

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 15-E-0302 — In the Matter of the Implementation of a Large-Scale
Renewable Program and a Clean Energy Standard

**COMMENTS OF THE ALLIANCE FOR CLEAN ENERGY NEW YORK,
AMERICAN WIND ENERGY ASSOCIATION, ADVANCED ENERGY
ECONOMY INSTITUTE, NORTHEAST CLEAN ENERGY COUNCIL,
and DISTRIBUTED WIND ENERGY ASSOCIATION**

April 22, 2016

I. Introduction and Executive Summary

The Alliance for Clean Energy New York, American Wind Energy Association, Advanced Energy Economy Institute, Northeast Clean Energy Council, and Distributed Wind Energy Association (“Renewable Energy Industry”) respectfully submit the following comments in response to the *Order Expanding Scope of Proceeding and Seeking Comments* issued January 21, 2016, in the above-referenced proceeding.¹

The Alliance for Clean Energy New York (ACE NY) is a nonprofit membership organization whose mission is to promote clean energy, energy efficiency, a healthy environment and a strong economy for New York State. This diverse coalition includes private renewable energy and energy efficiency companies, environmental and economic development organizations, academic institutions, and consultants to the energy sector. The clean energy technologies

¹ These comments represent the view of signatory organizations (ACE NY, AWEA, AEEI, NECEC, and DWEA) and not necessarily the view of all member companies.

represented by ACE NY members include land-based wind, rooftop and utility-scale solar, offshore wind, hydropower, biomass, biogas, fuel cells, energy efficiency, and distributed wind.

The American Wind Energy Association (AWEA) is the national trade association for the U.S. wind industry – the country’s fastest growing energy industry. With thousands of wind industry members and wind policy advocates, AWEA promotes wind energy as a clean source of electricity for American consumers. As the premier organization representing the interests of America’s wind energy industry, AWEA counts more than 800 organizations in its membership program. Its members are wind power project developers and parts manufacturers; utilities; and researchers – organizations at the forefront of the wind energy industry.

The mission of Advanced Energy Economy Institute (AEEI), the charitable and educational organization affiliated with Advanced Energy Economy (AEE), is to raise awareness of the public benefits and opportunities of advanced energy. AEE is a national business association representing leaders in the advanced energy industry. AEE supports a broad portfolio of technologies, products and services that enhances U.S. competitiveness and economic growth through an efficient, high-performing energy system that is clean, secure, and affordable.

The Northeast Clean Energy Council (NECEC) is a regional nonprofit organization representing clean energy companies and entrepreneurs throughout New England and the Northeast. Its mission is to accelerate the region’s clean energy economy to global leadership by building an active community of stakeholders and a world-class cluster of clean energy companies.

The Distributed Wind Energy Association (DWEA) is a collaborative group comprised of manufacturers, distributors, project developers, dealers, installers, and advocates, whose primary mission is to promote and foster all aspects of the distributed wind energy industry. Distributed wind, commonly referred to as small and community wind, is the use of typically smaller wind turbines at homes, farms, businesses, and public facilities to off-set all or a portion of on-site energy consumption.

The Renewable Energy Industry strongly and enthusiastically supports New York State’s pursuit of a new Clean Energy Standard (CES) to achieve 50% renewable energy by 2030, and to replace the now expired Renewable Portfolio Standard (RPS), and we are pleased to offer the following detailed comments on the *Staff White Paper on Clean Energy Standard* (“White Paper”), issued on January 25, 2016, in Case 15-E-0302.

Our support for the CES is founded on the well-known benefits of renewable energy development, including reducing the carbon emissions that cause global climate change; promoting local economic development; diversifying New York’s electricity supply in a market increasingly dominated by natural gas; providing long-term price stability in electricity supply; providing customers the opportunity to generate electricity on-site; avoiding the air pollution that contributes to smog and acid rain; and keeping energy dollars in-state. We support Governor Andrew Cuomo staking out a leadership position for New York State in addressing the critical issue of global climate change and building the clean energy industry. His directive to the Public Service Commission (“Commission”) to establish a Clean Energy Standard (CES) that will translate a 50% renewable energy goal into a mandate is supported by section 6-104(5)b of the Energy Law, given the inclusion of the 50% goal in the 2015 State Energy Plan. Further, while the Renewable Energy Industry wholeheartedly supports the 50% mandate, we highlight in these Comments the critical importance of specific design elements to create a program that will get clean energy projects proposed, sited, permitted, financed, and constructed in New York State, as this is the only pathway to successful achievement of our State’s 50% renewable energy mandate.

Our support of the 50% mandate is further bolstered by the findings of the *Clean Energy Standard White Paper – Cost Study* (“Cost Study”) released by the Department of Public Service on April 8, 2016. Taken in total, this Study projected modest bill impacts and significant net benefits from the CES program outlined by the White Paper. The Cost Study reviewed numerous scenarios, including differing procurement methods, interest rates, technology costs, electricity loads, and federal tax policy frameworks. Without providing detailed comments on the Cost Study at this time, we note that the 2023 base case scenario presented had electric bill impacts of less than 1% (Cost Study, page 96). All scenarios had positive net benefits and

several had positive gross benefits (negative costs). The positive net benefits accounted for avoided carbon emissions, and did not include other significant direct economic benefits described in other studies (i.e. NY's RPS assessments) such as tax revenue, jobs, and payments to suppliers. Overall, the findings of this Cost Study clearly support the premise that New York can achieve this ambitious program with modest or no impact on electric bills and net benefits for New Yorkers.

We note that the White Paper leaves several critical policy design questions undecided. We support, for example, the establishment of annual procurement obligations in megawatt-hours (MWh), but the White Paper only establishes these until 2020, which is not long enough to stimulate a strong pipeline of projects. We support a CES program that places an enforceable obligation on load serving entities ("LSEs") and uses an alternative compliance payment mechanism ("ACM" or "ACP") to ensure compliance. This type of approach is competitive and market-driven, and stimulates private-sector investment to achieve a clean energy future, all characteristics reflected in the principles of New York's State Energy Plan.² But the White Paper does not establish the level of the ACP nor the specific methodology for setting the ACP, so its efficacy in achieving the 50% goal cannot yet be assessed. We support the obligation for electric distribution companies (EDCs) to enter into 20-year power purchase agreements (PPAs), as well as the ability of the EDCs to recover the costs of the PPAs from ratepayers and resell renewable energy credits to LSEs, but the White Paper does not articulate what portion of the overall obligation would be procured via these EDC-backed PPAs.

This is perhaps the central question posed by the White Paper in terms of CES program design: what portion of the total CES obligation should be covered by utility-backed PPAs? It is a key decision that affects subsequent design decisions. The White Paper (at page 39-40) posits that the correct allocation to utility-backed PPAs should be the level that reconciles the objectives of renewable energy development and cost minimization (both of which compel long-term PPAs) with the objective of development of the self-initiated voluntary market. While the Renewable Energy Industry is supportive of innovative approaches to stimulating the self-initiated market

² New York State Energy Planning Board, *The Energy to Lead: 2015 New York State Energy Plan*. Available at www.energyplan.ny.gov.

in New York State, we also recognize that it is currently small and finite in New York, and inadequate at this time to meet the revenue requirements necessary to attract merchant projects or get new projects built. Further, as articulated in the Renewable Energy Industry’s earlier Initial Comments and Reply Comments in this same LSR proceeding, and shown in the analysis in the *Large-Scale Renewable Energy Development in New York: Options and Assessment, Final Report* (“LSR Options Paper”) issued in this case, a utility obligation to utilize long-term, bundled power purchase agreements offers the most chance for success in attracting investment and construction in New York, and can advance renewable energy goals at least cost and risk to New York ratepayers. It is the only approach that brings the price stability benefit of renewable energy to ratepayers. The utility-backed PPAs would be competitively procured, with independent power producers offering competitive bids. Bids could be evaluated using the “implied REC”³ approach, which would maintain the market signals created by the NYISO energy and capacity markets to target development to desired locations or to incent projects that have peak co-incident generation.

The Renewable Energy Industry proposes that the EDC-backed PPA portion of the total CES Tier 1 obligation should be 85%. The remaining portion of the obligation should be achieved via NYSERDA long-term REC contracts, distributed generation supported by co-incentives, and the short-term REC market. In selecting the 85% level, we recognize that long-term contracts – either utility-backed PPAs or NYSERDA contracts – will need to cover roughly 100% of the LSR portion of Tier 1, because without a long-term contract vehicle, we do not believe that new LSR will get built in New York. Any demand in the short-term REC-only market will most likely be exclusively met by behind-the-meter generation or imported renewable generation. Yet the Tier 1 obligation will rightly be met by a combination of LSR and behind-the-meter renewable generation. Based on the years of experience with the RPS in New York, roughly 86% of the incremental renewable energy was provided by LSR (via the Main Tier) versus behind-the-meter generation (via the Customer Sited Tier).⁴ This balance could very well shift

³ The term “implied REC” refers to the difference between a long-term PPA bundled bid price and the projected wholesale market price available to a project for energy and capacity. We advocate that the implied REC be the primary criteria for PPA bid selection. This is described in more detail in our Full Comments, below.

⁴ *New York State Renewable Portfolio Standard Annual Performance Report Through December 31, 2014*, March 2015. Table 1 (Page 7) reports that 9,519,765 MWh of Main Tier resources were procured, and 878,089 MWh of

as distributed generation proliferates under various REV policies, as well as NY-Sun. The Draft Supplemental Environmental Impact Statement for the CES⁵ suggests in Exhibit 4-1 that in a modeled base-case scenario, in-state LSR generation will be 29,054 GWh, which is roughly 86% of the 33,700 GWh of Tier 1 CES need.⁶ Finally, we note that some aggregated behind-the-meter generation could also be procured via EDC-backed PPAs. Taking each of these factors into account, and in order to ensure that adequate LSR projects are financed and constructed in the early years of the program, our proposal is that an amount equal to 85% of the total Tier 1 obligation be procured via EDC-backed PPAs. This 85% would be allocated to the EDCs as well as NYPA and LIPA, based on the load served.

The 50% renewable energy mandate demands a Clean Energy Standard that is designed to be long-term and enforceable, and includes the full range of renewable energy technologies, including solar, wind, offshore wind, hydro, fuel cells, biogas, and biomass. To reach 50%, we will need deployment of *all* of these technologies. Accordingly, we support the broad definition of renewables as described in Appendix C of the White Paper, with the exception of hydropower greater than 50 MW and/or involving new impoundments. For a variety of equity and environmental reasons, we support a 50 MW size limitation on new (post-2015) hydropower as well as continued use of the “no new impoundments” criteria. There also needs to be complementary policy support for aggressive energy efficiency deployment, to put the 50% target within easier reach.

Also in pursuit of all technologies, we support the use of an Offshore Wind Tier in the CES, as this is the only eligible technology with well-documented potential in New York that is widely deployed worldwide but not deployed in New York State. Similar to the RPS customer-sited tier 10 years ago, the offshore wind tier would be designed to jumpstart a promising but still emerging clean energy industry sector that is rapidly maturing in Europe but still emerging in

Customer Sited Tier resources were procured. Due to the inclusion of fuel cells, some amount of Main Tier resources are also customer-sited.

⁵ Draft Supplemental Environmental Impact Statement in CASE 15-E-0302, Proceeding on Motion of the Commission to Implement a Large Scale Renewable Program and a Clean Energy Standard, February 23, 2016.

Prepared for New York State Department of Public Service by Industrial Economics, Inc. and Optimal Energy, Inc.

⁶ We acknowledge that the Draft Supplemental Environmental Impact Statement states on page ES-3, “The specific mix of LSR and behind the meter sources that is ultimately installed may be different from what is assumed in the model.”

the US. In the same vein, the CES could also be able to support other emerging technologies when significant economic potential has been identified, but that have not been able to achieve meaningful levels of market scale.

The CES construct, as described in the White Paper, highlights the need for a binding energy efficiency target in New York. The proposed CES target for new renewables is 33,700 GWh, based in large part on the assumption that New York will achieve 35,627 GWh of new energy efficiency between now and 2030. This assumption should rightly be supported by new policies that ensure at least this level of energy efficiency will indeed be achieved, while a higher level is likely needed to ensure New York meets all of its State Energy Plan and climate goals cost-effectively.

We continue to oppose unrestricted utility-owned generation (UOG) of large-scale renewables⁷ which was also articulated in our LSR Initial Comments. We support the restrictions on UOG as articulated in the White Paper.

In addition to the issues summarized in this Introduction, **Part II** of our comments highlights a short list of priority program design issues; **Part III** includes our full comments organized by the headings of the White Paper, as requested in the *Notice*; and **Part IV** briefly answers some specific questions posed in the White Paper. **Part V** discusses some complementary programs made imperative by the 50% mandate; and **Part VI** provides concluding comments. **Appendix A** provides additional details on the limitations of reliance on a REC short-term or spot market without a significant long-term contracting program component.

The Renewable Energy Industry appreciates the opportunity to submit these comments and looks forward to a productive dialogue among stakeholders and the Commission regarding this critical program.

II. Priority Program Design Issues

This section highlights seven priority design issues, labeled A-G. These topics are also covered in Part III, our Full Comments, organized in the headings of the White Paper, as requested in the *Notice*.

A. ESTABLISH TARGETS & TIMELINES TO DRIVE RENEWABLES DEVELOPMENT IN NY

- **The CES needs annual, increasing REC obligations for 2017 – 2030.**
- **The final 2030 CES target needs to continue into the future.**
- **The CES needs annual procurement targets for long-term contracts for 2017 – 2022.**
- **Procurement should be timed to maximize federal tax benefits.**

The targets and timelines in the CES are an important design element in creating program certainty and transparency. A strong and sustainable CES will include firm annual REC targets for all LSEs, as well as PPA procurement targets for EDCs, LIPA, and NYPA. The EDC obligation to procure via PPAs should be frontloaded to maximize federal tax benefits, as should a schedule of NYSERDA solicitations for long-term contracts.

