

Regional Collaboration Issue Brief
New York State Energy Plan 2009

December 2009

1 Overview

New York's energy system is physically, economically and environmentally linked with its neighboring states and Canada. This creates an opportunity for regional collaboration within nearly all aspects of energy planning. Similar linkages exist within the State, resulting in additional opportunities for intrastate cooperation and planning. This Issue Brief identifies the challenges of, and opportunities for, regional collaboration as New York focuses its economic development policies on the growth of a statewide and regional clean energy economy.

New York currently participates in a number of innovative cooperative initiatives:

The Regional Greenhouse Gas Initiative (RGGI) is a market-based cap-and-trade program established to reduce greenhouse gas (GHG) emissions from electric power generation. With 10 participating Northeast and Mid-Atlantic States, including New York, RGGI is the first program of its kind in the nation, serving as a model not only for a future national program to reduce CO₂ emissions, but for other regional energy initiatives. In early 2009, the RGGI state partners and Pennsylvania committed to work jointly toward the development of a Low Carbon Fuel Standard program.

The Great Lakes Wind Collaborative (the Collaborative) is a forum in which information on sustainable wind power development in the region is analyzed and shared, with a focus on offshore development in the Great Lakes. According to the Department of Energy (DOE), the Great Lakes region has the potential to generate \$80 billion in economic activity and 300,000 jobs for the region from wind.¹

The Northeast and Mid-Atlantic States Meetings on Clean Energy Cooperation were convened to identify activities related to clean energy projects, policies, programs, and market development that are appropriate for regional governmental collaboration. The goal of the forum, hosted in 2008 by Governor Paterson and Governor Patrick of Massachusetts, and in 2009 by Governor Corzine of New Jersey, was to initiate and foster an ongoing process for regional collaboration on clean energy issues identified by the states.

Many more examples of, and opportunities for, regional collaboration are noted throughout the State Energy Plan and the following discussion. Through these regional partnerships, New York will be well positioned to achieve its goals for a clean energy economy while serving as a model for regional energy planning and implementation.

¹ Great Lakes Wind Collaborative (GLWC). *Quarterly Update*. 2008. <http://www.glc.org/energy/wind/quarterly/july08.html>

2 *Interstate Issues and Opportunities*

2.1 **Offshore Energy Planning**

Energy demand in New York and the northeast continues to grow.² To meet this demand, New York's coastal waters of Long Island Sound, the Atlantic Ocean and the Great Lakes are attracting increased interest for development of traditional pipeline and cable infrastructure, liquefied natural gas (LNG) transshipment and storage facilities, and renewable energy generation from wind, currents and tides.

New York needs to improve planning and decision-making processes for offshore energy generation and infrastructure siting to ensure that the clean energy needs of New York are met, goals for renewable energy are achieved, natural resources and coastal-dependent economic interests are protected, and predictability of regulatory response is enhanced.

Offshore areas represent high value environmental and economic assets. They are areas where human activities converge, including commercial navigation, commercial and recreational fishing, recreational boating, tourism, electric generation and transmission, and fuels transshipment. These activities generate billions of dollars in benefits to New York, New Jersey, Connecticut, Pennsylvania, Quebec and Ontario. Coupled with these uses are activities that are taken to protect and restore the coastal ecosystems that support these human activities. As more projects, including traditional energy facilities and wind and wave generation facilities, are proposed, the potential for conflict with other existing and proposed uses and ecosystem protection goals increases.

Activities waterward of the shoreline are subject to federal and State laws, regulations and treaties in a complex jurisdictional environment defined by: offshore State and federal territorial limits and sovereignty; ownership of underwater lands; various forms of mineral, fishery, and other resources; national security interests; and regulatory controls. These jurisdictions, some of which overlap, include:³

- State territorial waters extending waterward from the shoreline to three miles offshore under ownership and jurisdiction of the State and, in certain cases, ownership or ownership interests by private entities and local governments.
- Internal waters, such as Long Island Sound and the Great Lakes, within the offshore territorial limits of the State and municipal or county governments to a boundary line with another state or Canada.

² Rates of demand growth vary under different assumptions for a range of fuels, and end-use sectors. However, in the aggregate energy demand is expected to increase over the planning horizon. NYSERDA. *Draft Demand and Price Forecasts*. 2009.

³ U.S. Commission on Ocean Policy. *Primer on Ocean Jurisdictions: Drawing Lines in the Water*. 2004. http://oceancommission.gov/documents/prepub_report/primer.pdf

- The Outer Continental Shelf (OCS), seaward of the most seaward territorial limit of the State, where the federal government has exclusive jurisdictions and authorities.
- The territorial sea extending from the shoreline to the seaward territorial limit of the United States 12 miles offshore, where the federal government has asserted sovereign rights, but which do not affect the rights of the states within the territorial limits of the states.
- The contiguous zone, 12 to 24 miles offshore, within which a nation can exercise control over customs, fiscal, immigration and sanitary matters.
- The Exclusive Economic Zone (EEZ), seaward of the territorial limits of a state to 200 miles offshore, where the federal government asserts jurisdiction over living and non-living resources. The Coastal Zone Management Act provides those states with approved coastal management programs with substantial authority to influence federal actions beyond three nautical miles which have or can have reasonably foreseeable effects on coastal resources.
- The high seas, which includes all portions of the sea not included in the territorial sea of any nation.

The Coastal Zone Management Act (CZMA)⁴ of 1972 provides states with approved coastal management programs, including New York, the ability to determine whether federal actions (permitting, direct actions, funding) in and outside a state and its territorial waters would or would not be consistent with the policies of the state's Coastal Management Program (CMP). If it is determined that an activity would not be consistent, the federal agency may not authorize, undertake or fund the activity. The CZMA allows the U.S. Secretary of Commerce to override a state's objection to a federal permit activity if the activity is found to be consistent with the objectives of the CZMA or is necessary in the interest of national security.⁵

Under the Deep Water Port Act of 1974⁶, the U.S. Secretary of Transportation licenses the construction and operation of all oil and natural gas deep water ports, including LNG facilities, located beyond the U.S. territorial seas and off the U.S. coast. Section 1508 provides that the Secretary designate Adjacent Coastal States which would either be directly connected to the deep water port or which would be within 15 miles of the proposed port upon application by the affected state and a finding that there is a risk to coastal resources. The Secretary may not issue a license without the approval of the Governor of a designated Adjacent Coastal State. In addition, the Act provides for interstate compacts or agreements to establish and operate deep water ports and to establish a joint agency or other management structure to implement the agreement, with the consent of Congress. The U.S. Coast Guard also has a strong regulatory role in this process.

