Green-e Energy Summary of WRI Scope 2 Guidance

In January, the World Resources Institute (WRI) released new guidance ("Guidance") on how companies should calculate and report greenhouse gas (GHG) emissions from purchased electricity—Scope 2 GHG emissions.[1] The Guidance is the result of a 4-year stakeholder engagement process, in which CRS was heavily involved, and involving over 200 other Technical Working Group members representing 23 countries. This summary of the WRI Guidance identifies how Green-e Energy certified purchases fit into Scope 2 GHG accounting, to help sellers and buyers of certified renewables quantify and publicly report GHG emissions associated with their electricity use.

There are five important takeaways from the Guidance for sellers and buyers of Green-e certified renewables:

1. Dual Reporting for Scope 2

The Guidance requires two methodologies for calculating Scope 2 emissions, and therefore two resulting Scope 2 figures to be reported. **The market-based method allows a consumer to claim the benefits of its Green-e Energy purchases** along with any other specific purchasing choices, and accurately calculate resulting Scope 2 emissions. It is based on supplier- and product-specific emissions rates, which for renewable energy are conveyed using Renewable Energy Certificates (RECs), whether they are bought separately from electricity, delivered through an electricity supplier's green power program or renewable electricity product, or consumed from on-site generation. Green-e Energy recommends that this number be used when calculating a user's total emissions across all Scopes. The location-based method assigns the average emissions rate of electricity generated in the user's region to each MWh used. This does not reflect any purchasing choice or action taken by the user.

2. Emissions Factors

In order to calculate emissions, megawatt-hours (MWh) of electricity consumed are multiplied by appropriate emission factors. In the market-based method, MWh are multiplied by emissions factors that are associated with what is being purchased. Green-e Energy certified renewables fall under "energy attribute certificates" (unbundled RECs) or "supplier/utility emission rates" (utility green pricing programs) in WRI's hierarchy of purchase types, and **each MWh of Green-e Energy certified renewables purchased has a Scope 2 CO2 emissions rate of zero**. All remaining MWh are multiplied by the emissions rate of the applicable purchase type on the hierarchy to give total Scope 2 emissions. MWh without a specific purchase type should use the residual mix emissions rate (see #4 below). In the location-based method, MWh of consumed electricity are multiplied by the average emissions factor for all generating resources in the region of electricity consumption, regardless of who has purchased what generation.

3. Quality Criteria

The Guidance includes a minimum set of "Quality Criteria" (on page two of this document) that renewable energy purchases must meet in order to be counted as zero or low emissions electricity in an electricity user's Scope 2 footprint (using the market-based method). **Green-e Energy certified renewable electricity programs and RECs meet all of the WRI Quality Criteria requirements** and are easily incorporated into Scope 2 calculations.[2]

4. Residual Mix

The "residual mix" is the mix of resources generating electricity in a region that are not being specifically purchased by a particular electricity user or group of users; it is what is left over once all of the specified purchases have been allocated to the buyers. **All purchases of Green-e certified renewable energy are *not* included in the residual mix**, so that only the purchaser can claim the renewable attributes, and electricity users that are not purchasing renewables take responsibility for emissions on the grid. **Green-e Energy publishes annual residual mixes by NERC region for the US and Canada, which subtract out all certified sales**, available at: http://www.green-e.org/docs/energy/ResidualMix2015.pdf

5. Biomass

WRI requires that CO2 emissions from biomass electricity or REC use be reported outside of the Scopes. **WRI does not currently require that the CO2 emissions from biomass electricity be quantified for total Scope 2 emissions reported.** CH4 and N2O emissions from biomass should be reported, however.

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[1] See also WRI's own Executive Summary and the full Guidance: http://www.ghgprotocol.org/scope_2_guidance.

[2] A more detailed analysis of how Green-e certified renewables meet Scope 2 Quality Criteria is available by contacting Green-e Energy staff.

