

La Capra Associates

To: Rhode Island Public Utilities Commission

From: Richard Hahn, La Capra Associates, on behalf of the Division of Public Utilities and Carriers

Re: Docket 4404 - Commission Review into the Adequacy of Renewable Energy Supplies Pursuant to R.I. General Laws §39-26-6

Date: October 18, 2013

§39-26-6(d) of the Rhode Island General Laws requires that the Rhode Island Public Utilities Commission (the “Commission”):

“Determine, on or before January 1, 2010, the adequacy, or potential adequacy, of renewable energy supplies to meet the increase in the percentage requirement of energy from renewable energy resources to go into effect in 2011 and determine on or before January 1, 2014, the adequacy or potential adequacy, of renewable energy supplies to meet the increase in the percentage requirement of energy from renewable energy resources to go into effect in 2015. In making such determinations the commission shall consider among other factors the historical use of alternative compliance payments in Rhode Island and other states in the NEPOOL region. In the event that the commission determines an inadequacy or potential inadequacy of supplies for scheduled percentage increases, the commission shall delay the implementation of the scheduled percentage increase for a period of one year or recommend to the general assembly a revised schedule of percentage increases, if any, to achieve the purposes of this chapter.”

On August 7, 2013, the Commission issued a memorandum establishing a procedural schedule for this proceeding and a filing date for NGRID. On September 25, 2013, National Grid (“NGRID”) filed the testimonies of Ms. Margaret Janzen of NGRID and Mr. Paul Flemming of ESAI Power, LLC (“ESAI”) providing an assessment of the outlook for renewable energy supplies in New England. Two technical sessions were held. On August 27, 2013 ISO-NE made a presentation to the Commission describing how ISO-NE tracks renewable energy projects.

And, on October 3, 2013, NGRID made a presentation summarizing the results of its September 25th filing.

La Capra Associates was asked by the Rhode Island Division of Public Utilities and Carriers (the “Division”) to review this material. This memorandum presents the results of the review.

Summary

Based upon the discussion in the rest of this memorandum, La Capra Associates recommends that the Commission delay the 1.5% increase in the 2015 Renewable Energy Standard (“RES”) requirement for one year as allowed by the statute. Based upon currently expected in-service dates for key projects with long-term Purchased Power Agreements (“PPAs”), there is a potential shortage of Renewable Energy Certificates (“RECs”) in 2015 and 2016. In the alternative, the Commission could retain the current schedule, which would result in an increased likelihood of making Alternative Compliance Payments (“ACPs”).

Overview of the Proceeding

This proceeding is to determine if the Commission should retain the scheduled increases in the percentage of power supplies that must come from renewable energy sources, delay the 2015 increase by one year, or recommend other changes to the Rhode Island Legislature. Figure 1 below shows the current schedule of RES compliance percentages and how a one-year delay in 2015 would affect that schedule. Note that by 2020, the compliance percentage reaches 14% in both the current schedule and in the one-year delay scenario.

Figure 1

RI REC REQUIREMENTS		
year	Current New REC %	Delayed New REC %
2013	5.50%	5.50%
2014	6.50%	6.50%
2015	8.00%	6.50%
2016	9.50%	8.00%
2017	11.00%	9.50%
2018	12.50%	11.00%
2019	14.00%	12.50%
2020	14.00%	14.00%

