

NEW YORK STATE ENERGY PLANNING BOARD

2013 New York State Energy Plan

COMMENTS OF ENVIRONMENTAL DEFENSE FUND ON DRAFT SCOPE FOR THE 2013 NEW YORK STATE ENERGY PLAN

I. Introduction

1. Environmental Defense Fund (“EDF”) appreciates the opportunity to file comments in response to the Draft Scope for the 2013 New York State Energy Plan (such Draft Scope, the “Draft Scope”, and such the Energy Plan, the “Plan”). EDF is a leading national nonprofit organization, headquartered in New York, representing more than 700,000 members nationwide, including over 70,000 in New York State. Since 1967, EDF has linked science, economics, law, and innovative private-sector partnerships to create breakthrough solutions to the most serious environmental problems.

2. EDF is committed to helping New York State meet its goals of providing reliable and affordable energy while also working to ensure that environmental concerns remain at the forefront of New York State’s energy policy. By taking steps now to expand the market for clean energy, the New York State Energy Planning Board (the “Board”) will build upon the state’s history of environmental leadership, generate new jobs in sectors as diverse as technology, construction and manufacturing, and provide consumers with affordable and reliable clean energy.

3. We are impressed with the breadth and intricacy of the Draft Scope that we have been given the opportunity to review. To ensure that the New York State energy plan that emerges from this process will include the most critical elements needed to maximize those benefits, the Board should squarely address the following in the Draft Scope: 1) the development of the smart, green grid that can become a platform for the information and connectivity needed

to maximize reliability, efficiency and clean energy; 2) an inclusive approach to energy infrastructure investment and regulation that is clearly oriented toward achieving measurable environmental and public health benefits while minimizing adverse impacts, including at the local level; 3) reinventing transportation for a low-carbon future; 4) robust interaction between New York State and other energy stakeholders to accomplish desired energy goals; and 5) sustained attention to identifying barriers to efficient outcomes and availability of policy levers to address those barriers.

II. This Energy Plan Is An Opportunity for New York to Achieve Environmental Objectives While Enhancing Affordability and Reliability.

4. New York’s leadership has established aggressive environmental goals. For example, in Executive Order No. 2, Governor Andrew Cuomo embraced the State’s existing greenhouse gas (“GHG”) emission reduction goal set by his predecessor: by 2050, to reduce greenhouse gas emissions to *80% below 1990 levels*. The Legislature has also recognized the protection of environmental values as important state policy, stating (in Section 1-0101 of the Environmental Law of the State of New York) that “[t]he quality of our environment is fundamental to our concern for the quality of life. It is hereby declared to be the policy of the State of New York to conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state and their overall economic and social well being.”

5. New York’s leadership in environmental matters is essential— particularly in the absence of comprehensive federal climate legislation. As an original signatory to the Regional Greenhouse Gas Initiative (“RGGI”) Memorandum of Understanding (“MOU”), New York, together with its fellow signatories, stated in 2005 that they “wish to establish themselves and

their industries as world leaders in the creation, development, and deployment of carbon emission control technologies, renewable energy supplies, and energy-efficient technologies, demand-side management practice and increase the share of energy used within the Signatory States that is derived from secure and reliable supplies of energy.”¹ New York’s participation in RGGI, a successful regional GHG cap and trade program, has given us a remarkable opportunity to lead by example by achieving 10% GHG reductions in the electric generation sector by 2018.²

6. To achieve our overall State GHG emission reduction goals requires us to go much further, and this planning process is a potent opportunity to make the necessary strides. The centrality of energy planning to achieving environmental goals is self-evident and is acknowledged in the 2009 New York State Energy Plan (the “2009 Plan”), whose five “policy objectives” include two of an environmental nature:

- a. “[E]nergy and transportation systems that enable the State to significantly reduce greenhouse gas emissions, both to do the State’s part in responding to the dangers posed by climate change and to position the State to compete in a national and global carbon constrained economy”, and
- b. “[R]educe health and environmental risks associated with the production and use of energy across all sectors.”³

7. Echoing the 2009 Plan, the New York State Energy Code (the “Statute”) recognizes the close relationship between energy policy and environmental policy and directs that environmental considerations play a central role in the development of an energy plan.⁴

¹ Regional Greenhouse Gas Initiative, Memorandum of Understanding (2005), *available at* http://www.rggi.org/docs/mou_12_20_05.pdf.

