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Green Certificates:

A look at how Green Certificates, known as Renewable Energy Credits (RECs), work in the US

Commissioner Terry Jarrett

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What is a Green Certificate?

- A tradable commodity proving that certain electricity is generated using renewable energy sources.
- Typically one certificate represents generation of 1 Megawatt hour of electricity.
- Also known as Renewable Energy Certificates (RECs) in the USA.



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Types of RECs

- A bundled REC is a package that includes a REC and the sale of energy.
- An unbundled REC is a commodity that is separate from the energy produced.
 - An unbundled REC does not represent the transmission or sale of energy in interstate commerce.



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The requirements for energy to qualify for RECs and how the integrity of the energy is verified

ELIGIBILITY AND VERIFICATION



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Green-e Energy National Standard for Renewable Electricity Products

- Must originate entirely from new renewable facilities depending on date of sale:
 - For example if REC is sold in 2012, facility must have been new in 1998
 - If REC sold in 2013, facility must have been new in 1999
 - And so on



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Green-e Energy National Standard for Renewable Electricity Products

- Must originate only from eligible resources:
 - Solar, wind, geothermal, Low Impact Hydro Institute (LIHI)-certified hydro, and biomass.
 - The biomass product must be generated from the following fuels: landfill gas; digester gas; plant-based agricultural, vegetative, and food-processing wastes; bioenergy crops, clean urban waste wood, and mill residues.



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National Standard

- Must include all environmental attributes associated with a unit of renewable generation, to the extent possible under current law.
- Must be supplied in a minimum quantity (usually 1000 kWh).
- The generator must maintain verifiable records that prove the creation date of the renewable energy.



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Verifying Product

- Renewable energy generation is substantiated through metering records, official filings with the Energy Information Administration as well as independent reporting from qualified third parties, such as MISO (Midwest Independent Transmission System Operator).
- Many states also require an attestation signed by an authorized individual of the generator's company.



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Missouri Requirements

- Facilities must be on premises that are owned, operated, leased, or otherwise controlled by the retail account holder.
- Must originate from a renewable energy resource (as defined by the Missouri Department of Natural Resources).
- Must be (1) megawatt-hour of electricity.



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Missouri Requirements

- The generator must maintain verifiable records that prove the creation date of the renewable energy.
- RECs must be validated through an attestation signed by an authorized individual of the company owning the renewable energy resource.



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More Information

- For more information about product eligibility and verification, look at:

http://www.green-e.org/docs/energy/Appendix%20D_Green-e%20Energy%20National%20Standard.pdf

<http://www.nrel.gov/docs/fy05osti/37388.pdf>

<http://www.sos.mo.gov/adrules/csr/current/4csr/4c240-20.pdf>

<http://narecs.com/about/index.htm>



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The process for obtaining RECs from an issuing facility

OBTAINING RECS



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Issuing RECs

- RECs are typically issued through a regional tracking system.
 - The US does not currently have a national tracking system.
- A generator wishing to obtain RECs must be registered with the appropriate tracking system.
 - In Missouri, generators register with the North American Renewable Resources Registry.



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Obtaining RECs

- Once registered, a generator must report its metered generation to the tracking system.
- The tracking system will issue electronic certificates which are each given a unique serial number to prevent double counting.



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REC Attributes and Information

- RECs typically include:
 - The type of renewable resource producing the electricity.
 - The date the REC was created.
 - The vintage of the renewable generator, or the date it was built.
 - Generator's location.
 - The RECs' eligibility for certification.
 - The renewable generation's associated greenhouse gas emissions (if any).



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Certification and the renewable energy enters the grid

AFTER ISSUANCE



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Certifying RECs

- RECs may need to be certified for a variety of reasons.
 - Buyers will often require RECs be certified.
 - Some states require certification as a condition of compliance.
- Compliance ensures RECs are properly accounted for and no double counting takes place.



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Green-e Energy

- The most commonly used certifying system in the US.
- Some states and companies require that RECs be certified by Green-e Energy specifically.
 - Missouri does not require Green-e certification, but it does approve of Green-e certification standards.
- <http://www.green-e.org/>



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Green-e Energy

Green-e Energy Certification follows:

1. Determine the Type of Certification. Either REC Single Mix, REC Multiple Mix or REC Broker.
2. Meet Green-e Energy National Standard, Contract and Other Governing Documents.
3. Complete and Mail Program Application.
4. Calculate and Pay Fees for Certification.



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Entering the Grid

- After a generator has received RECs, the energy created is released into the grid.
- Once in the grid, the renewable energy is mixed with energy from other generators.
- It is impossible to tell whether the energy being used is from renewable or non-renewable sources.



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Questions?