In our LSR Initial Comments, the Renewable Energy Industry recommended that the new LSR program be based on a percentage target rather than on a budget. For renewable energy developers, this offers more certainty of demand, which is important in ensuring adequate supplies of clean energy at the lowest prices. It also incorporates more accountability into the CES and increases the likelihood that New York will achieve its clean energy goals. Accordingly, we appreciate that the White Paper puts forward a target-based approach.

Nevertheless, a primary concern with the targets and timelines as outlined in the White Paper is the lack of targets after 2020, and the apparent back-loading of targets relative to a smooth pathway to 50% by 2030. Further, we seek clarity on how compliance with these annual MWh

targets will interact with the requirement for EDC-backed PPAs. Specifically, there should be separate procurement target for the portion of the total Tier 1 need that will be procured via EDC-backed PPAs. This would be a procurement obligation that is different from the LSE's REC obligation, in recognition that the generation procured via PPAs will not be realized as RECs until a later time, due to the lag between signing a PPA and construction completion. We strongly agree with the White Paper when it states (at page 43) that, "Successful markets for renewable development will require clarity and predictability in the schedule of annual targets."

The Renewable Energy Industry's position is that 85% of the Tier 1 need should be procured via EDC-backed PPAs. Long-term, increasing targets become even more important if the CES is not predominated by long-term PPAs, as a potentially volatile REC market can be further undermined by uncertainty in out-year targets. Accordingly, the annual REC targets through 2030, with annual PPA targets, would be ideally included in the June Order and not in a later Commission decision.

Another critical issue related to timelines is the need for New York to structure its CES to maximize the benefits to New York from the federal tax credits, which are set to decrease over time. Procurement to meet the CES should be timed in order to maximize potential PTC and ITC benefits for New York, by front-loading procurement in the years 2016 – 2019.

Table 1:
Illustrative Tier 1 Obligation, w/ Annual REC targets and 85% PPA Requirement

YEAR	Total Tier 1 Obligation (GWh) for LSEs	Total Tier 1 Obligation for LSEs (% of total load)	Tier 1 PPA obligation (if 85% of Tier 1) (GWh)	Proposed Minimum PPA solicitation (GWh)
2015	-	0	0	-
2016	-	0	0	-
2017	1,536	1.0%	0	2,000
2018	2,446	1.5%	0	6,367
2019	3,465	2.2%	0	2,338
2020	6,214	3.9%	749	2,338
2021	8,962	5.7%	7,618	2,338
2022	11,711	7.5%	9,954	2,338
2023	14,460	9.3%	12,291	2,338
2024	17,208	11.1%	14,627	2,338
2025	19,957	13.0%	16,963	2,338
2026	22,705	14.9%	19,300	2,338
2027	25,454	16.8%	21,636	2,338
2028	28,203	18.7%	23,972	-
2029	30,951	20.6%	26,309	-
2030	33,700	22.5%	28,645	-

Table 1 Notes: Tier 1 obligations for LSEs for 2017–2019 (column 2) were taken from the White Paper, while Tier 1 LSE obligations for 2020–2030 are based on equal annual increments necessary to reach 33,700 GWh by 2030. The Tier 1 PPA obligation (column 4) would be an EDC obligation to solicit PPAs with new renewables. The PPA obligation for 2020 (749 GWh) represents the difference between the 2020 obligation in the White Paper (5,465 GWh) and the 2020 obligation in column 2 (6,215 GWh), so it is less than 85% for that year. In subsequent years (2021–2030) the PPA obligation shown is simply 85% of the total Tier 1 obligation.

B. ESTABLISH UTILITY-BACKED PPAs AS THE CORE OF THE CES PROGRAM

- **Extensive use of long-term contracts will be necessary to reach 50% renewables.**
- **Power purchase agreements (PPAs) maximize ratepayer benefit.**
- **Long-term contracts are necessary in the near term to procure LSR portion.**
- **85% of the Tier 1 obligation should be procured via EDC-backed bundled PPAs.**

- **Short-term REC market cannot be relied on as the core of the CES program in the near term.**
- **There should be an opportunity for long-term contracts in Tier 2 as well.**

Our comments in the LSR proceeding, and the LSR Options Paper itself, highlighted that bundled PPAs will attract the most investment and construction in New York, and strike the right balance in terms of risk allocation between ratepayers, utilities, and renewable energy developers. As stated in the CES White Paper, the Options Paper recommended “bundled PPAs that include both RECs and energy (and perhaps capacity), to reduce costs and electricity price volatility.”⁸ EDC-backed PPAs are the model that best brings the price stability benefit of renewable energy to ratepayers. The EDC-backed PPAs would be competitively procured, with independent power producers offering competitive bids.

We appreciate that the CES White Paper included EDC-backed PPAs as a component of the program, stating, “Staff supports a requirement on EDCs to procure an appropriate percentage of the REC target through long-term contracts with renewable generators,” (page 36). As stated in the White Paper, developers face “multiple risks in a competitive market,” and we firmly believe that EDC-backed PPAs need to be the core of the CES program, in order to ensure an adequate in-state project development pipeline. We do not believe that merchant projects will be developed in New York State in the near term. For these reasons, the Renewable Energy Industry believes that at least 85% of the total Tier 1 obligation should be procured via EDC-backed bundled PPAs.

As discussed in the Introduction, the White Paper is silent on what portion of the obligation (Tier 1 or Tier 2) should be procured via EDC-backed bundled PPAs, and what portion should be procured via NYSEERDA contracts for RECs. It does state, “Staff proposes that NYSEERDA should continue to issue solicitations for contracts to purchase RECs during the initial years of the CES,” (page 41), but again, does not state what portion of the overall obligation these NYSEERDA contracts might cover. This silence *could* imply that some meaningful portion of CES compliance will or should be met through short-term or spot market REC purchases. To

⁸ Staff White Paper on Clean Energy Standard, Case 15-E-0302, January 25, 2016, page 35.

the extent that inference is correct, we strongly caution against reliance on a short-term and spot REC market, as it is highly unlikely to result in new in-state renewables, certainly in the near-term, and to reiterate that long-term contracts will be essential to achieve CES goals. Further discussion on the limitations of the short-term REC market is included in Part III of these Comments.

The Renewable Energy Industry believes that *all* of the LSR portion of the Tier 1 CES obligation will require long-term contracts to get in-state projects constructed, at least in the early years until there are opportunities, (likely from imports because merchant plants are unlikely to get built in New York), for eligible Tier I merchant supply to contribute RECs and for price formation for short-term and spot RECs to occur. As such, we recommend that at least 85% of Tier 1 RECs should be ‘covered’ by utility-backed PPAs via a published procurement schedule. There also should be the opportunity for Tier 2 resources to enter into long-term contracts, as this financial hedge can protect ratepayers from price shocks as the value of clean energy continues to rise across the country. Long-term contracts could occur, for example, under the same structure as Tier 1 (i.e. EDC-backed PPAs), although operating projects may not need the same 20-year contract timeframe as those projects from Tier 1, but for financing purposes there should be opportunities for 5, 10 and 20 year contracts for revenue certainty when the operators are making decisions for repairs and environmental mitigation.

The *Clean Energy Standard White Paper - Cost Study* supports our position in favor of EDC-backed PPAs, and includes the observation, “Consistent with the analysis presented in the 2015 LSR Options Paper, the greater revenue certainty of PPAs (resulting in reduced investor exposure to commodity market price risk), allows projects to come forward at a lower expected gross program cost than a fixed-price REC approach,” (Cost Study, Page 40). In the three Tier 1 scenarios related to procurement structure examined in the Cost Study, (i.e. a base case of 50% PPA and 50% REC contracts, a 100% bundled PPA case, and a 100% REC contract case), the 100% PPA case had the highest estimated program benefits for 2023, at \$1.5 billion, and the lowest bill impact, at .28%, although all three cases had positive net program benefits. Further, the 100% PPA case had an estimated gross program value of \$269 million in 2023 (that is, the value before consideration of avoided carbon emissions), while the other two scenarios had

negative values (costs) in 2023, and more significant bill impacts (e.g. .45% for the base case.) In sum, while all three scenarios had net positive benefits and modest bill impacts, the 100% PPA scenario was the most cost-effective and delivered the most benefits to ratepayers.

C. ESTABLISH AN EFFECTIVE ACP LEVEL

- **The ACP should be at a level to encourage LSEs to contract for renewables.**
- **The ACP should not be viewed as an equally acceptable compliance route; extensive use of the ACP is a program failure.**
- **An evaluation of the ACP every three-five years is reasonable.**

The Renewable Energy Industry supports the inclusion of an alternative compliance mechanism, or payment, within a well-functioning Clean Energy Standard program. While LSEs can meet their compliance obligations via an ACP, significant use of this mechanism will erode progress towards the 50% mandate, and should be viewed as a program failure.

The ACP should be set at a level high enough to stimulate REC procurement in Tiers 1 and 2. This could be achieved, for example, at a level at least twice the projected REC price, as outlined in Appendix D of the White Paper.

States with RPS policies that incorporate an ACP have typically been able to achieve their RPS targets with credits from renewable energy generation.⁹ Many of these programs also have force majeure provisions or a cost cap. Further, it should be noted that while an enforcement component is necessary to send a strong market signal to renewable energy investors, in practice, states with cost caps seldom have to employ their enforcement mechanisms because these caps are rarely hit, while deployment goals are generally achieved.¹⁰

The Renewable Energy Industry supports review of the ACP level every three to five years. If changes to an ACP are made in response to this review, they should be moderate and gradual.

⁹ Lawrence Berkeley National Laboratory, *Renewables Portfolio Standards in the United States: A Status Update* (2014): 10. <http://emp.lbl.gov/sites/all/files/2014%20REM.pdf>.

¹⁰ National Renewable Energy Laboratory and Lawrence Berkeley National Laboratory, *A Survey of State-Level Cost and Benefit Estimates of Renewable Portfolio Standards* (2014): 45-50. <http://www.nrel.gov/docs/fy14osti/61042.pdf>.

ACP revenues should be directed to NYSERDA for the procurement of RECs via long-term contracts. While the ACP is a fundamentally important price signal driving the market-based development of renewable resources, the “recycling” of collected ACP funds for procurement activity allows the State to amplify the ultimate purpose of supporting in-state renewable energy development.

D. ENSURE DIVERSITY AND INTEGRATE PROCUREMENT WITH WHOLESALE MARKETS

- **Use the “implied REC” approach to evaluate project bids.**

Resource diversity within New York’s renewable energy sector is key to creating a more stable portfolio by balancing out the benefits and attributes of one technology with different benefits and attributes from another. In the new CES program, these diversity values could be captured by basing bid selection on the required premium within the bundled offer price, also referred to as the “implied REC.” The implied REC is simply the bundled offer price less the expected market-based revenues the project might otherwise realize for energy, capacity and ancillary services. Because projects that are more advantageously located within constrained areas would otherwise receive higher energy prices than those in zones without the need for additional capacity, and those that are more peak-oriented will fetch higher total revenues still, all else equal, these projects’ bids will reflect a lesser premium, and projects can then be selected based on the value of this premium, the implied REC.

Past experience and a review of the different attributes of various renewable energy technologies demonstrates the importance of diversity in a renewable energy portfolio, particularly for a state with ambitious renewable penetration goals such as New York. For example, land-based wind and solar, two resources which have become increasingly competitive, generally have complementary electric generation profiles. This relationship aligns well with daily load patterns. Other qualifying Tier 1 resources such as offshore wind, biogas, hydropower, or fuels cells can help further align generation with utility load profiles, reducing the need for support from traditional generation.

Locational diversity is also important to NY's CES portfolio, both within a single resource type and among different resources, dramatically smoothing the variability of renewable generation. For example, one study from the Lawrence Berkeley National Laboratory found that geographic diversity over 23 solar power systems reduced the amount and magnitude of variability by 84% over 1 minute and 69% over 1 hour.¹¹ Geographic diversity in wind generation has an even stronger effect, with the interconnection of 20 wind plants reducing hourly variability by 95%.¹² By creating a CES program that emphasizes locational value and resource diversity, New York can assure a more predictable level of renewable energy output while optimizing use of the State's existing transmission and distribution infrastructure.

In recent years, New York has focused on developing markets for residential and commercial solar projects, working to bring those segments to scale and reduce soft costs. Meanwhile, large-scale solar has seen dramatic cost declines across the United States, and this market segment can provide many benefits that are complementary to other renewable resources. A CES program that acknowledges the benefits of diverse renewable energy resources will send signals to the large-scale solar development community to invest in New York, enabling the State to take advantage of the dramatic cost declines and ramp up its solar deployment. The same can be said for other technologies, such as fuel cells and biogas.

In the new CES program, these diversity values should be captured through a market-based and objective means. The implied REC approach to bid selection is one possible tool to capture these diversity values and maintain the signals of the wholesale market within a system procuring through long-term PPAs

E. ESTABLISH TIERS FOR OFFSHORE WIND AND EXISTING RENEWABLES

- **CES should include an offshore wind tier.**
- **Maintaining existing renewables in New York is critical to meeting policy goals.**
- **Tier 2 is necessary, and can be used to develop a REC market**

¹¹ Andrew Mills and Ryan Wiser, "Implications of Wide-Area Geographic Diversity for Short-Term Variability of Solar Power (LBNL-3884E)" (Lawrence Berkeley National Laboratory, Environmental Energy Technologies Division: 2010). <http://emp.lbl.gov/sites/all/files/REPORT%20lbl-3884e.pdf>.

¹² Warren Katzenstein, Emily Fertig and Jay Apt, "The variability of interconnected wind plants," *Energy Policy* Volume 38, Issue 8 (2010): 4400-4410.

Offshore Wind Tier: Offshore wind represents a renewable technology with huge potential in New York for a number of reasons. Firstly, it is highly scalable and reliable, and can thus supply significant amounts of renewable energy to the state and be a vital part of meeting the 50% goal. Secondly, offshore wind is the only large scale technology that can be deployed very close to the load centers of New York City and Long Island and deployment will therefore help these high demand zones overcome future challenges of capacity and transmission shortages. Thirdly, over time, offshore wind will be a cost efficient part of a diversified energy mix where resources can complement each other to provide a highly reliable, highly renewable, and highly cost efficient energy system.

