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November 24, 2023

***Re: EMA Cover Letter for SBTi Evidence Submission – “EACs are highly effective instruments for credibly tracking, conveying, claiming, reporting, and incentivizing decarbonization solutions.”***

Dear SBTi:

EMA as a trade association represents a diverse institutional membership of on-the-ground industry practitioners delivering “real world” decarbonization solutions through the development, finance, and operation of sustainable infrastructure projects in the clean power, renewable thermal, and emission reduction sectors. Environmental Attribute Certificates (EACs), also known as Environmental Instruments or Environmental Commodities, such as Energy Attribute Certificates, Renewable Energy Certificates, Guarantees of Origin, Renewable Thermal Certificates, SAF Certificates, Carbon Allowances, Carbon Offsets, and Emission Reduction Credits, amongst others, facilitate critical primary or marginal revenue streams on top of underlying physical commodity sales that deploy new and support existing projects. Ultimately, *all* mitigation impact occurs at a “project level,” irrespective of whether it originates from a project finance, corporate finance, or public finance transaction. Trade of EACs enables increased collaboration amongst market participants and supports the efficient deployment of least-cost solutions.

EMA’s position is that EACs are effective accounting instruments for conveying environmental attributes and effective delivery mechanisms for performance-based incentives & revenue for decarbonization solutions, irrespective of the transaction type (e.g., unbundled vs. bundled, spot vs. forward, etc.) in which they are conveyed. A detailed look at global environmental markets, whether they be in the compliance or voluntary space, reveals that almost all programs and transactions utilize EACs. This is because there is no better alternative to: (1) embody, track, convey, claim, and report the environmental attributes associated with physical interventions that promote decarbonization, while (2) rewarding those actions with quantifiable, measurable credit. EMA has submitted 18 pieces of evidence in accordance with our memberships’ practical experience and findings in building these markets. All 8 research questions have been answered in the context of this evidence submission. While each EAC and scope of corporate emission reduction clearly has its own nuances and considerations, the overarching concept of how EACs work and can be designed, or customized, to enable targeted decarbonization solutions remains ubiquitous in practice. **EACs are a proven, successful, and powerful market-based policy instrument ready to further scale climate finance and corporate action.**

The EMA thanks the SBTi for its careful consideration of EACs as an effective tool to mobilize climate finance at a cost and scale necessary to achieve global net-zero ambitions in the timeframe required. **EMA strongly recommends that the SBTi allow for and encourage the utilization of Environmental Attribute Certificates in the reporting and achievement of Scope 1, Scope 2, and Scope 3 corporate emission reduction strategies. Such an outcome will accelerate climate finance formation and mitigation action in line with SBTi’s Mission.**

Respectfully,

The Environmental Markets Association

Answers to Research Questions – “Please see cover letter which has this online submission form attached, including answers to all research questions in their entirety. Each response is limited to 200 words or fewer per instructions but there is a 1000 character limit not allowing for submission in these text boxes.” In case of any other online submission form errors, our entire online form submission is documented here for record keeping purposes. Thank you.

## EMA SBTi Submission – Call for Evidence on the Effectiveness of the Use of Environmental Attribute Certificates in Corporate Climate Targets – 11/24/2023

[The SBTi opens Call for Evidence on the effectiveness of Environmental Attribute Certificates in Climate Targets - Science Based Targets](#)

[Call for Evidence on Market Mechanisms \(sciencebasedtargets.org\)](http://sciencebasedtargets.org)

[Call for Evidence on the Effectiveness of the Use of Environmental Attribute Certificates in Corporate Climate Targets Survey \(surveymonkey.com\)](https://surveymonkey.com)

**1. Your Name**

- Executive Director
- Lauren LeMunyan

**2. Email address**

- [lauren@enviromarkets.org](mailto:lauren@enviromarkets.org)

**3. Please list the organization(s) to which you are affiliated.**

- Environmental Markets Association

**4. Type of organizational affiliation**

- Industry Association

**5. Provide a brief description of the organization(s) and your individual role within that organization (if this submission is associated with an organization) and/or provide a brief description of your individual background (if this submission is not associated with an organization)**

