NEW YORK STATE OF OPPORTUNITY. | Reforming the Energy Vision

The Clean Energy Standard

New York State Department of Public Service
New York State Energy Research and Development Authority
September 14, 2016
Informational Webinar

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STATE OF NEW YORK
PUBLIC SERVICE COMMISSION
CASE 15-E-0302 – In the Matter of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard

Informational Webinar
Wednesday, September 14, 2016
11:00 A.M. until 1:00 P.M.

A G E N D A

I. Welcome/Introduction----------11:00 A.M.
II. REC Program and LSE Obligations----------11:15 A.M.
III. ZEC Program and LSE Obligations----------11:30 A.M.
IV. CES Implementation Issues----------11:45 A.M.
V. CES Implementation Schedule----------11:55 A.M.
VI. Questions----------12:10 A.M.
VII. Adjourn----------1:00 P.M.

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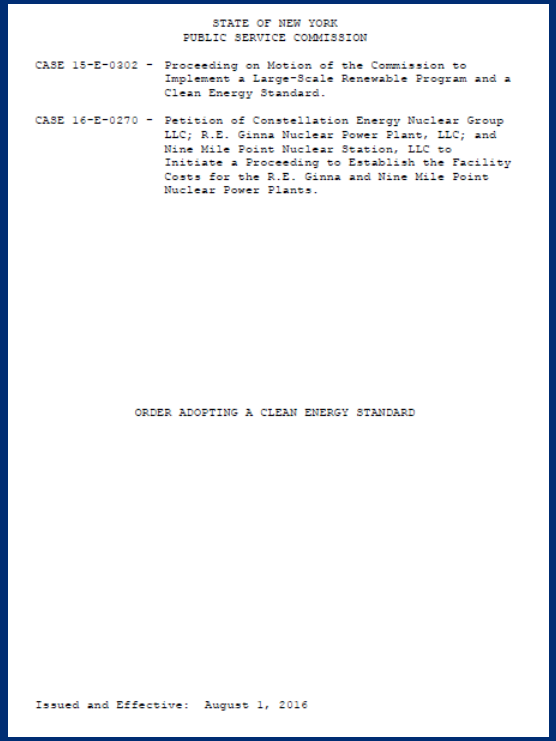
Clean Energy Standard

- By Order issued August 1, 2016, the Public Service Commission adopted the State Energy Plan (SEP) goal that 50% of electricity consumed in New York's is to be generated by renewable sources by 2030 as one strategy to reduce GHG emissions 40% by 2030.
- The Order also discusses a number of other strategies in furtherance of the GHG reduction goal, including preserving at-risk zero carbon-emitting nuclear resources.



STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

CASE 15-E-0302 - Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard.

CASE 16-E-0270 - Petition of Constellation Energy Nuclear Group LLC; R.E. Ginna Nuclear Power Plant, LLC; and Nine Mile Point Nuclear Station, LLC to Initiate a Proceeding to Establish the Facility Costs for the R.E. Ginna and Nine Mile Point Nuclear Power Plants.

ORDER ADOPTING A CLEAN ENERGY STANDARD

Issued and Effective: August 1, 2016

Clean Energy Standard

- The Clean Energy Standard (CES) anticipates a series of initiatives including, but not limited to, obligations upon LSEs and opportunities for voluntary contributions, all of which will contribute to attaining the 50 by 30 goal.
- The Order provides for two mandated requirements:
  - a Renewable Energy Standard (RES) requirement, and
  - a Zero-Emissions Credit (ZEC) requirement.
- The RES component and the ZEC component are interrelated but the goals are additive – ZECs will not count toward satisfying the 50% by 2030 renewable energy goal.

