Environmental Markets Association Response to Greenhouse Gas Protocol Electricity-Sector Consequential Methods Public Consultation

The following are responses to Greenhouse Gas Protocol's (GHGP) Electricity-Sector Consequential Methods Public Consultation developed by the Environmental Markets Association's (EMA) Board and Policy Advocacy Committee. This document was adapted from the survey and includes relevant questions in the order they are presented.

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Survey Questions and Responses:

18. What potential benefits, challenges, or unintended consequences do you foresee with developing and using consequential accounting methods for electricity-sector actions? Please include any practical considerations (e.g., feasibility, data needs, costs, comparability, clarity of claims).

    EMA does not condone consequential accounting as a required framework for procurement of market-based instruments to reduce Scope II GHG emissions inventories. While consequential accounting has many valid applications in the context of environmental market-based instruments (e.g., carbon offsets and renewable thermal certificates), it is not appropriate for mandatory use with RECs (i.e., renewable energy certificates, carbon-free energy certificates, energy attribute certificates, etc.). EMA instead promotes the use of attributional, or inventory accounting, combined with a market-based accounting approach that utilizes the matching of market-based instruments to claim emissions reductions.

    EMA understands that emissionality advocates seek to embody emission reduction measurements in the REC instrument itself as a way to direct pricing signals in favor of new projects with higher grid emissions displacement. Generally speaking, EMA and our members are aligned with these goals in a voluntary election framework, however, the GHGP must recognize that there are disadvantages and unintended consequences of using consequential accounting as a required framework for REC procurement:

    Ex ante consequential accounting: The use of ex ante baselines to calculate emission reductions will inherently be an inaccurate representation of true or actual emission reductions achieved because (1) marginal electricity-sector emissions on fuel-diverse grids change and evolve over time. (2) There will likely be major data challenges accounting for electricity imports/exports, and limited insight regarding power flows and emissions attributes. (3) These issues are made worse when arbitrary "grid boundaries" are drawn as envisioned in some GHGP revision scenarios.

It is important to note that the longer the time horizon of the baseline, the more inaccurate the calculation of emission reductions becomes compared to reality. Consequently, RECs that embody emissions reductions compared to a counterfactual baseline resemble carbon offsets / insets. Where a REC is a REC and represents 1 MWh of generation with a known, calculable emissions factor, there is substantial accuracy and clarity provided to buyers. Simply put, ex ante baselines do not produce more "accurate" emissions accounting frameworks compared to alternative accounting options in use and available to the markets today.

Ex post consequential accounting: Even assuming modelling and data limitations can be overcome, the use of ex post marginal emissions calculations to "true-up" emission reductions caused by the project would also create unintended consequences that could severely limit market participation and growth. Buyers purchasing RECs based on emissionality will not know in advance the emission reductions that will be conferred by a project and its RECs. Project developers will also not know the future emission reduction value of their projects. This will lead to market inefficiency and unnecessary valuation / transaction complexity in the pursuit of a false sense of precision.

VPPAs / PPAs are long-term liabilities on the balance sheets of buyers that are tens or hundreds of millions of dollars in value. If the buyer is procuring renewable energy solely to reduce Scope II emissions, then ambiguity surrounding their emission reduction claims will complicate the decision to purchase clean energy. This is certain to limit participation and growth in voluntary clean electricity markets and will have adverse consequences on capital formation, project development, and climate action.

Incorporating consequential accounting for scope II will be difficult for these reasons. That said, under an optional, voluntary framework, nothing would prevent companies from attempting these calculations and pricing their value into arms-length REC transactions without harming broader market formation, participation, and action.

19. Is the proposed Scope 2 TWG subgroup formula appropriate for quantifying emissions impacts from electricity projects? (Please refer to the structure of the formula itself, and save comments on methodological details, such as marginal emission rates or eligibility requirements, for following sections of the survey.)
    a. Yes
    b. No

20. Please explain your answer to question 19.

    See other survey responses.