- The Environmental Markets Association (EMA) is a 501(c)(6) not-for-profit industry trade association representing the interests of market participants involved in the trading, legislation, and regulation of environmental markets. EMA's mission is to promote open, competitive, and tradable market-based solutions that cost-effectively solve environmental challenges through the utilization of tradable environmental attribute certificates, while simultaneously contributing to sustainable economic development. Founded in 1997, EMA has helped establish and implement various environmental markets. EMA's membership is comprised of institutional traders, brokers, exchanges, utilities, financiers / investors, advisors, project owners, and sustainable infrastructure

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project developers active in the energy and environmental commodity space. On behalf of the Board of Directors, Lauren LeMunyan manages the EMA in her role as Executive Director. More information about the EMA and its membership roster can be found here:  
[www.enviromarkets.org](http://www.enviromarkets.org).

**6. How many pieces of evidence are you submitting?**

- 1 PDF containing 18 Pieces of Evidence

## About the evidence #1

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**7. Title your evidence submission**

EACs are highly effective instruments for credibly tracking, conveying, claiming, reporting, and incentivizing decarbonization solutions.

**8. Identify the types of attribute certificate to which your evidence applies.**

- ✓ Energy attribute certificates for electricity, heat, steam, and/or cooling
- ✓ Other energy carrier certificates, e.g., green hydrogen, green gas, SAFc
- ✓ Emission reduction credits
- Commodity certificates conveying an emissions attribute e.g., green steel
- Other (please specify)

**9. What type of evidence is this?**

- Empirical data or research study
- Report or white paper
- Statistical information
- Case study or example
- Survey or poll
- Legal or regulatory analysis
- ✓ Other (please specify)

A package of 18 pieces of evidence in PDF form has been submitted including empirical data, research studies, reports, white papers, case studies, surveys, and legal / regulatory analysis. These apply to all 8 research questions answered.

**10. Please indicate if there are any conflicts of interest associated with the evidence piece you are submitting. Refer to our guidelines in Annexes C and D.**

- Yes, I am aware of a conflict of interest associated with the evidence.
- ✓ No, I am not aware of any conflict of interest associated with the evidence

**11. Please explain the nature of any conflict of interest or perceived conflict of interest**

EMA is a 501(c)(6). Our Membership is comprised of companies directly investing billions of dollars in the decarbonization space. As communicated in the brief description of our organization, it should go without saying that Membership companies, generally speaking, have interests or may have future interests in the outcomes of any legislative, regulatory, or quasi-regulatory proceedings that impact the development of environmental market-based solutions. That said, the EMA has not identified and is not aware of any conflicts of interest associated with this submission. Except for the EMA Executive Director, all Board and Committee members engage in a voluntary, non-remunerated basis.

12. Upload a cover letter (optional / 500 words or fewer – You can use this to explain how the evidence responds to the research questions, describe the kind of position the evidence supports, and provide any additional context)

- “2023-11-24\_EMA SBTi EAC Evidence Cover Letter”

13. Upload the evidence

- “2023-11-24\_EMA SBTi Evidence Submission”

14. Is the evidence relevant to the research questions? (relevant, irrelevant, not sure)

Research Question 1: What evidence exists about the effectiveness or ineffectiveness of environmental attribute certificates in delivering measurable emission reductions?	RELEVANT
Research Question 2: What evidence supports or opposes a causal link between specific operating conditions (geographies, regulatory schemes, presence or absence of tracking mechanisms or registries, etc.) and the effectiveness of environmental attribute certificates to deliver corporate emission reductions? Which conditions?	RELEVANT
Research Question 3: What regulatory safeguards and market infrastructure, if any, would need to be put in place for environmental attribute certificates to be effective and sustainable?	RELEVANT
Research Question 4: What evidence supports or opposes the ability of environmental attribute certificates to accurately reflect and quantify emission reductions in the context of corporate climate abatement targets?	RELEVANT
Research Question 5: What evidence exists that uptake of attribute certificates leads to or hinders the transformation needed to reach climate stabilization?	RELEVANT
Research Question 6: What specific evidence-based claims can and cannot be made when employing environmental attribute certificates to corporate decarbonization?	RELEVANT
Research Question 7: Is there evidence that supports or undermines that the market value of this type of instrument is commensurate with the abatement costs of the underlying activity?	RELEVANT
Research Question 8: Is there evidence that shows that the use of these instruments (i.e. procurement of the attribute certificate) could contribute to scale-up of climate finance compared to alternative interventions? Or could it result in climate finance dilution?	RELEVANT

Describe the evidence #1 – 200 word open text field

15. The evidence supports the following answer to Research Question 1 (What evidence exists about the effectiveness or ineffectiveness of environmental attribute certificates in delivering measurable emission reductions?)

