EXPLORATORY BRIEFING

NEW CLIMATE INSTITUTE

THE ROLE OF ENVIRONMENTAL ATTRIBUTE CERTIFICATES FOR CORPORATE CLIMATE STRATEGIES

Prospects and challenges for the role of commodity certificates to address specific emission sources

OCTOBER 2024

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SUMMARY

Between 2024 and 2026, the potential role for commodity-specific environmental attribute certificates (commodity EACs) will be discussed within the revision of the SBTi's Corporate Net Zero Standard, and the major revision of the GHG Protocol Corporate Standard and Scope 3 Guidance. Several programmes have taken the initiative to propose frameworks or criteria for how an accounting system with commodity EACs could work.

This paper takes a step back and discusses the prospects and risks for pursuing such an approach. We provide an overview of potential commodity EACs **(→ Section 2)** and describe the relevant nuances and challenges **(→ Section 3)** to shed light on the following questions:

Is it sensible to develop GHG accounting and target setting frameworks that assume a significant role for commodity EACs as market-based instruments?

Under what circumstances and claims could the procurement of commodity EACs support sector transitions, without distracting or delaying from more direct action?

→ Tab. S1 presents a summary of proposed commodity EACs for seven emission sources. The table demonstrates that there is no one-size-fits all approach for commodity EACs. We observe a high degree of fragmentation in the definition and availability of EACs, as well as different circumstances under which EACs could potentially support the necessary sector transitions.

CHALLENGES AND PROSPECTS FOR COMMODITY CERTIFICATES (→ Section 3)

We identify the following key challenges and prospects for implementing a system for commodity EACs:

Fragmentation of certificate types (→ Section 3.1)

The landscape of potential commodity EACs is complex. We observe broad differences in the multiple types and definitions of certificates under development for commodity EACs. These range from those representing a transition to near-zero emission technologies to those that represent only marginal emission reductions on conventional technologies.

We consider that only certificates representing a shift towards technologies compatible with a 1.5° target can be a potentially useful instrument for supporting sector transitions. We question whether it is practical and realistic to develop robust frameworks and maintain oversight of multiple certificate types and eligibility criteria for each individual commodity and geographical association.

Supplier association, traceability and procurement constructs (→ Section 3.2)

The origin of EACs, their association and traceability to the supply chain, and the means through which they are procured, are critical factors that affect how the procurement of EACs could support sector transitions.

There may be some specific circumstances in which the procurement of commodity EACs from beyond companies' supply sheds could support sector transitions. However, the relatively poor historical track record of existing EAC frameworks (e.g. carbon credits and renewable electricity certificates) demonstrates that these factors represent significant challenges, It might be naively optimistic to assume that crediting systems could be developed for multiple other commodities in a reasonable timeframe, while ensuring that they are effective and robust.

Given the high degree of uncertainty, we consider that it may be more appropriate for commodity EACs beyond the supply shed to be used to channel *contributions* to beyond value chain interventions and not used for GHG inventory adjustments or emission reduction targets.

The Value Change Initiative Guidance defines a Supply Shed as "a group of suppliers in a specifically defined market (preferably at sub-national level) providing similar goods and services (commodities) that can be demonstrated to be within the company's supply chain" (Value Change Initiative, 2024). Supply Shed is a concept and approach that caters to situations where a company may not be able to directly trace sourcing to a specific upstream supplier, but it is known that sourcing comes from a group of suppliers within a "market" from which the company sources.

Potential disincentives for direct value chain decarbonisation (→ Section 3.3)

We observe the risk that using commodity EACs to claim emission reductions toward an emission reduction target or adjustments to a GHG inventory may ultimately discourage *direct* value chain decarbonisation. This risk may be partially mitigated if commodity EACs are used for more targeted claims framed as contributions to sector transitions achieved through EAC procurement. This approach might maximise transparency, encouraging genuine value chain decarbonisation alongside the complementary use of commodity EACs.

Integrity of the infrastructure and governance system

The use of commodity EACs requires the development of a sound and reliable infrastructure and governance system. This should include a certification standard, a certification procedure, a claim standard, a registry and an accounting and reporting standard. Robust and reliable governance must ensure that each of these infrastructure components are developed in a science-aligned and high-integrity manner. A failure at any one of the steps risks undermining the system's integrity. This brings distinct governance challenges into focus, such as the potential for influence by established actors with vested interests.

