Renewable and Conventional Sources of Electric Energy in Illinois

Renewable Energy Certificates (RECs) are tradable certificates that represent the non-tangible attributes of energy derived from a renewable resource. When purchasing a REC, the consumer purchases a claim to ownership of the rights of the positive (environmental, social, other "good") attributes making up the REC. The certificate is independently verified and audited and can only be used one time. One REC represents the actual generation of one megawatt hour of electricity.

Once electrons enter the grid that serves the eastern portion of the United States, it is impossible to differentiate how it was derived, or exactly what customer it ultimately serves. Akin to a drop of water entering a river, electrons flow into the grid and thereafter cannot be differentiated from electrons generated by different sources that have joined the grid, which serves millions of customers across multiple states.

Because they cannot be separated, when electricity is created from "green" or renewable resources such as hydro, wind or solar, an associated REC is created to *represent* the goodness of quality of that particular "green"-generated electricity. That renewable, non-tangible quality is stripped from the actual, tangible electricity generated. Each REC is certified, numbered and sold separately—one portion as conventional power regardless of its origin, and the portion that is the REC. For these purposes, conventional energy might be described as that derived from non-renewable sources such as coal, natural gas or nuclear. It is sometimes referred to as "brown" energy versus "green" energy.

Illinois electric consumers are served by a massive transmission system spanning 13 states across the East, South and Midwest. When electricity is consumed, it is not distinguishable as to its origination. Thus customers who wish to support renewable energy sources will pay a premium in additional to their base conventionally-sourced electricity by purchasing RECs representing the positive attributes of "green"-generated energy. They are financially subsidizing renewable power sources.

The term "brown" energy is used to describe energy produced from polluting sources; "green" energy describes that derived from non-polluting sources.

Q: What is a renewable energy source?
A: Renewable energy comes from sources that are naturally replenished such as from the sun, hydro-powered dams, wind, biomass (plant material) and geothermal (earth heat).

Q: What are conventional (non-renewable) sources of electricity?
A: Coal, nuclear and natural gas.

Q: What renewable energy is generated in Illinois?
A: By a significant margin, wind is the primary source of renewable (sometimes referred to as "green") energy in Illinois, followed by hydro, solar and methane gas from landfills.

Q: If I purchase 100 percent green energy, will my home be powered by electricity derived from windmills, hydro or solar sources?
A: No, not directly. The PJM (Pennsylvania New Jersey, Maryland) Interconnection that serves electric consumers in Illinois does not route power from a specific source to a specific end user—that is, to a particular home, business or municipality.

Q: How can I buy renewable power?
A: Electric consumers wanting to purchase a representation of renewable power must pay a premium to the price of conventional (sometimes referred to as "brown" power) by purchasing a REC. That premium payment subsidizes companies that generate renewable power.

The Illinois Power Agency Act instituted a Renewable Portfolio Standard (RPS), which requires 25 percent of Illinois electricity to be derived from renewable technologies by year 2025. For 2012, the RPS target is seven percent; for 2013, the target is eight percent. It will increase incrementally to the year 2025.

Illinois residents (and businesses) may purchase their electric supply at rates set by the Illinois Power Agency. Because of deregulation of the electric market in Illinois, they are free to switch to purchase electricity from an Alternative Retail Electric Supplier (ARES), which, at this point in time, are able to offer significantly lower rates as falling electricity prices are bringing advantages to the newly competitive market. All ARES must comply with the Renewable Portfolio Standards. They may do so by purchasing bundled power, purchasing RECs or making Alternative Compliance Payments that support renewable energy sources.

Electricity supply companies in Illinois are required to label the sources of their power.