



Staff Report Item 18

TO: East Bay Community Energy Board of Directors
FROM: Howard Chang, COO
SUBJECT: Carbon emission benchmarking and Accounting Methodology (Action Item)
DATE: October 17, 2018

Recommendation

Approve a calendar year 2018 emissions factor benchmark at 142lbs of CO₂e/MWh for the Bright Choice product utilizing the Electric Power Sector Protocol by the Climate Registry.

Background

Carbon Accounting:

EBCE staff has evaluated carbon accounting methodologies to measure and disclose EBCE's actual emissions on a backwards looking basis. Staff has engaged with city sustainability staff and informally with independent consultants to research these methodologies. A review of the following methodologies and platforms has been completed.

Accounting methodologies:

- The Climate Registry (TCR) (Voluntary)
 - Includes an electric sector protocol relevant for EBCE electricity supply
 - Certain key commercial customers have requested this platform that aligns with their disclosure methodology
 - Currently utilized by PG&E for annual disclosures and a number of existing CCAs, including MCE, SCP, and SVCE.
 - TCR is a non-profit organization governed by U.S. states and Canadian provinces and territories. TCR designs and operates voluntary and compliance GHG reporting programs globally, and assists organizations in measuring, reporting and verifying the carbon in their operations in order to manage and reduce it.
- Global Protocol for Communities (GPC) (Voluntary)
 - A methodology developed by WRI, ICLEAI, and C40 as part of the Greenhouse Gas Protocol
 - The Global Covenant of Mayors utilizes this protocol
 - There are limitations on scope 2 electricity related emissions with this platform, which is more focused on corporate and city disclosures, limiting the applicability of this for CCAs.

- The Carbon Disclosure Project and Carbons are two distinct disclosure platforms that are utilized for information disclosure
- The GPC currently mandates that member cities utilize a broad regional grid average emission. The protocol was recently updated to allow for dual reporting, which can allow cities to disclose emissions based on a grid average emission and a CCA-specific emission. The reporting platform to allow for this dual reporting functionality is not yet established.
- Currently Berkeley, Emeryville, Fremont, Hayward, Oakland, Piedmont, and San Leandro are part of the Global Covenant of Mayors
- Power Content Label (PCL) (Mandatory)
 - Power Content Label currently does not incorporate any emissions factors and only shows a % breakdown of the portfolio power content.
 - AB1110 is an active proceeding that will incorporate changes to require emissions intensities and certain treatment of PCC2 and PCC3 products.
 - AB1110 is expected to come into effect in 2020 for 2019 supply and the exact details of the disclosure changes and accounting methodology are pending
 - It is anticipated that the PCL scope will look only at California-specific emissions
- Clean Net Short GHG calculator used under the IRP (Mandatory)
 - The Clean Net Short methodology was released for the first time as part of this initial IRP requirements for all LSEs.
 - Changes may occur to the current IRP requirements because this was the initial year and CPUC staff is currently soliciting feedback and information

Given pending regulatory changes, staff advises that we select an accounting methodology at this time to provide some level of transparency and certainty with which staff should operate. Furthermore, the accounting methodology enables a clear measurement protocol related to adhering to an emissions benchmark. Multiple third-party consultants have informally advised EBCE to utilize the Climate Registry Platform because it is most applicable to the electricity sector and is widely recognized and used within the utility sector. It is understood that based on future regulatory requirements and changes to industry norms, EBCE staff may advise to the board changing, adding to, or eliminating the use of the Climate Registry in the future.

Emissions Benchmarking:

Utilizing the Climate Registry's Electric Sector Protocol as the carbon accounting methodology, EBCE staff is recommending we establish an emissions factor benchmark based on the board approved power content for Bright Choice, Brilliant 100, and Renewable 100. Given a variable energy load relative to a forecast, the emissions benchmark is best provided as a per MWh metric. Bright Choice is a board approved product set at 85% carbon free. Different energy sources have varying carbon emissions that are important to take into consideration when making procurement decisions. The emissions factor for CAISO unspecified system power is 0.428MT of CO₂e/MWh. Applying this emissions factor to 15% of the Bright Choice product equates to an emissions factor of 0.0642 MT of CO₂e/MWh on the Bright Choice Product. This equates to 142lbs of CO₂e/MWh. Brilliant 100 and Renewable 100 both have a 0 emissions factor. For subsequent years EBCE staff will establish new benchmarks with approval from the Board to continue to reach its carbon reduction goals. This benchmark of 142 lbs of CO₂e/MWh is set using the carbon accounting methodology under The Climate Registry. Pending changes with the Power Content Label, the Clean Net Short Methodology, or other unanticipated regulatory changes could materially deviate from

this emissions benchmarking process methodology based on different emissions credits for products, such as PCC2 and PCC3 RECs. Unfortunately, those changes are uncertain at this time and difficult to forecast. As a comparison, the latest PG&E published emissions factor, which utilizes the Climate Registry, was for 2016 power content and was 294 lbs of CO₂e /MWh¹. This reflects a 25% reduction from 2015. It is expected that PG&E’s emissions factor will continue to decrease, but it is uncertain where future years will come out.

By establishing a carbon emissions benchmark, the goal would be to minimize costs while adhering to a cap on the emissions factor. EBCE staff can make objective decisions to procure from various energy sources, which include renewables, large hydro, and from Asset Controlling Suppliers (ACS). In the case of renewable energy certain generation sources, such as geothermal and biomass, may contribute carbon emissions compared to zero emissions from solar and wind. In the case of large hydro, power from ACS may provide a low carbon and cost-effective substitute for source specific large hydro. There are currently three approved Asset Controlling Suppliers that may deliver power from a portfolio into CAISO. All three entities reside in the Pacific Northwest and are estimated to be 85-90% large hydro. In the table below, an estimate of emissions factors is provided across several energy sources.

	Carbon Emission lbs CO ₂ e/MWh		
	Low Estimate	High Estimate	Avg
Solar	0		
Wind	0		
Large Hydro	0		
ACS			
Bonneville Power Authority	26		
Powerex	56		
Tacoma Power	34		
Geothermal*	135	240	185
Biomass (wood and landfill gas) *	25	5400	385

*Note emissions are taken from specific units provided in CARB’s Import Energy Reporting Data and EPA’s egrid data.

Staff is seeking approval on setting this emissions benchmark factor and the adoption of the Climate Registry’s carbon accounting methodology.

ⁱ <http://www.pgecurrents.com/2018/03/26/independent-registry-confirms-record-low-carbon-emissions-for-pge/>