The multiple challenges to establish sound and reliable infrastructure and governance systems for each commodity EAC should be considered when determining how companies

may use EACs and the claims that may be made. We consider that an EAC system designed for contribution claims is likely to be less vulnerable to being influenced by vested interests than a system designed for market-based accounting and GHG inventory adjustments.

IMPLICATIONS FOR SBTI AND GHG PROTOCOL PROCESSES

(→ Section 4)

EACs could serve as an accounting tool to determine the chain of custody for interventions that can be physically linked to the value chain (SBTi discussion paper scenario 1).

Companies may increasingly set climate targets for their upstream emissions based on the share of procured products or services aligned with 1.5°C pathways, such as the procurement of near-zero emission steel. Under this framework, the use of commodity EACs could certify commodities against standardised definitions of 1.5 °C alignment and could be used to verify the environmental attributes of commodities through a robust traceability model. The SBTi and GHG Protocol could support this by developing independent, science-based definitions or establishing criteria for recognising external programmes.

For the SBTi's scenario 2, we differentiate between two different situations: EACs derived from interventions *within a specific supply shed*; and EACs *without traceability and close association*.

In some circumstances, commodity EACs derived from interventions *within* a specific *supply shed* may be a reasonable means to claim emission reductions in the value chain.

Companies could face disincentives to take direct action for supply chain decarbonisation if they are offered the ability to make and account for interventions *within the broader supply* shed rather than working with specific suppliers directly. Yet, interventions within the supply shed may be the most direct approach possible to decarbonise the value chain in some cases. This could be the case if supplier traceability is not feasible, for example with electricity flows within a grid, or when suppliers change on a frequent basis, as is often the case for the fragmented supply chains for several agricultural commodities. Whether the procurement of EACs from the supply shed could be a reasonable approach for market-based accounting is likely dependent on the nature of the commodity and the definition of the supply shed. The approach would also introduce risks that must be carefully considered. The case-specific development of high integrity crediting mechanisms for each individual commodity will be highly challenging and susceptible to influence from actors with significant interests. Decades of experience with Renewable Energy Certificates has also shown that the procurement of EACs alone without consideration of the specific procurement constructs may be unlikely to have a significant emission reduction impact.

EACs with lower *value chain traceability* may be best suited for standalone targets and claims related to *contributions* to sector transformation. Such targets and claims should be distinct from targets for reducing a company's own emissions footprint.

We question whether it is realistic for commodity EACs without traceability and physical close association to be effective and robust enough to be used as market-based accounting instruments. We recognise the significant risks associated with flawed systems.

The SBTi's Scope 3 Discussion Paper (SBTi, 2024) suggests a more nuanced framework for scope 3 target setting. In this context, it may in some circumstances be reasonable to recognise contribution-framed interventions through the procurement of EACs, as a means of supporting 1.5°C aligned transitions. Such *contributions* must be clearly framed in those terms. Given the high degree of uncertainty and improbability that the purchase of commodity EACs can really be equivalent to direct action within the value chain, it would be inaccurate and counterproductive for *contribution*-framed commitments to be conflated with targets for emission reductions or other specific transitions within the value chain.

Commitments to contributions should only be considered a temporary option for supporting transitions where new technologies are geographically limited and require significant financial support to commercialise and scale. A clear distinction of such commitments should provide an incentive for companies to set targets for outcomes within the value chain as soon as they have the means to do so.

Tab. S1

Overview of the potential role for commodity EACs across various emission sources

NewClimate Institute's POV

There is no one-size-fits all approach for commodity EACs. Given the complexities, we question whether it is realistic for commodity EAC programmes to be effective and robust enough to be used as market-based accounting instruments for multiple emission sources.