- ✓ Evidence supporting their effectiveness in delivering measurable emission reductions
- Evidence supporting their ineffectiveness in delivering measurable emission reductions
- Not sure/Other

16. Please explain how the evidence addresses Research Question 1

EACs enable robust traceability of climate beneficial electrons and molecules, created from individual projects, which become undifferentiated once injected into utility systems. Decades of practical experience in Europe and NA have shown that no better alternative has emerged to handle issuance, tracking, and retirement of environmental attributes associated with underlying



physical interventions. Similarly, in our climate system whereby “a ton is a ton,” Emission Reduction Credits serve an equivalent role in reducing, avoiding, or sequestering carbon emitted elsewhere, thus solving the climate science equation when those reductions are real, verifiable, permanent, and additional. EACs ability to do this is evidenced by the existence and continued development of dozens of global environmental registry operators which help issue, track, and retire EACs. Independent standards / methodology providers help ensure quantitative measurements associated with EACs are scientifically informed, high integrity, and continuously evolving. Monitoring, reporting, and verification (MRV) bodies serve auditing, quality control, and enforcement functions. This ecosystem of infrastructure / service providers enables EAC traceability and reduces double counting risk of attribute claims. EACs serve as a scalable, reinforcing foundation to deliver measurable emission reductions in a market-based accounting or book-and-claim system through any type of market transaction.

**17. The evidence supports the following answer to Research Question 2 (What evidence supports or opposes a causal link between specific operating conditions (geographies, regulatory schemes, presence or absence of tracking mechanisms or registries, etc.) and the effectiveness of environmental attribute certificates to deliver corporate emission reductions? Which conditions?)**

- ✓ Supports a causal link
- Opposes a causal link
- Not sure/Other

**18. Please explain how the evidence addresses Research Question 2**

- In the voluntary decarbonization space, convergence of environmental registries, leadership standards, standardized legal basis / product definitions, and utilization of market-based accounting in combination with tradable EACs has had a positive causal link to growth in climate action by corporates and voluntary customers. The premise of market-based accounting or book-and-claim is foundational in EAC markets – action must get credit. In the NA Energy Attribute Certificate market, for example, the enclosed NREL voluntary REC report highlights growth in customer participation and procurements across a variety of transaction types that are 100% evidenced by the utilization of EACs. Corporate PPA/VPPA growth, in particular, which is often facilitated through “power swap + EAC/REC forward agreements,” was enabled by market constructs to reward and credit these transactions – currently allowed in the Scope 2 GHG Protocol whereby corporates can zero out Scope 2 emissions with EAC purchases. The incredible growth in procurement and participation after the 2015 GHG Protocol Scope 2 guidance release is not a coincidence. FTC, EPA, FERC, and other regulatory body alignment around EAC definitions and the GHG Protocol’s permission of their use has led to renewables uptake. This concept applies to all other transaction types illustrated by NREL.

**19. The evidence supports the following answer to Research Question 3 (What regulatory safeguards and market infrastructure, if any, would need to be put in place for environmental attribute certificates to be effective and sustainable?)**

- ✓ Regulatory safeguards and/or market infrastructure needed
- No safeguards or infrastructure needed
- Not sure/Other

