

RECs and SRECs Still Playing an Important Role in East Coast Renewable Energy Project Economics

April 13, 2021

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To: Clients and Colleagues
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The environmental attributes associated with renewable energy projects can be an important part of project economics. Thus, having an opinion on the outlook for the value of these attributes is necessary. Power Advisory models the supply and demand for REC (Renewable Energy Credit) and SREC (Solar Renewable Energy Credit) markets; and we provide price forecasts for as long as 30 years. In particular, we provide forecasts for New England Class 1 equivalent RECs, PJM "Tri" Tier 1 RECs as well as the SREC markets in NJ, MA, MD, PA and DC.

Demand in these markets is typically driven by a Renewable Portfolio Standard (RPS) and price is governed to some extent by an Alternative Compliance Payment (ACP) schedule which acts as a price ceiling. Supply is a function of the number of MWs in the ground and capacity factor. In most markets, the environmental attribute has a lifetime of more than one year and thus unused supply from previous years is added to the current year's supply (commonly known as "banking"). Price tends to be a function of whether a given market is oversupplied, undersupplied or in equilibrium. In undersupplied markets, price normally gravitates upward toward the ACP. While in oversupplied markets, the price can fall, sometimes to low levels. Pricing for equilibrium markets, where supply and demand are about the same, lies somewhere in between.

A number of factors can drive pricing. These include:

- Build rates (resource additions)
- Concentration of ownership
- Regulatory changes (RPS, ACP schedule, other program changes)
- Changes in capacity factor from year to year (which drive supply)
- Changes in electricity sales from year to year (which drive demand)
- Schedule changes (either delays, or accelerations) of RFPs, or large projects coming online

In this client note, we provide an update on two important markets in particular: ISO-New England Class 1 REC and New Jersey SREC.