	There are no standardised definitions of 1.5 °C aligned EACs Some EACs derive from near-zero emissions technologies. Others derive from marginal emission reductions with conventional technologies. ↓	**The potential for EACs to contribute to sector transitions varies** Some sectors would require location- and even time-specific EACs. EACs could distract from the need for activity reduction in some sectors. ↓
Emission sources with *mature* near-zero emission technologies and high market penetration		
Renewable electricity	**Near-zero EACs:** RECs and Carbon free energy (CFE) from renewables (excl. biomass). **Emissions-reduced EACs:** RECs from biomass; CFE from CCUS.	**Location- and time-specific EACs** are necessary to address key challenges. **The procurement construct is highly relevant** to the potential impact.
Emission sources with *emerging* near-zero emission technologies that need scaling up		
Steel production	**Near-zero EACs:** RMI's Sustainable Steel from renewables-powered electric arc furnaces. **Emissions-reduced EACs:** XCarb EACs from emission reductions on basic oxygen furnaces.	**The emergence of technologies is regionally differentiated,** gaining moderate market penetration in some regions up to 2030 while remaining nascent in others. **EACs would need to derive from within companies' supply sheds** to contribute to regional challenges and to avoid potential disincentives for direct action.
Heavy-duty trucking	**Near-zero** or **Low-carbon EACs:** Planned for 2024 by Zero Emission Trucking Alliance (ZETA) and Green Market Activation (GMA) using battery- or fuel cell electric vehicles.	
Emission sources with *nascent* technologies		
Sustainable Aviation Fuel	**Low-carbon EACs:** SAFs with Sustainable Aviation Buyers Alliance (SABA) criteria. **Emissions-reduced EACs:** Other SAFs.	**At this nascent stage, EACs from beyond the supply shed could potentially support the transitions** if they can accelerate the emergence of technologies and the initial stages of their uptake. **EACs risk distracting from the relevance of reducing aviation activity,** noting the sustainability issues associated with SAF.
Maritime fuels	**Low-carbon EACs:** Renewable Fuel of Non-Biological Origin (RFNBO) Certificates. **Emissions-reduced EACs:** Biofuel-based certificates e.g. ISCC.	
Cement & concrete	**Low-carbon EACs:** Under exploratory phase by Centre for GMA.	
Mining	**Near-zero** or **Low-carbon EACs:** Under exploratory phase by the AIM Platform.	**Tailored programmes may be needed** for the specific transition needs of each mineral. **EACs risk distracting from the relevance of reducing mining activity** through circularity solutions.

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ABBREVIATIONS

AIM	Advanced and Indirect Mitigation Platform
BEV	Battery electric vehicle
BOF	Basic oxygen furnace
CCUS	Carbon capture, utilisation and storage
CFE	Carbon free energy
EAC	Environmental attribute certificate
IEA	International Energy Agency
ISCC	International Sustainability and Carbon Certification
FCEV	Fuel cell electric vehicles
GHG	Greenhouse gas
GMA	Green Market Activation
GO	Guarantees of Origin (form of REC from some regions)
HDV	Heady duty vehicles
HFO	Heavy Fuel Oil
MRV	Monitoring, Reporting and Verification
NZE	Net zero emissions
REC	Renewable energy certificate
RFNBO	Renewable Fuel of Non-Biological Origin
RSB	Roundtable on Sustainable Biomaterials
SABA	Sustainable Aviation Buyers Alliance
SAF	Sustainable aviation fuel
SBTi	Science Based Targets initiative
SSBP	Sustainable Steel Buyers Platform
SZEF	Scalable zero emission fuel
ZEMBA	Zero Emission Maritime Buyers Alliance
ZETA	Zero Emission Trucking Alliance

/\ 01 INTRODUCTION AND DEMYSTIFYING TERMINOLOGIES

INTRODUCTION

Between 2024 and 2026, major revisions to the rulebooks for corporate climate action and GHG inventory accounting are underway. The potential role for commodity-specific environmental attribute certificates (commodity EACs) will be discussed with the revision of the SBTi's Corporate Net Zero Standard, and the major revision of the GHG Protocol Corporate Standard and Scope 3 Guidance.

Some stakeholders advocate for the increased use of commodity EACs for market-based or project-based accounting in GHG inventories, and for use towards the fulfilment of companies' emission reduction targets. Several programmes have taken the initiative to propose frameworks or criteria for how such an accounting system with commodity EACs could work. This paper takes a step back and discusses the prospects and risks for pursuing such an approach.

We provide an overview of potential commodity EACs **(→ Section 2)** and describe the relevant nuances and challenges **(→ Section 3)** to shed light on the following questions:

Is it sensible to develop GHG accounting and target setting frameworks that assume a significant role for commodity EACs as market-based instruments?