26. For each of the provided additionality tests, indicate which tests should be included (required or optional) in a framework designed to assess additionality for renewable energy projects? For these questions, "required" indicates a mandatory test, such that all projects must pass the test in question to be eligible. "Optional" indicates that a test can be used to demonstrate additionality but is not mandatory. For optional tests, projects have the choice for which tests they use to demonstrate additionality.
    a. Regulatory test
        i. Required
        ii. Optional
        iii. Not required

b. Timing test
    i. Required
    ii. Optional
    iii. Not required
c. Financial analysis test
    i. Required
    ii. Optional
    iii. Not required
d. Barrier test
    i. Required
    ii. Optional
    iii. Not required
e. Common practice test
    i. Required
    ii. Optional
    iii. Not required
f. Positive list
    i. Required
    ii. Optional
    iii. Not required
g. Performance standard
    i. Required
    ii. Optional
    iii. Not required
h. Contractual/tenor test
    i. Required
    ii. Optional
    iii. Not required
i. First-of-its-kind test
    i. Required
    ii. Optional
    iii. Not required

28. For each of the provided additionality tests, please indicate which tests are feasible to implement:
    a. Regulatory test
    b. Timing test
    c. Financial analysis test
    d. Barrier test
    e. Common practice test
    f. Positive list
    g. Performance standard
    h. Contractual/tenor test
    i. First-of-its-kind test
    j. None (no tests are feasible)

29. Please provide additional context or information on which tests are or are not feasible to implement.

    EMA believes that any additionality test has no place within the GHGP Electricity Sector Consequential or Scope II accounting frameworks, nor are additionality tests required to facilitate consequential accounting frameworks that measure avoided/displaced emissions. Additionality is a subjective and arbitrary measurement that does not conform to the accuracy principle in emissions accounting. For these reasons, EMA does not believe additionality tests are feasible to implement.

    Additionality based on facility commercial operation date is problematic for market development and does not align with the on-the-ground reality of how projects are developed and financed. Age-based

eligibility rules can reduce market efficiency and raise compliance costs by constraining access to otherwise high-quality clean or low-carbon generation. Because all projects age, determining when a facility becomes "too old" is subjective and can create investment uncertainty. Such limits also shorten payback periods for new projects (increasing costs) and undermine the viability of existing plants that continue to deliver credible environmental benefits. Ongoing incentives help both new and existing facilities remain operational. All new renewable or clean energy projects become existing projects eventually and arbitrarily defining new vs. old is not only counterproductive but will lead to market inefficiency and higher climate action costs. In the context of project finance, when a project's RECs are only eligible for a certain period of time, the price of RECs must increase during the shortened, eligible underwriting window. This is because RECs in later periods have to be valued at zero. If REC prices had been solving for equity returns on the margin, this revenue will then need to be made up through increased electricity or capacity market prices. The RECs of older, already cost-recovered, projects producing clean electricity (e.g., older hydro or nuclear) can still be displacing dirtier sources. They also require ongoing operational and relicensing investments to maintain their production and the sale of RECs helps keep these clean energy resources online. It is discriminatory to cast older facilities that produce equivalent avoided emissions benefits as ineligible for consequential accounting because of additionality preferences.

31. Should regional differences be considered in additionality tests (e.g. different combinations of additionality tests would be relevant or appropriate for different regions)?
    a. Yes
    b. No
    c. Unsure, depends on details

33. Should the level of rigor in additionality tests be applied differently depending on the type of claim an organization wants to make? (e.g. association vs. causal claim).
    a. Yes
    b. No

35. Which methodology or methodologies **are appropriate** for quantifying the operating margin emissions impacts of renewable energy projects? (select all that apply).
    a. SCED – fuel on the margin
    b. SCED – locational
    c. Scenario modeling
    d. Heat-rate/LMP
    e. Statistical
    f. Capacity factor based
    g. Difference-based
    h. None

37. Please provide any additional explanations or further details regarding which operating margin methodologies are or are not appropriate.

    All of the methodologies listed for ex ante estimation of marginal emissions impacts—SCED (fuel on the margin), SCED (locational), scenario modeling, heat-rate/LMP, statistical, capacity factor-based, and difference-based—face fundamental accuracy limitations for mandatory application to Scope 2 market-based instruments. Each relies on assumptions about the counterfactual electricity system, marginal generation, and future dispatch that are highly uncertain and dynamic. Small changes in assumptions regarding fuel dispatch, transmission constraints, imports/exports, or policy drivers can materially alter results, making consistent and auditable application across regions non-comparable and impractical.

