

EXHIBIT C

**RENEWABLE ENERGY CREDIT PRICES – THE MARKET SIGNAL FROM THE
STATE RENEWABLE PORTFOLIO STANDARD PROGRAM**

Prepared for

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Agreement Number 10430

November 14, 2008

SUMMARY

Renewable energy credits (RECs) are the renewable attributes produced by renewable generation. NYSERDA pays renewable generators for RECs, with the electricity sold in the New York Independent System Operator (NYISO) market or bilaterally. REC prices represent the key indicator from the market regarding the cost of renewables. This report presents findings pertaining to REC prices and the New York RPS program. This work will be part of a comprehensive market conditions assessment report submitted to NYSERDA in November of 2008.

The evaluation team conducted both primary and secondary data collection activities. Primary data collection activities consisted of in-depth telephone interviews with a broad set of renewable energy market participants.

This report addresses the topics critical to understanding this market signal:

- **NYSERDA RPS Program REC Pricing Summary.** What have the REC prices been in the first three solicitations?
- **REC Price Comparisons.** How do the NYSERDA prices compare to those seen in other states?
- **External Factors Affecting REC Prices.** What factors, other than program components, tend to make prices go up or down?
- **Program Components that May be Affecting REC Prices.** How do program components tend to affect REC prices?

Key findings are presented below.

NYSERDA RPS PROGRAM REC PRICING SUMMARY

Average prices for awarded RECs have declined overall in each of the three procurements. From \$22.90 in RFP 916, average prices dropped to \$15.31 and \$14.94 in RFP 1037 and RFP 1168, respectively. This trend has been led by wind; non-wind (hydro and biomass) prices increased from RFP 1037 to RFP 1168, from \$13.13 to \$18.30.

for intermittent out of state facilities. As a result, the Bear Creek facility is subject to the earlier monthly matching delivery requirement. The High Falls facility will be subject to the hourly matching requirement.

To maintain confidentiality, the evaluation team cannot comment specifically on input provided by interviewees from the companies that hold NYSERDA REC contracts for these two projects. However, the limited participation in the New York RPS program by out of state facilities is an important indicator in and of itself. The import rules appear to present enough of an economic barrier to most out of state projects that companies do not believe they can bid competitive REC prices into the New York RPS program for these facilities. This should not substantially affect REC pricing in New York, since there is not a shortage of in-state program participants. However, greater flexibility for imports from out of state generators could increase competition by increasing the range of supply available.

Allowing Sale of Energy through Physical Bilateral Contracts

As a means of protecting the integrity of New York's Environmental Disclosure Program, when the New York RPS first went into effect, only facilities selling energy into the NYISO spot market could participate in the RPS program. In June 2006, the New York PSC issued an order stating that facilities participating in the RPS program could sell energy either into the NYISO spot market *or* through physical bilateral contracts. The PSC determined that modifications could be made to the Environmental Disclosure Program to accommodate this change.⁴⁰ Because of this timing, facilities bidding into the second Main Tier solicitation (RFP 1037) were able to take advantage of physical bilateral contracts. The rationale behind this change was that allowing physical bilateral contracts would improve market liquidity and reduce risk. This, in turn, was expected to result in lower REC prices bid into the RPS program.

A few of the developers that had participated in both the first and second solicitations, or had considered bidding in the first solicitation, commented that the ability to enter into physical bilateral contracts had, in fact, reduced their REC bid price in the second solicitation. Average REC prices for awarded projects dropped from \$22.90 in the first solicitation to \$15.31 in the second solicitation. This may be one of the factors contributing to this drop in average REC prices.

Several interviewees noted that, although they do not use physical bilateral contracts for their own projects, the PSC's decision was valuable in that it increases market liquidity and flexibility. The majority of

⁴⁰ New York's Environmental Disclosure Program previously relied on bundling of energy and attributes, and only counted sales of energy through the NYISO spot market.

participating developers reported that they sell their energy into the NYISO spot market, though a significant number of facilities do sell at least a portion of their energy through bilateral contracts.

Other Program Components With Potential to Affect REC Prices

Other program components that may be affecting REC prices based on input from market stakeholders include:

- *Program structure in which all technologies compete with one another.*

Some interviewees noted that having all technologies compete in the same competitive bidding process results in REC prices that are lower than what certain technologies need in order to be economically viable. For example, technologies that are less well established than hydro and onshore wind would have to reduce the bid price to be competitive. However, certain program features do benefit non-wind technologies, such as the option to enter into shorter contract terms for fuel-based technologies, and the economic benefits scoring criteria, in which biomass projects are likely to excel because biomass provides more long-term jobs than wind or hydro⁴¹

- *Limited selection criteria.*

Some interviewees recommended that NYSERDA consider factors such as resource diversity, proximity to load, and a project's ability to support grid stability in the selection process. Some noted that existing market mechanisms, such as congestion pricing and the installed capacity market, already help level the playing field across technologies and projects. Others expressed that projects that can offer benefits other than low REC prices and economic benefits would have difficulty competing effectively under the current RPS program structure.

If the RPS program were structured to offer special opportunities for those technologies that have more difficulty competing under the existing program structure (i.e., through technology carve-outs in the RPS), the resulting average REC prices for the program would be higher than they are currently.

- *Vintage Requirements.*

The requirement that facilities must have become operational on or after January 1, 2003 to qualify to participate in the Main Tier program could result in higher RPS REC prices in New

⁴¹ This is discussed in the NYSERDA 2008 Economic Benefits Report.