Overview

- Scope 2 Accounting Overview
- Challenges with Scope 2 Accounting
- Enbridge Case Study
- Options to Reduce Scope 2 Emissions
- Carbon Accounting Lessons Learned
Since 1983 Energy and environmental consulting firm with 550 employees

33 years of experience in energy program evaluation

Leaders in GHG quantification and reporting

Energy industry leaders

Understand energy efficiency and management

Climate risk and resilience expertise
GHG Emissions Accounting

Scope 1 DIRECT
- Transportation and distribution
- Use of sold products
- End-of-life treatment of sold products

Scope 2 INDIRECT
- Purchased goods and services
- Capital goods
- Fuel and energy related activities
- Transportation and distribution
- Waste generated in operations
- Employee commuting

Scope 3 INDIRECT
- Leased assets
- Investments
- Franchises
- Company facilities
- Company vehicles
- Processing of solid products
- Use of solid products
- End-of-life treatment of solid products

Upstream activities

Reporting company

Downstream activities

Image Credit: The Greenhouse Gas Protocol
Reporting Emissions from Electricity

Corporate Standard

Scope 2 Guidance
(amenment to CS)
Scope 2 Guidance Overview

Provides consistent guidance on how to incorporate various energy agreements and electricity procurement choices into your inventory

Provided two methods of calculating your GHG emissions:
- Location-Based
- Market-Based

Companies with operations in a jurisdiction with the means to track renewable energy products shall report using both methods
Includes operations in U.S., Canada, and Europe

Emissions reduction targets are set using one of the available methods
Dual Reporting of GHG Emissions from Electricity

Location-Based
Quantify emissions using regional emissions intensity

Market-Based
Emissions reflect electricity procurement choices
Emissions Factor Hierarchy

Location-Based
- Regional/Subnational EF
- National EF

Market-Based
- Energy Certificates/Contracts (e.g., RECs, GOs, PPAs)
- Supplier-Specific EF
- Residual Mix EF
- Regional/Subnational EF
- National EF

$EF =$ Emissions Factor
Historically developed location-based GHG inventory

Wanted to account for nuclear and wind power purchases and align with best practices

Began with US liquid pipeline operations (150 pumping stations)
Enbridge Case Study

Location-Based vs. Market-Based Scope 2 GHG Emissions (MT CO2e)

- Location-Based Emissions: 2,500,000 MT CO2e
- Market-Based Emissions: 2,800,000 MT CO2e
Corporate Renewable Energy

Publicly announced contracted capacity of corporate Power Purchase Agreements, Green Power Purchases, Green Tariffs, and Outright Project Ownership in the US and Mexico, 2012-2017. Excludes on-site generation (e.g., rooftop solar PV) and deals with operating plants. Last updated: September 19, 2017.

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For more information, please visit: [http://www.businessrenewables.org/](http://www.businessrenewables.org/) or contact BRC@RMI.org
Options to Reduce Scope 2 Emissions

- **Switch to electricity provider with cleaner mix, if possible**
- **Bundled green products from utility or electricity supplier**
- **Unbundled clean energy attributes (e.g., RECs or GOs)**

**Energy Efficiency**

- **Power Purchase Agreement (PPAs)**
- **Owned onsite renewable generation**
Clean Energy Attributes
What is a Power Purchase Agreement?

Contract between specific consumer and energy generators to purchase electricity and/or RECs

- Generation can be offsite or onsite
- Generation from renewable energy project directly reduces consumer’s purchases from the grid

Source: EPA Green Power Partnership
Financial agreement between renewable energy generation and buyer

- Renewable energy project and buyer do not need to be in same grid region
- Acts as a type of price hedge on total electricity spending

Source: EPA Green Power Partnership
Carbon Accounting Lessons Learned

- Maintain ownership of RECs
- Must use market-based accounting
- Ensure renewable energy meets GHG accounting requirements
- Develop corporate energy strategy
Maintain Ownership of RECs

Must maintain RECs from PPAs or onsite renewables to include in GHG inventory

If you sell the RECs you cannot account for generation as zero carbon

RECs must be retired, redeemed, or claimed to account for energy as zero carbon
Must Use Market-Based Accounting

If you have operations in U.S.A, Canada, or Europe must use dual reporting

Base year may need to be recalculated

Emissions reduction targets must use market-based emissions to take credit for renewable energy
Ensure Renewable Energy Meets GHG Accounting Requirements

Renewable energy production must be in same “electricity market” as consumption

Date of energy generation must be from same calendar year as consumption (+/- 6 months)

If no RECs, agreement should be verified by a third party
Develop Corporate Energy Strategy

Treat energy like a portion of your supply chain

Assess energy procurement options holistically across organization

Invest in energy efficiency opportunities before renewable energy
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