The Energy Policy Act of 2005 granted the Secretary of Interior the primary permitting authority for renewable energy development, e.g., wind, wave, and tidal, in the OCS. This authority, delegated to the Minerals Management Service (MMS), resulted in a final programmatic environmental impact statement

⁴ 16 U.S.C. §1451 et seq.

⁵ U.S. Commission on Ocean Policy. 2004.

⁶ 33 U.S.C. §1501-1524

concerning the development of an offshore energy permitting program.⁷ This in turn has led to the development of final rulemaking on renewable energy development in the OCS. In the meantime, an interim policy has been established for authorization of the installation of offshore data collection and technology testing facilities in federal waters.

Complicating the matter, under Section 205 of the Federal Power Act, the Federal Energy Regulatory Commission (FERC) currently has guidance in place that allows for wave, in-stream and tidal energy conversion facilities, commonly referred to as hydrokinetic, to be permitted in a stepped licensing procedure. The process generally begins with a preliminary permit, which offers the holder priority to study the feasibility of pursuing, developing and obtaining the data needed to apply for a pilot license. A pilot license allows the licensee to install grid-connected wave energy conversion devices at a small scale and is used to support an application for a full commercial license. A full commercial license allows the full build out potential of the resource; however, there is little data to quantitatively describe this potential. Mapping showing this potential could be developed through existing federal inventory programs. If this effort is undertaken, it should address all relevant factors, including: fisheries/wildlife, hydrologic potential, sediment transport/littoral drift, benthic habitat, historic resources, navigational conflicts, bathymetry, wind and wave action potential, visual and auditory impacts, communications impacts, and other potential factors. Utility-scale hydrokinetic devices would likely require an individual Army Corps of Engineers (USACE) permit for both the in-water structure and the dredging and filling associated with the necessary transmission facilities; however, small pilot sized devices may qualify to be permitted under the USACE nationwide program.⁸ The MMS and FERC have recently agreed, through a Memorandum of Understanding (MOU), that in areas of overlapping jurisdiction, wave and other forms of hydrokinetic energy technologies will be allowed to continue under this permitting scheme despite recent jurisdictional disputes. The MOU is preliminary in nature and will be expanded upon by agency staff in the coming months.

Most in-stream and tidal turbines are proposed to be located within rivers or in ocean areas within a short distance from the shore, therefore, State and local regulatory agencies have much broader authority. See *Siting New Energy Infrastructure Brief and Renewable Energy Assessment* for more information.

The MMS oversees management and leasing of the nation's offshore oil and gas reserves. While there are no existing leases along the Atlantic coast, there is one area off the coast of Virginia that is scheduled to be available for leasing by 2012. The MMS is renewing the current five-year leasing program, which will expire in 2012. The new draft five-year plan would designate the size, timing and location of oil and gas lease sales on the OCS. The draft plan divides the Atlantic coast into four regions, with New York located in the North Atlantic region. This region currently has eight exploratory wells with no commercial discoveries and is tentatively proposed to contain one lease. This new five-year plan would go into effect prior to the expiration of the current plan to address the recent lifting of the Presidential and Congressional bans on offshore oil and gas leasing on the OCS.

Various other federal agencies have roles in offshore federal permitting processes that may be applicable to energy development, such as: the USACE (structures in navigable waters), the Federal Aviation Administration (hazard to aviation), the Fish and Wildlife Service (Migratory Bird Treaty Act), the National Oceanic and Atmospheric Administration (Endangered Species Act, Marine Mammal Protection Act, Magnuson-Stevens Fishery Conservation and Management Act, National Marine Sanctuaries Act),

⁷ U.S. Department of the Interior, MMS. *OCS Alternative Energy and Alternate Use Final Programmatic Environmental Impact Statement (EIS)*. 2007.

⁸ 33 CFR Part 330 Nationwide Permit Program. USACE. *Nationwide Permits Information*. 2007. http://www.usace.army.mil/CECW/Pages/nw_permits.aspx

the Environmental Protection Agency, the Maritime Administration, the U.S. Coast Guard, the U.S. Department of Transportation, DOE (funding, technical assistance) and FERC (Transmission).

The federal role in offshore energy development in the Great Lakes is different than in the ocean, as the offshore waters fall entirely within the State boundary. This restricts or eliminates the application of certain federal authorities, most significantly with respect to the role of MMS in renewable energy permitting. Similar to ocean areas, FERC plays a lead role in permitting wave/current generation. However, the USACE, rather than MMS, is the lead permitting authority for offshore wind. Other agencies will play a consulting role, as appropriate.

These evolving federal initiatives and the large number of agencies and authorities involved point to the need for coordination between New York and the responsible federal agencies to make appropriately sited, economically viable offshore energy projects a reality along the Mid-Atlantic coast and the Great Lakes. In addition, the interconnected nature of offshore ecosystems and the resources they contain require greater coordination with neighboring states in these regions.

Recent offshore energy proposals point to the need for greater interstate and regional cooperation in siting and developing necessary energy infrastructure. For example, the Islander East Pipeline crossing Long Island Sound, as proposed, would have brought up to 245 million cubic feet per day of natural gas to Long Island. While New York found the pipeline consistent with its CMP, Connecticut did not and the pipeline has not been built.

Renewable energy projects offshore (wind, current and tidal) are also under development or in the planning stages. For instance, New York has proposals before FERC to investigate areas of Long Island Sound near The Race⁹ for tidal generation, and is investigating the feasibility of an offshore wind project off the Rockaways; New Jersey's Board of Public Utilities approved \$4 million in grants to support development of a 346 MW offshore wind project with approximately 96 turbines; and in September 2008, Governor Carcieri of Rhode Island announced the selection of Deepwater Wind to develop a \$1.5 billion privately financed, 100+ turbine offshore wind project that could provide 15 percent of the state's electricity needs. As with the pipeline project noted above, interstate and regional cooperation on renewable energy projects will be important to successful outcomes. For example, New York and Connecticut have been asked to participate in the process of preparing an energy plan for Block Island Sound.

