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Improving the Forward Curve for Green Power

The Importance of Forward REC Markets in Renewable Energy Finance

by Andrew Kolchins, Evolution Markets

The development of renewable energy resources in the U.S. is constrained by a difficulty in obtaining project financing. The growth of the markets for the green attributes of renewable energy (RECs) provides a built-in solution. But, the market must first develop a forward curve to give project developers and the financial community the certainty in cash flows necessary to get additional renewable power resources online.

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-- Andrew Kolchins, Director, Renewable Energy Markets for Evolution Markets

Problem: Financing Constrains Renewable Energy Development

As renewable energy project developers know full well, financial institutions demand certainty. Financial resources for traditional power projects are conditioned on the existence of long-term power purchase agreements (PPAs). But due to the cost of doing business renewable energy project developers are asked to demonstrate long-term commitments for the purchase of not only the electricity, but also the RECs.

Many project developers are finding a market for their electricity, but power sold at market rates does not go far enough to recoup investment in most renewable power projects. Banks are hoping that projects can improve their bottom lines and achieve profitability faster by forward selling the renewable energy credits, in many cases separately from the power itself.

However, long-term sales of RECs have been very difficult to execute. Despite a number of state renewable portfolio standard (RPS) programs set up to facilitate compliance trading in RECs - and a nascent wholesale nation-wide voluntary REC market - forward sales of RECs rarely exceed five years. This is short of the typical 10-year REC sale agreements most banks require before financing a renewable energy project.

Solution: REC Forward Curve

State policy makers created RECs as a means to monetize the environmental and fuel diversity benefits of renewable power. Sure, these projects produce electricity, but they do so without many of the environmental impacts of traditional fossil fuel generation. There are now more than 19 states and the District of Columbia that have created state legislation, which require entities selling electricity in these states to have a specific portion of their supply from renewable sources. In addition to

buying renewable power directly, companies in many states can also purchase just the RECs to meet their RPS requirements.

These RECs are being traded in nascent markets that have yet to attain the liquidity, efficiency, and transparency needed to develop investor assurance. Most RPS programs have been implemented in states with deregulated energy markets. Competitive energy suppliers in these markets usually only have certainty in their load for a period of 1-3 years, because of how load is auctioned in cycles. For this reason trades are usually made for compliance with the current year's obligations - not for long-term sales that extend several years.

Long-term trading is also hampered by regulatory policy in individual states or regions that continues to be in flux. Several states continue to fine-tune their RPS requirements, including the mechanics of trading mechanisms in response to renewable energy supply and demand considerations or other public policy goals. If regulation was more certain and uniform across regions liquidity and price transparency would improve, inviting the entrance of additional speculative capital to the REC markets.

This market-generated view of future REC prices is called the forward curve, and it is a common factor in all types of commodity trading from energy and metals to soft commodities like coffee or sugar. Establishing a forward curve would greatly increase the amount of renewable energy facilities being built because developers could more easily obtain financing.

Benefits of the Forward REC Curve

Banks and other financial institutions look for revenue streams for extended periods of time to determine the economic feasibility of projects. Knowing that a developer can sell his or her RECs for a 10-year term allows these financial institutions to have the confidence they need to lend a more substantial percentage of project costs.

In addition, creating a stable forward market allows market speculators to enter into the marketplace. As speculators enter the marketplace, there are more potential buyers and sellers of RECs at any given time, enhancing liquidity. Once a marketplace becomes more liquid, participants become more confident in both the viability of the market and price stability. The price volatility of today's liquid and short-term REC markets has scared off participants who feared they might have gotten caught on the wrong side of a trade, unable to exit their positions.

How to Establish a Forward Curve

The key to creating a viable forward curve lies in transparency and regulatory certainty. Foremost, there must be stable regulatory policy underpinning REC markets. If the rules governing state RPS and REC trading remain consistent, REC market players can make long-term decisions without the risk of regulatory change.

In most state RPS, a premium is put on certain types of renewable generation that provide the most environmental benefits, such as photovoltaic solar, wind, landfill gas, and in some cases biomass generation. These premium renewable sources are often labeled "Class 1" or "Tier 1". States could provide additional clarity by creating uniform market standards for Tier 1 or Class 1 generation. Standards for these generation sources differ by region. Coordination of these standards will allow the

market to more easily trade specific tiers or classes of RECs over broader geographic regions with consistent price expectations, bolstering the forward market.

Market transparency must also be improved in order for a forward curve to develop. Buyers and sellers in the REC market can more easily make long term trading decisions if they are fully aware of supply conditions and market prices. REC tracking systems that market participants can trust and that effectively account for market supply are essential. Price transparency is vital as well. Evolution Markets was the first to offer daily updates on REC prices through its online evo.ID market data system. This bulletin board is publicly available and the belief is that the improved availability of accurate price information will give the market confidence to engage in forward trading.

Lastly, a successful forward REC market will depend on the entrance of new participants. These participants will need to be entities willing to take on risk for substantial upside, either by bridging the gap between wholesale term deals and retail sales to compliance buyers, or by serving as credit-worthy counterparties themselves. Renewable energy project development is poised to leap from a niche to mainstream market, but first REC markets will need to align with the same forward structure currently available in traditional energy markets such as fuel and power.

About the author...

Andrew Kolchins is a Director, Renewable Energy Markets for Evolution Markets LLC. Working from Evolution Markets' White Plains headquarters, Mr. Kolchins leads the company's brokerage services focused on facilitating trades in the compliance driven state renewable energy certificate (REC) markets in the Northeast and Texas, providing expert brokerage service to renewable energy project developers, green power marketers, traders, utilities, and end users. With extensive structured transaction and energy markets expertise, Mr. Kolchins serves customers in regional compliance REC markets. He will also seek to leverage environmental credit markets to coordinate renewable energy project finance, facilitating an overall increase in regional renewable energy capacity. Mr. Kolchins joins Evolution Markets from Green Mountain Energy where he built and managed the sales team for Sunshine Energy, a premium program for Florida Power & Light (FPL) that allows residential customers of FPL to purchase a cleaner form of electricity for the grid. Before working with Green Mountain, he served for seven years as a broker of natural gas swaps, options, and physical basis trades for a handful of institutional brokerage firms. Mr. Kolchins also assisted in the development and marketing of Bloomberg's online energy trading platform, PowerMatch.