BCSE Submission to the Science Based Target Initiative in Response to the Call for Evidence on the Effectiveness of Environmental Attribute Certificates (EACs)

November 24, 2023

The Business Council for Sustainable Energy (BCSE) appreciates the opportunity to share its perspectives with the Science Based Target Initiative (SBTi) in response to the Call for Evidence on the Effectiveness of Environmental Attribute Certificates (EACs).

BCSE advocates for energy and environmental policies that promote markets for clean, efficient, and sustainable energy products and services. Since its founding in 1992, BCSE has focused on policy adoption that will increase the deployment of energy efficiency, natural gas, and renewable energy, as well as energy storage, sustainable transportation, and emerging decarbonization technologies. As a diverse coalition, not all BCSE members take a position, or endorse, the issues discussed in this submission.

BCSE is pleased to provide several sets of evidence in the form of reports, statistics and case studies. Please see Annex 1 for all the submissions BCSE seeks to make.

While the Call for Evidence provides an opportunity to explain how each piece of submitted evidence responds to the research questions, the format of the Call for Evidence limits efforts to link evidence to support holistic claims on the effectiveness of EACs. As BCSE is offering multiple pieces of evidence to establish a claim, we are taking advantage of the email submission option, in addition to the online survey option, in the Call for Evidence to clarify how the evidence supports the claim.

For additional information, BCSE would like to acknowledge the submissions made by the American Biogas Council, the Clean Energy Buyers Association, the Coalition for Renewable Natural Gas, the Downstream Natural Gas Initiative, and the Renewable Thermal Collaborative. BCSE encourages thoughtful consideration of the issues and recommendations included in these submissions.

EACs Provide Market Signals and Investment in Decarbonized Electricity and Energy

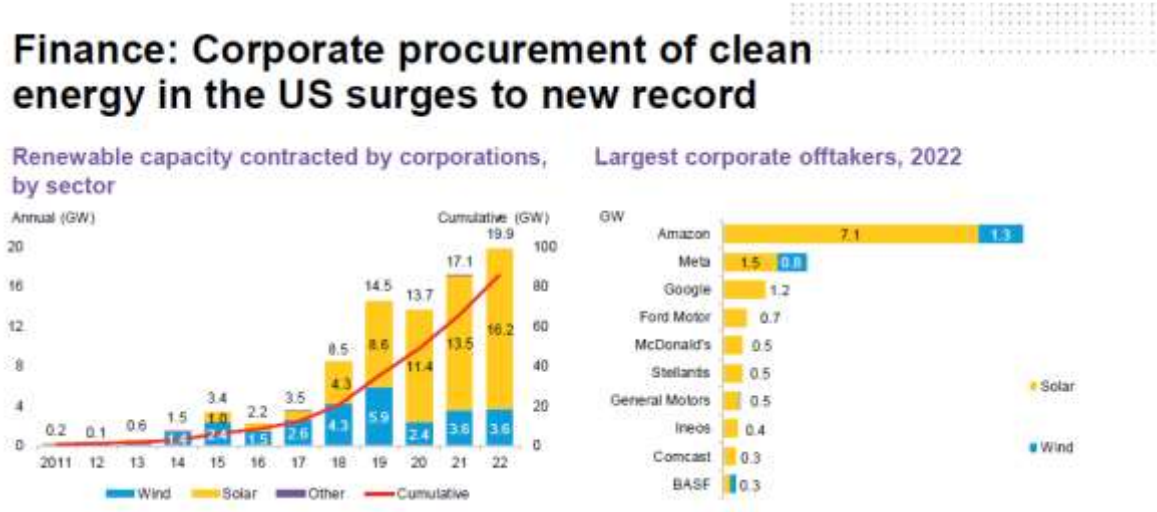
The pairing of market-based instruments with market-based accounting creates a strong incentive for energy customers to procure clean electricity and clean fuels, as well as increase investment in grid decarbonization.

Market-based instruments for the electricity sector represent procurement of a megawatt-hour (MWh) through bundled or unbundled products to represent the zero-emission attributes of the MWh.

While the power sector EAC does not represent an emission reduced from the atmosphere instantaneously and is not a carbon offset, it enables emission reductions from the grid by bolstering and accelerating grid decarbonization investments.

According to the 2023 *Sustainable Energy in America Factbook*, produced by BloombergNEF in partnership with BCSE, market-based instruments have had a significant impact in the deployment of renewable energy and other clean energy resources.