In order to bring these benefits to the state, the CES Program should be designed to specifically foster offshore wind development. While large scale offshore wind has become a mature technology in Europe, where over 3,000 offshore turbines have been installed and offshore wind is producing the equivalent to more than 20 million European consumers annually, not including an offshore wind specific tier to kick-start the industry in New York State is likely to undermine the possibilities to reap the technology's benefits to the state. The *New York State Renewable Energy and Energy Efficiency Potential Study*, issued by NYSERDA in 2014, indicated a bounded technical potential for offshore wind of more than 6 GW of capacity or 25 GWh of yearly production in 2030.

The CES Program is the right policy mechanism to support offshore wind. Offshore wind projects require bundled PPAs just like other LSR technologies; because the new CES Program is ideally going to integrate NYPA and LIPA; and because integrating it in the CES rather than having a separate policy would not be administratively efficient. By including an offshore wind tier in the CES program, the State of New York can create the demand that will lead to a pipeline of projects, which can materially reduce the costs of offshore wind, as described in the *New York State Offshore Wind Cost Study*, issued by NYSERDA. This study found that through a combination of state policy interventions – most importantly, creating market visibility by committing to a pipeline of projects – the State could reduce the cost of offshore wind by 33%. After this study was published, market development in Europe, as well as the increasingly

positive outlook for offshore wind in the northeastern US states, have increased the potential for cost reductions even further. An offshore wind tier in the CES program is the clear opportunity to create that market visibility and commit to a pipeline of projects.

An offshore wind tier designed to support development in the Atlantic Ocean off New York could reduce or defer the need to build other forms of generation in zones J and K where capacity is needed.¹³ As discussed elsewhere, LIPA and NYPA should participate in joint EDC solicitations to procure renewables via long-term PPAs. As part of this approach, LIPA could procure offshore wind through a PPA for its customers, or NYPA could procure offshore wind through a bundled PPA and provide this power to its own customers, EDCs, or the voluntary market. Offshore wind is an opportunity that should be pursued to achieve 50% renewable energy for New York by 2030.

Existing Renewables Tier: The current wholesale electricity market conditions that are affecting the fleet of upstate nuclear facilities, as discussed on page 5 of the White Paper, are having similar negative impacts on other clean energy projects, such as biomass power projects or small hydro facilities. Some of those projects have become non-viable and have either terminated operations or are contemplating closure, as evidenced by the Maintenance Tier requests from existing renewable energy projects. As such, expedited implementation of a CES is necessary in order to allow the continued operation of not only the nuclear facilities but certain existing renewable energy facilities as well.

We applaud Staff for recognizing the importance of existing renewable projects and for proposing a Tier 2 category for those projects. If these existing resources have the capability to monetize their renewable attributes at a sufficient price within New York, the State will be able to maintain the substantial environmental benefits, economic benefits, and fuel diversity benefits while avoiding premature retirements and/or exports of renewable energy to other markets.

¹³ The NYISO's 2014 Reliability Needs Assessment identifies the need for 1,200 MW of new firm capacity in zones J and K by 2024. New York Independent System Operator, *2014 Reliability Needs Assessment: Final Report* (2014): 61.
http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Planning_Studies/Reliability_Planning_Studies/Reliability_Assessment_Documents/2014%20RNA_final_09162014.pdf.

Many of the projects currently participating in the RPS program as Main Tier and Maintenance Tier resources have substantial remaining operating life, and it would not be in the State's interest for the energy, RECs and capacity from some or all of these resources to leave the market or to terminate operations. If that were to occur, New York would lose the ability to claim that renewable energy supply toward its renewable energy goals, and the loss of those resources to premature retirements would lead to lost jobs and the loss of fuel diversity benefits. This will make achieving the 50% harder and likely more expensive.

Lastly, long-term contracts should not be restricted to Tier 1 projects. Contracting opportunities should be available to Tier 2 projects, with contracts potentially varying from 5-20 years to provide valuable hedging opportunities for the state. Long-term contracts are in the ratepayer interest, and both generators and consumers are likely to see value in long-term contracting as a mechanism to mitigate price volatility. The *Clean Energy Standard White Paper – Cost Study* supports this position; in Section 8 a sensitivity analysis is performed for varying procurement structures, using three scenarios (100% PPA, 100% REC spot market, and a 50/50 mix). Tier 2A had gross program costs that was lower for the 100% PPA case than for either of the other two cases, as well as a lower bill impact (.3%), (Cost Study, Page 87).

F. INCLUDE NEW DISTRIBUTED RENEWABLES IN TIER 1; INTEGRATE CES WITH REV

- **Including distributed renewables in Tier 1 of the CES makes sense.**
- **When distributed renewables receive co-incentives, the RECs are customer-owned.**
- **Distributed renewables receiving co-incentives should be eligible for Tier 1.**

Tier 1 is proposed to include “no sub tiers or other limitations on facility size such that a wide range of system capacity and configurations are eligible to participate.” (White Paper, Page 21). The Renewable Energy Industry supports the inclusion of qualifying distributed energy resources (DER) in Tier 1, as proposed by Staff (White Paper, Page 21). This includes all the technologies and resources included in Appendix C of the CES White Paper. Diverse technologies and resources will be needed to meet the CES, and DER has an important role to

play. Moreover, inclusion of DER in the CES will further numerous other state policy objectives, such as resource diversity, GHG reductions, and development of a more liquid REC market.

We further support the assertion of Staff in the CES White Paper that this eligibility should not be affected by other ongoing proceedings related to DER (e.g., REV or DER compensation via LMP+D) or existing policies and programs that support DER (e.g., NY-Sun). Furthermore, because these programs and proceedings are designed to support deployment of DER, we agree with Staff that qualifying DER does not need a separate tier within the CES, as is the case in other jurisdictions, e.g., solar carve-outs with separate solar RECs (SRECs).

Although the White Paper leaves out many details of how DER will be counted or will participate in the CES, we believe that this will actually be relatively straightforward. Because the CES will adopt a REC-based compliance mechanism, DER owners will mint RECs just like with any other qualifying Tier 1 resource, and will then sell/market the RECs to obligated parties. As in other jurisdictions with REC-based RPS programs, we expect that intermediaries (REC aggregators, brokers, traders, marketers) will come into New York State to help DER owners track, manage and sell their RECs. Also, existing DER providers, such solar installers, already have significant experience with this aspect of DER, whether these projects are customer-owned or third-party owned. Most distributed generation systems today already have separate metering capabilities (often with automated communications/reporting) that can be used to track REC production without the need to install new utility metering and communications capabilities.

Importantly, for DER, which is presumably interconnected to the distribution system, we are of the position that the RECs initially belong to the DER project owner. The owner would either be the host customer or a third-party provider. The availability of net metering or an alternative DER compensation mechanism (i.e., LMP+D), or incentives from other state programs (e.g., NY-Sun) does not automatically confer REC ownership to the distribution utility, the LSE, or NYSERDA. The DER owners could, if they wanted, sell their RECs directly to their distribution utility or to their LSE (if a different entity). Alternatively (and more likely), the

DER owner would retain the services of another entity involved in the REC market, such as an aggregator/marketer, who would manage the sale of their RECs. In a well-functioning REC market, we would expect there to be multiple options for DER project owners to sell their RECs, by which we mean multiple companies and different types of products. It is possible that DER REC aggregators could even sell to LSEs via mid-term or long-term contracts, not just on annual basis.

We are sensitive to the potential interaction between the CES and the DER valuation mechanisms (LMP+D) being developed in another proceeding, due to the potential to double count the value of environmental attributes, once these attributes start to take on explicit values. Without specifying a particular mechanism at this time, we would simply suggest that the final LMP+D methodology be such that it avoids this potential for double counting by netting out the value received for the RECs in the LMP+D compensation formula. We believe this is consistent with the approach outlined in the Commission's *Order Establishing the Benefit-Cost Analysis* with respect to the cost of carbon, which stated that the actual value of the societal cost of carbon (SCC) that should be used in the benefit-cost analysis, " would be set at the difference between the EPA's SCC value and the RGGI price assumed in the CARIS LBMP model."¹⁴ This approach also avoids the need to try to differentiate and separate various externality values that are implicitly embedded in the REC (i.e., the REC is kept whole). If the REC value were to be greater than the total value of environmental attributes within the LMP+D framework, then these values would simply be set to zero. We recognize that this creates an added layer of complexity in developing the LMP+D framework, but it should be possible to use the REC tracking system to properly do the needed reconciliation.

The dynamic of DER inclusion in the CES is one of the important reasons why our recommendation for the portion of the CES obligation to be procured via utility-backed PPAs is 85% and not 100%; the other is the policy goal of developing the self-initiated market.

¹⁴ *Order Establishing the Benefit Cost Analysis Framework*, issued in CASE 14-M-0101, January 21, 2016, Page 18.

G. ESTABLISH ENERGY EFFICIENCY TARGET IN CES OR COMPLEMENTARY PROGRAM

- **New York needs a mandatory energy efficiency target for utilities, either as part of the CES or as a complementary policy.**

As discussed more in Part III (Full Comments), the fact that energy efficiency was factored into the 2030 load projections, and thus the 2030 renewable target, highlights the critical need for an energy efficiency binding target, either as a part of the CES (in addition to the 50% renewable energy target) or as a free-standing, complementary policy. The energy efficiency program should be a fully enforceable minimum threshold, and it should be set at an aggressive level. Our organizations¹⁵ have been advocating for an energy efficiency requirement for utilities -- as a basic service, equivalent to either all cost-effective efficiency investments or 2% of annual load – through the REV proceeding and the State Energy Plan development process. The CES proposal further highlights the imperative for this position. If the projected load reduction from energy efficiency is not realized, New York will not achieve the 50% mandate without a corresponding increase in MWh targets. Thus, the Commission should establish a mandated energy efficiency minimum threshold for all EDCs, with incentives for achievement of efficiency beyond this minimum level. Numerous studies confirm that energy efficiency is the least-cost resource option, and New York should aim for 2% annually or all cost-effective. Regardless of the projected amount, though, without a binding and enforceable mechanism, coupled with appropriate budgets to support achievement of the targets, there is no assurance that even the lower level of energy efficiency used to calculate the 2030 renewable energy need in the White Paper will be accomplished.

III. Full Comments

Below please find our full comments, organized in accordance with the sections and subsections of the White Paper, as requested.

¹⁵ DWEA and AWEA have not been filing in the REV proceeding and has not opined on energy efficiency policy, but the other signatory organizations (ACE NY, AEEI, NECEC) have.

A. White Paper Part I: INTRODUCTION, OBJECTIVES, AND SUMMARY OF PROPOSAL

The Renewable Energy Industry enthusiastically supports the 50% renewable energy mandate for New York State, and agrees that achieving this aggressive target will require, “concerted action across a range of issues.” (White Paper, Page 1). We are particularly supportive of the identified objectives B.1 (Increase renewable electricity supply to achieve the 50 by 30 goal) and B.2 (Support construction of new renewable generation in New York State). We also fully believe that the CES program can be designed to promote the progress of REV market objectives (objective B.4).

The Staff’s proposal is summarized in ten bullet points beginning on page 6, which we generally support, although noting that these ten recommendations leave several important design questions undecided. We do not agree, though, that it is adequate to only have a firm set of requirements for each tier through 2020, and maintain that the CES program needs to establish firm annual targets in GWh for each tier through 2030, in order to send a clear signal to investors and developers, and to establish a stable program. Recognizing that adjustments to these targets may prove necessary over time, we support the recommendation of a triennial review, but would also support some discussion regarding the criteria for adjusting the targets either upward or downward, so there would be additional transparency regarding the likelihood of change. In the interest of certainty and stability, these annual targets should be included in the Order establishing the CES.

B. White Paper PART II.A: RENEWABLE ENERGY PROPOSAL

i. Comments on White Paper PART II.A.1 “50 by 30 Goal, Obligation, and Compliance Mechanism Calculating the 50 by 30 Mandate”

The Renewable Energy Industry is supportive of the 2030 target of 33,700 GWh proposed in Part II.A.1 and the methodology described in Appendix B of the White Paper.

Section II.A.1 of the White Paper proposes triennial reviews regarding program targets so that “all market participants have certainty on program goal and target levels. This certainty will

help provide stability in market demand for project developers.” While the Renewable Energy Industry supports the proposal for triennial reviews, this will definitely *not* create certainty. We strongly feel that the CES program should have firm, annual targets established for each tier for the period 2017 – 2030 in the CES Order. As mentioned above, recognizing the potential need to adjust these targets, we support the triennial reviews but believe that the Commission should enumerate qualitative criteria in advance that would potentially cause the targets to need to be adjusted either upwards or downwards. This approach – annual targets accompanied by criteria to be considered prior to modifying them – would provide more certainty and stability. Given the significant lead time required to site, permit, interconnect, and construct projects in New York State, having targets only set for the period 2017 – 2020 is an inadequate market signal.

The White Paper does not provide any reasoning for either the lack of annual goals, or the lack of goals past 2020. The statement, “Staff recommends against establishing interim targets between 2020 and 2030 at this time” is not supported by any reasons. There should be annual goals for LSEs to meet, with some limited banking and borrowing provisions to smooth the compliance pathway between years. Further, the triennial renewable energy goals listed on Page 9 of the White Paper appear to be predicated on back-loading the procurement over time to reach the 50% mandate, requiring roughly a 1% (of total load) increment in 2017 and a 3% increment by 2020. In the absence of an explanation for these targets, we would support a less back-loaded (more evenly distributed) approach, both to smooth the compliance pathway to 50% and to maximize the benefit to New York of current federal tax credits that expire in the 2020 timeframe.

In any case, the CES program needs to have not only annual REC targets for LSEs, but also annual PPA targets for EDCs. Under this approach, EDCs would be required to solicit a specific amount of GWh in bundled power purchase agreements. In contrast to evenly-distributed REC targets, the PPA targets should be front-loaded, in order to capitalize on decreasing federal tax credits and in recognition that the renewable energy procured via a PPA would not be available for several years (due to permitting, financing, and construction process steps).