2.1.1 Emerging Responses

The demand for energy, concern over the health of the world's oceans, and increasing competition among users of the oceans, have resulted in a clear recognition that improved management is needed. Traditionally, oceans management has occurred on a single sector basis, including for example, fisheries management, navigation, energy development, scientific research, military operations, historic and archeological sites, mining, and recreation. This leads to jurisdictional ambiguity, as well as conflicts among human uses and between those and the environment.

For New York's offshore areas, a comprehensive, multi-jurisdictional and multi-sector approach is needed to develop a shared vision for the sustainable, multi-purpose use of these high-value environmental and economic resources. This type of planning is beginning to emerge in Australia, Europe, China, Canada, New England and the West Coast. For example, the United Nations Educational,

⁹ The Race connects Long Island Sound to the Atlantic Ocean.

Scientific and Cultural Organization (UNESCO) is supporting development of open water planning approaches through its Intergovernmental Oceanographic Commission and Man and the Biosphere Programme.

Offshore planning by multiple jurisdictions would establish a process to analyze and allocate three-dimensional space, including the water surface, water column, and seafloor, for specific uses, combinations of uses or for protections. Among the potential benefits are greater accommodation of multiple uses, greater certainty for the private sector in making new investments, and reduced risk of conflict between natural resource conservation and development. For the reasons noted above, this approach will require multi-jurisdictional collaboration and commitment to resolving complex use and allocation issues. Outcomes of offshore planning include a clear vision for the future and a comprehensive plan, similar to a land use plan, regulatory coordination to achieve the purposes of the plan, regular review and updates that incorporate technical and resources capacities, and permitting decisions based on the plan.

New York is advancing an understanding of shared offshore energy siting opportunities and regional cooperation through a number of initiatives. On June 4, 2009, Governor Paterson and New Jersey Governor Jon Corzine convened a summit of the Mid-Atlantic States (New York, New Jersey, Maryland, Delaware, and Virginia) on regional ocean issues. At the summit, the Governors signed the Mid-Atlantic Governors Agreement on Ocean Conservation and formed a regional partnership among the states, the Mid-Atlantic Regional Council on the Ocean, to address shared challenges facing ocean ecosystems, as recommended by New York's Ocean and Great Lakes Ecosystem Conservation Council. One of four initial priority areas for collaboration is the promotion of sustainable development of renewable offshore energy sources, including wind energy, through improved regulatory coordination in the region. The Council is developing action plans for the next year, including coordination of individual state efforts to identify areas most suitable for development and siting of renewable offshore energy. Representatives from the White House Council on Environmental Quality and key federal agencies were in attendance at the summit and committed to working in partnership with the Council to implement the Agreement.

While this comprehensive regional effort will provide a general framework for cooperation, New York continues to pursue more targeted interstate initiatives to develop discrete actions on specific issues of shared concern. As a follow-up to the Northeast and Mid-Atlantic States Meeting on Clean Energy Cooperation, the MMS has tentatively agreed to establish a New England-Mid-Atlantic States Joint Planning Agreement. Among the goals of the Joint Planning Agreement would be the development of "a consistent, efficient approach to integrating state-federal activities, including resource assessment and data collection."¹⁰ The U.S. Offshore Wind Collaborative has drafted a letter to formally request this partnership between the states and MMS.

Cooperative energy planning for the Great Lakes is emerging as a result of the Great Lakes Wind Collaborative. A preliminary assessment of wind development in the off-shore environment of the Great Lakes is underway. The report will include a summary of the state-of-the-art of offshore wind development and identify siting opportunities and limitations based upon current technology, expected near-term advancements, and existing water uses. The meteorological and marine environments of the Great Lakes will be discussed in the context of project siting and engineering, installation and operations. The jurisdictional and regulatory issues related to project development will be summarized for both the waters of the Great Lakes, the adjacent New York State land, and the adjacent borders with Pennsylvania and Canada. Finally, commercial and economic parameters affecting project siting and development will

¹⁰ Northeast and Mid-Atlantic States Meeting on Clean Energy Cooperation Hosted by the State of New York. *Executive Summary*. 2008. http://www.state.ny.us/governor/reports/pdf/NEMAG_Meeting_Executive_Summary.pdf

be identified and discussed, including existing land and water uses (conflicting and compatible), logistics, and transmission system considerations. The information in the report will be presented to inform potential stakeholders on the feasibility of, and siting opportunities for, offshore wind energy development within the State's Great Lakes offshore waters.

2.2 Regional Planning for Renewable Fuels

In its first report, the New York State Renewable Energy Task Force acknowledged that renewable fuels have the potential to play an important role in New York's energy future and could result in the State becoming one of the nation's leaders in the renewable fuel industry.¹¹ However, the report also pointed out that current State policy on renewable fuels was inadequate and that no single renewable fuel would be able to meet the State's energy needs. The report identified the need to assess critical environmental, capacity, technology, efficiency, and economic issues surrounding development of these fuels. In response to the recommendation for an assessment of renewable fuels, the State is preparing a comprehensive report, "Development of a Renewable Fuels Roadmap and Sustainable Biomass Feedstock Study for New York."¹²

In addition to the development of a State-based biofuels roadmap, New York recognizes the importance of multi-state cooperation and coordination of efforts to successfully tap the potential of bioenergy. At the September 2008 meeting of Northeast and Mid-Atlantic states on clean energy cooperation, co-hosted by New York and Massachusetts, several priority actions and goals pertaining to interstate collaboration on renewable fuels were identified. Goals identified and agreed upon by participating state representatives were to:

- Create a regional market in the northeastern United States for high-performance European bioheating technologies, and open up the possibility of U.S. based manufacturing.
- Establish protocols for lifecycle assessment of the fuel and identify the carbon footprint.
- Establish a sustainable resource management and supply infrastructure for biomass fuel that protects the resource and provides developers a standard to meet.
- Harness the capacity of northeastern research institutions to develop a coordinated strategy to bring federal research and development funding to the region, with a focus on biofuels.¹³

For each of the aforementioned goals, specific priority action items were established, as well as identification of lead entities, key players, timelines and milestones. When the states met for their second annual meeting in October 2009, they identified the need to establish regional performance standards for bioheating systems in order to accelerate the market introduction of these new high performance systems.