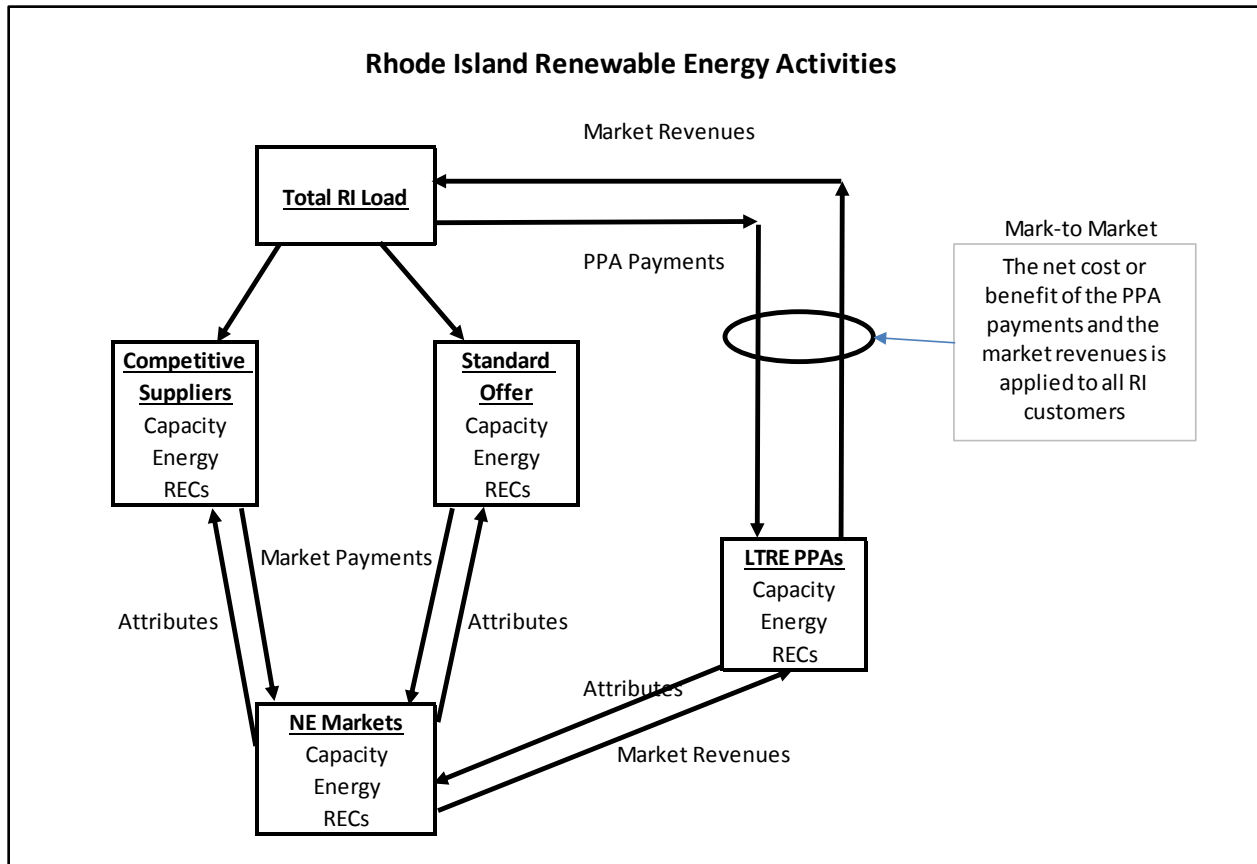
RI Renewable Energy Activities

Rhode Island law mandates two activities that involve renewable energy. All load serving entities (“LSEs”) – both NGRID (as a provider of Standard Offer power supplies) and competitive suppliers – are required to meet an RES and have certain percentages of their power supply portfolios provided by qualified renewable energy projects. Both NGRID and competitive suppliers meet their load obligations by purchasing capacity, energy, and RECs from New England markets. The long-term renewable energy contracting statute requires NGRID to sign 15-year (“PPAs”) with developers of renewable energy projects. Under these PPAs, NGRID purchases products or attributes - such as capacity, energy, and RECs – from these projects, and sells these attributes into New England markets. If the PPA payments are less than the market revenues, then the contract is said to be below market and yields a net benefit. If the PPA payments are more than the market revenues, then the contract is said to be above market, and the PPA yields a net cost. The net cost or benefit accrues to all Rhode Island customers, regardless of whether they receive their power supplies from NGRID or from a competitive supplier.

The RES requirements and the long-term contracting activities complement each other. Higher market prices for capacity, energy, and RECs produce higher market revenues for the PPAs and result in lower net costs or higher net benefits to all Rhode Island ratepayers of NGRID. Higher

market prices result in higher costs for Standard Offer and competitive power supplies. The long-term PPAs serve as a hedge against higher market prices. Figure 2 below provides a schematic diagram of these activities.