Under what circumstances and claims could the procurement of commodity EACs support sector transitions, without distracting or delaying from more direct action?

KEY TERMINOLOGIES

We recognise that terminology related to commodity EACs and market-based accounting approaches is often inappropriately conflated, brushing over highly relevant nuances in different types of certification approaches and their potential use. This report aims to highlight the differences between these nuances and their relevance.

→ **Environmental attribute certificates (EACs)** are instruments that certify and communicate specific environmental or sustainability attributes of a given activity or commodity, and can generally be classified into two broad categories: commodity certificates and carbon credits (SBTi, 2024).

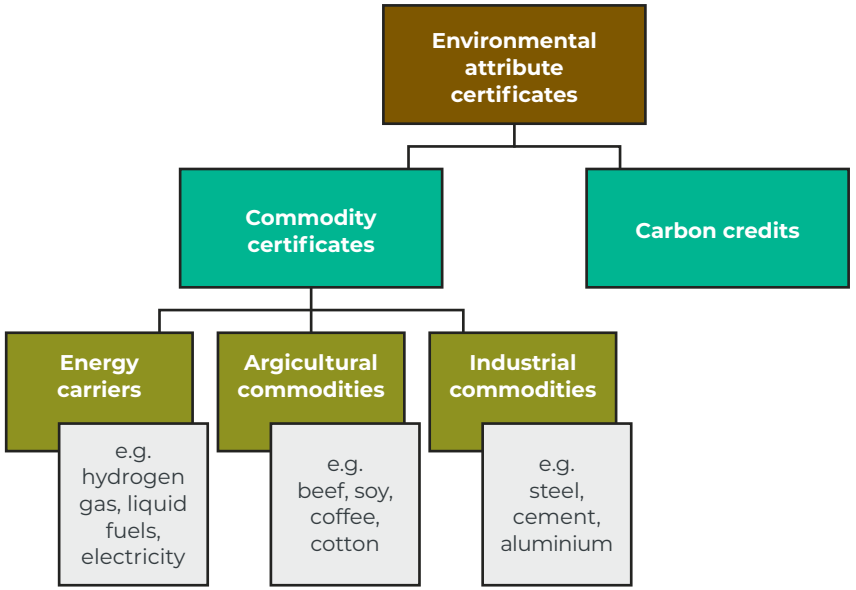
→ **Commodity EACs** are instruments that certify and convey sustainability information about the production process of different commodities (SBTi, 2024). The SBTi scope 3 discussion paper outlines a further breakdown of three sub-categories of commodity EACs: energy carriers, agriculture commodities and industrial commodities **(→ Fig. 1)**. In this paper, we focus on commodity EACs in energy carriers (RECs) and industrial sectors.

→ **Traceability, chains of custody** and **procurement constructs** are three factors that fundamentally affect the potential impact of commodity EACs (**→ Section 3.2**, summarised in **→ Fig. 2**) and the credibility of the claims

that companies make. Traceability is commonly established using different chain of custody models to ensure the product meets specific claims. Chain of custody models involves "documenting, controlling and tracing each stage of the commodity or product's journey along the value chain" (SBTi, 2024). There are four types of chains of custody models: identity preserved, physical segregation, mass balance, and book and claim (→ **Fig. 2** and → **Section 3.2** for further explanation).

→ **Book and claim** is sometimes misused as an interchangeable terminology for market-based accounting with commodity EACs. However, book and claim refers only to one type of chain of custody model (usually the least stringent) for commodity EACs. Under this model, the "physical products – whether certified or not – are not tracked and flowing in the same supply chain" (SBTi, 2024). Instead, certificates or credits are traded independently, meaning they are unbundled from the physical products.