¹¹ First Report of the Renewable Energy Task Force to Lieutenant Governor David A. Paterson. *Clean, Secure Energy and Economic Growth: A Commitment to Renewable Energy and Enhanced Energy Independence*: p.12. 2008.

¹² NYSERDA. *RFP 1249: Development of a Renewable Fuels Roadmap and Sustainable Biomass Feedstock Study for New York*. 2008.

¹³ Northeast and Mid-Atlantic States Meeting on Clean Energy Cooperation Co-Hosted by New York and Massachusetts. *Meeting Summary*. September 2008.

In early 2009, New York joined with 10 other Northeast and Mid-Atlantic states, including all members of the RGGI plus Pennsylvania, to develop a regional Low Carbon Fuel Standard (LCFS) to reduce the carbon concentration in fuels used in vehicles and buildings. This regional approach is intended to create significant market potential for low carbon fuels and expedite the development of new technologies. For the transportation sector, the LCFS initiative could potentially encourage the use of cleaner fuels, such as electric-powered vehicles and biofuels (excluding those biofuels that result in negative impacts such as crop diversion or land-use changes).

2.3 RGGI Support for a Clean Energy Economy

RGGI is a cooperative effort by 10 Northeast and Mid-Atlantic states (Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont) to limit GHG emissions from the power sector. It is the first mandatory, market-based CO₂ emission reduction program in the United States. Between 2014 and 2018, the states will reduce the cap by 10 percent and help limit the region's total contribution to atmospheric greenhouse gas levels. Proceeds from the RGGI auction will support investments designed to transform the State's current high-carbon-intensity energy system to one that generates power with low carbon intensity and uses energy in an efficient manner. Because the RGGI program was designed through the collaborative effort of energy and environmental agencies from 10 Northeastern states, the environmental goals of the cap-and-trade program are well integrated with the participating states' environmental and energy programs. RGGI provides a best-in-class template for national and international market-based cap-and-trade programs.

2.3.1 Why RGGI is a Transformational Link for Energy and Environmental Programs

RGGI is composed of individual CO₂ Budget Trading Programs in each of the 10 participating states. These 10 programs are implemented through state regulations, based on a RGGI Model Rule, and are linked through CO₂ allowance reciprocity: regulated power plants will be able to use a CO₂ allowance issued by any participating state to demonstrate compliance with the state program governing their facility. Taken together, the 10 individual state programs will function as a single regional compliance market for carbon emissions.

Historically, cap-and-trade programs have provided allowances directly to regulated emission sources. Under RGGI, instead of giving allowances directly to electric generators for free, states sell a significant portion or all allowances, through auction. These bidding behaviors inform buyers of allowances, and electricity customers, of the financial cost associated with controlling GHG emissions. RGGI allowance auctions proceeds are being dedicated to programs for energy efficiency, renewable or non-carbon emitting technologies, and innovative carbon emissions abatement technologies. RGGI allowance auction funds will help create a clean energy economy in the region, promote new "green" jobs, and support economic recovery in the participating states.

By reinvesting allowance auction proceeds in a portfolio of clean energy and efficiency programs, the states have additional opportunities to reduce electricity demand (further lowering GHG emissions), reduce the compliance costs and electric rate impact of the RGGI program, increase funding for energy efficiency and renewable energy, drive the clean energy economy and minimize the likelihood of "emissions leakage."

The participating states have paid particular attention to the question of emissions leakage. Emissions leakage can occur if electricity generation shifts from cleaner power generated in the RGGI region to higher-emitting non-regulated sources outside the region, with a net increase in CO₂ emissions.

Developers of the RGGI program recognized that leakage could develop if end-use energy efficiency measures prove insufficient to discourage the shift in generation, or if a federal cap-and-trade program is significantly delayed.¹⁴ By applying leakage mitigation measures, monitoring continuously for possible leakage and collaborating on additional leakage mitigation strategies, the participating states expect to minimize or eliminate this outcome.

Through the September 2009 auction, approximately \$155 million has been collected to fund clean energy and efficiency programs. Under detailed plans now being developed, RGGI-funded measures will support GHG reductions directly, taking advantage of economy-wide opportunities to reduce GHG emissions. By helping to institutionalize the most productive solutions, RGGI funding will build capacity to sustain a clean energy economy.

RGGI auction proceeds will be used to expand the full spectrum of energy efficiency and clean energy projects from research and development, through demonstration, commercialization and deployment. RGGI also will help support integrated statewide, municipal, and grassroots programs that deliver coordinated information, education and opportunities for additional GHG reductions and consumer energy savings.

RGGI allows New York to continue its commitment to reduce the use of traditional fossil fuels with dedicated funding for clean and renewable energy initiatives. With its participation in RGGI, New York continues to demonstrate national leadership by supporting clean and renewable energy technologies, as it provides an example for other states and the nation.

¹⁴ RGGI Emissions Leakage Multi-State Staff Working Group. *Potential Emissions Leakage and the Regional Greenhouse Gas Initiative: Final Report RGGI Emissions Leakage Multi-State Staff Working Group to the RGGI Agency Heads*: p.1. 2008.

3 *Intrastate Issues and Opportunities*

3.1 Local and Regional Energy Planning

New York is a state of great regional diversity, which presents unique challenges and opportunities for the planning and development of a sustainable and clean energy economy. New York is also a “home rule” state, which empowers municipalities to undertake comprehensive planning and enact many programs and policies that may affect the State’s ability to meet its energy goals.

Used by over two-thirds of municipalities in New York, the comprehensive plan is an important tool that establishes a community-based vision for future growth and identifies policies, goals and recommendations for implementing that vision. The comprehensive plan can be used to highlight the need to conserve energy and reduce GHG emissions, and to identify the need for new land use regulations to promote compact development in order to reduce traffic congestion and dependence on automobiles. It can lay the foundation for enhanced building codes and code enforcement to encourage energy-efficient building practices and for energy audits of municipal operations to reduce energy usage. The comprehensive plan can also identify other energy-related actions, including the feasibility of developing new decentralized clean energy generation facilities and actions to mitigate the effects of climate change.