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Quality Criteria – WRI Guidance Table 7.1. WRI's minimum criteria for renewable electricity purchases to meet. Green-e Energy certified sales meet all of them.		
#	**Summary of Criterion Details**	**How Green-e Energy Fulfills Requirement**
1	**Instrument must convey the GHG emission rate attribute associated with the MWh**.	Green-e Energy certified renewables include all carbon-related attributes (See the National Standard Section III.C).
2	**Instrument must be the only device that conveys the GHG emission rate attribute claim.**	Green-e Energy specifically restricts double claims on RECs (See Section III.E of National Standard) and requires that generators include all carbon emissions benefits in the renewable attributes they sell. This is ensured through verification of attestations and other methods in the Appendices of the National Standard.
3	**Instrument must be retired, redeemed, or cancelled by or on behalf of the reporting entity to support the claim.**	Green-e Energy requires that RECs used in certified products are fully retired, via tracking systems or via attestations validating the full chain of custody.
4	**Instrument must be issued and redeemed close in time to the period of energy consumption to which it is applied.**	Green-e Energy requires that certified products only use renewables generated within a 21-month window around the time frame to which they are applied (Section III.B of the National Standard).
5	**Instrument must be sourced from a region reasonably linked to the region in which it will be applied (i.e. within the same market).**	Green-e Energy requires that certified renewables be generated within North America and sold to customers in the same area (Section III.G of the National Standard). WRI considers the US to constitute a single market for RECs.
6	**Supplier-specific emission rates should be calculated including certificates retired on behalf of customers and applying the residual mix rate to null power.**	Green-e Energy requires that RECs be retired to substantiate delivered renewable electricity, and that RECs cannot be claimed in the power disclosure of utilities selling off RECs and using null power.
7	**For direct purchasing or on-site generation, all instruments must be transferred to the reporting entity.**	All Green-e Energy claims are substantiated by energy attribute certificates (RECs) that must be owned and used by only the entity claiming renewable electricity use.
8	**Residual mix shall be used to represent the GHG intensity of unclaimed or publicly shared electricity.**	Green-e Energy publishes US and Canadian residual mixes that factors out all Green-e Energy certified sales, available at: http://www.green-e.org/docs/energy/ResidualMix2015.pdf

Optional Recommended Reporting -- WRI Guidance Table 8.1. Additional information that a user may optionally include in its reporting to add more detail to its activities.	
Feature	Green-e Energy Purchaser Reporting Options
Label Name	Enter "Green-e Energy"
Incremental Funding Program	Green-e Energy does not require or verify incremental funding claims associated with certified products, as this is not common practice in the US and Canada. Purchasers may request more detailed information from sellers.
Resource Type	Available via the Historic Product Content Label (which will include information on biomass content, if any, for use toward biomass N2O and CH4 reporting), which sellers of all Green-e Energy certified products are required to provide to customers.
Facility Location	State-specific information available via the Historic Product Content Label
Facility Online Date	At a minimum, purchasers can indicate "No more than 15 years old". Some re-powering and extended-use are approved by Green-e Energy on a case-by-case basis (see Section II.E of the National Standard). Purchasers may request more detailed information from sellers.
Connection to Regulations	Enter "Claimed instrument above and beyond supplier quota." Under Section III.D of the National Standard, in limited cases where a renewable electricity product meets 100% of a customer's load, a percentage of the product may be met with renewables also counting towards a Renewable Portfolio Standard.
Cap-and-Trade	Enter "Yes, with allowance retirement". Purchasers can be sure that the full carbon, including avoided emissions, are included in a Green-e Energy certified product because Green-e Energy requires electricity suppliers to retire allowances on behalf of certified voluntary renewable energy sales.
Funding / Subsidy	Reporting will vary. This covers things like the Investment Tax Credit and Production Tax Credit, neither of which puts a claim on the REC in the US or Canada.
Carbon Offsets	Enter "No". Renewable electricity and RECs sold in certified products must contain all carbon attributes.
Other Instruments	Green-e Energy requires retirement of all instruments with similar renewable value to RECs, and any such instruments may be listed (e.g. Michigan IRECs).

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