Clean Energy Standard

The RES establishes requirements consisting of:

- a Tier 1 obligation on Load Serving Entities (LSEs) to financially support new renewable generation resources to serve their retail customers;
- a new Tier 2 obligation on electric distribution companies (EDC) on behalf of all retail customers to continue to support the maintenance of certain existing at-risk generation attributes;
- a program to maximize the value potential of new offshore wind resources; and
- a requirement for regular renewable energy credit (REC) procurement solicitations.

The ZEC requirement consists of an obligation on LSEs to invest in zero-emissions attributes to serve their retail customers for the preservation of existing at-risk nuclear facilities.

Renewable Energy Standard

RES Forecast

The first step in the calculation RES obligation was to determine the forecasted statewide load for 2030. The New York Independent System Operator (NYISO) Gold Book forecast was used to estimate the total load expected in 2030. Since the Gold Book forecast only extends ten years, Staff extended the forecast values to 2030 using a linear extrapolation for the period of time beyond the NYISO forecast (2026-2030). Under this approach the unadjusted forecasted statewide load for 2030 is 176,618,000 MWhs. The forecast was then adjusted for the minimum energy efficiency achievements expected under the utilities' Energy Efficiency Transition Implementation Plans and New York State Energy Research and Development Authority's (NYSERDA) Clean Energy Fund programs – efficiency activities were also imputed for both Long Island Power Authority, the New York Power Authority and direct load customers.

Renewable Energy Standard

Calculation of the RES Forecast

The following table illustrates the calculation of the 2030 load forecast:

Year	NYISO Statewide Energy Forecast (GWh)	Cumulative Additional Energy Efficiency (GWh)	CES Forecasted Consumption (GWh)
2017	165,800	6,680	159,120
2018	166,877	8,907	157,970
2019	168,670	11,133	157,537
2020	170,558	13,360	157,198
2021	171,198	15,587	155,611
2022	171,987	17,813	154,174
2023	172,745	20,040	152,705
2024	173,755	22,267	151,488
2025	174,229	24,493	149,736
2026	174,704	26,720	147,984
2027	175,181	28,947	146,234
2028	175,659	31,173	144,485
2029	176,138	33,400	142,738
2030	176,618	35,627	140,992

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Renewable Energy Standard

RES Tier 1 Target

Based on the calculation of the RES forecast, in order to reach the 50% by 2030 renewable energy goal, the level of renewable electricity consumed in NY in 2030 must be 70,496 GWh.

Staff calculated the level of renewable energy consumed in NY in 2014 (the baseline) to be approximately 41,296 GWh; this results in an incremental need of 29,200 GWh of renewable resources by 2030.

Renewable Energy Standard

RES Tier 1 Eligibility

Eligibility for Tier 1 will mirror the eligibility rules used for the Main Tier of the RPS, with the exception that the 30 MW limit on low-impact run-of-river hydroelectric facilities is eliminated. The eligible resources include biogas, biomass, liquid biofuels, fuel cells, hydroelectric, solar, tidal/ocean, and wind.

Facilities must be located in NY, or in a control area adjacent to NY. All electricity must be delivered into market in the NY control area.

To be eligible a facility must have entered commercial operation after December 31, 2014.

Renewable Energy Standard

RES Tier 1 Behind-the-Meter Eligibility

For 2017, installations from NY Sun and RPS CST programs that came on-line after December 31, 2014 were considered in the 2017 LSE target, but were subtracted for the purpose of calculating the 2017 LSE REC procurement obligation.

For 2018 and beyond, the Tier 1 eligibility of NY Sun, CST or other behind-the-meter (BTM) resources is being investigated in a separate proceeding; Case 15-E-0751 - Value of Distributed Energy Resources (LMP+D). While this generation may be from renewable resources, the decisions reached in that case will provide guidance on whether BTM resources will be permitted to sell RECs as part of the RES program.