The comprehensive plan can include options for working with adjoining communities and counties to establish regional approaches to energy-related issues, including strategies for public transportation and congestion mitigation, GHG reduction, and identification of potential locations and corridors for regional generation and transmission facilities.

To some extent, the State’s clean energy goals already are being integrated at the local level. Some recent initiatives related to energy demand, efficiency and development at the local or regional levels include:

- In late 2009, the New York City Energy Planning Board will present the results of its regional energy planning process, which addresses challenges and issues specific to the downstate region. The Energy Planning Board and this energy planning effort are outgrowths of PlaNYC, an ambitious and comprehensive sustainability plan for New York City.
- Based on a recommendation from the State’s Renewable Energy Task Force, an interdisciplinary work group comprising the Long Island Power Authority (LIPA), ConEd, New York Power Authority, New York State Energy Research and Development Authority (NYSERDA), the Metropolitan Transit Authority, and the Port Authority of New York and New Jersey, under the name of the Long Island-New York City Wind Collaborative, was formed to study the potential for an offshore wind project 10 miles off the Rockaway Peninsula. This project could provide significant market development benefits to the wind industry, create clean-tech jobs, and help diversify the State’s electricity system. The Collaborative released a Request for Expressions of Interest in June 2009.
- In March 2009, LIPA completed its Draft Electric Resource Plan 2009 - 2018. Major components of the plan address energy efficiency and demand reduction, renewable and

distributed generation, power supply, transmission and distribution, and the environment.

- In upstate New York, the Central New York Green Team, which consists of over fifty partners within government, industry and the academic community, is actively engaged in green sector development. One such recent initiative is the partnership between the City of Syracuse, Onondaga County and the SUNY College of Environmental Science and Forestry to develop a willow biomass-to-energy plant that initially is expected to provide power to all public facilities within the county.
- In 2008, Westchester County completed an “Action Plan for Climate Change and Sustainable Development” that provides strategies to reduce GHG emissions associated with energy, transportation, land use, recycling and waste management, and water resources management. The county-wide action plan provides guidance on actions to be taken by various sectors within the county, including county government, municipalities, business, education, and households.
- On Long Island, the Town of Babylon has been at the forefront of innovative energy efficiency programs. In late 2008, the Town unveiled a new program, the “Long Island Green Homes Program,” which provides financing to homeowners for energy efficiency improvements. Prior to this program, Babylon became the first town on Long Island to adopt ENERGY STAR standards for new homes, and subsequently established a requirement that all new commercial and industrial buildings over 4,000 sq. ft. meet the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) certification standards.
- In December 2008, the Tompkins County Comprehensive Plan was amended to include a discussion of energy and GHG emissions. The comprehensive plan amendment provides a discussion of potential ways that communities within Tompkins County can reduce energy demand, improve energy efficiency, transition to renewable energy sources, and enhance resources that naturally remove carbon from the atmosphere.¹⁵
- The Town of Chatham’s recent amendment to its comprehensive plan presents a discussion of energy efficiency and green energy alternatives. It identifies a number of strategies to encourage energy efficiency and the use of alternative energy sources, including the use of small scale wind and hydro turbines, the development of buildings built to LEED standards, and the growing of alternative energy sources as a potentially profitable alternative for farmers.¹⁶
- In 2009, the Legislature passed a number of bills that will provide some local governments the authority to provide financing for energy efficiency retrofits. For example, legislation passed both houses that will allow the City of Binghamton and the Town of Bedford to provide loans to businesses and residents to install distributed energy resources and make energy efficiency improvements; the loans would be paid back through assessments on the real property where the loan was applied.¹⁷

¹⁵ Tompkins County Planning Department. *Tompkins County Comprehensive Plan: Energy and Greenhouse Gas Emissions Element- 2008 Amendment*. Adopted by the Tompkins County Legislature on December 16, 2008.

¹⁶ Town of Chatham. *Comprehensive Plan Draft. 2009*.

¹⁷ See A.8387A/S.5762A (Bradley, Leibell), and A.8890/S.5867A (Lupardo, Libous).

While not all local or regional energy planning efforts have been undertaken through the comprehensive planning process, the comprehensive plan offers a logical and effective vehicle to address energy issues. Articles of New York’s General City, Town and Village Laws define a comprehensive plan as “the materials, written and/or graphic, including but not limited to maps, charts, studies, resolutions, reports and other descriptive material that identify the goals, objectives, principles, guidelines, policies, standards, devices and instruments for the immediate and long-range protection, enhancement, growth and development of the [city, town or village].” While sections of City, Town and Village Laws¹⁸ suggest topics to be included in comprehensive plans, communities may elect to address any relevant topics, including those related to energy.

As demonstrated by some of the initiatives outlined above, communities increasingly are working on a collaborative basis to develop inter-municipal and regional energy related plans and actions. Section 239 of the New York State General Municipal Law grants county agencies and regional planning councils with the authority to develop county and regional comprehensive plans. Similar to municipal planning, these plans may establish goals and objectives, inventory existing land uses, identify needs, and propose measures and programs to implement the goals and objectives; they cannot, however, require towns, cities or villages to do anything that the municipalities do not wish to do themselves. Since many aspects of energy demand, production and transmission transcend municipal boundaries, local communities could benefit from a collaborative approach to developing energy inclusive comprehensive plans. This planning approach would allow communities to address energy concerns in a more cost effective and politically effective manner, while establishing broad regional priorities and actions to meet the State’s energy goals.

3.2 Smart Growth, Regional Collaboration, and Energy Demand

Smart Growth¹⁹ can reduce dependence on automobile travel and reduce Vehicle Miles Traveled (VMT), thus reducing petroleum consumption, dependence on foreign oil and transportation-based GHG emissions. Regional planning, a major component of Smart Growth, can effectively deliver positive land use and energy outcomes by aligning transportation decision-making and local land use and development planning on a regional level.