Table 1:

Illustrative Tier 1 Obligation, w/ Annual REC targets and 85% PPA Requirement

YEAR	Total Tier 1 Obligation (GWh) for LSEs	Total Tier 1 Obligation for LSEs (% of total load)	Tier 1 PPA obligation (if 85% of Tier 1) (GWh)	Proposed Minimum PPA solicitation (GWh)
2015	-	0	0	-
2016	-	0	0	-
2017	1,536	1.0%	0	2,000
2018	2,446	1.5%	0	6,367
2019	3,465	2.2%	0	2,338
2020	6,214	3.9%	749	2,338
2021	8,962	5.7%	7,618	2,338
2022	11,711	7.5%	9,954	2,338
2023	14,460	9.3%	12,291	2,338
2024	17,208	11.1%	14,627	2,338
2025	19,957	13.0%	16,963	2,338
2026	22,705	14.9%	19,300	2,338
2027	25,454	16.8%	21,636	2,338
2028	28,203	18.7%	23,972	-
2029	30,951	20.6%	26,309	-
2030	33,700	22.5%	28,645	-

Table 1 Notes: Total Tier 1 obligations for LSEs (column 2) for 2017 – 2019 were taken from the White Paper, while LSE obligations for 2020 – 2030 are based on equal annual increments necessary to reach 33,715 GWh by 2030. The Tier 1 PPA obligation (column 4) would be an EDC obligation to solicit PPA for any eligible renewables, LSR or DER, regardless of size. The PPA obligation for 2020 of 750 GWh is the difference between the 2020 obligation in the White Paper (5465 GWh) and the 2020 obligation in column 2 (6215 GWh), so it is less than 85% for that year. In subsequent years (2021-2030) the PPA obligation is simply 85% of the total Tier 1 obligation.

Tax Credit Issues: Federal tax incentives in the form of the Production Tax Credit (“PTC”) and the Investment Tax Credit (“ITC”) provide meaningful financial benefits to consumers. Procurement to meet the CES should be timed in order to maximize potential PTC and ITC benefits for New York ratepayers.

On December 17, 2015, President Obama signed into law an omnibus spending bill that included a long-term extension and phase-out of the PTC and ITC. This law provides certainty for renewable energy developers, but also encourages near-term investments in renewable

energy in order to maximize consumer benefits. For example, for wind energy, the law structures the PTC phase down as follows:

Table 2: Federal Wind Production Tax Credit Phase-out Schedule

Start of Construction Deadline 12/31	Wind Production Tax Credit Value: \$23/MWh
2016	100%
2017	80%
2018	60%
2019	40%
2020	0%

Wind energy has accounted for roughly 90% of RPS Main Tier capacity.¹⁶ While this may change over time, we would expect that its relative cost, and its ability to be a complementary land use in agricultural areas, make it likely to be a predominant CES resource. Solar, also expected to be a significant resource, is also subject to federal tax credits structured to decrease over time. Therefore, the CES program should be structured to maximize the benefits of both the wind PTC and the ITC, by (1) maximizing the size of the last 2016 Main Tier solicitation, (2) maximizing the size of a 2018 and 2019 solicitation if one occurs, and (3) requiring EDCs to procure a significant level of new renewable capacity via PPAs in 2017, as well as 2018, 2019, and thereafter. In short, the annual targets for EDC-backed PPAs should be front-loaded.

Early procurement will provide significant CES savings. The following table demonstrates the financial implications of a one-year delay in CES procurement assuming that wind energy is used at the same rate for compliance in the future as it has been in the past.

¹⁶ NYS Renewable Portfolio Standard: Annual Performance Report through December 31, 2014. NYSERDA. P. 9 reports on project development status, with 1,672.9 MW of wind of a total of 1,853.9 MW of Main Tier projects.

Table 3: Illustration of Potential Lost PTC Savings

Year	Incremental Tier I Goal (MWh) ¹⁷	Tier I Goal met by Wind (MWh) ¹⁸	PTC Value Reduction ¹⁹	Lost Savings ²⁰
2017	1,536,000	1,382,400	\$4.60	\$63,590,400
2018	910,000	819,000	\$4.60	\$37,674,000
2019	1,019,000	917,100	\$4.60	\$42,186,600
2020	2,000,000	1,800,000	\$9.20	\$165,000,000

Note: This table, in contrast to Table 1, uses the 2020 Tier 1 target from the White Paper.

The Renewable Energy Industry strongly recommends that as much Tier I renewable energy be procured as early as possible to fully maximize PTC and ITC value.

Annual Increasing Targets Necessary: Again, without annual increasing targets over the long-term, there is not an adequate market signal, particularly if the program is designed with a portion to be achieved solely by the short-term REC market. A long-term, continually increasing CES goal is the best dynamic to prevent REC supply from going long and driving prices below the revenue levels required to get new projects financed and built. Even though New York’s stated goal is to continue an RPS ramp-up from 2020 through 2030, the lack of clearly defined targets for the years after 2020 will strongly discourage investments in merchant renewable energy since suppliers will have little assurance that RECs will have long-term value. A CES obligation that only ramps-up for four years is highly unlikely to be sufficient to encourage renewable energy investment, certainly not in the absence of long-term contracts.

Section II.A.1 includes The Role of Energy Efficiency section. The fact that energy efficiency was factored into the 2030 load projections, and thus the 2030 renewable target, highlights the critical need for an energy efficiency goal, either as a part of the CES or as a free-standing, complementary policy. Our organizations have been advocating for an energy efficiency requirement for utilities -- as a basic service, equivalent to either all cost-effective efficiency investments or 2% of annual load – throughout the REV proceeding and during the State Energy

¹⁷ Incremental Tier I Goals derived from White Paper, page 45.

¹⁸ Tier I Goal met by wind derived by 90% rate of wind use for compliance to the incremental Tier I goals.

¹⁹ The PTC value reduction derived on a year on year basis. For example, the reduction for 2017 is compared to the PTC Value in 2016 and the reduction for 2018 is compared to the PTC Value for 2017. All values are nominal and do not attempt to account for inflation, net present value, or monetization.

²⁰ Lost savings accounts for all 10 years of PTC benefits. Again, all values are nominal and do not attempt to account for inflation, net present value or monetization.

Plan development process. Rather than alleviate the need for this target, the CES proposal further highlights the imperative. If the projected load reduction from energy efficiency— which is a significant amount equivalent to the scale of Tier 1²¹ -- is not realized, it will be much more difficult for New York to achieve the 50% mandate. Thus, the Commission should not assume that the projected level of energy efficiency will be successfully achieved without establishing a minimum threshold target. While we understand and appreciate that one of the key goals of REV is to drive New York to market-based energy efficiency, until such a time as that goal is met, an energy efficiency target combined with adequately funded utility budgets are necessary to drive the market and ensure New York can achieve the projected load reductions. We also appreciate that the topic of energy efficiency has been assigned to the newly-formed Clean Energy Advisory Council (CEAC) per the Clean Energy Fund Order,²² which states that the CEAC is tasked to, “develop a recommended approach to developing a sustainable market for procuring energy efficiency as a demand reducing resource,” and to “consider how this approach could support the establishment of an Energy Efficiency Standard . . .”²³ Yet, we note that the deadline for the CEAC’s work product is in August (after the CES Order is expected to be finalized), and suggest that the important policy design question of the need for an enforceable energy efficiency standard should be the subject of a Commission proceeding rather than an advisory group decision-making process.

While it is most important that the State develop some type of enforceable energy efficiency target to complement the CES program, as a critical component of ensuring achievement of the 50% mandate while reducing customers’ bills, it is also important to note that the roughly 1.3% annual energy efficiency projection in the White Paper is still less than a level equated to “all cost effective.” Numerous studies confirm that energy efficiency is the least-cost resource option, and New York should aim for 2% annually or all cost-effective. The Staff’s projected 2,227 GWh of annual savings from energy efficiency is greater than historical achievement in New York and cannot be achieved with the current flat budgets for utilities’ Energy Efficiency Transition Implementation Plans (ETIPs). Though the Distributed System Implementation Plans

²¹ In its Appendix B, the White Paper assumes a total of 35,627 GWh of additional energy efficiency savings will be achieved by 2030, while the identified need for new renewables for Tier 1 is 33,700 GWh.

²² *Order Authorizing the Clean Energy Fund Framework*, issued by the Public Service Commission January 21, 2016 in CASE 14-M-0094.

²³ *Order Authorizing the Clean Energy Fund Framework*, Page 53.

(DSIPs) have been identified as a possible funding mechanism for incremental energy efficiency, the DSIP process is new and undefined, and approval timelines are highly uncertain. In addition, the ramp down of NYSERDA energy efficiency funding and programs will detract from the successful realization of the efficiency savings necessary to achieve the CES goals. Regardless of the amount of projected savings, though, without a binding and enforceable mechanism and sufficient budgets, there is no assurance that even the lower level of energy efficiency used to calculate the renewable energy requirements in the White Paper will be realized, thus undermining the entire CES program's likelihood of success.

The Obligation on Load Serving Entities: The Renewable Energy Industry is supportive of a CES program that places the obligation on load-serving entities, including both ESCOs and investor-owned utilities serving in their role of electricity supplier of last resort, as long as this approach also includes an EDC obligation to enter into bundled PPAs.

LIPA and NYPA: The White Paper's section on LSE's as the obligated entity states, "non-jurisdictional entities are expected to adopt renewable and non-emitting energy percentages for their served load and Staff will confer with NYPA and LIPA regarding their plans." The Renewable Energy Industry supports a stronger integration of NYPA and LIPA renewable energy programs with the Clean Energy Standard. Specifically, NYPA and LIPA should have both the obligation to procure RECs to demonstrate compliance on an annual schedule, *and* should participate in the joint-EDC solicitations for bundled PPAs that are proposed in the White Paper, with a published schedule of procurements. For the last ten years, Long Island, which represents a significant portion of New York's population and load, has been functionally excluded from the energy policy of the rest of New York State. While Long Island leads the State in installed solar capacity, the total MWh generated is still low. As a result, despite LIPA's stated policy of supporting the (old) 30% RPS goal, according to the NYISO's 2015 *Power Trends* report, only 3% of Long Island's energy comes from renewable sources.²⁴ The approach used over the last ten years has not succeeded in aligning the LIPA program with the statewide RPS Main Tier. It is important to fix this imbalance because Long Island represents

²⁴ New York Independent System Operator, *POWER TRENDS 2015: Rightsizing the Grid* (2015): 26. http://www.nyiso.com/public/webdocs/media_room/press_releases/2015/Child_PowerTrends_2015/ptrends2015_FINAL.pdf.

such as significant portion of New York's load and population, and has some of the oldest generating units in the State.

The new CES program should strive to integrate Long Island and achieve consistency in statewide policy. Offering a single program with common rules would allow for more efficient implementation, and could lower overall administrative costs for both the State and developers. While a single unified program would be ideal, we also recognize that Long Island is under a different structure than other utilities in the State, and jurisdictional issues need to be addressed. Still, the CES program should ensure that Long Island has the same targets, requirements, accountability, and enforcement mechanisms as every other EDC in New York.

Similarly, NYPA and its customers should be integrated into the statewide CES program by applying both a NYPA obligation/commitment to purchase RECs as an LSE, and a commitment to enter into PPAs with generation owners at commensurate levels as the EDCs, ideally by participating in a joint EDC solicitation.

The Renewable Energy Industry is supportive of direct NYISO customers being treated as LSEs in terms of a REC procurement obligation.

Part II.A.1 also includes the sections Compliance Mechanisms – Renewable Energy Credits. The Renewable Energy Industry is supportive of the use of tradeable renewable energy credits (RECs) to achieve LSE compliance; the use of the new NYGATS system to track RECs; and the option of an LSE to purchase RECs directly from generators, from NYSERDA or EDCs, or from a variety of brokers or traders. Our experience, though, has made us highly skeptical that reliance solely on the short-term REC market for any significant share of the renewable energy obligation will be at all successful, especially in the near term. This skepticism is part of the basis of our support for long-term contracting in general, and EDC-backed PPAs specifically.

Long-term contracting is both essential to encourage renewable energy investments necessary to meet CES goals and it is also the most cost-effective and financially efficient approach. Still, the Commission may decide to establish a short-term and spot market to initially act as a

balancing mechanism and possibly later to send a strong enough price signal to encourage merchant renewable energy development (although this will be a challenge). First, to create a short-term or spot market for Tier 1 RECs, either as a balancing mechanism for marginal quantities or as a more robust instrument that encourages merchant investments, it is absolutely essential to have predetermined, annual CES targets through 2030, with a requirement that load-serving entities (LSEs) continue to purchase RECs post-2030 at a level equal to the final 2030 Tier 1 and Tier 2 targets, without an end-date. Following that, we recommend that beginning after 2022, the percentage of the total obligation that is covered by PPAs between generators and EDCs be gradually decreased if there is evidence that the REC-only long term contracts or the short term REC markets is an adequate market signal to get projects developed. We expect that, at least initially, this demand will be met by imports from adjacent territories as tracked through NYGATs, although this does allow for some short-term and spot market REC price formation to occur which is the first important step to creating a more robust REC market. Then, over time, NYSERDA and the Commission can monitor developments in the market to evaluate the extent of merchant investment and whether short-term REC price formation appears sufficient to spur meaningful merchant renewable energy projects. If it does, the amount of the total obligation to be covered by PPAs with the EDCs could be reduced. Generally, we are skeptical that short-term and spot market RECs can act effectively as any more than a balancing function and so we strongly recommend that CES compliance planning anticipate relying mostly on long-term contracts.

Limitations of the Short-Term REC Market: Spot markets for RECs are by their nature very thin, as the supply and demand for RECs is much smaller than the supply and demand for energy. This leads to a great deal of price volatility, as highlighted at the CES Workshop #1 by numerous roundtable participants, especially the speakers that were representing neighboring states. In other restructured REC markets, when supply is even slightly long, observed REC prices have dropped rapidly towards zero. An example of this phenomenon is Commonwealth Edison's annual REC purchases for Illinois RPS compliance in 2011 and 2012. REC prices in those years were \$1.05 and \$0.88 respectively. Those prices do not provide sufficient incentive to build additional resources. Such low short-term REC prices can happen at any time during an

RPS cycle due to REC supply and demand dynamics, which are generally divorced from incremental project costs.