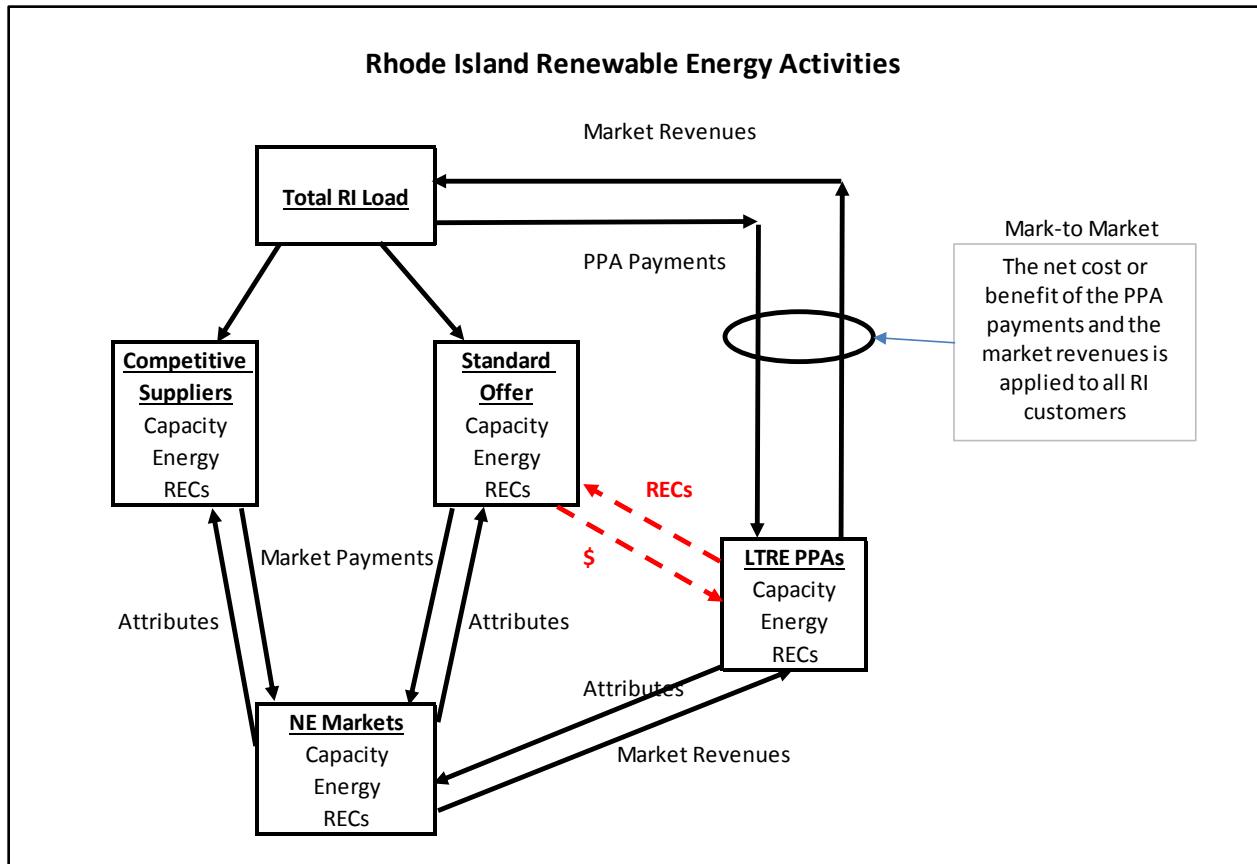
Figure 2



It would be possible to keep the RES requirements and the long-term contracting activities separate and independent of each other. Each could exist without the other. However, both activities do exist, and NGRID has proposed linking these activities by using RECs purchased via the long-term PPAs to help meet its RES requirement for its Standard Offer customers. Under this approach, NGRID transfers RECs purchased via PPAs, charges a price for these RECs to Standard Offer customers, and credits revenue to the PPAs. The price charged for these RECs is a current market price. If this transfer occurs near the time that other RECs would have been purchased, the cost impact is approximately the same as if the two activities were kept separate. However, using RECs acquired via PPAs will increase the likelihood of an adequate

supply and help to minimize ACPs, which typically come at a slightly higher price. Figure 3 below illustrates the transfer of RECs from the PPAs to meet Standard Offer RES obligations. La Capra Associates has endorsed this approach by NGRID.

Figure 3



NGRID Filing

NGRID’s filing provides a forecast of the number of RECs available from the PPAs. As shown in graph 1 on page 9 of Ms. Janzen’s testimony, the PPAs that have already been signed will produce more RECs than needed for Standard Offer supplies through 2017. NGRID also provides an analysis by ESAI that assessed the overall supply and demand for RECs in New England. ESAI concludes that the region-wide demand for RECs will exceed the projected supply, which will result in an inadequate supply of RECs region-wide, which will result in RECs prices being high and only slightly below the level of ACPs.