**20. Please explain how the evidence addresses Research Question 3.**

- EAC Market oversight is essential. Environmental registry operators, software / data providers, independent standards / methodology providers, and monitoring, reporting, and verification (MRV) bodies are all a necessary part of the environmental markets’ ecosystem. Quasi-regulatory groups such as GHG accounting frameworks and leadership standards are also essential for voluntary-driven decarbonization efforts since these fill the roles that legislative, regulatory, and statistical agencies fill in compliance markets. Together, these groups ensure EACs represent credible, high integrity, and traceable claims, reduce double counting risk, and facilitate





scientifically / data informed processes for attribute measurement associated with physical interventions. That said, environmental accounting risks are proliferating and there is growing recognition that accounting frameworks need harmonization / reconciliation within a “total accounting” framework across voluntary, compliance, and international “decarbonization” initiatives. Under the premise action must get credit, otherwise action will not be taken, and credit must not be double counted for the same action, this means a “total accounting framework = market-based accounting + residual mix accounting” approach applied universally across all overlapping programs. GHG Protocol, for example, double counts emissions within and between scopes. Residual Mix data across jurisdictions is missing and needed under any evolving construct (e.g., annual matching, 24/7, emissionality).

**21. The evidence supports the following answer to Research Question 4 (What evidence supports or opposes the ability of environmental attribute certificates to accurately reflect and quantify emission reductions in the context of corporate climate abatement targets?)**

- ☒ Supports
- ☐ Opposes
- ☐ Not sure/Other

**22. Please explain how the evidence addresses Research Question 4.**

- The power and potential of EACs, beyond their ability to facilitate incentives and revenue, is that, within reasonable circumstances, they can always be designed to accurately reflect and quantify the environmental attribute characteristics associated with the underlying intervention / activity. However, nuances do arise depending on the instrument used and which scope of emissions it is applied to. RTCs for Scope 1 emissions, for example, have the capability to quantify accurate emission reductions for the underlying fuels’ lifecycle emissions (e.g., a dairy digester destroying methane that has a negative carbon value even after accounting for the RNG fuel’s combustion) while using market-based accounting to facilitate natural gas fuel matching on a volumetric basis. RTCs can allow for accurate carbon accounting and accurate book-and-claim of emission reductions through the displacement of fossil fuel gas and the destruction of methane. Scope 2 dynamics are further addressed in research question #6. Scope 3 emissions can in theory use carbon offsets, EACs, or RTCs to reduce supplier emissions for corporate reporters. There are no legitimate “physical” or “scientific” structural barriers for the accurate use of EACs in reducing GHG inventories in any scope, while keeping in line with climate science and SBTi’s Mission.

**23. The evidence supports the following answer to Research Question 5 (What evidence exists that uptake of attribute certificates leads to or hinders the transformation needed to reach climate stabilization?)**

- ☒ Leads to transformation
- ☐ Hinders transformation
- ☐ Not sure/Other

**24. Please explain how the evidence addresses Research Question 5**

- Evidence submitted on Energy Attribute Certificates highlights that virtually every single renewable energy transaction (feed-in tariffs, utility tariffs, PPAs/VPPAs, unbundled RECs, CCA) conveys environmental attributes using EACs. The NREL / CEBA reports illustrate recent growth in renewable power procurement and customer participation enabled by EACs. EACs foster transaction type innovation, alleviate procurement challenges, and increase market participation on both the sell-side / buy-side. Renewable energy project finance transactions are complex and EACs allow for the customization of procurement solutions to suit specific needs so that a greater number of sellers and buyers can be connected, revenue pools become larger, and investment capital pools deepen. For example, not every business / individual has the balance sheet, credit rating, or internal expertise to manage contractual risks associated with VPPAs. Other EAC solutions such as unbundled RECs accommodate unique customers circumstances. Overall, this



leads to greater demand for new renewable energy projects (which need financing) and existing renewable energy projects (which require refurbishment overtime). By enabling growth in procurement and participation, EACs drive power sector transformation. The same concept equally applies to fuel-based certificates and emission reduction certificates. In all these markets, EACs enable project finance additionality through the additional revenues provided.