² To date, the RGGI program has raised more than \$660 million dollars and has recycled the revenue to fund energy efficiency/renewable energy programs across member states. Regional Greenhouse Gas Initiative, RGGI Benefits, <http://www.rggi.org/about/benefits> (last visited Sept. 17, 2010).

³ STATE ENERGY PLANNING BD., 2009 STATE ENERGY PLAN VOL. I (2009), *available at* http://www.nysenergyplan.com/final/New_York_State_Energy_Plan_VolumeI.pdf.

8. State government is not alone in this endeavor. As further discussed below, local government entities in New York State have developed their own sustainability targets.

Moreover, the private sector has much to offer. New York is fortunate to be the home of some of America's most exciting clean tech companies— from the biggest to the smallest – including some of the most important players in the world of smart grid. New York real estate owners have been leaders in building and retrofitting for world-class energy performance. Our public and private universities – technology leaders in their own right – can contribute broad and deep expertise to a concerted effort by the State to transform how we use energy.

A. Development of the Smart Grid

9. The so-called “smart grid” is, fundamentally, the next step in the natural evolution of the electric grid – the integration of “intelligence” (sensors, communications and controls) throughout the electricity system, from a power plant to every device with a plug. The smart grid will enable significant system-wide efficiencies and new opportunities to be proactive rather than reactive in the face of potential system problems. Two-way communication will enable power consumers to also become “resources.” Combined with dynamic pricing that lets end users know, in real time, when supply is constrained and therefore prices are high, the groundwork is laid for meaningful change in how electricity consumers manage their energy needs.

10. Advanced metering technology for residential customers is also an important part of the complete picture. A key lesson from early roll-outs of this technology, particularly where

⁴ New York State Energy Law § 6-102(5). Specifically, Sections 6-104(2)(a) and (i) require that the Plan include an inventory of projected GHG emissions and strategies for facilitating and accelerating the use of low carbon energy sources and/or carbon mitigation measures; Section 6-104(d) requires that, in assessing current energy policies and programs and their contributions to achieving long-range energy planning objectives, the Board must give due regard to factors such as, inter alia, “protection of public health and safety, adverse and beneficial environmental impacts [and] conservation of energy and energy resources” (Section 6-104(2)(d)); Section 6-104(g) requires the Plan to include an environmental justice analysis; and Section 6-104(k) requires an assessment of the impacts of Plan implementation upon, inter alia, environmental quality.

coupled with dynamic pricing, is that it demands early and consistent engagement with residential customers. Consumers cannot be reasonably expected to become as savvy in their use of power as they have become in the use of computers, cell phones and the internet without considerable education before-the-fact. That said, well thought-out roll-outs of smart meters (and residential dynamic pricing programs), in regions as disparate as Oklahoma and the District of Columbia, have been extremely successful in facilitating more efficient use of energy while saving customers money, and extremely popular, demonstrating that energy customers will seize the opportunity to adopt new technologies when properly educated as to their benefits.⁵

11. The smart grid is a powerful platform for efficiency and renewables. It has the power to support and promote incorporation of clean sources into our generation mix, energy efficiency, energy conservation, load shifting and electrification of transportation – all while enhancing reliability and affordability. As we advised the New York State Public Service Commission (the “PSC”) in its smart grid proceeding late last summer:

“The smart grid, if thoughtfully planned, can reduce our reliance on fossil fuels by optimizing grid efficiency, bringing clean power online, and even enabling the transformation of our transportation system.⁶ The smart grid can prime the grid for dynamic pricing, innovation, energy storage, and clean tech services....”⁷

12. Because of the public health, environmental and fiscal issues at stake here, we also reiterate the key points that we included in our comments to the PSC:

⁵ See OGE Energy Corp. Homepage, <http://www.oge.com/environment/EnergyEfficiency/Pages/Smart%20Grid.aspx> (last visited April 27, 2011); POWERCENTS DC PROGRAM FINAL REPORT, Sept. 2010, available at <http://www.oe.energy.gov/DocumentsandMedia/DC OPC Attachment.pdf>; Candace Lombardi, *Electricity Use Curbed By Pricing? Not Exactly*, CNET.com (Sept. 9, 2010), available at http://news.cnet.com/8301-11128_3-20015964-54.html#ixzz1KrTn4dUu.