Figure 1 – Published March 1, 2023



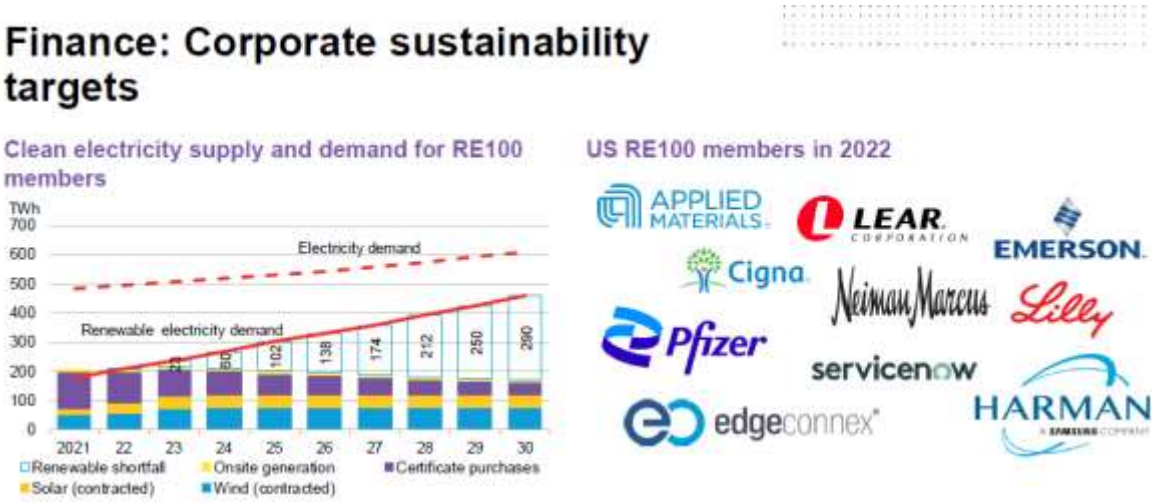
The *2023 Factbook* notes that corporate power purchase agreement (PPA) volumes in the United States reached a record 19.9GW in 2022, surpassing the previous record of 17.1GW in 2021. Companies announced 112 individual PPAs, down from 118 the previous year, but much greater in average size (178MW compared with 145MW). The overall number of different companies signing PPAs in the United States totaled 49, and global PPA signing is expanding.

Virtual PPAs reached a record 17GW in 2022, crushing the previous record of 12GW in 2021 and making up 85 percent of activity in the United States. Under this structure, the project sells power directly into the wholesale market and captures the spot price at the time. The buyer in turn gets ownership of the certificates from the project and pays a fixed price. BloombergNEF points out that the virtual PPA is becoming more popular both due to the simplicity of signing them – a major positive for new entrants to corporate procurement – but also due to increasing volatility in the U.S. power market.

Further, a significant driver for their growth has been the ability for companies to contract for long-term EACs via their PPA.

BCSE notes that growth in EAC markets has preceded the development of other market instruments like PPAs. The United States is an example, as PPAs became viable in 2011 after years of growth in the EAC market. In contrast, when Mexico changed its EAC laws in recent years, it led to declines in renewable energy development.

Figure 2 – Published March 1, 2023



The *2023 Factbook* also highlights that corporate demand from RE100 members will catalyze significant clean energy build in the United States and globally in the coming years. Fifty-six new companies joined the RE100 in 2022, pledging to fully offset their electricity consumption with clean power at a future date. Ten of the new joiners in 2022 were from the United States, compared with 42 across Asia Pacific. More than 100 companies in the U.S. have now joined the RE100 – more than any other market. These companies collectively consume 165TWh of electricity annually, based on their latest disclosures.

There are now 397 RE100 members globally across 25 markets. As of 2021, these companies collectively offset 41 percent (438TWh) of their electricity demand with renewables, led by certificate purchases (123TWh) and offsite wind (51TWh).

In total, the 397 RE100 members will need to purchase an additional 290TWh of clean electricity in 2030 to meet and maintain their RE100 goals. Meeting this entirely through offsite solar and wind deals would catalyze an estimated 99GW of solar and wind build globally. An estimated 132TWh of the above demand is expected to come from the Americas region – most of this from the United States.

Market-Based Accounting and Scope 3 Reporting

BCSE recommends that SBTi confirm the use of EACs to decarbonize the measured or estimated electricity and energy-based components of an energy customer's Scope 3 greenhouse gas emissions. This will spur voluntary carbon-free electricity (CFE) demand and expand investment in grid decarbonization. Expanding market-based accounting under Scope 3 will enable customers to take verifiable action to decarbonize the electricity-based components of their value chains.