Smart Growth promotes regional land use and transportation planning largely because many New Yorkers live in one jurisdiction, while working, shopping, and enjoying recreational activities in others, traversing several jurisdictions to access these destinations. Transportation corridors and systems, as well as economies, ecosystems, greenways, and waterways, simply do not begin and end at municipal borders. Since land use and transportation systems operate at the regional level, land use and transportation planning should therefore be integrated to a greater degree at the regional level.

Transportation Choices Determine Land Use and Development Patterns. No factor has influenced land use and development patterns more than transportation policy. Beginning in the early 1940s, the major transportation determinant of development patterns in America has been the highway.

¹⁸ City Law §28-a, Town Law §272-a, and Village Law §7-722.

¹⁹ The Governor’s Smart Growth Cabinet defines Smart Growth as sensible, planned, efficient growth that integrates economic development and job creation with community quality-of-life by preserving and enhancing the built and natural environments. Smart Growth encourages growth in developed areas with existing infrastructure to sustain it, particularly municipal centers, downtowns (“Main Streets”), urban cores, hamlets, historic districts and older first-tier suburbs. Smart Growth integrates land use planning and transportation on both the local and regional level to create communities that use less energy; that is, compact, mixed-use, walkable/bikable, transit-friendly communities that rely less on automobile travel. The benefits of Smart Growth to energy efficiency are multi-fold.

A massive and unprecedented public investment in a national system of interstate highways, beginning with the Federal-Aid Highway Act of 1956 and continuing into the 1990s, opened up vast swaths of (initially) inexpensive land. These highways allowed families and individuals to live farther away from urban centers, while still accessing jobs with a relatively short commute.

As a result, the rate at which land was developed soon outpaced population growth. Between 1982 and 1997, developed land in the northeast increased 39 percent, while the population increased only seven percent.²⁰ The problem is worse in upstate New York, which has experienced what the Brookings Institution calls “Sprawl without Growth.” That is, between 1982 and 1997, developed land increased by 30 percent, while the population only increased 2.6 percent.²¹

Dispersed, sprawling development patterns largely determine the amount of automobile travel necessary for day-to-day activities. Low-density development, for instance, increases travel distances between and single-use zoning separates life’s daily needs – home, work, recreation, retail – into virtual islands, accessible primarily by car. The combination of low density and single-use zoning creates a built environment that is not conducive to alternative mobility options, such as walking, biking and mass transit.

Sprawl moves in successive waves. In the 1980s, low-density, single-use development migrated further into the rural fringe, particularly on rural farmland. Consequently, over one-half of the U.S. metropolitan landscape is now designed to suit cars almost exclusively, making walking, biking and transit almost impossible in these areas.²²

Besides its impact on VMT, sprawl is also less energy-efficient than more compact, urban-form communities. Low densities preclude mutual heat and cooling effects that exist in higher density communities. The delivery of electricity is strained by the distance that it must travel to accommodate dispersed customers. In fact, sprawl is linked to a 30 percent premium on the average cost of heating and cooling buildings, compared to denser urban areas.²³

Land Use and Development Patterns Determine VMT.²⁴ The effect of sprawling development patterns on driving rates in this country is well-documented. Since 1980, VMT nationwide have increased three times as fast as population, and twice as fast as vehicle registrations; between 1970 and 1998, VMT increased 132 percent.²⁵ Between 1983 and 2001, VMT increased 226 percent, 64 percent of which are attributable to land use, while the population increased only 22 percent.²⁶ The 1980s saw an increase in VMT four times faster than the driving population; in just seven years between 1983 and

²⁰ Fulton, W., Pendall, R., Nguyen, M., and Harrison, A., The Brookings Institution, *Who Sprawls Most? How Growth Patterns Differ Across the U.S.* 2001.

²¹ Pendall, R., The Brookings Institution. *Sprawl Without Growth: The Upstate Paradox.* 2003.

²² Condon, P., Lincoln Institute of Land Policy. *Planning for Climate Change.* Land Lines. 2008.

²³ Condon, P., Lincoln Institute of Land Policy. *Planning for Climate Change.* Land Lines. 2008.

²⁴ These are national figures and trends. Please see the Transportation Issue Brief for New York-specific data.

²⁵ Ewing, R., Bartholomew, K., Winkelman, S., Walters, J., and Chen, D., *The Urban Land Institute and Smart Growth America, The Link to Energy Security and Climate Change*, Smart Growth America, citing Growing Cooler: The Evidence on Urban Development and Climate Change. 2007. www.smartgrowthamerica.org

²⁶ Leinberger, C. B., *The Option of Urbanism: Investing in a New American Dream*, pp. 73-74, Island Press. 2008.

1990, VMT increased 40 percent.²⁷ Between 1983 and 1995, the average commute increased 37 percent, from 8.6 miles to 12.6 miles. Without changes in land use and transit, driving will increase 59 percent between 2005 and 2030, far outpacing a 23 percent population increase and causing a 41 percent increase in transportation-based GHGs.²⁸

The Benefits of Smart Growth and Regional Planning. While immediate and measurable energy benefits can result from individual development projects, Smart Growth should be recognized as a long-term energy and climate change strategy to help New York reach the multiple objectives of the Energy Plan. Unlike the immediate energy benefits of installing efficient appliances in a home, for example, land use and development patterns change gradually and incrementally, often showing full benefits 10 to 20 years after programs have begun. One family that moves from a sprawling subdivision far from the employment centers to a transit-oriented development center may immediately reduce the number of miles they drive, and possibly the number of cars they own. But such changes must take place on a very large scale to significantly reduce energy use and combat climate change. Broad land use reform is often preceded by several long-term, time-consuming steps – comprehensive planning; public visioning, education and outreach; zoning amendments; public, governmental and environmental review; and sometimes legal battles.

For these reasons, many systemic Smart Growth land use reforms can begin through the local comprehensive plan development or update process. Municipal and regional comprehensive plans usually project desired land use patterns over a period of 15 to 20 years, a time-frame that comports with the long-term, systemic progress envisioned by Smart Growth reforms. If conducted correctly, the comprehensive planning process can also reinforce and legitimize many Smart Growth principles through extensive community and stakeholder participation.