⁶ ELECTRIC POWER RESEARCH INSTITUTE, METHODODOLOGICAL APPROACH FOR ESTIMATING THE BENEFITS AND COSTS OF SMART GRID DEMONSTRATION PROJECTS, Jan. 2010, at 1-1, available at <http://my.epri.com/portal/server.pt?space=CommunityPage&cached=true&parentname=ObjMgr&parentid=2&control=SetCommunity&CommunityID=405>.

⁷ *Id.*

- *State leadership is essential* for a coherent New York State smart grid strategy;
- *Delaying smart grid deployment costs money*, due to the enormous opportunity cost resulting from our continued investments in non-smart grid infrastructure that we will have to live with for decades;
- Smart grid is *critical to public health and the environment* because of its power to enable efficiency and peak-shaving; and
- Smart grid can *help keep energy dollars at home in New York*, because improved asset utilization, greater viability of distributed generation, and greater consumer efficiency, mean less money being spent building transmission lines, importing electricity, and exporting New York's consumer dollars to other states or Canada.

13. Although smart grid is mentioned in the Draft Scope (in the context of infrastructure needs, costs and impacts), its significance as a key to optimizing other applications also being assessed is not fully captured. One example of the many cascading benefits of smart grid technology is demand response, which will vastly improve NYSERDA's ability to incorporate renewable energy resources on the grid in order to meet our statewide goals. Demand response programs are effective because rather than having to run back-up fossil generation to content with the intermittency of the sun and wind, grid operators will be able to balance renewables with flexible demand that will vary in time with supply. Current demand response programs in New York are limited in scope and size by the use of conventional technology; studies from FERC and NERC have shown that demand response can be expanded drastically using smart grid technology that would allow for the aggregation of small customers and the use of dynamic pricing.

14. We recommend that the Draft Scope incorporate more express recognition of the central role that the modernization of grid architecture *must play* in meeting energy and environmental goals. Although deployment of "utility-side" technologies that optimize power flows and voltage levels on the grid can deliver significant (3-5%) reductions in GHG emissions, customer-facing technologies (smart meters linked to home energy management systems, smart appliances, on-site generation, storage and electric vehicles) are the *only* means for enabling far more ambitious reductions in GHG emissions, by facilitating far greater incorporation of renewables, enabling smart appliances, and giving consumers the information they need to respond effectively to price signals. The development of the smart grid enormously increases opportunities for end use efficiencies, load-shifting, and increased integration of renewable energy, which, together with reductions associated with efficiencies on the grid, could deliver reductions of GHG emissions from the electric sector of up to 30% -- reductions on a scale that are otherwise simply unobtainable. The smart grid can also help optimize the environmental outcomes associated with the charging of electric vehicles, and thus help enable a 25% reduction in GHG emissions from the transportation sector. To put it bluntly, the State's goal of reducing GHG emissions to 80% below 1990 levels by 2050 cannot be met without full and thoughtful deployment, throughout the electric system, of the technology that supports real time energy optimization by all parties in the energy marketplace. Additionally, it merits emphasis that upgrades to the entire system – from the power plant to the delivery system to the end-user – must be employed concurrently to realize the greatest value, because the value of each is enhanced by the others. A piecemeal approach will devalue the return on investments made in upgrading the system.

15. Therefore, we stress that the need for an increased emphasis on grid technology upgrades be incorporated more systematically in the Draft Scope document, most notably in Section II (“Meeting the State’s Energy Needs and Goals with Energy Efficiency and Renewable Resources”). This section already states an intention to “[c]onsider potential impacts of distributed generation, combined heat and power (“CHP”) systems, demand response, and efficiency improvements in the energy transmission and distribution systems.” A smarter grid is an essential platform for optimizing all these advances. A clear focus on the power of this technology, thoughtfully deployed, to dramatically increase opportunities in other respects (e.g., energy efficiency, renewable resources, incorporation of electric vehicles) should also inform the assessment, called for in Section III of the Draft Scope, of “options to modernize aging infrastructure.” We recommend that the final Scope go much further and recognize clearly the potential of grid modernization to achieve efficiency improvements in its own right, but also to serve as a platform for reaping all the potential benefits from user-sited resources.

