Untangling environmental markets

David Bogomolny, **Frank Felder** and **Scott Weiner** consider the complexities caused by overlapping RECs and emissions markets

Over the past decade, many countries and 19 US states have implemented Renewable Portfolio Standards (RPS), which require that certain percentages of electricity distributed within their boundaries be produced from renewable resources. An RPS is a policy tool that promotes efforts to lower reliance on fossil fuels, advances the economic development of renewable energy industries, encourages increased energy security through reliance on a wider variety of energy sources, and reduces fossil fuel-related emissions. Renewable energy sources either produce no emissions, or at least no net emissions (in the case of biomass), and these anticipated emissions reductions are perhaps the most widely cited benefits of RPS policy.

In the US, five states enforce their RPS policies through the use of Renewable Energy Certificates (RECs), which are awarded to renewable energy generators. RECs represent an aggregation of the positive attributes associated with the production of one megawatt-hour of renewable energy. Used in both RPS compliance and voluntary markets, they are designed to be tradable, thereby providing for the monetisation of the bundle of attributes associated with the generation of renewable energy. RECs have a value – because suppliers are required to deliver them to show compliance with the relevant RPS, or with their obligations in voluntary markets – providing renewable energy generators with a new income stream, designed to offset the higher production costs of renewable energy.

In parallel, US emissions cap-and-trade programmes have created other markets, with their own tradable emissions allowances, that aim to reduce emissions from electricity generators. The natures of these allowances and RECs are fundamentally different. First, emissions allowances represent tons of a particular emission, whereas a REC represents an unquantified bundle of multiple emission types, as well as any other societal attributes implicit in the state RPS policy.

These factors create a barrier to the use of RECs as a compliance vehicle in emission markets. Assuming that an emission value – such as the reduction of a ton of sulphur dioxide – could be established for a particular REC, the various emission attributes would either have to be unbundled, or the REC would not be available for use in the renewable energy markets. Second, emissions permits are based upon absolute quantity caps, whereas RECs are based upon a percentage of total electricity output. REC production is expected to increase annually with rising levels of energy generation, whereas federal emissions caps are lowered over time, and fewer permits are distributed in subsequent years.

RPS policies lead to renewable energy generators offsetting fossil-fuelled energy generation. Emissions are therefore reduced, providing generators with unused emissions permits that presumably will be monetised by sale to another emitter, which will use the permit – resulting in no net decrease in the emission category. Essentially, the state RPS policies will likely merely result in the redistribution of emissions and a reduction in the cost of emissions permits, unless additional policy initiatives are taken. Applicable emissions caps must be lowered to reflect the effect of the renewable generation. If new emissions, such as carbon dioxide, are regulated via cap and trade, as is being considered in the northeastern US, then this cap should be set in the context of existing RPS policies.

Another policy concern regarding RPS compliance markets is that RECs can only be utilised, and therefore traded, within particular jurisdictions and markets. This policy framework is intended to provide a mechanism that links increases in energy costs associated with an RPS, to the ratepayers underwriting those costs, and some direct nexus of benefits to those paying the bill will remain likely. The same restriction is not present in the voluntary REC marketplace, where buyers of RECs seek to address more generalised interests. Transparency among RECs issues in different jurisdictions remains a challenge.

One approach would be to establish a conversion factor that would translate the value of a REC from one jurisdiction to another. This, however, is daunting. Every market would require different conversion factors for every other market. Furthermore, conversion factors would not necessarily be reversible from one market to another, depending upon which renewable energy technologies are included in each market. REC conversions and other policy issues surrounding RECs markets are quite new, as the effects of RPS policies have yet to be fully realised.

Another approach is to identify areas of similarity among issuing authorities that can lead to a REC that would provide some degree of transparency and application in multiple jurisdictions. For example, a REC emanating from wind generation in Pennsylvania could be used to satisfy the New Jersey RPS. However, the nature of the Pennsylvania and New Jersey programmes prohibit the blanket use of Pennsylvania RECs in New Jersey. The same issue occurs among all state RPS programmes. In an effort to advance discussion that can lead to increased use of RECs in multiple jurisdictions, and therefore increased system liquidity, the authors, in conjunction with the Clean Energy Group, a Vermont-based not-for-profit, have commenced a survey of RECs programmes and their definitions. The findings are due by July. EF

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