There are a number of land use and zoning tools that support Smart Growth objectives. These include:

- *Smart Growth Overlay Zoning Districts.* Overlay zoning allows a developer to pursue a Smart Growth alternative, e.g., density, smaller-lots, narrower streets, mixed uses, live-work units, to existing conventional zoning in targeted districts. With this alternative in place, the municipality and the state can reward projects that adhere to the overlay zoning.
- *Form-Based Codes (or Performance Zoning).* Rather than focusing on a particular building use, form-based codes emphasize the form and design of the building, e.g., height, set-back, density, and mixed-uses, in relation to surrounding streetscapes, land uses and public spaces. Form-based codes thus help create the physical environment and orientation that Smart Growth promotes.
- *Incentive Zoning.* Incentive zoning provides density bonuses to development projects that provide some type of a community benefit, such as a public square or streetscape amenities, park, affordable housing or day care.
- *Cluster Zoning.* As an alternative to existing large-lot zoning, cluster zoning allows a developer to increase the density on one part of a subdivision in exchange for greater open space and public

²⁷ Benfield, F.K., et al. *Once There Were Greenfields: How Urban Sprawl is Undermining America's Environment, Economy, and Social Fabric*, p. 31. NRDC. 1999.

²⁸ Bartholomew, K., Chen, D. T., Ewing, R., Walters, J., and Winkelman, S. *Growing Cooler: The Evidence on Urban Development and Climate Change*. The Urban Land Institute and Smart Growth America. 2007.

space on another part. The net density on the entire subdivision remains the same; the configuration changes.

- *Transfer of Development Rights.* Transfer of Development Rights allows developers to buy the zoned development rights in areas designated for preservation, and transfer those rights to areas designated for higher-density, urban-form development. Transfer of Development Rights has also been used as a historic preservation tool; the unused building height or density of an historic building or site can be purchased and transferred to a dense growth area.

Compact development patterns can reduce VMT by up to 40 percent.²⁹ By reducing VMT, Smart Growth also reduces transportation-based GHG emissions, which directly helps mitigate climate change. Smart Growth alone can reduce GHG emissions from current trends 7 to 10 percent by 2050;³⁰ with both land use changes and stringent fuel-efficiency standards, GHG emissions could be reduced to 1990 levels by 2030.³¹

Smart Growth also reduces petroleum use. If just 10 percent of new housing were built in Smart Growth communities, it would save 4.95 billion gallons of gasoline, 59.5 million metric tons (66.6 million long, or U.S. tons) of carbon dioxide emissions and \$220 billion in household expenses over 10 years.³²

Transit Oriented Development (TOD). TOD is compact, walkable/bikable, mixed-use communities planned on a traditional village scale and built around a transit station. This development reduces VMT and transportation-based greenhouse emissions by reducing car travel and offering alternative mobility choices such as walking, biking, and public transit. One study found that residents of TODs drive 45 percent less than residents of conventional car-dominated neighborhoods, and save approximately 512 gallons of fuel and \$1,400 in fuel cost annually.³³

3.2.1 Emerging Responses

The Governor's Smart Growth Cabinet. The Governor's Smart Growth Cabinet was created by Executive Order in December 2007. The Cabinet consists of representatives from several state agencies that affect growth, development and land use. Cabinet member agencies are working collaboratively, on a multi-disciplinary, cross-jurisdictional basis, to promote better land use policies and practices on both the state and local level. The Executive Order directs the Cabinet to accomplish two important goals: 1) ensure that state agency practices, spending and operations conform to Smart Growth principles; and 2) develop a set of state policy recommendations that will help localities achieve Smart Growth on the local level. The Governor created the position of Director of Smart Growth at the Department of State (DOS)

²⁹ Bartholomew, K., Chen, D. T., Ewing, R., Walters, J., and Winkelman, S. *Growing Cooler: The Evidence on Urban Development and Climate Change*. The Urban Land Institute and Smart Growth America. 2007.

³⁰ Bartholomew, K., Chen, D. T., Ewing, R., Walters, J., and Winkelman, S. *Growing Cooler: The Evidence on Urban Development and Climate Change*. The Urban Land Institute and Smart Growth America. 2007.

³¹ Bartholomew, K., Chen, D. T., Ewing, R., Walters, J., and Winkelman, S. *Growing Cooler: The Evidence on Urban Development and Climate Change*. The Urban Land Institute and Smart Growth America. 2007.

³² Burer, M.J., Goldstein, D., Holtzclaw, J. *Location Efficiency as the Missing Piece of the Energy Puzzle: How Smart Growth Can Unlock Trillion Dollar Consumer Cost Savings*. Proceedings of the 2004 Summer Study Energy Efficiency in Buildings, American Council for an Energy Efficient Economy. 2004.

³³ Victoria Transport Policy Institute (British Columbia, Canada). *Transit-Oriented Development: Using Public Transit to Create More Accessible and Livable Neighborhoods*. 2007. citing Bailey, L. ICF International for the American Public Transportation Association. *Public Transportation and Petroleum Savings in the U.S.: Reducing Dependence on Oil*, 2007.

to coordinate the Cabinet's activities. DOS has developed long-standing relationships with local governments on land use matters through its planning, education, technical assistance, and grant programs.

On the first directive, Cabinet member agencies are evaluating and reforming their land use-related activities to bolster Smart Growth. Several agencies have already taken concrete action to promote Smart Growth, and discourage sprawl, in their respective programs. The DEC, Environmental Facilities Corporation (EFC), and Department of Health (DOH), for example, recently incorporated Smart Growth eligibility criteria into the State Water Revolving Fund application process that discourages sprawl-inducing development outcomes and encourages Smart Growth. The Department of Transportation (DOT) issued Smart Growth guidelines to promote smart land use and transportation planning on the local and regional level. Several Cabinet agencies developed an inter-agency TOD incentive package, which offers enhanced program benefits and assistance for TOD; this initiative was announced as part of the recommendations from the MTA's Blue Ribbon Commission on Sustainability.