    Many of these methods also require granular, high-quality data that are not consistently available or verifiable. Approaches such as locational SCED or heat-rate/LMP depend on detailed nodal pricing and dispatch information, while statistical and scenario-based methods rely on assumptions that may not hold over multi-year time horizons. Capacity factor and difference-based methods similarly depend on generalized assumptions that are difficult to standardize across projects or reporting entities. These challenges limit the comparability, reproducibility, and transparency of ex ante marginal emissions calculations.

    Finally, even where modeling and data challenges could theoretically be addressed, ex post estimations of marginal emissions introduce significant uncertainty for market participants. Buyers and project developers cannot know in advance the precise emissions impact of a given REC or long-term contract. This uncertainty complicates valuation, contracting, and reporting, undermining market efficiency and participation.

    For these reasons, it may not be appropriate to require entities to report consequential accounting metrics. EMA is concerned that the listed methodologies are problematic when assessed against GHGP accounting principles.

38. Which methodology or methodologies **are appropriate** for quantifying the build margin emissions impacts of renewable energy projects? (select all that apply).
    a. Recent capacity additions
    b. Policy scenario
    c. Capacity expansion modelling
    d. Average emission rate
    e. None

40. Please provide any additional explanations or further details regarding which build margin methodologies are or are not appropriate.

The methodologies listed—recent capacity additions, policy scenario, capacity expansion modeling, and average emission rate—introduce inaccuracies and are not appropriate for mandatory Scope 2 accounting. Each approach relies on assumptions or projections that introduce significant uncertainty and limit comparability. For example, recent capacity additions and policy scenario methods depend on forecasts of system evolution that are inherently uncertain and can vary widely depending on assumptions about retirements, fuel switching, and regulatory developments. Capacity expansion modeling requires detailed assumptions about future investments, market behavior, and policy interactions, making consistent application across regions and projects infeasible. Average emission rate methods simplify system behavior into a single value, obscuring temporal, locational, and marginal variations that are central to accurate emissions attribution.

These limitations create practical and analytical challenges. Historical or projected system changes may not reflect the incremental impact of a specific renewable project, and assumptions necessary to apply these methods systematically are often unverifiable or data-intensive. Differences in methodology or baseline definitions across regions could produce materially different results, reducing reproducibility and comparability.

47. Which, if any, of the included approaches for assigning build and operating margin weights for electricity projects are appropriate? (select all that apply)

a. GHG Protocol Guidelines for Quantifying GHG Reductions from Grid-connected Electricity Projects
b. UNFCCC CDM Tool07
c. Default 0.50 build margin weight for all projects
d. Resource adequacy approaches
e. Intervention lifecycle approaches
f. None are appropriate
g. Unsure

49. Which, if any, of the included approaches for assigning build and operating margin weights for electricity projects are not feasible to implement? (select all that apply)
    a. GHG Protocol Guidelines for Quantifying GHG Reductions from Grid-connected Electricity Projects
    b. UNFCCC CDM Tool07
    c. Default 0.50 build margin weight for all projects
    d. Resource adequacy approaches
    e. Intervention lifecycle approaches
    f. All are feasible
    g. Unsure

50. If you selected any of these approaches, please explain why the approach is not feasible to implement.

The approaches listed for assigning build and operating margin weights—including the GHG Protocol Guidelines for Quantifying GHG Reductions from Grid-connected Electricity Projects, UNFCCC CDM Tool 07, default 0.50 build margin weight, resource adequacy approaches, and intervention lifecycle approaches—are not appropriate for mandatory Scope 2 accounting. Each method relies on assumptions or projections about which generators are displaced or influenced by a project, as well as assumptions about future system investments, dispatch, and resource adequacy. These assumptions are highly uncertain and system-specific, making consistent application across regions and projects infeasible.

More sophisticated approaches, such as resource adequacy and intervention lifecycle methods, require granular data and forward-looking modeling of generation, policy, and grid conditions that are not consistently available or verifiable. Simpler approaches, such as default weighting or the CDM Tool 07, do not reflect actual system dynamics and produce results that may be materially inconsistent across projects or over time. In all cases, differences in assumptions, boundaries, and modeling choices can materially alter outcomes, reducing comparability, reproducibility, and transparency.

Given these limitations, EMA concludes that none of the listed approaches are feasible for mandatory application in Scope 2 market-based accounting. While such methods may have analytical value for voluntary studies or internal scenario analysis, they cannot provide the standardized, auditable, accurate, and scalable framework necessary for consistent Scope 2 reporting.

1 Thank you