

Calculating Hourly Utility Emission Factors

Draft Proposal | October 2023

1. Problem Statement

Demand for information about hourly matching of electricity generation to customer load, such as 24/7 clean energy, is increasing. Vertically integrated electric utilities are well positioned to expand access to hourly emissions data. However, this is not commonly reflected in the emissions reporting made available to customers. Complications associated with calculating and interpreting this information stem from the fact that hourly products and hourly retail mix data from different utilities may reflect differences in terms of a utility's generation, storage and purchasing mix, grid circumstances and market structure, approach to data collection, customer load, and accounting choices. No standard guidance is available today to define best practices for calculating hourly emissions factors.

This CEAP initiative will answer the question:

- *How should vertically integrated electric utilities calculate hourly utility emission factors?*

2. Proposal Summary

This initiative will develop best practices for calculating hourly emission rates for different utility product offerings. It will consider how best to reflect hourly utility customer emissions both on an hourly and annual basis, as well as for different classes of products, including specified subscription blocks.

Available data sources will be evaluated and incorporated as appropriate and recommendations will be developed where necessary to account for storage, wholesale transactions, unspecified purchases, and variations in customer load. This initiative will also seek to create templates to help utilities communicate consistently with customers across service areas.

3. Summary Table

This table will further define the initiative along specific parameters and criteria and inform the working group stage.

Scope limitations:	<ul style="list-style-type: none"> ▪ Focused on attributional accounting for hourly-matched electricity delivery in the U.S. ▪ Project will not consider impact or avoided emissions accounting, although areas where additional guidance is needed can be identified. ▪ Findings may be applicable outside of the U.S., but further research will be needed to comprehensively address market-specific circumstances.
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Potential outcomes:	<ul style="list-style-type: none"> ▪ Increase access to high quality data to support buyer carbon mitigation strategies. ▪ Increase proliferation of hourly products, providing access to more customers. 		
Reasons for urgency:	<ul style="list-style-type: none"> ▪ Despite significant interest in hourly clean electricity accounting, it is difficult for customers to understand how much hourly-matched electricity they are already using. ▪ Disclosure of hourly matched data may help incentivize technology solutions (e.g., storage and transmission) that are necessary to decarbonize the grid. ▪ A U.S. executive order requires hourly products for government agencies, and existing regulations in the EU are mandating hourly reporting for EU-based companies' operations in the U.S. 		
Anticipated deliverable:	<ul style="list-style-type: none"> ▪ Definitions of different classes of hourly products and data ▪ Best practice guidance for developing specified and default product emission factors that reflect hourly data ▪ Standardized product disclosure template(s) 		
Other relevant initiatives:	<ul style="list-style-type: none"> ▪ Singularity Open Grid Emissions Initiative ▪ California Energy Commission's implementation of SB 1158 		
Relation to existing CEAP initiatives:	<ul style="list-style-type: none"> ▪ This work relates to CEAP's Calculating a Residual Mix initiative with a focus on vertically integrated electric utilities' hourly emission factors. ▪ This work also relates to CEAP's Best Practices for Power Source and Emissions Disclosure initiative. 		
Available resources:	<ul style="list-style-type: none"> ▪ The Climate Registry's Electric Power Sector Protocol ▪ Institute for Electric Innovation's Designing 100 Percent Carbon-free Energy Solutions: Preferences, Challenges, and Pathways Forward ▪ CRS core competencies: expertise in utility product design and verification, building on Green-e® 		
Potential challenges:	<ul style="list-style-type: none"> ▪ Scale of diversity in provider operations, circumstances, and data collection and systems ▪ Limited availability of specified resource and customer load data at the right granularity and frequency ▪ Greater clarity on accounting for storage may be needed 		
Key working group stakeholders:	<table border="0"> <tr> <td> <ul style="list-style-type: none"> ▪ Regulated utilities ▪ Deregulated utilities ▪ Energy marketers ▪ Hourly matched clean electricity buyers ▪ U.S. Federal Government </td> <td> <ul style="list-style-type: none"> ▪ National Laboratories ▪ Public utility commissions ▪ EAC tracking systems ▪ Software providers ▪ Data providers </td> </tr> </table>	<ul style="list-style-type: none"> ▪ Regulated utilities ▪ Deregulated utilities ▪ Energy marketers ▪ Hourly matched clean electricity buyers ▪ U.S. Federal Government 	<ul style="list-style-type: none"> ▪ National Laboratories ▪ Public utility commissions ▪ EAC tracking systems ▪ Software providers ▪ Data providers
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