Secondly, the Cabinet developed a policy agenda for the 2009 Legislative Session. This agenda includes Tax Increment Financing (TIF) Reform Legislation. TIF is a self-financing economic development tool that has been used with success throughout the country to revitalize urban centers, particularly blighted ones, with an infusion of infrastructure investments. Through TIF financing, once an area is defined for redevelopment, the base-year tax assessment level for the area is frozen; any taxes generated above that base level in the future, as a result of infrastructure and property improvements (the "Increment Amount"), are used to pay for the improvements made to the area, which help attract commercial and residential investment, either on a pay-as-you-go basis or to pay bonded debt. TIFs are not separate taxing or assessment jurisdictions; they are simply a pass through mechanism for capturing the increment funds generated from economic revitalization and using them to make debt payments.

The current TIF statute in New York is flawed in that it excludes most school districts, except the "Big 5" city school districts (New York City, Buffalo, Rochester, Syracuse and Yonkers), from participating in TIF, even if they wish to. The current statute is also not geographically focused enough to ensure that TIFs are used for Smart Growth purposes. A TIF reform bill would help make the current TIF statute more beneficial to localities, and more focused on Smart Growth priority growth centers; areas in which compact, mixed-use development is most appropriate.

By promoting Smart Growth in day to day State agency operations and through policy reforms, the Smart Growth Cabinet will help make Smart Growth more accessible to local governments, where land use decisions are made.

Regional Land Use and Transportation Planning. Various entities in New York are moving toward regional land use and transportation planning. The New York Metropolitan Transportation Council (MTC) propose to target growth regionally into 10 consensus driven growth centers as a means of accommodating rapid growth in jobs, population, development and economic activity that is forecast for MTC's geographic service area.³⁴ Over the past decade, MTC has also undertaken a series of sustainable development studies, bringing together municipal, county and State interests in an integrated planning process. MTC is currently exploring ways to regionalize this approach through its funding of the first phase of the Long Isand 2035 initiative, a collaborative effort to attempt to develop an integrated regional land use and transportation plan for suburban Long Island.

³⁴ The principal members of the New York Metropolitan Transportation Council (MTC) are the Metropolitan Planning Organization (MPO) for New York City, suburban Long Island and the lower Hudson Valley. *Our Vision for a Growing Region*. 2008.

The Capital District Transportation Committee, the region's Metropolitan Planning Organization (MPO), has conducted the "Linkages" program. This initiative is entirely devoted to integrating land use planning and transportation policy, particularly on the regional level. DOT already works hand-in-glove with MPOs in regions in which they exist. This collaboration provides the foundation for further infrastructure-based land use planning, and land use-based infrastructure planning.

Federal, State, regional and local entities can support regional land use and transportation planning by working closely with regional planning councils and, where applicable, county planning boards. Such collaboration is particularly useful in regions of the State not represented by an MPO.

The State can promote collaboration between local land use entities and regional MPOs. One way is to award municipal grants and assistance to applicants that demonstrate conformance with a regional land use plan, which is developed in conjunction with a MPO and/or a regional planning council.

4.1.2 Regional Planning for Renewable Fuels

- New York is developing a Renewable Fuels Roadmap and Sustainable Biomass Feedstock Study to fully assess the effects of existing State policy on the development and use of various renewable fuels.
- Interstate collaboration is important in realizing the full potential of bioenergy and renewable fuels and can help create significant market potential to drive development of new technologies, such as low carbon fuels. New York has taken key steps in developing and leading interstate efforts with 10 Northeast and Mid-Atlantic States.

4.1.3 RGGI Support for a Clean Energy Economy

- Through the September 2009 auction, approximately \$155 million has been collected to fund clean energy and efficiency programs.
- Plans are being developed to use RGGI allowance proceeds to fund a full spectrum of energy efficiency and clean energy projects, as well as training and education programs to promote additional GHG reductions.
- RGGI provides funding for clean energy and renewable initiatives and will play an important role in developing a clean energy economy.

4.2 Intrastate Issues and Opportunities

4.2.1 Local and Regional Energy Planning

- Local governments play an important role in New York's energy future through their authority to conduct comprehensive planning and regulate land use.
- Local governments are becoming more aware of their opportunities to reduce their carbon footprint, increase energy efficiency and work across jurisdictions to reduce GHG.
- More training and education of the general public and local governments is needed and will encourage local accountability in meeting State and local energy needs. Training and education should encompass, at a minimum, the goals and objectives of the State Energy Plan; New York's energy needs; the current and future means of generating, storing and transmitting energy; and intrastate and regional energy issues and priorities. Targeted training to local governments through existing programs, such as those implemented by DOS and NYSERDA, would give local officials the tools to integrate energy planning with other local and regional planning efforts while supporting State energy goals.
- Enabling legislation for municipal comprehensive plans provides guidance on topics that may be included in the plans, but does not specifically list energy planning, so visibility of the issue needs to be enhanced.

- Incentives should be provided to incorporate energy planning into local and regional land use programs and comprehensive plans. State programs should be aligned to provide technical and financial assistance to support such planning. For communities that are actively engaged in energy planning, the State could explore opportunities to realign existing energy and community development programs for projects that foster a clean energy economy.
- Energy planning efforts should be combined with Smart Growth initiatives to reduce energy demand through better transportation and land use decisions, and local energy planning should be undertaken in concert with county planning and/or regional planning councils.

4.2.2 Smart Growth, Regional Collaboration, and Energy Demand

- Sprawling land use patterns contribute to inefficient use of energy by reducing opportunities for public transportation and contributing to a greater reliance on use of private cars to access work, shopping and other activities.
- Incorporating Smart Growth principles into local and regional comprehensive plans can help redirect this trend. Education for local governments on the planning and land use regulatory techniques to implement Smart Growth should expand.
- Land use techniques and zoning tools, such as overlay districts, form-based codes, transfer of development rights, cluster zoning, and incentive zoning can contribute to achieving the goals of the State Energy Plan by creating more compact and efficient land use patterns thereby reducing energy consumption.
- Integrating land use planning and transportation planning on a regional level is important in encouraging land use patterns that reduce VMT. The New York Metropolitan Transportation Council and the Capital District Transportation Committee are two entities that are advancing this type of integrated planning, which can guide and inform local planning. There are opportunities for other MPOs, regional entities and counties to begin this analysis.
- The Governor's Smart Growth Cabinet is making recommendations for various initiatives to promote Smart Growth and create incentives for implementation. An early recommendation is a Tax Increment Financing Reform Bill.