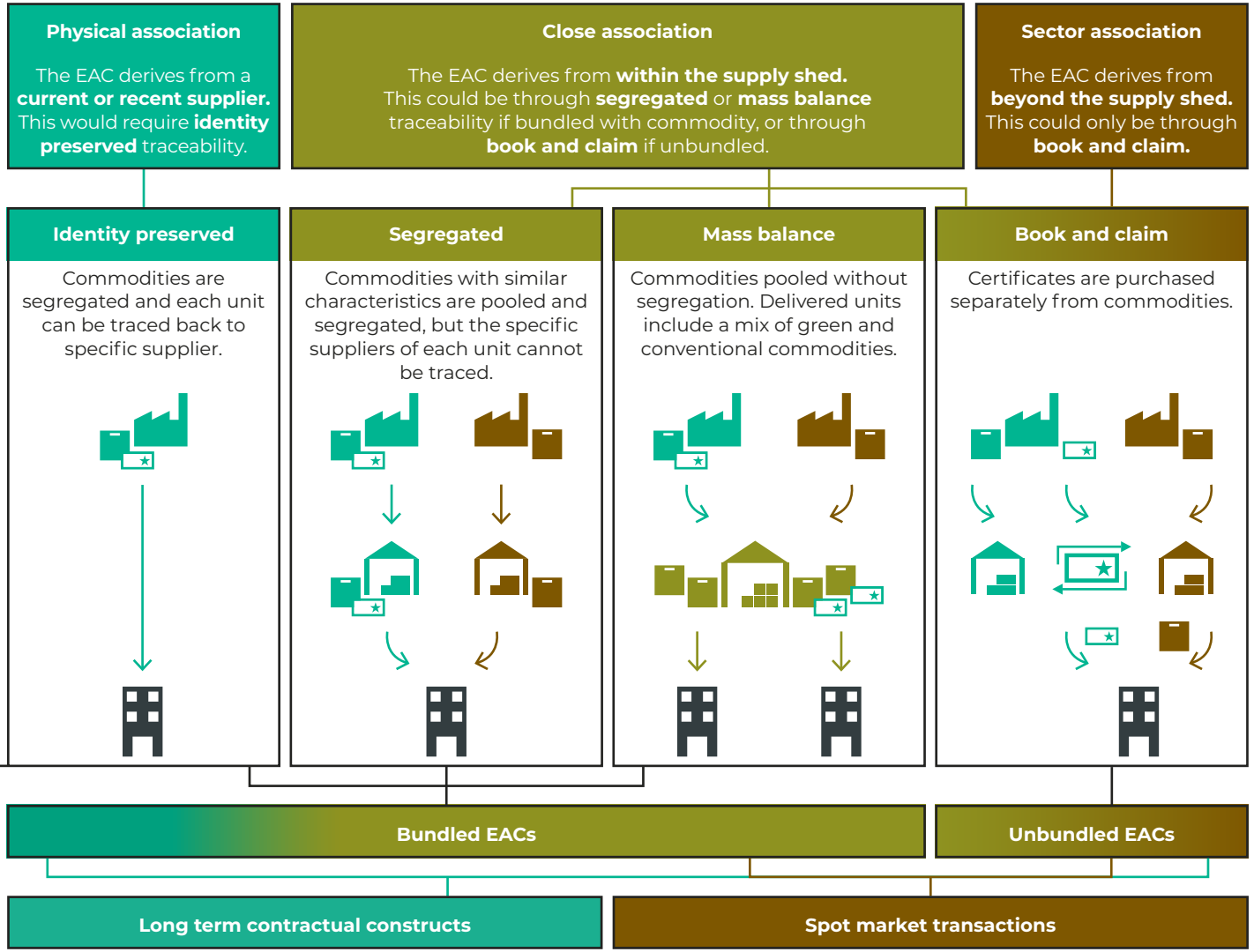
Fig. 1
Overview of EACs commonly used to substantiate climate-related claims



Source: (SBTi Scope 3 Discussion Paper, Page 35).

Fig. 2

Nuances of commodity EACs regarding supplier association, traceability and procurement constructs



/\ 02 OVERVIEW OF POTENTIAL COMMODITY EACs

2.1 OVERVIEW

→ **Sections 2.2-2.8** provide a snapshot overview of the following seven emission sources for which commodity EACs are often used or proposed as a solution to support the decarbonisation of the sector:

- Renewable electricity
- Sustainable aviation fuels
- Maritime fuels
- Steel
- Trucking
- Cement and concrete Mining

These **seven emission sources** do not account for all types of commodity EACs that we could identify in the literature, which also includes EACs for natural gas, agricultural commodities and hydrogen, among others.