The fundamental nature of short-term and spot market RECs makes them an insufficient instrument to achieve CES compliance. In an efficient REC market, the REC value would equal the incremental cost of the new renewables, i.e., the difference between the wholesale price of energy and the levelized cost of energy from the renewables (factoring in federal incentives, the project's capital and operating costs and a reasonable, risk-weighted rate of return) [$REC = (\text{renewable energy project cost} + \text{reasonable, risk-weighted rate of return}) \text{ minus } (\text{wholesale energy} + \text{federal incentives})$]. But the fundamental difficulty in relying on short-term and spot market REC prices is that they are not determined by a project's incremental cost, but by short-term REC supply and demand. Further, REC markets have fixed demand, which cannot adjust to price, and a limited number of buyers and sellers leading to a lack of liquidity, especially compared to much larger energy markets. As a result, short-term REC markets often produce volatile pricing, unreflective of incremental costs, in which prices tend to fall towards zero when supply is even slightly long, discouraging new investments required for RPS compliance, and prices that rise to toward the ACP when the market is short, leading electricity customers to overpay for RPS compliance. As REC markets are typically for just a few years in advance, it is not possible to enter into a long-term hedge with a third party marketer like is possible with other energy products.

Over the long-run, reliance on short-term RECs might possibly encourage some new renewable energy development, although only if policy-makers are willing to let renewable energy investors take the market's upside when prices rise well above the incremental cost. This would include structuring an ACP mechanism that is high enough that it does not act as a price cap, as well as the willingness to tolerate potentially very high REC prices in certain years. This dynamic is illustrated in Appendix A to these Comments. When REC prices are below the incremental cost, (as is the current situation in MISO, and in PJM's recent past), in order to get projects built, the REC price must rise above the long-term incremental cost in out years. But when REC prices fall below the long-term incremental cost they must correspondingly rise above the long-term incremental cost in future years for projects to achieve revenue adequacy,

and there are significant barriers to this result. The short-term nature of the increasing RPS targets will not instill confidence in investors to take a long position on unbundled short-term and spot market RECs, especially because ACPs will act as a price cap which discourages cost recovery. Lastly, intolerance for high prices, even if necessary for a project to achieve financial viability, can lead policy-makers to revise or change RPS goals. This would be especially pronounced in the New York case if their were only compliance targets established through 2020, accompanied by signals that the future goals could be altered under undefined criteria.

These limitations of the short-term REC market underscore the need for long-term contracting for new renewable resources.

The Alternative Compliance Mechanism section is also in Part II.A. This section is consistent with mainstream RPS design by proposing to incorporate an alternative means of LSE compliance with annual procurement targets through remittance of Alternative Compliance Payments (“ACP”), (White Paper, page 14). The Renewable Energy Industry supports the inclusion of an alternative compliance mechanism, or payment, within a well-functioning Clean Energy Standard.

The White Paper characterizes the ACP as “not a penalty for non-compliance. Rather, it is an alternative avenue to compliance for the LSE.” (White Paper, Page 14). While this is certainly correct, it is important to note that the ACP should not be structured to be the primary - or financially neutral - compliance vehicle for LSEs.

Apart from its role in stimulating demand for qualifying renewables, the Alternative Compliance Mechanism serves a two-fold regulatory purpose. First, it must be designed to spur all LSEs subject to the portfolio requirement to enter into contracts for RECs with project developers rather than simply absorb the ACP as a cost of doing business. In order to achieve this, the ACP must be set at a price point significantly above the expected market clearing price for RECs for both Tiers 1 and 2, i.e. it must be sufficiently punitive that LSEs avail themselves of less expensive RECs generated from CES-qualified projects. Additionally, the ACP level should provide sufficient headroom to account for any transaction costs associated with

negotiating and aggregating RECs from multiple developers, and any risk premium associated with entering into a long-term arrangement.

The second objective of the ACP is to set an effective ceiling on ratepayer contributions to the CES program goals. Under a well-designed CES, few if any ACP payments should be made, since the underlying purpose of the program is sustained and orderly development of renewable energy generation rather than the accumulation of penalty payments. However, under scarcity conditions, the ACP is usually intended to set an upper limit on the cost of the program.

These objectives are in tension – the stimulus objective of the ACP argues for a higher value, while rate impact concerns would tend towards a lower ACP value. Ultimately, it will be up to the Commission to reconcile these competing objectives. In general terms, the Renewable Energy Industry supports the approach highlighted in Appendix D of the White Paper which states, “One way to accomplish this objective has been to set the ACP at a multiple of at least twice the expected long-term REC premium, to encourage investment in developing projects rather than payment of the ACP.” This is an appropriate approach for both Tier 1 and Tier 2.

The Renewable Energy Industry supports a review of the ACP every three to five years, with any changes implemented in a manner that is moderate and gradual.

The White Paper also describes the various purposes towards which other states have allocated annual collections, and goes on to, “recommend[s] that ACP payments should not be oriented toward research and development but rather should be directly applied to reducing the costs of in-state renewable development in furtherance of the 50 by 30 goal.” (White Paper, Page 15) However, the White Paper does not get more specific other than to say, “NYSERDA can use the CEF programs to prioritize the use of these proceeds.” The Renewable Energy Industry agrees that ACP funds should not be used for research purposes, but further believes that these funds should be directed to NYSERDA procuring renewable energy via long-term contracts in furtherance of the 50% goal. It is especially important to use collected funds specifically for renewables procurement if the ACP is used as a compliance mechanism for any significant portion of the CES obligation (as well as to reevaluate the program design in order to change

that dynamic, should it arise). While, as noted above, the ACP is a fundamentally important price signal driving the market-based development of renewable resources, the “recycling” of collected ACP payments for procurement activity allows the Commission to amplify the ultimate purpose of supporting in-state renewable energy development. This is a familiar concept, having been adopted by other state RPS program administrators, as well as by the Regional Greenhouse Gas Initiative (RGGI) states with respect to the use of proceeds from the auction of carbon allowances on deployment of carbon-reducing technologies.

ii. Comments on White Paper Part II.A.2: “Eligibility and Tiers”

This section of the White Paper begins with a discussion on the Theory of Tiers and follows with the Staff Proposal for the Tiered Approach to Meet Annual Obligation. Generally, the Renewable Energy Industry shares the Staff’s recognition of the important considerations in designing a tiered program (“Targeted approaches”, “Preserve existing clean energy generation”, “Preservation of flexibility,” “Competition,” and “Co-incentive Programs”). We share the belief that in the interest of simplicity, the “tier obligations should be as broad as possible,” but only as long as other policy objectives have been achieved, especially the design of the program than will foster the full range of clean energy technologies necessary to achieve the 50% by 2030 mandate. With this as a foundation, the Renewable Energy Industry:

- Supports the establishment of Tier 1 to foster the deployment of new renewable energy projects in New York and the inclusion of distributed renewables technologies in Tier 1;
- Supports the establishment of Tier 2 to ensure that existing renewables continue to operate in New York and deliver their energy within the state, which is required to reach 50% by 2030; and
- Supports the addition of an Offshore Wind Tier, to foster the renewable energy technology that has not yet been deployed in New York State; that has a significant development potential; and is very likely required to be deployed in New York to achieve the 50% without an overreliance on out-of-state or out-of-country resources.

Section II.A.2 includes a discussion of Geographic Eligibility. Historically, ACE NY has supported aspects of the RPS that are designed to promote in-state economic development, which is consistent with our mission of providing business opportunities in New York State for

renewable energy companies, and maximizing the local economic development, NYS jobs, and tax revenue for New York communities. The eligibility of out-of-state resources, combined with hourly scheduling and delivery requirements, may strike a generally acceptable compromise between various policy objectives. We are supportive of the deliverability requirement which requires that resources “located in control areas adjacent to the NYISO control area will be eligible so long as the generation is accompanied with documentation of a contract path between the generator and the purchaser that, among other things, includes provision of transmission or transmission rights for delivering the generation via the NYISO” (White Paper, Page 21). Further, we agree that it is important that the eligible resource is one that can actually physically supply into the New York market. Extending the program to out-of-state resources, though, raises two issues (1) New York ratepayer support for government-owned Canadian resources, and (2) the inclusion of very large hydropower facilities (and their associated environmental impacts) being supported via the CES Program in Tier 1 or Tier 2. Both of these issues deserve additional public discussion, which was absent from the White Paper. Our position is that both Tier 1 and Tier 2 should not include hydropower greater than 50 MW or that involves new impoundments, and should not include government-owned resources. Certainly government-owned resources and hydropower larger than 50 MW would, of course, still be imported and utilized in New York, but our position is that these type of resources should not mint RECs in either Tier 1 or Tier 2.

The Tier 1 – New Renewables Resources section of the White Paper describes Tier 1 eligibility as limited to renewable generation coming online on January 1, 2015, or later, with technology and fuel feedstock eligibility that “largely mirror” that of the RPS Main Tier. While the White Paper does not enumerate the differences between the current Main Tier and the proposed CES Tier 1, based on Appendix C it appears that the inclusion of hydropower larger than 50 MW is the only change.

Distributed Resources in Tier 1: Tier 1 is proposed to include “no sub tiers or other limitations on facility size such that a wide range of system capacity and configurations are eligible to participate.” The Renewable Energy Industry fully supports the inclusion of qualifying distributed energy resources (DER) in Tier 1, as proposed by Staff (White Paper, Page 21). This

includes all the technologies and resources included in Appendix C of the CES White Paper. Diverse technologies and resources will be needed to meet the CES, and DER has an important role to play. Moreover, inclusion of DER in the CES will further numerous other state policy objectives, such as resource diversity and GHG reductions. We note here that DER could also be procured by EDCs using long-term contracts, and in that case, that DER could potentially contribute to our proposed requirement that the EDC cover 85% of the total Tier 1 obligation using PPAs.

We further support the assertion of Staff in the CES White Paper that this eligibility should not be affected by other ongoing proceedings related to DER (e.g., REV or DER compensation via LMP+D) or existing policies and programs that support DER (e.g., NY-Sun). Furthermore, because these programs and proceedings are designed to support deployment of DER, we agree with Staff that qualifying DER does not need a separate tier within the CES, as is the case in other jurisdictions, e.g., solar carve-outs with separate solar RECs (SRECs).

Although the CES White Paper leaves out many details of how DER will be counted or will participate in the CES, we believe that this will be relatively straightforward. Because the CES will adopt a REC-based compliance mechanism, DER owners will mint RECs just like with any other qualifying Tier 1 resource, and will then sell/market the RECs to obligated parties. As in other jurisdictions with REC-based RPS programs, we expect that intermediaries (REC aggregators, brokers, traders, marketers) will come into New York State to help DER owners track, manage and sell their RECs. Also, existing DER providers, such as solar installers, already have significant experience with this aspect of DER, whether these projects are customer-owned or third-party owned. Moreover, most distributed generation systems today already have separate metering capabilities (often with automated communications/reporting) that can be used to track REC production without the need to install new utility metering and communications capabilities.

Importantly, for DER, which is presumably interconnected to the distribution system, we are of the position that the RECs initially belong to the DER project owner. The owner would either be the host customer or a third-party provider. The availability of net metering or an alternative

DER compensation mechanism (i.e., LMP+D), or incentives from other state programs (e.g., NY-Sun) does not automatically confer REC ownership to the distribution utility, the LSE, or NYSEDA. The DER owners could, if they wanted, sell their RECs directly to their distribution utility or to their LSE (if a different entity). Alternatively (and more likely based on experience in other jurisdictions), the DER owner would retain the services of another entity involved in the REC market, such as an aggregator/marketer, who would manage the sale of their RECs). In a well-functioning REC market, we would expect there to be multiple options for DER project owners to sell their RECs, by which we mean multiple companies and different types of products.

We are sensitive to the potential interaction between the CES and the DER valuation mechanisms (LMP+D) being developed in another proceeding, due to the potential to double count the value of environmental attributes, once these attributes start to take on explicit values in DER compensation. Without specifying a particular mechanism at this time we would simply suggest that the final LMP+D methodology be such that it avoids this potential for double counting by netting out the value received for the RECs in the LMP+D compensation formula. We believe this is consistent with the approach outlined in the Commission's Order on Benefit-Cost Analysis with respect to the cost of carbon.²⁵ It also avoids the need to try to differentiate and separate various externality values that are implicitly embedded in the REC (i.e., the REC is kept whole). If the REC value were to be greater than the total value of environmental attributes within the LMP+D framework, then these values would simply be set to zero (i.e. the net value of externalities in the LMP+D framework could not be negative). We recognize that this creates an added layer of complexity in developing the LMP+D framework, but it should be possible to use the REC tracking system to properly conduct the needed reconciliation.

Related to this matter, we respectfully disagree with the statement made in the CES White Paper that, "The CES will properly value the environmental attributes of clean distributed resources and thereby enhance their market penetration." (CES White Paper at page 27). While the CES may represent an additional source of value (revenue) to DER, the actual REC value will be

²⁵ *Order Establishing the Benefit Cost Analysis Framework*, CASE 14-M-0101, January 21, 2016, Page 18.

market-based and thus may not, in fact, properly value the environmental attributes of DER, much in the same way that RGGI allowances do not fully value the cost of carbon. Moreover, to the extent that the LMP+D mechanism does more accurately reflect the full environmental value of DER (as is its intent), then RECs are simply a way to monetize a portion of that value in a complementary program, and would not necessarily enhance DER market penetration (assuming no double counting). Nevertheless, to the extent that the CES represents an efficient way to monetize some or all of the environmental benefits of DER then we would agree that this could increase DER market penetration.

The Tier 2 – Existing Renewables Resources section proposes a tier for the fleet of non-state owned renewable energy generators already in operation in New York and adjacent control areas, which we generally support. The current wholesale electricity market conditions that are affecting the fleet of upstate nuclear facilities, as discussed on page 5 of the White Paper, are having similar negative impacts on existing renewable energy projects, including biomass power and hydropower projects. Some of those projects have become non-viable and have either terminated operations or are contemplating closure. As such, expedited implementation of a Clean Energy Standard is necessary in order to allow the continued operation of these clean and renewable energy facilities.