Renewable Energy Standard

LSE Obligations

The cornerstone of the RES is the obligation placed on all LSEs under the Commission's jurisdiction to acquire an increasing portion of their annual retail load from new (in service after December 31, 2014) renewable resources. The Order set, through 2021, the annual obligation in total statewide MWh translated as a percentage of each LSEs load:

	LSE Obligation	
Year	MWh	Percentage of LSE Load
2017	974,000	0.6%
2018	1,741,270	1.1%
2019	3,124,100	2.0%
2020	5,302,371	3.4%
2021	7,530,642	4.8%

Renewable Energy Standard
Satisfying LSE Obligations

An LSE may satisfy its obligation by one of the following ways:

- LSEs may purchase RECs from NYSERDA;
  - The Commission directed NYSERDA to conduct Tier 1 REC procurement solicitations at least once annually.
- LSEs may enter directly into agreements, including long-term power purchase agreements (PPAs), with renewable energy resources;
- LSEs may pay an alternative compliance payment (ACPs);
- Or some combination of the three.

Renewable Energy Standard
Tier 2 - Maintenance

Rather than adopting Staff's Tier 2a and 2b proposal, the Order generally renewed the RPS maintenance program as the new Tier 2 of the RES. Eligibility is limited to:

- Run-of-river hydroelectric facilities of 5 MW or less, wind facilities, and biomass direct combustion facilities.
- Facilities must have been in commercial operation prior to January 1, 2003.
- The output of the facility must have been originally included in New York's baseline of renewable resources calculated when the RPS program was first adopted.

Renewable Energy Standard
Tier 2 - Maintenance

Each facility seeking funds under Tier 2 will be required to demonstrate absent the maintenance contracts, the facility will cease operations and no longer produce positive emission attributes.

Maintenance contracts will be provided on a case-by-case basis and relief will be tailored to the situation presented.

Eligible costs will be recovered from delivery customers in the same manner as in the RPS Program Maintenance Tier, or from such other sources as the Commission shall determine.

Zero–Emissions Credit

Zero–Emissions Credit

The eligibility to sell ZECs will be based on a few criteria:

- Must have a history of providing clean energy resources to retail customers in New York.
- The plant must be in jeopardy of closing absent an additional revenue source.
- 12-year contract between plant and NYSERDA.
  - Provides certainty for an owner making long-lived capital investments.
  - Ensures the zero-emissions attributes will be preserved for a long period of time.
- One ZEC = one MWh of production by an eligible facility.

Zero–Emissions Credit

The LSE ZEC obligation is designed to ensure that enough revenues are in place so that the plants continue to operate and produce carbon-free emission.

- ZEC cap = 27,618,000 per year.
  - Based on July 2015 – June 2016 output.
  - If not all owned by same owner, then separate limits for each owner.
- If fewer MWH are produced, then the level of required ZEC purchases goes down.
- Each LSE will be responsible for purchasing ZECs equal to their load share percentage for the entire State.
- The annual compliance period is April 1 - March 31.

Zero–Emissions Credit

The price per ZEC will be different every two years.

- The price for the first two years, or Tranche 1, was based on the Social Cost of Carbon (SCC) as published by the U.S. Interagency Working Group (USIWG) less the cost of carbon currently collected through the Regional Greenhouse Gas Initiate (RGGI).
  - Commission used this methodology of valuing avoided carbon in the Benefit Cost Analysis Framework order.
  - $17.48 per MWh plus an administration adder.
- Future ZEC prices depend on several factors:
  - SCC estimates for later years.
  - Market revenue forecasts every two years.
  - The amount of renewable energy being consumed in New York.

Zero–Emissions Credit

- The SCC estimate of the USIWG goes up approximately $2 per MWh each year.
  - RGGI amount remains fixed – any changes are expected to be reflected in energy revenue forecasts.
- If Zone A forecasted energy and capacity prices increase from the forecast in July ($39 combined), then the ZEC price is adjusted downward by the amount of the change.
  - Provides a consumer protection.
  - Means the ZEC price could be much lower (and perhaps even zero) than the amounts listed in Staff's Responsive Proposal.
- If sufficient renewable energy is being consumed in New York, the assumed amount of carbon being avoided for each MWh of nuclear output is assumed to decrease.
  - Reduces ZEC prices.
  - Adjustment related to this begins with Tranche 4.