BCSE notes proposals being considered by some stakeholders, including the Clean Energy Buyers Institute (CEBI), to expand the menu of CFE procurement options available to customers to reduce Scope 3 electricity-based emissions.

Specifically, an avoided emissions impact indicator is one concept that is being assessed to optimize CFE procurement impact. An avoided emissions impact-based indicator would reflect the level by which a given customer is sending targeted market signals for more CFE in the most carbon-intensive places and times.

The avoided carbon emissions impact-based indicator could be allowed, in addition to the location-based and market-based methods. CEBI is furthering conversations around the merits of different options and any prerequisites needed to feasibly calculate, utilize, and report this figure.

In addition, the SBTi should also extend the use of EACs to other emerging zero-carbon and low-carbon fuels outside of electricity markets to provide customers a means and incentive to procure these fuels and help increase investments in and deployment of these fuels.

Ensuring Effective Use of Market-Based Accounting

BCSE believes robust systems are already in place in both voluntary and compliance markets to assess and transparently report the carbon intensity of clean fuel and electricity sources; generate, verify, track, and retire certificates; and prevent double counting. These programs have been designed to enable the effective use of market-based instruments in voluntary and compliance markets. SBTi must seek to align its framework with existing mandatory policies to avoid issues in reporting between compliance markets, voluntary markets, and those who may be required to report all purchases under the GHG Protocol and/or SBTi.

Opportunities to Improve Transparency and the Stakeholder Process

Given SBTi's governance and the fact that it is not an elected official, governing body, or regulator, it should provide an opportunity for transparent stakeholder discussion and engagement in all its processes – and before it makes decisions on how to consider the evidence it received and how it might be used to impact SBTi certifications.

These could take the form of a series of stakeholder webinars, similar to those provided by the U.S. Environmental Protection Agency for its updates to methodologies for use in the annual national GHG inventory.

Please do not hesitate to contact BCSE President Lisa Jacobson with any questions.

Thank you for your consideration.

ANNEX 1

Evidence for SBTi Consideration on the Effectiveness of EACs

1. **Academic Research: University of California Irvine – *Environmental Attribute Credits: Analysis of Program Design Features and Impacts***

Link to UCI study:
https://apep.uci.edu/PDF_White_Papers/Environmental_Attribute_Credits_Analysis_of_Program_Design_Features_and_Impacts_091523.pdf

This white paper assesses program design features related to the generation and use of EACs, their impact on cost, and on the attainment of environmental goals. The analysis presents perspectives and available evidence on requirements for use of tradable credits, time matching, additionality, geographic boundaries, verification and tracking, preference for nascent technologies, and methods to ensure credit value certainty. There is evidence and rationale to support the range of positions being put forward on these issues. Notwithstanding program differences, there is robust evidence that the use of EACs supports market development and facilitates investment in environmentally preferred resources. Increased stringency in program requirements ensures environmental integrity but can also impede resource expansion if compliance with increased stringency requirements becomes too onerous. The optimal balance depends on the design element being considered, the environmental attribute, and the stage of market development.

2. **Statistics: BloombergNEF, Business Council for Sustainable Energy – 2023 Sustainable Energy in America Factbook**

Link to 2023 Sustainable Energy in America Factbook, selected slides:

https://bcse.org/images/2023%20CACC/BCSE%20BNEF%202023%20Factbook%20Corporate%20Procure%20RE%20Deployment%20Stats.pdf

The statistics show that corporate procurement of renewable energy will catalyze significant clean energy build in the United States. Comparing corporate procurements trends in the U.S. to U.S. deployment of renewables shows their impact: as corporate procurement grows, renewable energy's proportion of the electricity mix expands, as does its output. At the end of 2022, carbon emissions from the power sector were 35 percent below 2005 levels.

U.S. Corporate Power Purchase Agreement Trends

- Corporate power purchase agreement (PPA) volumes in the U.S. reached a record 19.9GW in 2022, surpassing the previous record of 17.1GW in 2021.
- Companies announced 112 individual PPAs, down from 118 the previous year but much greater in average size (178MW compared with 145MW).

- The overall number of different companies signing PPAs in the U.S. totaled 49, down from 67 in 2021.

Renewable Energy 100 (RE100) Pledge Trends: Global and U.S.