We applaud Staff for recognizing the importance of existing renewable projects and for proposing a Tier 2 category for those projects. Many of the projects currently participating in the RPS program as Main Tier and Maintenance Tier resources, and those that have been counted towards the RPS but not compensated, have substantial remaining life, and it would not be in the State's interest for the energy, RECs and capacity from some or all of these resources to leave the market or to terminate operations. If these existing resources have the capability to monetize their renewable attributes at a sufficient price within New York, the State will be able to maintain the substantial environmental benefits, economic benefits, and fuel diversity benefits while avoiding premature retirements and accompanying job losses, or exports of renewable energy to other markets. If that were to occur, New York would lose the ability to claim that renewable energy supply toward its renewable energy goals.

Many of the projects currently participating in the RPS program as Main Tier and Maintenance Tier resources have substantial remaining life, and it would not be in the State's interest for the energy, RECs, and capacity from some or all of these resources to leave the market or to terminate operations. If that were to occur, New York would lose the ability to claim that renewable energy supply toward its renewable energy goals as well as federal Clean Power Plan goals. Further, the loss of these resources to premature retirements would lead to lost jobs and the loss of fuel diversity benefits.

We believe that long-term contracts should not be restricted to Tier 1 projects. Contracting opportunities should be available to Tier 2 projects, although perhaps at a shorter term. Long-term contracts are in the ratepayer interest, and both generators and consumers are likely to see value in long-term contracting as a mechanism to mitigate price volatility, as observed in the *Clean Energy Standard White Paper - Cost Study* in Section 8, which estimated lower program costs for Tier 2A when long-term contracts were utilized, as compared to the short term REC market.

iii. Comments on White Paper Section II.A.3: "Cost Management"

The Cost Management section of the White Paper begins with a discussion of the adjustment of targets. The White Paper states that, "The triennial review will review load forecasts, compliance performance, and the adequacy of projected renewable energy supplies to meet the increase in the Tier 1 percentage requirement," but does not get more specific regarding what conditions would need to exist for targets to be changed. As discussed above, the triennial review should be predicated on establishment of annual targets in the Commission CES Order, and the CES Program should provide more detail on what factors should cause the targets to change in the triennial reviews. This is necessary to create a stable program. This section of the White Paper also states, "a feature could be implemented that would stop the obligation level from rising more than a determined quantity above current actual renewable generation levels on an annual basis," which sounds like exactly what firm annual targets would do. The CES Order should also specify that the 50% mandate will continue after 2030 for 20 years to provide the "clarity that the ultimate targets, once reached, will be maintained for a sufficient period to

allow investors to amortize their investments and realize expected returns on their investments after a number of years.” (White Paper, Page 25).

This section also addresses Banking and Borrowing. The Renewable Energy Industry is supportive of the integration of *limited* banking and borrowing in the CES program design, recognizing the value of these tools in smoothing compliance and volatility in the REC markets. Suggested limitations on banking and borrowing are:

- RECs would be allowed to be banked for 2 years; and
- RECs could be borrowed for 2 quarters, from operational projects.

The Distribution Level REV Implications section briefly touches on integration of the CES with REV reforms. As covered in our comments on Tier 1 above, we remain supportive of the various REV initiatives and feel that they can be designed to productively interact with the CES program, and vice versa.

B. White Paper Section II.B: “Nuclear Facilities”

The missions of the various undersigned organizations all include the promotion of renewable energy and energy efficiency and providing input on public policies to achieve the transition to an efficient, affordable renewable energy future. Regarding the nuclear portions of the Clean Energy Standard proposal, we very much support that the nuclear tier, Tier 3, will not count towards New York achieving the 50% renewable energy goal by 2030, nor count toward any LSE’s obligations in pursuit of the 50% goal. We hope that Tier 3 is a successful bridge to a renewable energy future, and not a permanent subsidy. The nuclear subsidy should not become a permanent mechanism that precludes market opportunities for clean, renewable generation technologies. The Staff White Paper states, “The nuclear tier supports a smooth emission-free transition from nuclear to non-nuclear resources,” but the White Paper does not appear to describe how the State will transition away from nuclear energy subsidies, and when. The Commission could articulate how Tier 3 will be phased out over time, in order to send a clear, long-term signal to the relevant nuclear facilities, the renewable energy industry, and other New York stakeholders and ratepayers. This could take the form of decreasing MWh targets over

time, for example. In any case, nuclear energy, while certainly low-carbon, is not renewable and should be kept separate from the State's renewable energy policies.

Further, the Renewable Energy Industry would not support the use of funds otherwise dedicated to energy efficiency and renewable energy, such as the Systems Benefit Charge, Clean Energy Fund, or RGGI proceeds, to be used to support nuclear facilities either through the Clean Energy Standard Tier 3 or the expedited program proposed by the Commission in the *Order Further Expanding Scope of Proceeding and Seeking Comments*, issued on February 24, 2016 in this proceeding.²⁶

C. White Paper Section II.C: "The Role of Long-term Contracting Mechanisms"

This section of the White Paper begins with a review of the LSR Options Paper, the stakeholder feedback on the LSR Options Paper, and consideration of LSR options in the new CES context. The Renewable Energy Industry supports the statement in this section, "Staff supports a requirement on EDCs to procure an appropriate percentage of the REC target through long-term contracts with renewable generators," and "The Commission should require a designated level of EDC procurement via long-term REC and power purchase agreements." (White Paper, Page 36). This approach is supported by the analysis in the LSR Options Paper that identified utility-backed PPAs as the least cost approach; numerous stakeholder comments in the LSR proceeding in support of this approach; evidence from other states regarding the limited success of the short-term REC market in getting projects financed and built; evidence from the last 10 years of RPS experience in terms of the pace of development with REC-only contracts; and the risks articulated in the White Paper. These risks include the demand risk for developers, the volatility of REC markets, and the price risk inherent in NYISO energy and capacity markets.

For all of these reasons, the Renewable Energy Industry believes that nearly 100% of Tier 1 demand that is to be met with LSR will need to be met through some form of long-term contract, at least in the early years. We do not believe that meaningful amounts of LSR will be

²⁶ The *Order Further Expanding Scope of Proceeding and Seeking Comments*, issued by the Commission on February 24, 2016 included the "Proposed Expedited Program to Provide Financial Support for the Benefit of the Electric System to Maintain the Viability for Certain Nuclear Power Plants.

developed in New York State on a merchant basis. We acknowledge that the White Paper states that, “Requiring mandatory purchases for all of the CES compliance obligations would no doubt have adverse consequences to the development of these markets,” referring to the expressed interest of some companies and institutions to purchase renewable energy on a voluntary basis. The White Paper continues on to reference an “appropriate portion” to be procured by utilities via PPAs without specifying what that appropriate portion is. We further recognize that distributed renewables will be included in Tier 1, and these types of projects may be financed and built through a combination of a short-term REC market and other state co-incentives/programs.

We propose that 85% of the Tier 1 obligation be covered in EDC-backed, bundled PPAs. The remainder of Tier 1 would be covered by some combination of long-term NYSERDA REC contracts, co-incentive programs that support distributed renewables, self-initiated PPAs, or the short-term REC market. We remain keenly interested in the possibility of NYSERDA variably priced “V-REC” contracts.²⁷

The White Paper calls for the following incremental amounts of Tier I renewables annually through 2020.

Table 4: Targets from White Paper, 2017 – 2020

Year	% Target	GWh Target	Incremental Annual GWh Target
2017	0.9%	1,536	1,536
2018	1.5%	2,446	910
2019	2.1%	3,465	1,019
2020	3.4%	5,456	2,000

Our position, as stated earlier, is that percentage targets should be established for the years 2017 – 2030, and should be more evenly distributed than suggested in the White Paper. For

²⁷ The White Paper, at page 34, mention the option of NYSERDA entering into a long term, variably priced (V-REC) contracts in which generators would have two revenue streams: payments from the NYISO and an attribute payment set at the difference between the project’s revenue requirements and an energy index price.

illustrative purposes, the chart below uses the targets for 2017 – 2019 presented in the White Paper, and then has equal annual increments necessary to achieve 33,700 GWh by 2030.

Table 3: Illustrative Annual Targets for LSEs’ Tier 1 Obligation

YEAR	Total Tier 1 Obligation (GWh) for LSEs	Total Tier 1 Obligation for LSEs (% of total load)	Tier 1 Annual Increment (GWh)
2017	1,536	1.0%	1,536
2018	2,446	1.5%	910
2019	3,465	2.2%	1,019
2020	6,214	3.9%	2,749
2021	8,962	5.7%	2,749
2022	11,711	7.5%	2,749
2023	14,460	9.3%	2,749
2024	17,208	11.1%	2,749
2025	19,957	13.0%	2,749
2026	22,705	14.9%	2,749
2027	25,454	16.8%	2,749
2028	28,203	18.7%	2,749
2029	30,951	20.6%	2,749
2030	33,700	22.5%	2,749
post-2030	unknown	22.5%	unknown

Further, as discussed in Part II above, these annual REC obligations should be accompanied by EDC PPA procurement obligations. A solicitation schedule with MWh targets should be established by the Commission, and should apply to all EDCs. Ideally, this schedule would also include PPA procurement targets for LIPA and NYPA. Then, the EDCs, LIPA, and NYPA could coordinate an annual solicitation with some appropriate level of oversight by the Commission.

Table 6: Example of Solicitation Schedule to Procure Renewables via PPAs

YEAR	Illustrative Minimum PPA Solicitation Schedule (GWh)	Illustrative Joint Utilities PPA Solicitation Schedule (as 73% of total) (GWh)
2017	2,000	730
2018	6,620	4,833
2019	2,340	1,708
2020	2,340	1,708
2021	2,340	1,708
2022	2,340	1,708
2023	2,340	1,708
2024	2,340	1,708
2025	2,340	1,708
2026	2,340	1,708
2027	2,340	1,708
2028	-	-
2029	-	-
2030	-	-

Note: Table 6 illustrates a PPA solicitation schedule for EDCs, including LIPA and NYPA, that would provide for 85% of the total Tier 1 REC obligation to be procured via PPAs beginning in 2020. Because LIPA and NYPA are the LSE for roughly 27% of load in New York State (based on Page 19 of the Cost Study), a solicitation that did not include NYPA and LIPA would be sized as estimated in the 3rd column. Ideally, the jurisdictional utilities, LIPA, and NYPA could do a joint solicitation to procure renewable energy, to maximize competition and efficiency.

Recognizing that the EDCs serve a variable portion of total electricity load, and that this portion is less than 85%, we support a structure that would allow EDCs to sell their excess RECs to other LSEs or to direct NYISO customers. The EDCs should be provided with clear and unambiguous assurances from the Commission that the costs of the bundled PPAs would be recoverable, either through the sale of RECs to LSEs or, in the event that there are costs that are not recovered in these sales, recovered in the delivery charge as indicated in the White Paper on page 39.

Section II.C.3 addresses Use of Central Procurement. Here, the White Paper suggests a continuing role for NYSERDA in procuring RECs via long-term REC-only contracts, stating, “Staff proposes that NYSERDA should continue to issue solicitations for contracts to purchase

RECs during the initial years of the CES.” (White Paper, Page 41). This section also recommends that NYSERDA play a role in the joint utilities’ procurement via PPAs by assisting in the development of standard contracts and procurement methods. The Renewable Energy Industry supports both of these recommendations.

The White Paper is silent, though, on the scale of NYSERDA REC-only procurement, and it does not elaborate on the variable priced V-REC option. Our position is (1) NYSERDA should act quickly to procure a significant portion in 2016 and 2017 to maximize the benefit of federal tax credits in term of minimizing overall costs of the CES program, (2) NYSERDA should have a continuing role in long-term contracting after 2018 to ensure that roughly 100% of the LSR portion of the Tier 1 CES obligation is procured with long-term contracts in the early years, with a phase out if it appears that the self-initiated market has been created in New York and/or the REC-only market is stimulating interest in merchant development, and (3) the Commission should continue to consider the potential for NYSERDA contracts to transition to be variable priced V-RECs instead of REC-only.

The following table illustrates the potential annual costs of NYSERDA procuring half of the total CES obligation using either REC-only contracts or V-REC contracts, and does so using the targets from the White Paper for 2017 – 2020 and an assumed \$20 REC price for the V-REC/CFD product and a \$25 price for unbundled RECs for the long-term REC program. Under these assumptions, the cost of NYSERDA procurement would be less using V-REC contracts, illustrating that further consideration of that option could prove beneficial to overall CES program efficiency.

Table 7: REC-only vs. V-REC Cost Comparison

Year	Incremental Volume V-REC MWh	Incremental Annual Cost V-REC	Incremental Volume REC-Only MWh	Incremental Annual Cost REC-Only
2017	610,779	\$12,215,580	610,779	\$15,269,475
2018	350,186	\$7,003,720	350,186	\$7,003,720
2019	404,686	\$8,093,720	404,686	\$10,117,150
2020	772,903	\$15,458,060	772,903	\$19,322,575

Notes: Although the Table 7 cost savings resulting from the use of V-REC contracts are the

result of assumed cost differentials, this is consistent with other analyses, including the Cost Study, that estimate higher REC-only prices than prices for bundled products.

The PSC Staff White Paper posits that NYSERDA would resell RECs to load-serving entities as a potential method of cost-recovery. This is an interesting option to assist in the launch of a short-term and spot REC market that could act as a balancing mechanism for RPS compliance. However, it would be a very inefficient mechanism to meet the bulk of the CES obligation. As described above (and in Appendix A) short-term REC prices are based on REC market supply and demand, not on a project's incremental cost. As a result, short-term and spot market RECs, the type of RECs NYSERDA would be selling to LSEs, will not likely reflect incremental costs or the price NYSERDA is paying for its RECs, because long-term REC products produce a price resembling a project's incremental cost. Therefore, LSEs will either be overpaying for RECs (short market) or underpaying (long market). In the first instance, electricity customers will ultimately pay much more for RECs than necessary to achieve RPS compliance which is the least optimal outcome. In the second, NYSERDA will fail to recover its costs and would then need an infusion to restore the difference from either electricity customers or taxpayers. For these reasons, the portion of the CES obligation covered by this approach should be limited.