Zero–Emissions Credit

The Order provides additional incentives to ensure that the plants provide the carbon attributes expected.

- If output is less than 85% of the ZEC cap for any Tranche, then the ZEC cap will be reduced for the following Tranche by approximately 4%.
    - Cap is restored to its original amount if performance approves.
- If any of the three plants close, the ZEC cap goes down by one-third.
    - Incentive for the owner to keep plants open.

NYSERDA Clean Energy Standard Implementation - 2017

Summary

September 14, 2016

Background

Background

NYSERDA on 8/25/2016 filed a petition proposing:

- Renewable Energy Standard (RES) Program administration adder; and
- RES sales and payment schedule

The petition also includes proposals regarding:

- Zero Emissions Credit (ZEC) Requirement Program (ZECR) administrative adder;
- ZEC sales and payment schedule; and
- Mechanism by which distribution utilities will provide security for payments owed to REC and ZEC generators

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Administration

Proposed ZEC Administration Adder

NYSERDA proposed an adder of $.2172 per ZEC, calculated as follows:

ZEC Program Salary and overhead expenses	$1,640,000
Cost Recovery Fee (CRF) expenses	4,360,000
Total Costs	$6,000,000
ZECs expected to be offered for sale April 1, 2017 – March 31, 2018	27,618,000
ZEC administration adder per ZEC	**$.2172**

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Proposed Alternative Method for Covering REC Administrative Costs & Fees

NYSERDA requested PSC approval to use uncommitted funds from following sources for non-recurring expenses and REC administration as an alternative to REC adder:

- System Benefit Charge (SBC)
- Energy Efficiency Portfolio Standard (EEPS)
- Renewable Portfolio Standard (RPS)

Proposed Alternative Method for Covering REC Administrative Costs & Fees continued

REC Program Salary and overhead expenses (through December 31, 2017)	$1,420,000
REC/ZEC Program Non-recurring expenses	1,000,000
REC/ZEC system development costs	5,930,000
Subtotal – NYSERDA expenses and capital costs	$8,350,000
Estimated CRF expenses	$150,000
Less Remaining RPS and NYGATS Administrative Funds	($2,000,000)
Total Costs to be funded through repurposed SBC/EEPS/RPS funds	**$6,500,000**

- NYSERDA to provide quarterly reports to DPS Staff on actual expenses incurred

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Long Term Procurement

REC Procurement and Contracting

- The CES Order directed NYSERDA to conduct long-term REC-only procurement solicitations at least once annually.
- For the 2017 procurement period NYSERDA will publish on its website no later than December 1, 2016, a firm schedule of fixed dates for the annual and potential supplemental solicitations.
- Staff, in consultation with NYSERDA, will propose procurement guidelines for consideration by the Commission as part of the implementation plan.

ZEC Purchase Agreements

- The CES Order directed NYSERDA to offer long-term contracts for the purchase of ZECs from the FitzPatrick, Ginna and Nine Mile Point generating facilities in accordance with the price, contract period and the other terms and requirements specified in the Order.

REC/ZEC Disposition and NYSERDA Funding

NYSERDA Administration of RES and ZECR

In its August Petition, NYSERDA proposed to:

- Develop and build purchase & sale platform for RECs/ZECs
- Enter into contractual relationships with LSEs for periodic payments for purchase & sales of REC/ZEC
- Execute “backstop” agreements with electric distribution companies (EDCs) to cover risk inflows from LSEs to NYSERDA

Standard REC, ZEC & EDC Agreements

NYSERDA requested:

- PSC to direct NYSERDA to develop and file standard REC, ZEC and EDC agreements as compliance filings
- The agreements will incorporate:
  - Payment schedules
  - All necessary terms; including:
    - Methods of payment
    - Financial security requirements
    - Penalties for non-compliance
- *Update – NYSERDA will file model standard agreement for public comment*

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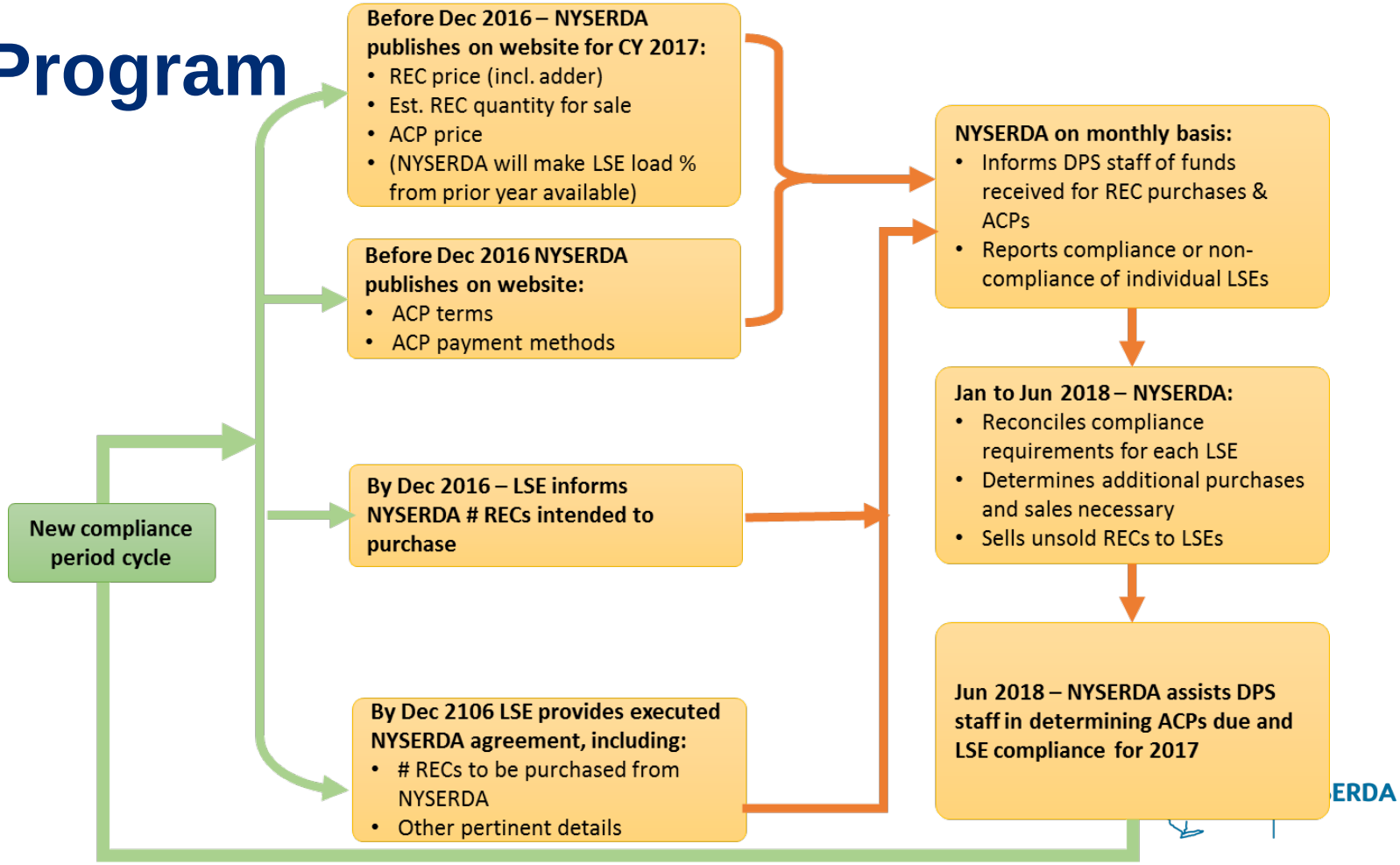
Standard REC, ZEC & EDC Agreements continued