**25. Please explain how the evidence addresses Research Question 6 (What specific evidence-based claims can and cannot be made when employing environmental attribute certificates to corporate decarbonization?)**

- Currently, for many jurisdictions and programs which utilize energy attribute certificates and market-based accounting, EACs accurately quantify and convey emissions attributes associated with renewable energy production and procurement. For wind and solar, measured by a revenue grade meter, EACs deliver zero-carbon emissions electricity procurement that is highly accurate (in a physical measurement sense the MWh's generated from the plant are measured accurately and the emission factor is known with certainty). It is therefore factual and correct to say that zero carbon energy was procured via the EAC. Energy attribute certificates represent one of the most highly credible and robust evidence-based claims in the EAC ecosystem for these reasons. In a jurisdiction like Europe, which uses guarantees of origin (another form of EAC) to track voluntary renewable power generation, and associated environmental attributes, across the continental electricity market, the use and deployment of residual mix accounting enables accurate emissions allocation between EAC purchasers and non-EAC purchasers. Thus, it factually and accurately conveys responsibility and liability over the emissions associated with procurements, including for participants that elect to not make clean energy procurements (and therefore get the remaining emissions system mix assigned to them after netting out the renewable purchases).

**26. The evidence supports the following answer to Research Question 7 (Is there evidence that supports or undermines that the market value of this type of instrument is commensurate with the abatement costs of the underlying activity?)**

- ✓ Supports
- Undermines
- Not sure/Other

**27. Please explain how the evidence addresses Research Question 7.**

- From the practitioner's standpoint, EACs that have no underlying physical commodity associated with the transaction have a high correlation with the abatement costs of the underlying activity since the EACs represent 100% of the revenues driving the projects development and financing (e.g., this happens frequently in the carbon offset space where the carbon abatement value of the project is the sole source of revenue). In markets where EACs are associated with an underlying physical commodity sale (e.g., RECs & renewable electricity or RTCs & renewable natural gas), the EACs provide the marginal revenue that when combined with the underlying physical commodity sale create a total economic value greater than the fossil-fuel alternative. Market pricing for EACs fluctuates on a variety of factors including market structure and supply / demand conditions for the correlated physical commodity and/or input costs to create it as well as other factors. The purpose of the EAC in multi-commodity producing infrastructure project is not strictly to represent the abatement costs of the underlying activity but to provide marginal revenue that makes the underlying intervention economic compared to the fossil-fuel alternative. Floating EAC prices represent floating investment signals relative to fundamental market conditions at a given time.

**28. The evidence supports the following answer to Research Question 8 (Is there evidence that shows that the use of these instruments (i.e. procurement of the attribute certificates) could contribute to scale-up of climate finance compared to alternative interventions? Or could it result in climate finance dilution?)**



- 
- ☒ Scale-up of climate finance
  - ☐ Climate finance dilution
  - ☐ Not sure/Other

**29. Please explain how the evidence addresses Research Question 8.**

- EACs mobilize climate finance through multi-billion-dollar environmental commodity revenue streams which drive project development and emission reduction activity additionality. These addressable revenue streams support larger capital markets for decarbonization finance. When demand for environmental commodity markets grows, revenue increases through higher volumetric demand and/or higher pricing. Since EACs are performance-based instruments whereby producers are only rewarded for successfully delivering environmental benefits, they are also highly effective environmental policy mechanisms for mobilizing climate finance compared to, for example, other mechanism like rebates, grants, or tax credits that can be less correlated with environmental attribute production. In the North American and European voluntary energy attribute certificate markets, billions of dollars in revenue each year are facilitated through EACs. The enclosed Sol Systems' Project Finance Case Studies, representing hundreds of millions of dollars in financing, and the EMA Renewable Finance Primer, illustrate real-world deals for unbundled REC financing transactions (proving impact happens too in unbundled EAC transactions). The NREL and CEBA reports highlight accelerations in renewable energy procurements that rely on EACs and represent billions of dollars in capital expenditures. In carbon offset markets, a recent study shows CDP voluntary buyers are spending upwards of \$500 million annually towards decarbonization.

**30. May we contact you to request clarification about your submission?**

- ☐ Yes

**31. I confirm that, to the best of my knowledge, the information I am submitting to this Call for Evidence is true and accurate; or that any inaccuracies or errors have been identified.**

- ☐ Yes

**32. I confirm that, to the best of my knowledge, there are no legal restrictions on the publication and distribution of the information I am submitting to this Call for Evidence.**

- ☐ Yes

**33. I acknowledge that the SBTi may quote my submission in the summary report, with or without attribution to me and/or my organization(s)**

- ☐ Yes