Evidence from PJM and ISO-NE demonstrates that REC-only RPS markets are insufficient to encourage robust investments in merchant renewable energy generation. There are nearly 6,700 MW of commercial scale wind energy in PJM, of which just under 1,200 MW is merchant, or about 18%. Since 2012, there has only been one merchant commercial scale wind farm constructed in PJM – a 175 MW wind farm in Illinois which became operational in 2015. Similarly, in ISO-NE only 126 out of 1,015 MW of grid-tied wind energy is merchant, or about 12%. There have been no merchant projects constructed in New England since 2012.²⁸ This record demonstrates the essential need for long-term contracting for renewable energy and RECs in order to encourage project development necessary for RPS compliance.

In sum, we respectfully request that the Commission designate that 85% of the Tier 1 obligation be procured via PPAs between EDCs and developers, perhaps with this percentage decreasing

²⁸ American Wind Energy Association Market Database Pro.

over time with evidence of more robustness in the self-initiated long-term contracting market, the scale of distributed renewables development, or merchant plant development activity.

Finally, Section II.C.4 discusses Utility Ownership and Self-Initiated Market Development. After acknowledging that an absolute prohibition of utility participation in the ownership structure may not be in the interest of consumers, Staff continues to state, "...in the interest of encouraging competitive entry into New York markets, Staff recommends that the Commission adhere to the principles articulated in the Framework Order wherein utility ownership of generation is only permitted in exceptional circumstances where there are demonstrable consumer benefits that could not otherwise be achieved." The White Paper continues to say that utility-ownership that adheres to the principles in the Framework Order and drives down CES costs could be entertained, identifying the need for in-state development as a potential focus of utility ownership.

The Renewable Energy Industry continues to be concerned about the possibility of utility ownership, for all of the reasons articulated at length in our comments on the LSR Options Paper, which identified significant issues with vertical market power, utility bias, complexity, the need for more oversight, and the difficulties in comparing bids for UOG to bids for PPAs. The Options Paper did not put forward any suggestions that would adequately overcome these issues and fairly level the playing field, nor did it offer evidence that allowing utility ownership would bring benefits to ratepayers. The Options Paper offered only one scenario in which UOG is more affordable: a ten-year extension of the federal production tax credit (PTC) where renewable developers are unable to take advantage of it. This is more unlikely now than when the Options Paper was first released. And even in that scenario, the cost advantage of utility-ownership was erased when the risk to ratepayers for underperformance or higher-than-expected operation and maintenance costs of UOG assets was considered.²⁹

We echo the statement in the White Paper that, "if New York permits utility ownership, third parties may choose not to enter the New York markets because of competitive risks." This potential to chill the market is real, as developers are now weighing near-term development

²⁹ LSR Options Paper, p. 103.

opportunities across the U.S. in light of the PTC extension/phase-out combined with other development and cost factors. This potential to chill the market would need to be overcome by an exceptionally strong and certain program if utility ownership was approved, even in exceptional circumstances.

D. Comments on White Paper Section II.D: “Targets for Each Tier Through 2020” and II.E: “Program Implementation”

Section II.D lays out targets, in GWh, for each tier in the years 2017 – 2020. As articulated at length earlier, evenly distributed targets for Tier 1 and Tier 2 -- i.e., not back-end loaded -- need to be established in the Order for each year 2017 – 2030. Also, separate targets for EDC solicitations for PPAs need to be established starting in 2017.

Section II.E delineates the topics to be covered in an Implementation Plan. The Renewable Energy Industry strongly feels that, in the interest of timeliness, several of these questions need to be decided in the Commission’s Order establishing the Clean Energy Standard, especially the schedule of annual targets, the level of PPA procurement by EDCs, and the role of NYSERDA. This interest in timeliness is based on our desire to make progress on the nearly 4,000 MW of renewable energy in the NYISO interconnection queue; to not have an unproductive gap in renewable energy procurement in New York; to continue to stimulate interest in New York on the part of developers (to add to the queue); and to maximize federal tax credit benefits. It is crucial that solicitations begin and bids be selected in 2017 to begin to make progress towards the ambitious 50% goal, as the RPS Main Tier has already expired. Based on experience in Massachusetts under the Green Communities Act 83-A³⁰, it could take three years or more for the procurement process, although we are clearly hoping for a more rapid procurement process in New York. While certainly details of program implementation can be further developed in an

³⁰ Section 83 of the Green Communities Act, Chapter 169 of the Acts of 2008, required Massachusetts EDCs to solicit proposal from developers of renewable energy projects and execute PPAs. Regulations were issued in 2009, a request for proposals (RFP) was issued and re-issued in 2010, projects were selected and the EDCs submitted petitions for approval of the PPAs in 2011 (to the MA DPU) and several of the PPAs were approved in 2011, (*Study on Long-Term Contracting Under Section 83 of the Green Communities Act*, Peregrine Energy Group, Inc. and New Energy Opportunities, Inc. for the Massachusetts Department of Energy Resources, December 31, 2012). This represents a three year process from enactment to signed contracts.

Implementation Plan that involves another round of public comments, these fundamental issues should be decided so that lengthy procurement processes can get underway.

IV. Responses to Specific Inquiries in the White Paper

While a list of questions was not included in the Commission's *Notice Soliciting Comments and Providing for Technical Conference and Public Statement Hearings*, there were several instances in the White Paper that Staff sought input on specific questions. In this section we provide brief responses.

a. P. 13: Question on electric vehicles and heat pumps

Increased proliferation of electric vehicles and geothermal heat pumps, both which will support a lowering of economy-wide greenhouse gas emissions (GHG), will be necessary for New York to achieve its 80 X 50 GHG goal. It will also increase total electricity demand. Thus, it is appropriate to include some projected increase in electricity demand due to these technologies, as was done in Appendix B of the White Paper. This increased load does not require that the annual percentage targets established in the CES be modified, because the benefits from these technologies accrue and increase as the portion of electricity used in New York generated by renewable resources increases, (and because the targets are in percentages). The mandate is 50% of total electricity used, and this should not be modified based on what the electricity is used for. In contrast, robust deployment of these technologies could affect the achievement of an energy efficiency mandate, should one be established. This could potentially become a disincentive for support for these two technologies by utilities. Therefore, the design of an energy efficiency mandate should take into consideration of this potential dynamic so as not to penalize an obligated entity that fails to achieve efficiency targets due to these technologies, but instead adjusts its efficiency obligation accordingly.

b. P.15: Question on schedule for review of ACP

While it is important that the ACP not be changed too frequently – because then it will fail to send a long-term signal to both LSEs and developers – a review every three to five years is reasonable.

c. P. 26: Question on banking and borrowing of RECs

Banking and borrowing of RECs should be allowed to smooth compliance and dampen REC market volatility, but should be limited so as not to undermine market certainty. We propose that RECs be eligible for banking for two compliance years and borrowing for two quarters, from an operational generator.

- d. P. 38: Question on the ideal term length for a bundled product

Bundled PPAs should be for 20 years to provide for the most competitive bids.

- e. P. 40: Question on percentage of REC obligation that should be PPAs

85% of the total CES Tier 1 obligation should be covered by 20-year bundled power purchase agreements between developers and electric distribution utilities, under a procurement schedule that requires annual solicitations for specified megawatt-hours beginning in 2017. The remainder of Tier 1 would be achieved by new DER installed using co-incentives, or by long-term NYSERDA REC-only contracts, or by the self-initiated, voluntary market.

- f. App D: Question on method for developing the ACP

The ACP needs to be sufficiently larger than the expected REC price plus transaction costs for purchasing RECs, for Tier 1 and Tier 2. The Commission should aim to achieve this level of sufficiency while maximizing alignment with neighboring states.

V. Complementary Programs

The CES program and its various design features discussed in the White Paper, and in these Comments, are the most important core policy to achieving 50% renewables by 2030. Its timely completion and implementation should be a top priority. There are other policy design processes that are also relevant and vital to achievement of the 50% mandate. These include those currently being examined in the Reforming the Energy Vision (REV) proceeding and other related proceedings. And, as the CES is finalized and implemented, other important issues will need to be reexamined in light of the 50% mandate. The Renewable Energy Industry looks forward to working with the Commission, other State agencies, and the NYISO on the full range of programs complementary to the CES that achieving the 50% target will require. This will include, but not be limited to:

- The State will need to clarify and harmonize how **NYPA and LIPA** will contribute to the 50% mandate. As discussed herein, one approach would be to assign both a REC procurement obligation and a PPA procurement obligation to NYPA and LIPA. For the PPA procurement, NYPA and LIPA would ideally participate in joint-utility annual solicitations to maximize consistency and efficiency;

- State agencies should consider working closely with the NYISO to improve and streamline the **NYISO interconnection process**, as the current process is prohibitively time consuming. The interconnection process is, of course, absolutely critical to maintaining system reliability and safety. This process could, though, undoubtedly be streamlined without sacrificing the NYISO's reliability mission. We suggest that the interconnection process undergo a comprehensive review with consideration of the following goals: Create a target timeframe for the process and measure and report progress towards this metric; identify and adopt best practices from other RTOs; eliminate steps in the process that don't add value; reexamine the Class Year Study process; better synchronize the interconnection process with Article 10; and simplify the process for small generators less than 25 MW. ACE NY members are specifically hoping for an effort to simplify the Class Year Study process, given the time period that this study consumes (18 – 24 months at minimum).
- State agencies may also consider further work with the NYISO concerning **storage policies** and the integration of storage with the CES, an issue that could materially affect achievement of the 50% mandate. For example, the NYISO is considering how to better integrate energy storage technologies within their markets, both on an interconnection basis and operationally. The integration of energy storage resources is a REV-related goal, as it could avoid more costly infrastructure investment and offset load requirements on the wholesale or retail sides of the meter. The integration of energy storage with renewable energy resources can effectively reduce the variability of those resources, enhancing the reliability and ease of operability of the grid. This is the kind of complementary resource pairing that is being appropriately promoted by the Commission. Currently at issue is the NYISO's interpretation of the definition of renewable energy resources. Specifically, the NYISO has indicated that combining energy storage resources with renewable resources may no longer qualify those resources as renewable or intermittent, potentially rendering them ineligible to meet CES qualifications, as well as excluding them from the Buyer-Side Mitigation limited offer floor exemption under the NYISO tariff. The unintended result of this uncertainty can produce a disincentive to pair energy storage technology with renewable resources, exactly the opposite of what the Commission, the NYISO and FERC would want. We strongly encourage the Commission and Staff to work with the NYISO and other stakeholders to resolve this uncertainty. More broadly, the Commission may want to examine the amount of additional flexibility that the system will require with the additional deployment of renewables resulting from the CES, and could set a process in motion for the utilities to plan for and deploy resources such as energy storage, demand response, and transmission capacity in step with increases in renewables deployment. This type of study could also consider co-benefits that particular resources can contribute toward achieving other state goals. For instance, while storage can be deployed to firm and time-shift renewable energy supply, it can also be used to shave peaks, enhance resiliency, and defer or replace expansions in transmission and distribution capacity.

- As more experience is gained with the Article 10 process, State agencies should consider a review of the Article 10 regulations to pursue any appropriate opportunities **to adjust the siting process** to make it more efficient and predictable;
- The new 50% mandate will likely compel State agencies and the NYISO to work together to identify and define additional **transmission system upgrades** that may be required to achieve the Commission’s various public policy goals, including the 50% mandate. A forward-looking study of necessary transmission system investments to achieve 50% renewable energy -- beyond the Energy Highway AC projects in the Hudson Valley and the Western New York congestion relief project -- could be helpful in informing priority transmission investments.
- **State actions to foster offshore wind development** will include timely completion of the Offshore Wind Master Plan and the DOE-funded multi-state offshore wind project, as well as ongoing support for federal agencies as they pursue the designation of new offshore wind energy areas, and support for federal actions in pursuit of offshore wind leases;
- **Policy support for DER** remains an important goal, both in support of REV goals and towards the achievement of the DER contribution to the 50% target. Towards this end, decisions regarding the definition and applicability of the net metering successor (“value of D”) proceeding, including how it might apply to projects in the 2 MW and larger size category will be relevant to the Clean Energy Standard. Also, further definition of the REV Track 2 mechanisms, i.e. the Earnings Impact Mechanisms, and how they will attract DER investment to help contribute to the CES. The signatory organizations remain involved in the REV proceeding (CASE 14-M-0401) as well as the Interim Successor to Net Energy Metering proceeding (CASE 15-E-0751). While we note their importance here, our organizations will comment in detail on these issues in the context of those proceedings.
- **Establish a binding energy efficiency target.** Although this issue has been discussed elsewhere in these Comments, we reiterate here in order to again highlight the connection between the success of the 50% Clean Energy Standard, and the imperative for firm energy efficiency targets. Our organizations urge the Clean Energy Advisory Council and the Commission to establish a more specific and enforceable energy efficiency requirement for utilities, as well as the processes to allow utilities to recover their investment in cost-effective energy efficiency programming. Energy efficiency needs to be a basic service for the utilities as the distributed system platform provider, with the energy efficiency levels necessary to achieve the 50% CES established as a minimum floor and incentives for achievement beyond this minimum.
- **Targeted co-incentives to achieve co-benefits.** Elsewhere in these Comments, we discuss the integration of co-incentives for distributed renewables with Tier 1. The most impactful co-incentive program is currently NY-Sun, a successful program that we support. These types of co-incentive programs remain important for other DER technologies as well, in order to continue to diversify the DER market; to attract other

industries to New York, and to serve as a bridge for emerging technologies. It remains appropriate and complementary to the CES to maintain funding through the Clean Energy Fund (which is supporting NY-Sun) for anaerobic digester biogas, distributed wind, fuel cells, and to consider funding for micro-hydro and storage. Our organizations support continuing investment through the CEF for these technologies, both through direct co-incentive programs and through market transformation activities that address soft costs, identify niche markets, or assess potential to contribute to the 50% goal. We note that these technologies can bring economic and environmental co-benefits to particular sectors, such as the agricultural sector or to municipalities. These co-benefits can include offsetting O&M costs for farms or municipalities; providing resiliency and power quality; reducing water use; or providing a mechanism for investment in dam safety.