- 56 new companies joined the RE100 in 2022, pledging to fully offset their electricity consumption with clean power at a future date.
- 10 of the new joiners in 2022 were from the U.S., compared with 42 across Asia Pacific. New U.S, members included Applied Materials, Eli Lilly, Lear Corporation and Pfizer. Over 100 companies in the U.S. have joined RE100 as of 2022 – more than any other market. These companies collectively consumed 165TWh of electricity annually, based on their latest disclosures.
- There are now 397 RE100 members globally across 25 markets. These companies collectively offset 41% (438TWh) of their electricity demand with renewables as of 2021, led by certificate purchases (123TWh) and offsite wind (51TWh).
- In total, the 397 RE100 members will need to purchase an additional 290TWh of clean electricity in 2030 to meet and maintain their RE100 goals. Meeting this entirely through offsite solar and wind deals would catalyze an estimated 99GW of solar and wind build globally. An estimated 132TWh of the above demand is expected to come from the Americas region – most of this from the U.S,. This suggests that corporate demand from RE100 members will catalyze significant clean energy build in the U.S. in the coming years.

U.S. Renewable Natura Gas (RNG) Trends

- Traditionally, biogas (the feedstock for RNG) was used for electric generation onsite or sold into the power market. However, thanks to policies that incentivize its use as a transportation fuel, energy incumbents are developing strategic partnerships and acquiring companies to convert biogas into RNG which is compatible with pipeline natural gas.
- Oil and gas companies with decades of experience in production and transportation of energy products see RNG as an extension of their core business and an opportunity to make clean energy investments or self-generate credits for compliance with transportation policies.
- In 2022, BP announced the acquisition of the largest RNG company in the US, Archaea Energy, for $4.1 billion. The deal was equivalent to 54% of BP's total low-carbon energy investment from 2015 to 2021 and represented 25% of its planned capex spend for 2022.
- Natural gas pipeline companies are investing more in RNG to demonstrate how pipeline infrastructure can play a role in the transition to using more low-carbon fuels. Kinder Morgan, the largest gas pipeline distributor in North America has said it plans to invest $1.1 billion in RNG by 2024, boosting production from 1.8 billion cubic feet (Bcf) in 2022 to 7Bcf by 2024.

3. Statistics: US EPA – Landfill Gas EAC Market's Success in Creating Methane Emissions Reductions

Link to EPA Landfill Gas Energy Basics: https://www.epa.gov/sites/default/files/2016-07/documents/pdh_chapter1.pdf

Link to EPA LFG Energy Project Development Handbook: https://www.epa.gov/system/files/documents/2021-07/pdh_full.pdf

Link to EPA Landfill Methane Outreach Program stats: https://www.epa.gov/lmop/accomplishments-landfill-methane-outreach-program

The United States Environmental Protection Agency's (EPA) supports the market-based procurement of RNG as an incentive for landfill gas capture and use within its "LFG Energy Development Handbook", as well as under its Renewable Fuel Standard program. EPA also tracks emission reductions based on landfill gas capture and use. According to the Handbook, operational landfill gas facilities (inclusive of both electricity production and RNG) have reduced over 688 MMTCO2e over the past 28 years, since the program's inception.

The Handbook also discusses how, for electricity generators, RECs are sold through voluntary markets to help make a project economical. Without these incentives, the Internal Rate of Return (IRR) is too high to rate the expenditure. EPA's "Landfill Gas Energy Basics" white paper states that the economic benefits for the Landfill owner include revenue from Renewable Energy Certificates (RECs) and that this and other potential revenue can help offset the total project capital costs for the gas collection system and energy project costs. This incents the scale-up of landfill gas to energy, creating GHG emission reductions.

4. Case Study: Ameresco/City of Phoenix, AZ

Link to Ameresco RNG case study: https://www.ameresco.com/portfolio-item/city-of-phoenix-91st-avenue-wastewater-treatment-plant-az/

At time of construction, Ameresco's RNG production facility at the City of Phoenix's wastewater treatment plant was the largest of its kind in the United States. This facility accepts wastewater from Phoenix, Glendale, Mesa, Scottsdale and Tempe and is operated by the City of Phoenix and is expected to reduce the equivalent of 44,671 metric tons of CO2 per year. This facility is connected to the interstate pipeline network, and is utilizing market-based instruments under the Renewable Fuel Standard for funding. There otherwise does not yet exist a feasible end-user close enough to purchase the RNG directly. Increasing renewable gas supply in this manner will help to ultimately achieve a 100% renewable gas system which serves targeted end-uses in the long-run. This strategy aligns with leading climate jurisdictions such as California and the EU.

Note that this case study represents only one of many examples in North America where the RNG producer and end-user utilize market-based instruments. This practice is all but ubiquitous as the project funding mechanism for RNG projects (other than the few which are in close

proximity to end-use and utilize dedicated pipelines or trucking). In the future, pipelines which carry hydrogen and CO2 from different sources are expected to use market-based certificates for renewable gas in an analogous manner.