NYSERDA requested:

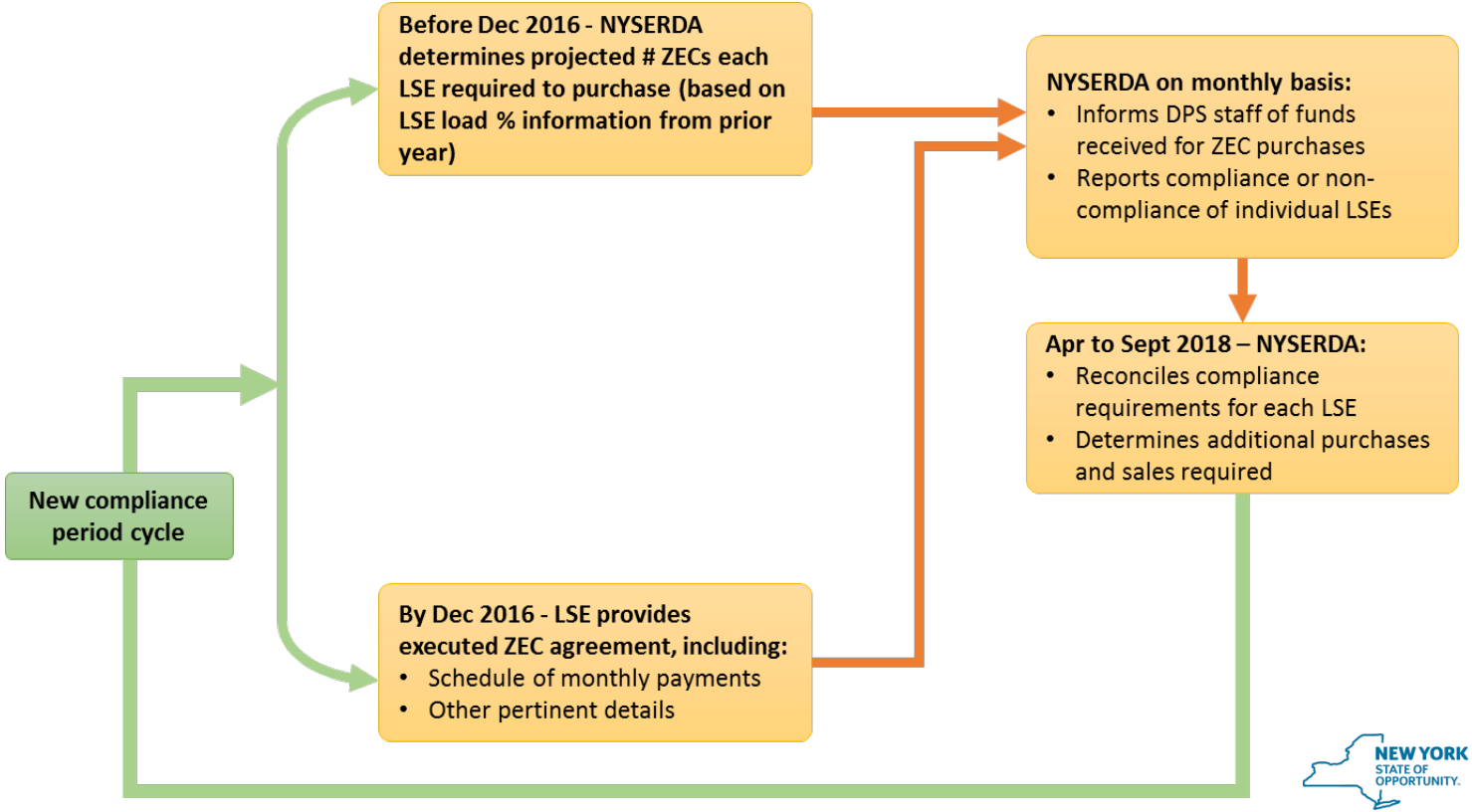
- PSC to direct each LSE & EDC to execute agreements and provide them to NYSERDA
- DPS Staff to be authorized, upon request by NYSERDA, to approve modifications to agreements as may be necessary over time to reflect program changes or other contingencies