VI. Conclusion

The Renewable Energy Industry, as represented in this submission as the Alliance for Clean Energy New York, the American Wind Energy Association, the Advanced Energy Economy Institute, Northeast Clean Energy Council, and the Distributed Wind Energy Association, strongly supports New York State's pursuit of a Clean Energy Standard to achieve 50% renewable energy by 2030. Our organizations and member companies believe that New York can emerge as a stronger market for both large-scale and distributed renewables and we look forward to further activity and investment in New York State.

For nearly 10 years, New York State has pursued large-scale renewable energy development through the RPS Main Tier, with notable success: 65 contracted projects for 2,035 MW of new renewable capacity; program costs “expected to comprise less than 0.2% of total retail electricity expenditures;” and taking into account wholesale electricity price reductions resulting from the program, a cumulative net rate impact “projected to be essentially zero.”³¹ The new generation facilities have proven the benefits of this investment by keeping energy dollars in-state; prompting local economic development; reducing carbon emissions; diversifying New York's electricity supply in a market increasingly dominated by natural gas; providing long-term price stability in electricity supply; and avoiding the air pollution that contributes to smog and acid rain.

³¹ NYSERDA, *New York State Renewable Portfolio Standard Annual Performance Report Through December 13, 2013, Final Report* (March 2014): 5.

With this new Clean Energy Standard, combined with innovative co-incentive programs for distributed renewables now under development through REV, New York can build on this success by increasing the pace and scale of development while continuing to have a program that minimizes costs. By utilizing the State’s procurement administration experience, combined with the EDC’s ability to enter into long-term bundled power purchase agreements, New Yorkers can have a program than maximizes diverse benefits – including price stability – and minimizes costs.

Our organizations and member companies appreciate the chance to voice our comments on the *Staff White Paper on Clean Energy Standard* and look forward to the Order that will establish the CES and usher in a new era of renewable energy investment in New York.

Respectfully submitted,

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Ryan Katofsky
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Advanced Energy Economy Institute

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Vice President of Policy and Government Affairs
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Distributed Wind Energy Association

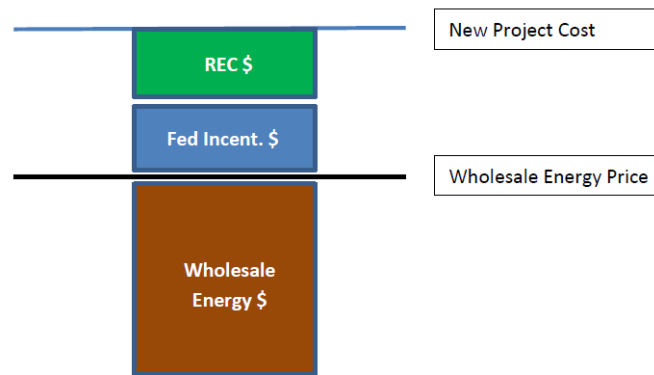
Appendix A: Limitations of a Short-term REC Market

This Appendix covers the fundamentals of RPS design in restructured markets and demonstrates why extensive use of long-term contracts will be necessary to meet RPS goals. We include it in our comments in response to the White Paper's indications that some meaningful portion of RPS compliance will or should potentially be met through short-term or spot market REC purchases, differentiated from any utility or NYSEERDA REC procurement options that were presented. To the extent that inference is correct, we strongly caution that a meaningful market for short-term and spot market RECs is highly unlikely to arise and to reiterate that long-term contracts will be essential to achieve RPS goals.

A number of restructured states in PJM have relied primarily on short-term and spot market REC purchases to meet their Tier I or Class I requirements. These states are Pennsylvania, New Jersey, and Maryland which account for a large portion of state RPS demand in PJM and whose RPS requirements are currently the primary drivers of state REC demand in PJM. However, those states have benefited from a number of dynamics which are likely not available to New York to support extensive reliance on short-term or spot market REC purchases for RPS compliance. Those dynamics were and are: (1) Early mover competitive retail supplier long-term contract purchases; (2) Significant regional wind development in response to the 1603(b) grant program unrelated to market demand for state-level RPS compliance, and; (3) Large-scale regional procurement covering the 13 state PJM region and potential for MISO imports to supplement New Jersey and Maryland RPS demand, meaning that PJM's very large market has significantly greater potential for short-term REC supply liquidity than New York.

There are three elements which make extensive reliance on short-term or spot market RECs insufficient to encourage renewable energy development responsive to RPS goals: (1) The lack of additional increasing RPS goals after 2020; (2) The implementation of the January 1, 2015 vintage date, and; (3) The basic fundamentals of restructured short-term and spot REC markets subjected to ACPs or other price ceilings. The first two elements were included in the White Paper and would be unique to New York; the third applies broadly to all restructured REC markets. In the body of these Comments, we discuss item (1) and indicate the need for firm annual targets 2017 – 2030, with the 2030 requirement continuing in perpetuity. For item (2), we support the vintage date and do not propose modifying it. Modifying it might provide a relief valve through PJM imports, but wouldn't help stimulate new investment in in-state projects.

Regarding (3), the fundamental nature of short-term and spot market RECs make them an insufficient instrument to achieve RPS compliance. In an efficient REC market, a REC's value equals the difference between the wholesale price of energy and federal incentives and a new renewable energy project's long-term costs and a reasonable, risk-weighted rate of return. In short: $REC = (\text{wind energy project cost} + \text{reasonable, risk-weighted rate of return}) \text{ MINUS } (\text{wholesale energy} + \text{federal incentives})$. This can be presented visually:



Renewable Energy Revenue Sources

If the REC market is not producing a price signal equal to incremental costs (i.e. the difference between the value of wholesale energy and federal tax incentives and the long-term cost of a new renewable energy project and a reasonable, risk-weighted rate-of-return), then that price signal is inefficient. The fundamental difficulty in relying on short-term and spot market REC prices is that they are not determined by a project’s incremental cost, but by short-term REC supply and demand. This difficulty is further exacerbated by the “thinness” of short-term REC markets; rather REC markets have fixed demand which cannot adjust to price and a limited number of buyers and sellers leading to a lack of liquidity (especially compared to much larger energy markets). As a result, short-term REC markets tend to produce volatile pricing, unreflective of incremental costs, in which prices tend to fall towards zero when supply is even slightly long, discouraging new investments required for RPS compliance, and prices that rise to toward the ACP when the market is short, leading electricity customers to overpay for RPS compliance.

Over the long-run, reliance on short-term RECs might possibly still encourage RPS compliance, although only if policy-makers are willing to let renewable energy investors take the market’s upside when prices rise well above the incremental cost. This would include structuring an ACP mechanism that does not act as a price cap, as well as the will to tolerate potentially very high REC prices in certain years. Still, ACE-NY remains highly skeptical that even if such commitments were made that substantial reliance on short-term and spot-market RECs is an effective policy tool to achieve RPS compliance.

Over time, an efficient REC market produces REC prices equal to incremental cost (Figure 1).

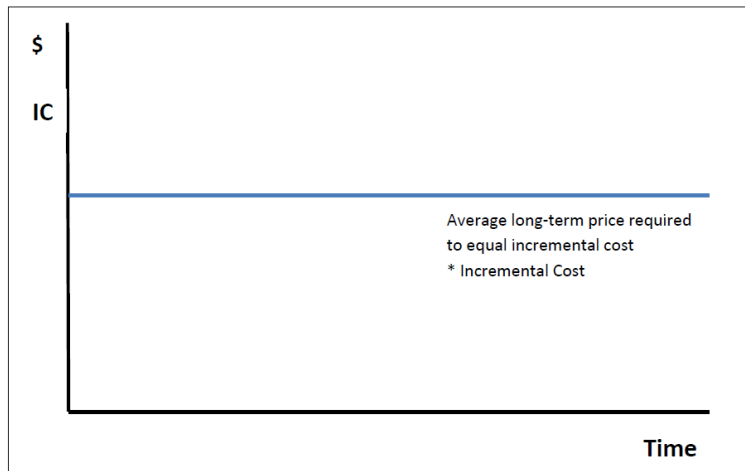


Figure 1: REC Price Required for Incremental Cost Recovery

Figure 1's blue line demonstrates a project's incremental cost. This is a levelized revenue of REC revenue over time that a project would need to achieve revenue adequacy.

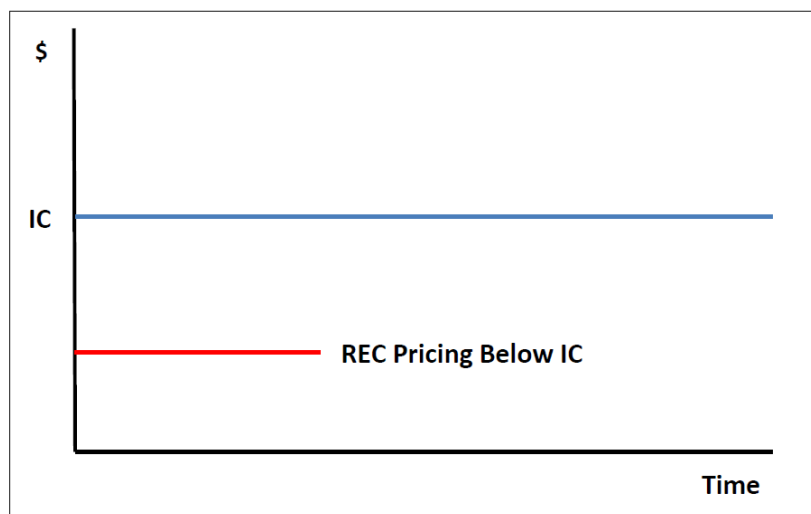


Figure 2: REC Prices below the Incremental Cost

Figure 2: In this example, which is reflective of the current state of short-term and spot REC markets, nationally and in the Mid-Continent Independent System Operator ("MISO") and in PJM's recent past, REC prices are below the incremental cost. As a result, in order to achieve revenue adequacy REC price must rise above the long-term incremental cost in out years.

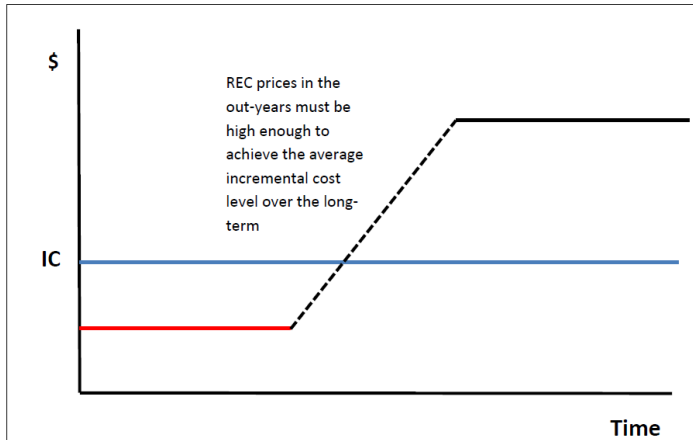


Figure 3: Out-Year REC Prices Must Rise Significantly to Achieve Incremental Costs

Figure 3: When REC prices fall below the long-term incremental cost, they must correspondingly rise above the long-term incremental cost in future years for projects to achieve revenue adequacy. However, there are significant barriers to this result. The first, as mentioned above, is the short-term nature of the increasing RPS targets which will not instill confidence in investors to take a long position on unbundled short-term and spot market RECs. Additionally, ACPs can act as a price cap which discourages cost recovery. Lastly, intolerance for high prices, even if necessary for project to achieve resource adequacy, can lead policy-makers to revise or change RPS goals (this could be especially pronounced in the New York case given the short-term nature of the proposed ramp-up period only through 2020 which may make it easier to alter future commitments).

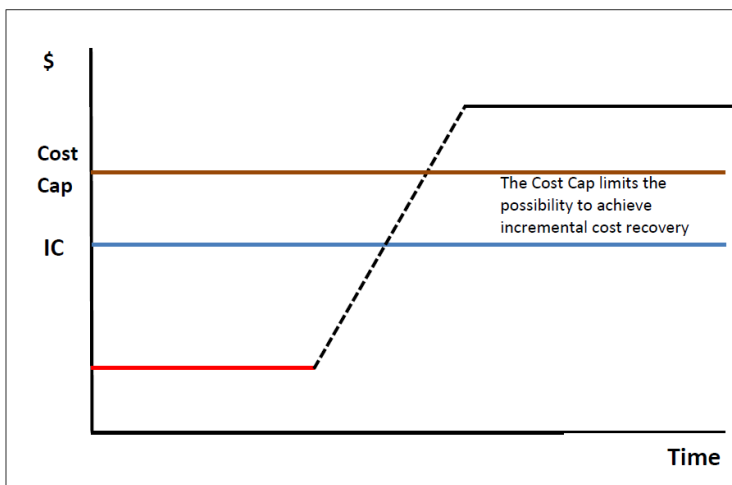


Figure 4: Out-Year REC Prices Capped by ACP and other considerations

Figure 4: The brown line added to Figure 4 represents a limitation to the out-year REC revenue which undermines the recovery of incremental costs and threatens project revenue adequacy. If renewable energy investors are concerned that upside revenue is limited and potentially insufficient to allow for recovery of incremental costs, they will be discouraged from making investments required for RPS compliance.

In conclusion, evidence from PJM and ISO-NE demonstrates that REC-only RPS markets are insufficient to encourage robust investments in merchant renewable energy generation. There are 6,667.6 MW of commercial scale wind energy in PJM, 1,184.3 MW is merchant, or 17.7%. Since 2012 there has only been one merchant commercial scale wind farm constructed in PJM – a 175.1 MW wind farm in Illinois which became operational in 2015. Similarly, in ISO-NE only 126 out of 1,015 MW of grid-tied wind energy is merchant, or 12.4%. There have been no merchant projects constructed in New England since 2012.³² This record demonstrates the practical essentialness of long-term contracting for renewable energy and RECs in order to encourage project development necessary for RPS compliance.

³² American Wind Energy Association Market Database Pro.