16. We applaud the Board for acknowledging in the Draft Scope “the need for the State to invest in resiliency of its energy and transportation systems.” However, although we do not dispute the importance of “robust contingency plans” and similar efforts to “prepare New York for emergencies and maintain the reliability of the State’s energy systems,” we would hope that the Board intends also to recognize the resiliency that can result from upgrading the grid architecture itself, and to research and define the ways in which a more distributed, smarter grid can be more innately resilient and defensible than the more centralized, one-way grid we have inherited. For example, smarter grid technology can often prevent disruptions in power quality and supply, detecting and correcting emerging problems before they affect customers. If a disruption on the grid does occur, a smarter grid can rapidly identify and isolate the problem, and

often "self heal." By enhancing the integration of distributed generation, demand response and storage, it can minimize disruption in the event that one or more major generating facilities or power lines are taken offline. As the Department of Defense has recognized, still higher levels of security and continuity can be obtained through deployment of microgrids, in combination with storage and on-site renewables.⁸

B. Inclusive Approach to Energy Infrastructure Investment

17. We are encouraged by the Draft Scope's acknowledgment, in Section IV, of "the inter-dependency of the electricity and natural gas systems." In New York City, our substantial, highly concentrated thermal loads make CHP one of the most promising lower-carbon, less polluting electric generation opportunities; however, private parties that seek to bring CHP online are discouraged by the limited gas supply, leaving the possibility largely unrealized. In such circumstances, where an opportunity for low-carbon distributed electric generation is squandered, the inadequacy of the gas infrastructure leads *directly* to needless additional pressure on the electric system and greater local toxic and GHG air emissions. As further discussed below, limitations on natural gas availability also hinder New York City's efforts to phase out dirty heating oil, a substance whose use has serious public health consequences.

18. It is impossible, of course, to consider any expansion in the availability of natural gas in New York State without addressing the risk of adverse environmental impacts that can accompany natural gas development. We note with approval that the Draft Scope recognizes that environmental impacts of natural gas production must play a role in the assessment of natural gas supply sources. Addressing potential impacts must be a key part of any plan to

⁸ See Dina Fine Maron & Climatewire, *Can Renewable Energy Make U.S. Military Bases More Secure?*, SCIENTIFIC AMERICAN (Oct. 18, 2010), available at <http://www.scientificamerican.com/article.cfm?id=can-renewable-energy-make-us-military>.

enlarge development of New York State’s natural gas resources. In comments submitted to the Commission of the Department of Environmental Conservation in December of 2009, EDF noted that “[t]he development of the Marcellus shale natural gas reserves in New York State must be accomplished in a manner that protects the environment of the State and the health of its residents.” Our specific recommendations (stated in greater detail in those comments) include, inter alia, rigorous disclosure requirements with respect to the chemicals used in hydrofracturing; responsible waste disposal and air emissions requirements; designation of areas off-limits for shale gas development (specifically including NYC Catskill-Delaware watershed, as well as a process for identifying other sensitive areas for such designation); and a damage mitigation fund and bonding requirements.

19. We urge the Board to make clear in the Scope that it recognizes how locally-specific environmental effects can be – even if they arise from broadly applicable policies – and that the Plan will endeavor to address such localized effects. New York City’s groundbreaking Community Air Survey – which illustrates the environmental and health consequences of energy decisions on a neighborhood scale – can provide the Board with significant local data with respect to the environmental and public health conditions that result from energy use in an area of the state where over eight million New Yorkers reside. It can also serve as a powerful model for how this type of analysis can be successfully undertaken in other regions where environmental impacts can reasonably be expected to vary on a highly granular scale.

C. Transportation for a Low-Carbon Future

20. As a result of the density of population downstate in the New York City metropolitan area and the widespread use of mass transit, the state’s transportation sector is energy efficient compared to that of other states. However, New York could pursue additional

measures to reduce consumption of fossil fuels in and carbon emissions from the transportation sector.

