry support, and implement code, ordinance, and process improvements to facilitate private EV-charging infrastructure development; (2) develop policies that guide businesses and homeowner associations on how to approach requests for charging along with provisions that ensure that these requests cannot be ignored; (3) work specifically with commercial partners to “sponsor” public EV charger infrastructure or install private EV chargers on their properties; (4) work with multi-family housing partners to ensure availability of EV charging solutions in that environment.	Municipalities, support from: NJTPA, TMA's, Utility companies	Short to medium term

12.	Develop EV-ready and AFV infrastructure policy for new development. Steps include (1o) establishing criteria in state environmental project reviews and (2o) modify building codes to require construction of infrastructure in new or renovated buildings especially in multi-family residences and public areas.	State legislature	Short to medium term
13.	Train municipal and county personnel, first responders, electricians, automobile dealerships, automotive technicians, parking attendants, fleet managers and tourism industry on EVs and alternative vehicles.	Municipalities	Short to medium term
14.	Enhance fleet rules or procedures to enable the full range of EVs and AFVs to compete for government contracts, develop implementation plans for government fleet AFV purchases, with metrics to measure success, encourage purchase and leasing of AFVs for government fleets to maximize the potential savings from the federal tax incentive and build charging and fueling infrastructure to support those vehicles.	State Legislature	Medium term
15.	Encourage preferential parking and reduced parking rates for EVs and AFVs. Consider other benefits, such as HOV lane access or toll reductions to encourage adoption.	Municipalities	Medium term
16.	Incentivize residential electric customers to charge PEVs during off-peak hours at reduced rates (Time of Use – TOU Rate). Address regulatory or other barriers to the sale of electricity at public and private EV-charging stations. Work with dealers and charging providers to track PEV adoption and charging station installations in the region and plan for grid system upgrades. Engage electric utilities in the active promotion of EV adoption, integrated with proactive grid-impact planning. See Strategy 11.3.	Board of Public Utilities, utility companies	Medium to long term