



The Regulatory Assistance Project

Green Power Newsletter

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Tradable Renewable Energy Certificates

Buying tradable renewable energy certificates (RECs) is not unlike buying green power. The difference lies in the fact that RECs were previously never identified as such, because buyers of green power always assumed that the environmental benefits of green power accompanied the electricity itself.

But as we know, green power is not actually delivered to the purchaser's meter. Instead, it flows into the local or regional electricity grid. The sale of RECs simply acknowledges as much, making it possible to buy virtual green power anywhere--even if our electricity supplier doesn't offer it.

What is a tradable renewable energy certificate?

Imagine that each megawatt-hour produced has a conceptual label, or "tag," attached to it. The tag describes the attributes of the electricity: its selected environmental impacts, and the resources that generated it. But renewable energy sources typically have fewer environmental impacts. Therefore, a so-called "green" tag--representing the benefits of using renewable energy in terms of the pollutants avoided--is more desirable than a "dirty" tag, assuming consumers can discern the difference.

Here referred to as a tradable renewable energy certificate, each green tag represents the premium value of one megawatt-hour of certified renewable power generation. For example, each megawatt-hour of electricity produced by a wind plant displaces the energy and associated pollution from the marginal generator, usually a fossil fuel plant.

The premium value of RECs compensates for the extra costs associated with generating green electricity, leveling the playing field for green energy to compete with generic energy. RECs also create revenue for green providers, and, most importantly, an incentive for cleaner energy production.

Who's using RECs?

Companies, municipal utilities and non-governmental organizations as diverse as PG&E's National Energy Group, PacifiCorp, Sterling Planet, Waverly Power & Light, and the Bonneville Environmental Foundation have already begun to sell and promote RECs. On the demand side of the market are buyers that vary from the U.S. General Services Administration to Kinko's.

RECs are used in Texas as a way of complying with the state's renewable portfolio standard, which requires a certain proportion of electricity sold by each supplier in the state to come from a renewable source. A computer system keeps track of RECs generated and sold--a stock exchange using RECs as a special kind of currency.

How old is the market for RECs?

The market is still in its infancy. While the concept of separating electricity from its benefits is relatively new, we nonetheless have experience in trading environmental benefits through sulfur dioxide emission allowances or nitrogen oxide emission reductions credits. Congress established this practice with the 1990 Amendments to the Clean Air Act, in an attempt to reduce air pollution.

What does "unbundling" mean?

The first step in strengthening the market for RECs is to recognize that, in some instances, the actual electricity has been separated from its environmental benefits. The act of separation is known as "unbundling."

A consumer can buy RECs and electricity from two different sources: the RECs from a renewable generator, the electricity from an energy service provider. An energy service provider that buys wholesale generic power, meanwhile, can make environmental claims about what it sells by purchasing unbundled RECs and re-bundling them with the commodity of generic electricity to create a bundled green power product.

What is meant by "disaggregation"?

Taking the concept one step further, imagine that we can disaggregate a certificate into its component attributes, and trade those attributes separately. For example, a wind generator might sell part of a certificate representing carbon dioxide reduction to one party, and another part of the certificate representing nitrogen oxide reduction to another party. The question remains, however, as to whether the remaining attributes--wind power and sulfur dioxide reduction, for example--can be sold as a REC in a green power market. Because certificate trading is still evolving, the National Wind Coordinating Committee has developed REC principles and guidelines, and the Center for Resource Solutions is formulating certification standards for tradable RECs (they call them "T-RECs").

What are the risks of accepting RECs as a tradable resource?

One risk is the potential for fraud without a certificate registry or REC tracking system. Texas has created such a system to verify compliance with its renewable portfolio standard. ISO-New England is developing a generation information system that will track where, when and from what source each kilowatt-hour was generated, including emissions characteristics.

Consumer advocates and market participants have also warned of potential liabilities stemming from misleading claims about what type of electricity each REC really represents, or even suppliers making multiple claims on the same REC. In addition, companies must comply with truth-in-advertising laws. The National Association of Attorneys General has already issued guidelines for marketing green electricity.

To avoid these problems, REC providers such as National Energy Group and the Bonneville Environmental Foundation have adopted a full disclosure policy, telling consumers up front that they are selling the RECs or benefits of green electricity and not the electricity itself. Providers thus aim to protect their own credibility by clarifying that the RECs have been unbundled from the electricity; and by stating where, when and what energy source produced it.

Market analysts who have tried to anticipate potential risks have pointed out that explaining the REC concept to the average consumer might cause confusion, undermining the credibility of the market. In fact, some research shows that consumer confidence in the veracity of the label information declines when tradable certificates are explained to them.¹ They had a harder time understanding the verification method for tradable certificates than for contract tracking. Some observers believe that consumers don't want to know the details about how RECs trading and tracking work. Various stakeholders need to know and support the concept, but it is information overload for the average consumer.

The balance between full disclosure and not overloading consumers with unwanted information may be in this: If selling RECS only, a marketer should be clear and upfront about it, erring on the side of full disclosure. If selling commodity electricity bundled with RECs, as in a delivered green power product, a marketer should explain that consumers don't get green kWh delivered to their meters but instead cause green power to be delivered to the grid. This is essentially the same explanation given to consumers for traditional bundled green power products. This skips the details, which can be made available on websites.