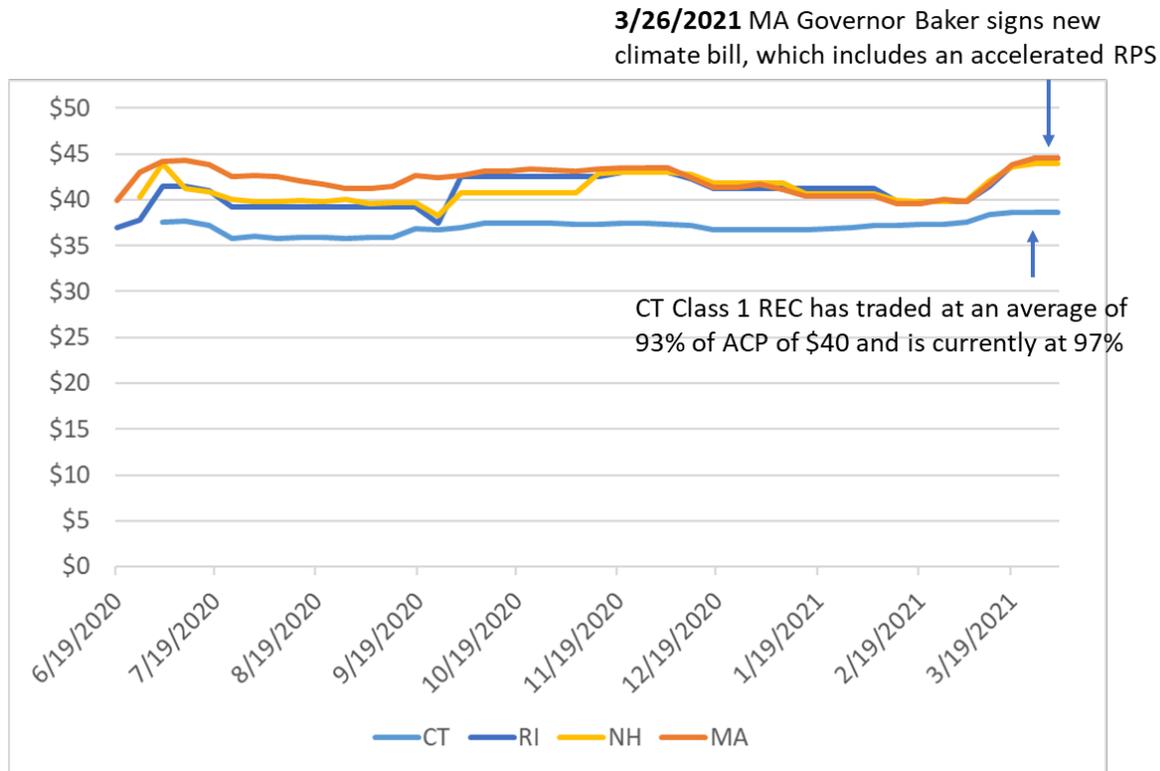
ISO-New England Class 1 REC

Pricing for the current vintage

The 2021 Class 1 RECs for MA, NH and RI are currently trading at about \$44 while CT is trading \$5 lower at \$39 (Figure 1). This is a clearly undersupplied market with the CT Class 1 RECs trading at

\$96.7% of its ACP value of \$40 and MA Class 1 RECs trading at about 70% of its ACP value of \$60. Note that the Massachusetts ACP is scheduled to drop to \$50 in 2022 and \$40 in 2023, so the pricing is expected to be under \$40 for that market by 2023. There is overlapping Class I REC eligibility within New England so MA, CT, RI and NH credits have tended to trade in the same range.

Figure 1. 2021 ISO-NE Class 1 REC Prices, Last 10 Months (\$/REC)



Source: S&P Global Market Intelligence

The main reasons why this market is currently undersupplied are as follows:

- **Increases in RPS.** The Massachusetts RPS was modified in 2018 from 1% annual increases to 2% annual increases for the years 2020-2029. There have also been RPS increases in Connecticut and Maine during 2019 and 2020.
- **Delays in Offshore Wind Projects.** Under the Trump administration, the 800 MW Vineyard Wind project was delayed as the Bureau of Ocean Energy Management (BOEM) delayed the project's federal permitting. However, on March 9, 2021, the Biden administration gave initial approval to the project, and it is now on schedule to come online in 2023 or 2024. Several other offshore wind farms will follow. But this still creates a void for compliance buyers who contracted these projects until then.
- **Delays in the New England Clean Energy Connect (NECEC).** The Massachusetts Clean Energy Standard (CES) which came into effect in 2018, creates an additional requirement for compliance entities to buy Clean Energy Credits (CECs). Class 1 RECs qualify as CECs as well as

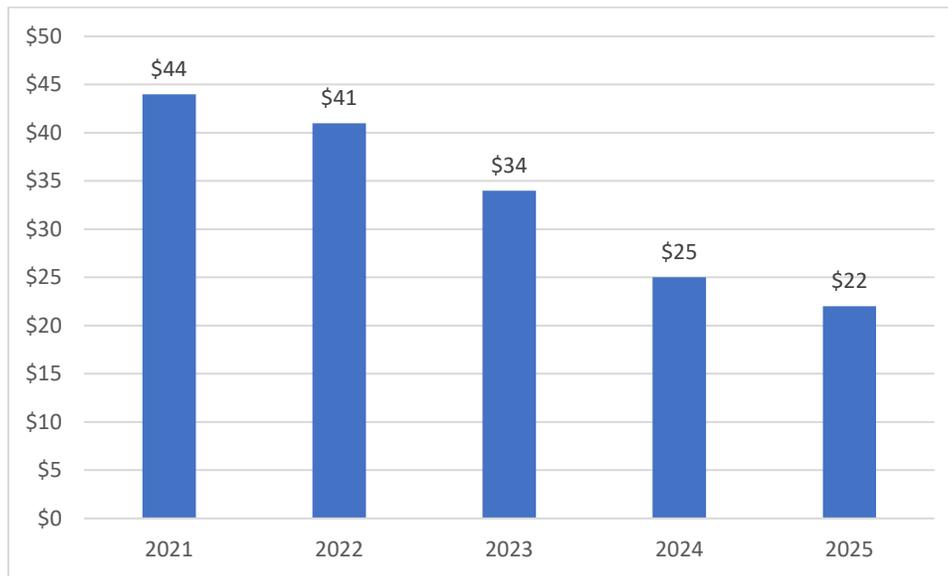
non-emitting resources such as large hydro from Canada via the 1,200 MW NECEC transmission project contracted by the state's electric distribution companies from a 2017 solicitation. However, this project has taken longer than expected to begin construction and in the meantime, compliance buyers must use Class 1 RECs to fill the void, or pay the CEC ACP which is equal to 50% of that of the Class 1 REC ACP. In 2021, that's 50% of \$60, or \$30 and in 2022, that's 50% of \$40, or \$20. This serves to tighten the Class 1 REC market to some extent, although when pricing is above the CEC ACP, Class 1 RECs will not be used. Rather, compliance entities will pay the CEC ACP which is lower. The NECEC got its final permit approval on January 15, 2021 and has subsequently begun construction. Though there is a court injunction that is holding up a 54 mile stretch of the project. The project is expected to achieve COD in Q2 2023. The project had originally been scheduled to come online in 2022.