La Capra Associates Analysis

In determining the inadequacy or potential inadequacy of renewable energy supplies, the statute states that the Commission shall consider, among other factors, the historical use of ACPs in Rhode Island and other states in the NEPOOL region. Up until 2010, there was an adequate supply of RECs in New England, as the compliance percentages were relatively low. During this time period, reliance upon ACPs as a means of RES compliance was seldom used. As the compliance percentages increased faster than new supplies were added, reliance upon ACPs became prevalent in 2011. This view is supported by NGRID's filing. Table 2 of Ms. Janzen's testimony show no ACP costs for NGRID from 2007 through 2010, and \$4.5 million in ACP costs in 2011, with zero again in 2012. Also, slide 11 of NGRID's presentation at the October 3, 2013 technical session showed a region-wide REC surplus through 2010. From 2011 through 2020, a REC shortfall is predicted. When there is a shortfall of RECs, we would expect increased reliance upon ACPs, although perhaps not in every state or by every load serving entity.

We generally agree with the ESAI assessment predicting a shortfall of RECs region-wide as a base case assumption. While there is the potential that additional projects including imports may materialize, at this time there is not enough information to include such possibilities in a market assessment. As a result, we would expect REC prices to be at high levels, slightly below ACPs. Because demand exceeds supply, we would expect continued reliance on ACPs.

NGRID's assessment that the long-term PPAs will yield sufficient RECs to meet Standard Offer RES requirements assumes that the Bowers Wind project is on-line for 2015 and that Deepwater Wind is on-line for 2016. Under these assumptions, NGRID's assessment is reasonable.

However, based on information reviewed in Docket 4437 (Champlain Wind PPA, also referred to as Bowers Wind) and also provided in response to discovery in the instant docket, it is very likely that these two projects will not be on-line in 2015 or 2016. Bowers Wind has been denied a permit by the Maine Department of Environmental Protection, and Bowers Wind is appealing that decision. Bowers Wind has until 2015 to obtain this permit, and NGRID has stated that 2017 is a more appropriate in-service date for this project. In response to Commission 1-1 in

Docket 4437, NGRID states that the commercial operation date was changed to March 31, 2017 to accommodate Bowers Wind’s appeal of the denial of this permit. Regarding Deepwater Wind, in its most recent progress report to NGRID provided in response to DIV 1-4 in this proceeding, it states that the project is experiencing issues regarding permitting, and that the construction of the transmission line and the wind farm has yet to commence. This report does not provide a forecasted in-service date but states that the PPA allows this date to occur by December 31, 2017. I also note that the response to DIV 1-4 in this proceeding indicates that Orbit Energy is having siting issues that are not yet resolved. This means that the expected in-service date of the Orbit Energy project could also slip, although Orbit Energy contributes a much smaller amount of RECs than does Bowers Wind or Deepwater Wind.

Figure 4 below provides a comparison of the expected Standard Offer RES requirements to the RECS expected to be available from the PPAs. As shown, without the Bowers and Deepwater projects in 2015 and 2016, there is a significant shortfall in RECs available from the PPAs.

Figure 4

SUMMARY OF RI PPAs		
Current RES %		
Project name	2015 MWH	2016 MWH
RI LFG Genco	239,002	239,002
Bowers Wind Project	159,149	159,149
Deepwater Wind	0	105,120
Black Bear Hydro	31,268	31,268
Orbit Energy HSAD	23,160	23,160
21 smaller projects	25,088	25,088
Total PPA RECs	477,667	582,787
w/o Bowers and Deepwater	318,518	318,518
Standard Offer <u>current</u> RES requirements	412,558	490,236
Potential Shortfall w/o Bowers and Deepwater	94,040	171,718

Figure 5 below shows the impact of a one-year delay in the 2015 increase in the RES compliance percentage on the number of RECs to be available from the long-term contracts in 2015 and 2016 and whether these RECs are adequate to meet NGRID’s Standard Offer RES obligations in those years. Under this schedule, there is still a shortfall, but it has been significantly reduced.

Figure 5

SUMMARY OF RI PPAs		
Delayed RES %		
Project name	2015 MWH	2016 MWH
RI LFG Genco	239,002	239,002
Bowers Wind Project	159,149	159,149
Deepwater Wind	0	105,120
Black Bear Hydro	31,268	31,268
Orbit Energy HSAD	23,160	23,160
21 smaller projects	25,088	25,088
Total PPA RECs	477,667	582,787
 w/o Bowers and Deepwater	 318,518	 318,518
 Standard Offer <u>delayed</u> RES requirements	 335,203	 412,830
 Potential Shortfall w/o Bowers and Deepwater	 16,685	 94,312

Cost Analysis

La Capra Associates performed an analysis of the cost impact of delaying the 2015 compliance percentage increase by one year. In this analysis, we used known capacity prices for 2015 and 2016. We also used a forecast of market energy prices using current futures prices. Our forecast of REC prices assumes that shortfall conditions will yield prices that are 4% below the projected ACP levels for 2015 and 2016. This assumption yields prices consistent with ESAI assessment.

