GREENHOUSE GAS ACCOUNTING AND MANAGEMENT

APRIL 24, 2018, BIOGEN, 225 BINNEY STREET, CAMBRIDGE, MA 02142

OBJECTIVES

The objective of this workshop was to provide an introduction to GHG accounting principles, and share best practices and organizational experience in setting emission targets, data management and tracking emissions over time.

PRESENTATIONS

1. Overview of GHG Inventory Management and Reporting - Alex Carr, Principal and Ryan Cassutt, Program Associate, The Climate Registry

Key takeaways:

- GHG reporting helps organizations quantify their carbon footprint, identify opportunities for reducing emissions, saving them money and helping them become more energy efficient and competitive. Studies indicate that companies can save from USD$16.25-$100 per ton of GHGs reduced. Reporting GHG's annually also sets a baseline for future performance and make it possible to track reductions and progress over time.
- Companies adopting *'Science based targets'* commit to set greenhouse gas emission reduction targets in line with climate science. Criteria that must be met for target to be recognized as science based and updated recommendations are available here.
- Scope 2 dual reporting includes two methods to account for indirect emissions: (i) the location-based method accounts for the local impacts of a company's purchased electricity by calculating emissions based on a regional, grid-average emission factor (ii) under the market based method companies account for purchase of contractual instruments, or greenhouse gas reducing mechanisms such as renewable energy certificates (RECs) or power purchase agreements (PPAs).
- While RECs can be applied to scope 2 emissions, market-based emissions do not include carbon offsets. Carbon offsets used to counterbalance emissions generated from one source with emission reduction or avoidance from other sources can be applied to Scope 1 or Scope 3 emissions.
- Third party verification is useful to identify errors, improve GHG management systems and data collection processes. Verification costs can be reduced by maintaining transparent data monitoring systems, keeping organized data records, using built in calculation tool in reporting software and maintaining a quality assurance program.

2. GHG Emission Tracking and Data Collection - Kathleen Woodward, Manager, EHS + Sustainability, Biogen

Key takeaways:

- A carbon neutral company since 2014, Biogen has achieved a 70% reduction in operational carbon intensity since 2006 and is committed to a 100 percent renewable energy target. The goal is to achieve a 35% reduction of absolute emissions by 2030 across the value chain from a 2013 baseline.
- Biogen uses a data management tool to capture data on waste, GHG, water, and health and safety. The tool makes it possible to review data at a granular level and improve the frequency of data collection.
- However, it has been challenging to get data from multitenant buildings and have people input data into the dashboard in a timely manner.

3. City of Cambridge Municipal and Community Wide Inventory - Bronwyn Cooke, Sustainability Planner, City of Cambridge

Key takeaways:

- Municipal Emissions: The first inventory took two years to complete but since then the system has been operationalized and the data collection process has been streamlined. The municipal inventory reports on emissions from buildings, streetlights and traffic signals, water delivery facilities, vehicle fleet and wastewater facilities.
- It is important to document the methodology used, data sources and data management tools (City used excel spreadsheets). Third party verification cost $9800 and was useful to provide external validation.
- Consistent data collection for inventories over the years has made it possible to interpret data, analyze trends and monitor progress. This also helped develop the building performance matrix for the Municipal Facilities Improvement Plan (MFIP).
- Community Emissions: The City's first community wide inventory took 8 months to complete. It was harder to track data for this inventory as emission sources are not owned by the City. 2012 was used as the baseline year to forecast emission trajectories for 2030, 2040 and 2050.
- Buildings account for the main source of emissions in Cambridge. The community wide emission inventory is being used as a foundation for updating the Climate Action Plan and provides the rationale for emission reduction strategies and actions recommended.

4. Comprehensive Emission Inventory Accounting at a Complex Decentralized Institution - Caroleen Verly, Sustainability Data Analyst, Office of Sustainability, Harvard University

Key takeaways:

- Harvard University' emission inventory includes Scope 1 and Scope 2 emissions, ~600 buildings and 3 onsite district energy systems. Building heating, cooling and electricity accounts for 97% of their emissions.

- Harvard achieved a 30% net emission reduction from 2006 – 2016 and recently committed to being fossil fuel neutral by 2026 and fossil fuel free by 2050.
- By 2026 Harvard University plans to prioritize reductions in campus energy use, offset or neutralize emissions by investing in off-campus renewable energy projects. The long-term strategy to achieve these goals is still being planned.
- Through its 2050 fossil fuel free commitment the aim is to also address public health, ecological, and economic effects associated with the burning of fossil fuels.