21. On the fuel efficiency front, the State has already adopted the California Pavley motor vehicle CO₂ emission standards, and those standards are now reflected in the EPA motor vehicle CO₂ emissions standards for 2009-16 and the US DOT fuel economy standards. Those standards will gradually increase the average efficiency of NYS motor vehicles. But to go beyond that, the most effective way to reduce fuel consumption further is through the use of price signals. Both road pricing and smart parking pricing have the potential to reduce VMT and correct unpriced externalities, and they also raise revenue that can be put towards other beneficial uses. Examples include but are not limited to the following:

- Providing incentives for State residents to purchase highly efficient vehicles above and beyond what the California and national standards require;
- Investing in plug-in-electric hybrid or electric vehicle infrastructure (see below);
- Providing incentives and funding for rural and suburban regions to develop innovative transit modes like Bus Rapid Transit, van pools, and shuttle service to local rail stations;⁹ and
- Adequately funding existing public transportation authorities – particularly the MTA, with its average weekday ridership of 8.5 million. The authority has seen its budget raided by the legislature in each of the last two years, has instated fare hikes in two of the last three years, and currently faces a \$10 billion shortfall in its five-year capital plan.

We cannot emphasize enough that no state energy plan can be considered complete if it

⁹ EDF's Reinventing Transit report (attached hereto and available at <http://www.edf.org/page.cfm?tagID=38941>) contains detailed case studies of a diverse set of communities that have undertaken such efforts.

does not provide the MTA with a sufficient, stable and reliable stream of funding going forward.

22. Some developments in rural towns and counties can cause significant VMT increases, and the Plan should explore possible ways to incentivize low-carbon, transit-oriented development. One possibility would use a model to measure the VMT consequences of development proposals similar to that used by the California Central Valley's San Joaquin Air Pollution District to estimate vehicular pollutant emissions. It could adopt and improve upon such a model so that it could be used to calculate likely annual VMT and transportation-related CO2 emissions. This could be done through SEQRA environmental reviews. SEQRA could require compensation in the form of higher investments in community design and compliance with green building standards to reduce CO2 below a prescribed threshold.

23. Another promising opportunity to reduce GHG emissions from transportation arises from the electrification of our vehicle fleet, supported by the smart grid. The potential environmental benefits from plug-in electric vehicles ("PHEVs") are two-fold. First, substituting electricity for gasoline combustion can reduce lifecycle GHG emissions by 12 to 54% relative to conventional automobiles depending on the source of the electric power.¹⁰ On the whole, New York State is well-positioned to maximize potential GHG reductions associated with PHEVs because it generates much of its electricity from low carbon sources when compared to other regions in the United States.¹¹ That being said, New York State will be unable to capitalize on the benefits offered by PHEVs and hybrid vehicles unless it strives towards ensuring that low

¹⁰ See New York State Metropolitan Planning Organization Annual Conference, GREENHOUSE GAS EMISSION REDUCTION STRATEGIES 5, June 15, 2010, available at <http://www.nysmpos.org/pdf/NYSMPO%202010%20Conference%20Presentations/Climate%20Change%20and%20Energy/GHG%20Syracuse%202010.pdf>.

¹¹ See *Understanding GHG Emissions from Plug-In Electric Vehicles*, <http://www.mlgw.com/images/UnderstandingGHGsofPHEVs.pdf> (last visited Apr. 29, 2011).

carbon generation sources are used to charge these vehicles. Thus, optimized electric grid management is critical because it allows for cleaner sources of energy to meet the growing energy demand that results from increased use of PHEVs and hybrids. New York State policy must level the playing field for cleaner sources of energy (e.g., by correcting the price of traditional generation sources to account for harmful GHG emissions).¹²

24. Furthermore, the potential for using PHEVs as an energy storage resource could yield significant value for the grid and for consumers. To our knowledge, the potential for New York State to take advantage of this resource has not yet been rigorously evaluated. The Plan could undertake or call for such a study to ensure that the full range of potential benefits are understood and captured.