A Broader View of Certificates

Although RECs focus on trading *renewable* energy certificates only, it is important to remember that identifying the attributes of each kilowatt-hour (tags or certificates of any stripe or color) supports information disclosure requirements as well. This has the advantage of placing accurate information about power sources in front of consumers, educating many in this passive way.

If every kWh requires a tag identifying its generation type, location and emissions

¹ Herman, M. and B. Roe, *Consumer Research on Tracking Approaches and Product Versus Supplier Labeling*. The National Council on Competition and the Electric Industry, October 1998.

characteristics, verification for product labeling purposes is made easy. The New England generation information system being developed by ISO-New England is one such registry that will serve multiple purposes: to support information disclosure, compliance with renewable portfolio standards and generation performance standards, as well as unbundled REC trading for green power products

Geographic scope of trading

One of the great advantages of RECs is that they can be bought and sold over great distances because there is no physical constraint of reliance on transmission grids. Hence Wyoming wind certificates could be sold in Maine, and at a reasonable cost.

But is this really a great advantage? Will consumers care where their certificates are created? Some consumers concerned about climate change may recognize that avoided greenhouse gases provide global benefits, and hence the location of the emission-free generation doesn't matter. On the other hand, there are many consumers who are motivated by a desire for cleaner air (a local benefit) or for regional renewable energy development.

One option is to accept RECs generated in other regions (or countries for that matter) if it is accompanied by the delivery of electricity into the regional grid where the RECs are ultimately used. This would ensure the displacement of some regionally produced electricity, and the regional environmental benefits of that displacement. Such a restriction, however, limits the flexibility of RECs trading, and the liquidity of RECs markets.

Relating to this regional deliverability question is the recent issuance of several FERC orders that require the formation of larger regional transmission organizations. Larger regional markets would make it easier to deliver commodity electricity to the region where the RECs are sold, but might also dilute the credibility of local environmental benefit.

One solution is simply to require disclosure of where the energy is generated, both as a general rule for electricity labeling and specifically for RECs, and let consumers decide if it matters to them.

International experience

In Europe, several countries are supporting REC trading, largely to verify compliance with greenhouse gas reduction targets or renewable energy obligations, but also to serve voluntary demand for green power. Certificates created in one country, however, are not yet recognized in another country for meeting government-ordered renewable energy mandates. This is in part because national certificate schemes are not necessarily compatible with each other.

To address this problem, there is an effort underway to create a common platform for certificate trading at the continental level. The generation information system being developed in New England may fulfill a similar function for the six New England states, but it is not at all clear that different regional systems that may be created in the US will be compatible. As in Europe, there will eventually be a need to harmonize such verification systems.

In addition, states or region in the US may share some of the same concerns with some countries in Europe. Specifically, these concerns are that RECs from one country might undermine the development of renewable energy in the purchasing country, and that subsidized renewable energy in one country could compete unfairly (in REC form) against unsubsidized renewable energy from another country. These concerns may also need to be addressed here in the US.

What can regulators and legislators do?

Energy regulators and legislators can take a number of steps to set the stage for tradable renewable certificates. They are as follows:

- Recognize explicitly that renewable energy credits can be unbundled and traded separately from electricity. That will help erase any doubt about the concept's legitimacy.
- Require REC trading as a means of compliance with a state's renewable portfolio standards, which should help lower the compliance cost by offering greater flexibility.
- Ensure that cap-and-trade emission reduction programs allow renewable energy generators to participate fully. The current cap-and-trade program for sulfur dioxide, for example, assigns allowances only to polluters, who receive and trade amongst themselves the allowances set by the Environmental Protection Agency. One approach is a set-aside of allowances for qualifying renewable generators. State environmental regulators would include this as an element of the State Implementation Plans required to meet their Clean Air Act responsibilities.
- Support verification of consumer information disclosure using tags for all sources of electricity. Though some consumers may not care what state or source generated the electricity, the information can prevent suppliers from (intentionally or unintentionally) making multiple claims on the same tag, including RECs.
- Acknowledge that unbundled RECs can be used to create green power products. Since RECs may come from generation virtually anywhere, states may want to require generators to inform consumers of their location or require that an equivalent amount of energy be delivered to the regional grid serving the purchaser.
- Urge regional development of certificate registries or databases. This is very important to facilitate regional RECs trading, to avoid abuse or errors in claims (no double selling), and to ensure consumer confidence in the system. Such systems can serve multiple purposes: to support information disclosure, renewable

- portfolio standards, generation performance standards or unbundled REC trading for green power products.
- Decide whether to accept disaggregated attributes. While certain states, such as Texas, require that attributes be bundled together, some believe such policies stifle market innovation. Others argue that disaggregation could undermine the green power market because of the confusion and credibility risk it potentially presents. A compromise might to sell only aggregated credits in consumer markets, and disaggregated credits in more specialized, emission-reduction markets.

More information

www.nationalwind.org

www.resource-solutions.org/CRSprograms/T-RECS.html

www.purewind.net

www.bonenvfdn.org

www.sterlingplanet.com

www.waverlyia.com (Waverly Light & Power/Iowa Energy Tags)

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