Sales and Payment Schedules

REC Program


Before Dec 2016 – NYSERDA publishes on website for CY 2017:
• REC price (incl. adder)
• Est. REC quantity for sale
• ACP price
• (NYSERDA will make LSE load % from prior year available)
Before Dec 2016 NYSERDA publishes on website:
• ACP terms
• ACP payment methods
By Dec 2016 – LSE informs NYSERDA # RECs intended to purchase
By Dec 2106 LSE provides executed NYSERDA agreement, including:
• # RECs to be purchased from NYSERDA
• Other pertinent details
New compliance period cycle
NYSERDA on monthly basis:
• Informs DPS staff of funds received for REC purchases & ACPs
• Reports compliance or non-compliance of individual LSEs
Jan to Jun 2018 – NYSERDA:
• Reconciles compliance requirements for each LSE
• Determines additional purchases and sales necessary
• Sells unsold RECs to LSEs
Jun 2018 – NYSERDA assists DPS staff in determining ACPs due and LSE compliance for 2017

ZECR Program



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Compliance

Compliance

- RECs and ZECs will be tracked and verified through the New York State Generation Attribute Tracking System (NYGATS)
- NYGATS will verify eligibility - including delivery requirements
- Each LSE must register in NYGATS and will be required to submit an annual compliance filing

EDC Backstop

Overview

- CES requires NYSERDA to enter into agreements with renewable and zero-emissions generators & make payments to generators at regular intervals
- NYSERDA's ability to make payments depends on receipt of funds for REC/ZEC sales in advance of payment due dates
- CES Order provides EDC to serve as guarantors of obligations to generators for REC program (i.e. financial "backstop")
- NYSERDA requested PSC clarification that backstop mechanism is also provided for ZEC program

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EDC Backstop Operation Principles

- NYSERDA REC/ZEC payment obligations will align with receipt of funds from LSEs for REC/ZEC sales
- NYSERDA proposes a monthly payment obligation for both (i) REC/ZEC purchase from generators and (ii) REC/ZEC sales to LSEs
- NYSERDA requests approval to use available Clean Energy Fund (CEF) cash balances on a temporary basis prior to invoking EDC collection mechanism
- EDC backstop would be invoked if aggregate shortfalls exceed amounts that could be covered short term from CEF cash balances
- EDC backstop needs to be established and authorized to allow NYERDA to invoke mechanism when appropriate trigger events have been met without additional PSC approval

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Schedule of Implementation

CES Proposed Implementation Schedule

September 2016

1. *LSE OBLIGATION*	VENUE	STAKEHOLDER OUTREACH	EARLIEST COMMISSION ACTION
Address target for 2017	Secretary's Notice of Staff statement explaining the calculation of 2017 LSE target of 0.6%.	9/13/16 Webinar	October 2016
review and confirm targets for 2018-2021	Phase 1 Plan filed by Staff and/or NYSERDA October 2016	November 2016	December 2016/ January 2017
Details for demonstrating compliance following compliance period	Phase 1 Plan	November 2016	December 2016/ January 2017
Details of financial transactions between NYSERDA and LSEs for RECs and ZECs	NYSERDA petition filed 8/25 and Supplemental filing by NYSERDA expected with proposed contracts for comment	9/13/16 webinar	November 2016
Details/protocols of NYGATS registration and other requirements	Phase 1 Plan	November 2016	December 2016/ January 2017
Protocols/Terms of REC Banking	Phase 1 Plan	November 2016	December 2016/ January 2017
Establish targets for 2022-2030	Phase 1 Plan	November 2016	December 2016/ January 2017