Pricing for the Remainder of the 2020s

While some utility scale onshore wind and solar projects are under development, under construction or anticipated to be contracted under future RFPs, offshore wind is the key resource type that will drive REC prices given their scale and the multi-GW emphasis that New England states have placed on them. Massachusetts alone is targeting 5,600 MW of offshore wind by 2035, has already contracted 1,604 MW and is soliciting more this year. The Biden administration has indicated that it wants to accelerate the offshore wind industry and thus, we expect projects to begin moving forward quickly through the federal regulatory process. Over the course of the rest of the decade, a large amount of offshore wind is expected to come online and close the demand gap. In fact, absent any further regulatory changes, the market is likely to become oversupplied by 2030 which would drive New England Class I REC prices lower. Broker quotes show this expected price erosion (Figure 2).

There are some drivers of higher demand. On March 26, 2021, MA Governor Charlie Baker signed into law new legislation related to climate change which among other things, increases the state's RPS by 3% annually from 2025 to 2029, versus the previous 2%. This will increase demand in those later years from where it otherwise would have been.

Figure 2. ISO-NE Class 1 REC Forward Pricing, 2021-2025



Source: Broker quotes

2030 and Beyond

In the time frame beyond 2030, the market could go in different directions. On the bearish side, the RPS may not be changed, the market would become significantly oversupplied and prices would decrease, perhaps to the \$2-\$5 range. On the upside, governments might use the REC market as a policy tool to incentive more renewables, which may lead to pricing that is in the vicinity of the ACP. There are already some indications that support an upside scenario with the increased targeting of net zero economy-wide emissions and the promise of electrification.

Or, there could be a scenario in between.

NJ SREC Market Update

The NJ SREC market is the largest in the country and has also been one of the most lucrative. The market was closed to new projects beginning April 30, 2020 after solar reached 5.1% of load as determined by the Board of Public Utilities. After that date, this market became a capped market with about 3.3 GW of solar projects qualified in the program, and supply was no longer dependent on the build rate of new projects.

Since the new RPS schedule that was announced in 2018 was determined so as to approximate supply, the market is expected to remain roughly in equilibrium. Although a surplus of SRECs remains from prior years (about 18% of supply in total as of the end of EY2020), it's unlikely this surplus will be bid into the market, because market participants know that it would drive prices

down. Rather, we expect the market to remain tight and for pricing to remain close to the ACP, at least while the ACP is high (the ACP declines linearly over time from \$248 in EY2021 to \$128 in EY2033).

Looking at the EY2021 and EY2022 credits, they have traded on average at 94% and 95% of ACP, respectively, over the past 10 months (Figure 3). Currently, they are trading at 95.6% and 97.6%, respectively.

Figure 3. NJ SREC EY2021 and EY2022 Prices, Last 12 Months (\$/SREC)



Source: S&P Global Market Intelligence

The New Jersey SREC market is scheduled to sunset in EY2033. Between now and then, we expect pricing to remain in the 90%+ range of ACP for most of the time.

Power Advisory welcomes the opportunity to assist clients' understanding of the SREC and Class 1 REC markets and assessment of renewable energy investment opportunities in these markets.