With Bowers Wind and Deepwater Wind moved to 2017, we estimated the net cost of the current RES compliance for Standard Offer supplies and for competitive suppliers plus the net cost or benefit of the long-term PPAs to be \$44.0 million and \$53.5 million in 2015 and 2016 respectively. By delaying the 2015 increase by one year, the costs became \$36.5 million and \$45.9 million, for a two-year savings of \$15.1 million. These savings are due to the elimination of the 1.5% increase of RES compliance percentage increases in 2015 and 2016. Figure 6, and 7 in the Appendix attached to this memo provide additional details on this cost analysis.

Recommendation

Based upon the above assessment, the expected supply of RECs from PPAs will not likely be sufficient to meet the Standard Offer RES requirements for 2015 and 2016, thereby resulting in additional costs to ratepayers in the absence of a delay in the RES requirement. The New England region as a whole is also expected to experience a shortfall of RECs in those years. Thus, a potential inadequacy of supplies is likely to exist. Based upon the Rhode Island statute that requires such a delay upon a finding of the potential for inadequate supplies, we recommend that the Commission delay the 2015 increase in RES requirements. We make this recommendation in recognition of, and to comply with, the Rhode Island statute. La Capra Associates supports the inclusion of renewable energy resources in power supply portfolios. Our recommendation does not reduce Rhode Island's Commitment to renewable energy. It merely delays its expansion by one year in order to comply with the State statute. This delay will also not materially impact the price of Class I RECs that projects could obtain from other states. By the year 2020, the compliance requirement will be 14% under either approach. We also recognize that the Commission may wish to continue with the current RES compliance schedule. While this approach may result in greater reliance upon ACPs for RES compliance compared to the delay scenario, it represents a valid policy choice for the Commission.

APPENDIX
COST ANALYSIS OF A ONE-YEAR DELAY

Figure 6

SUMMARY OF RI RENEWABLE ENERGY		
Bowers Wind and Deepwater Wind in 2017		
Item	2015	2016
REC Market Price	\$64.98	\$66.23
LTREC Purchases		
MWH & RECs	318,518	318,518
PPA payments	\$41,032,173	\$41,888,313
Market Revenues	\$37,050,380	\$36,733,770
Net Cost to RI	\$3,981,794	\$5,154,543
Standard Offer Electric Sales	5,156,969	5,160,374
RES %	8.00%	9.50%
Standard Offer RECs req'd	412,558	490,236
Standard Offer REC Price	\$64.98	\$66.23
RES costs to Standard Offer	\$26,809,019	\$32,470,027
Competitive Supplier	2,547,704	2,523,738
RES %	8.00%	9.50%
Competitive Supplier	203,816	239,755
	\$64.98	\$66.23
RES costs to Competitive Supplier	\$13,244,494	\$15,879,826
 Total RES Cost to RI	 \$44,035,307	 \$53,504,397

Figure 7

SUMMARY OF RI RENEWABLE ENERGY		
Bowers Wind and Deepwater Wind in 2017 - Delay 2015 RES % Increase		
Item	2015	2016
REC Market Price	\$64.98	\$66.23
LTREC Purchases		
MWH & RECs	318,518	318,518
PPA payments	\$41,032,173	\$41,888,313
Market Revenues	\$37,050,380	\$36,733,770
Net Cost to RI	\$3,981,794	\$5,154,543
Standard Offer Electric Sales	5,156,969	5,160,374
RES %	6.50%	8.00%
Standard Offer RECs req'd	335,203	412,830
Standard Offer REC Price	\$64.98	\$66.23
RES costs to Standard Offer	\$21,782,328	\$27,343,181
Competitive Supplier	2,547,704	2,523,738
RES %	6.50%	8.00%
Competitive Supplier	165,601	201,899
	\$64.98	\$66.23
RES costs to Competitive Supplier	\$10,761,151	\$13,372,485
Total RES Cost to RI	\$36,525,274	\$45,870,210