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CES Proposed Implementation Schedule
September 2016

2. *ALTERNATIVE COMPLIANCE PAYMENTS*	VENUE	STAKEHOLDER OUTREACH	EARLIEST COMMISSION ACTION
Methodology for setting ACP post 2017	Phase 1 Plan	November 2016	December 2016/ January 2017
Disposition of ACP to benefit customers	Phase 1 Plan	November 2016	December 2016/ January 2017
3. *REC PRICING*	VENUE	STAKEHOLDER OUTREACH	EARLIEST COMMISSION ACTION
NYSERDA REC adder for administrative costs	NYSERDA petition	9/13/16 Webinar	November 2016
Method for pricing and offering RECs post 2017	Phase 1 Plan	November 2016	December 2016/ January 2017

CES Proposed Implementation Schedule

September 2016

4. NYSERDA PROCUREMENTS	VENUE	STAKEHOLDER OUTREACH	EARLIEST COMMISSION ACTION
Clarification of Tier 1 Eligible resources (including repowering and return to service criteria)	Phase 1 Plan	November 2016	December 2016/ January 2017
Protocols for certification process for eligible resources	Phase 1 Plan	November 2016	December 2016/ January 2017
Capitalization and cash flow for NYSERDA long-term contracts and EDC as backstop	NYSERDA 8/25/16 Petition	9/13/16 Webinar	November 2016
Procurement schedule	Phase 1 Plan	November 2016	December 2016/ January 2017
Procurement Process, Rules and Evaluation Criteria	Phase 1 Plan	November 2016	December 2016/ January 2017
Staff recommendation as to whether NYSERDA procured RECS should be tradable post 2017	Phase 2 Plan filed by NYSERDA and/or Staff January 2017	January 2017	March/April 2017

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CES Proposed Implementation Schedule

September 2016

5. *OTHER MATTERS*	VENUE	STAKEHOLDER OUTREACH	EARLIEST COMMISSION ACTION
Review and proposal for revisions to Maintenance Program requirements for Tier 2 including contract terms, funding source, administration and REC ownership	Phase 1 Plan	November 2016	December 2016/ January 2017
Program Reporting and Evaluation requirements	Phase 3 Plan filed by NYSERDA and/or Staff March 2017	April 2017	June/July 2017
Methodology/protocols for Triennial Reviews	Phase 3 Plan	April 2017	June/July 2017
Criteria for interim divergence test	Phase 2 Plan	January 2017	March/April 2017
NY Certified Green Product (NY based Green power)	ESCO reset proceeding (Case 15-M-0127)	TBD	TBD
Considerations to accommodate customers who prefer to have a 100% renewables instead of ZECs	ESCO reset proceeding	TBD	TBD

CES Proposed Implementation Schedule

September 2016

5. *OTHER MATTERS - Continued*	VENUE	STAKEHOLDER OUTREACH	EARLIEST COMMISSION ACTION
Geothermal as an eligible technology and Consideration of T-REC Program	Outreach/Proposal	Stakeholder process announced in 4Q of 2017	TBD
Maximize off shore wind potential	Outreach/CEF investment chapter Blueprint and Master Plan	On-going	Report to the Commission
Mechanisms for monitoring EV and HP penetration	Monitoring and Reporting	TBD	Report to the Commission
Consideration of securitization to reduce costs of RECs	Reporting	TBD	Report to the Commission
Monitor activity of baseline resources	Monitor and reporting	TBD	Report to the Commission
Work with RGGI States to support stronger regional consistency that can benefit all consumers	Outreach and work with NY RGGI team	On-going	Report to the Commission