25. The automotive industry and the general public are increasingly preparing for the electrification of our automobile infrastructure, further underscoring the need to rigorously study and harness the potential grid benefits and reductions in the State's environmental impact. Experts predict that by 2016, consumers will have 159 electric or hybrid vehicle models to choose from,¹³ which could amount to 5% or more of all auto sales in the United States.¹⁴ By 2050, as much as 80% of all auto sales will be PHEVs.¹⁵ New York State must have adequate infrastructure in place to support this ever increasing customer base for electric and hybrid vehicles, which requires thoughtful consideration of such things as destination charging stations and upgrades to the electric grid. A build out of necessary infrastructure to support electric and hybrid vehicles also provides the opportunity to help integrate renewable energies, thus allowing

¹² *Id.*

¹³ Candace Lombardi, *Study: Electric Cars, Hybrids Too Expensive for Most* (Apr. 27, 2011), available at http://news.cnet.com/8301-11128_3-20057942-54.html.

¹⁴ See <http://green.autoblog.com/2010/09/20/auto-industry-analysts-predicts-well-have-more-than-100-hybrids-a/>.

¹⁵ Environmental Assessment of Plug-In Hybrid Electric Vehicles. Publication no. 1015325. Electric Power Research Institute (EPRI), Natural Resources Defense Council (NRDC), 2007. Web. 18 June 2010.

New York State to fuel clean vehicles with clean energy. Finally, as more and more infrastructure is put into place, New York State must ensure that consumers are properly educated as to the placement of alternative fueling stations and the benefits of electric vehicle technology to maximize the potential environmental benefits associated with electric and hybrid vehicles.

D. Robust Interaction and Partnerships

26. We also urge the Board to use this Plan to identify local-government policies, goals and plans that will contribute to the State's 80% by 2050 goal and provide them with regulatory and financial support. The opportunities for partnership and collaboration are large. The final section of the Draft Scope discussing Local, Regional and Federal Action and Collaboration, recognizes that local, regional, federal policies can have an impact on the State's efforts to achieve its own policy goals. But the reverse— i.e., the positive or negative impact of State policies on the ability for local, regional and federal governments to accomplish their energy goals – does not appear to be addressed as strongly.

27. Moreover, due to the extremely local nature of environmental, public health, and environmental justice impacts, and the unique competence of local entities to assess and analyze those impacts – as demonstrated most vividly by the New York City Community Air Survey – we encourage the State to recognize local government entities' efforts to lead the way in recognizing and addressing those impacts, and to take those efforts into consideration in developing State energy policy.

28. For example, in New York City, the combustion of dirty heating oil – numbers 6 and 4 – has far-reaching, adverse environmental and public health consequences that touch millions of New Yorkers, with disproportionate impacts hitting some of the most vulnerable

neighborhoods. The City’s data show that this misguided deployment of energy resources kills hundreds of New Yorkers *every year*. The solution requires availability of cleaner grades of heating oil – a solution that the New York State legislature helped provide by enacting a law (S. 1145-A/A. 8642) to cut the sulfur content of number 2 heating oil¹⁶– and expanded availability of natural gas, a solution that requires PSC-supported investment in infrastructure and (as discussed above) strong state laws that prevent the well-documented detrimental impacts of poorly regulated natural gas extraction. Collaboration among stakeholders at all levels is essential to achieving solutions that work.

E. Barriers to a More Sustainable Future

29. As a final point, we recommend that the list of policy levers to be assessed under the “Renewable Resources” heading (including “regulatory coordination, market incentives, policy mechanisms, cost recovery methods, and research and development”) should be incorporated more broadly in the final Scope. These policy tools are equally relevant in the other areas, such as energy efficiency, grid modernization generally, and demand response. Indeed, these and other policy tools should be seen broadly as, among other things, a set of ways to address market failures that lead our entire society to use more energy than, over a sufficiently long horizon, we can actually afford.

III. Conclusion

29. The Statute has given this Board an enormous opportunity to set the stage for New York to make great strides toward achieving ambitious environmental and public health goals, while improving the reliability and affordability of energy resources available to New

¹⁶ See LEGISLATIVE REPORT FROM THE NYS ASSEMBLY COMMITTEE ON ENVIRONMENTAL CONSERVATION, Summer 2010, *available at* <http://assembly.state.ny.us/comm/EnCon/20100730/>.

Yorkers. The challenges are enormous – but so are the opportunities. We look forward to continuing to support this vital effort to plan for New York’s energy future.

Respectfully Submitted,

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