→ **Tab. 1** presents a summary of these seven emission sources. The table demonstrates that there is no one-size-fits all approach for commodity EACs. We observe a high degree of fragmentation in the definition and availability of EACs, as well as different circumstances under which EACs could potentially support the necessary sector transitions. different circumstances under which EACs could potentially support the necessary sector transitions.

These nuances – and the prospects and challenges they entail for commodity EACs – are further discussed in → **Section 3**.

Tab. 1

Overview of the potential role for commodity EACs across various emission sources

NewClimate Institute's POV

There is no one-size-fits all approach for commodity EACs. Given the complexities, we question whether it is realistic for commodity EAC programmes to be effective and robust enough to be used as market-based accounting instruments for multiple emission sources.

	There are no standardised definitions of 1.5 °C aligned EACs Some EACs derive from near-zero emissions technologies. Others derive from marginal emission reductions with conventional technologies. ↓	**The potential for EACs to contribute to sector transitions varies** Some sectors would require location- and even time-specific EACs. EACs could distract from the need for activity reduction in some sectors. ↓
Emission sources with *mature* near-zero emission technologies and high market penetration		
Renewable electricity	**Near-zero EACs:** RECs and Carbon free energy (CFE) from renewables (excl. biomass). **Emissions-reduced EACs:** RECs from biomass; CFE from CCUS.	**Location- and time-specific EACs** are necessary to address key challenges. **The procurement construct is highly relevant** to the potential impact.
Emission sources with *emerging* near-zero emission technologies that need scaling up		
Steel production	**Near-zero EACs:** RMI's Sustainable Steel from renewables-powered electric arc furnaces. **Emissions-reduced EACs:** XCarb EACs from emission reductions on basic oxygen furnaces.	**The emergence of technologies is regionally differentiated,** gaining moderate market penetration in some regions up to 2030 while remaining nascent in others. **EACs would need to derive from within companies' supply sheds** to contribute to regional challenges and to avoid potential disincentives for direct action.
Heavy-duty trucking	**Near-zero** or **Low-carbon EACs:** Planned for 2024 by Zero Emission Trucking Alliance (ZETA) and Green Market Activation (GMA) using battery- or fuel cell electric vehicles.	
Emission sources with *nascent* technologies		
Sustainable Aviation Fuel	**Low-carbon EACs:** SAFs with Sustainable Aviation Buyers Alliance (SABA) criteria. **Emissions-reduced EACs:** Other SAFs.	**At this nascent stage, EACs from beyond the supply shed could potentially support the transitions** if they can accelerate the emergence of technologies and the initial stages of their uptake. **EACs risk distracting from the relevance of reducing aviation activity,** noting the sustainability issues associated with SAF.
Maritime fuels	**Low-carbon EACs:** Renewable Fuel of Non-Biological Origin (RFNBO) Certificates. **Emissions-reduced EACs:** Biofuel-based certificates e.g. ISCC.	
Cement & concrete	**Low-carbon EACs:** Under exploratory phase by Centre for GMA.	
Mining	**Near-zero** or **Low-carbon EACs:** Under exploratory phase by the AIM Platform.	**Tailored programmes may be needed** for the specific transition needs of each mineral. **EACs risk distracting from the relevance of reducing mining activity** through circularity solutions.

2.2 RENEWABLE ENERGY CERTIFICATES

What is the approach for commodity certificates?

RECs are known under various names, such as Guarantees of Origin (GOs) and Energy Attribute Certificates (EACs). One REC represents 1 MWh of renewable electricity. Corporates purchase RECs primarily to reduce scope 2 emissions and to make renewable electricity claims.

Technology status

Renewable electricity generation technologies are mature with significant market penetration.

Potential certification type (see Tab. 2 Section 3.1 for category definitions)

EACs deriving from near-zero emissions tech — Available

RECs from renewable energy technologies (excluding biomass); Carbon free energy (CFE) from renewable technologies and nuclear energy.

EACs from marginal emission reductions with conventional tech — Available

RECs from biomass; CFE from CCUS.

Key actors (non-exhaustive)

Membership initiative: RE100.

Standard setters: GHG Protocol and SBTi.

Corporates who move to 24/7 matching and procure PPAs on the local grid: for example, members of the Climate Group 24/7 Coalition such as Google, Vodafone and AstraZeneca.

Corporates who advocate for RECs not tied to grids of their operations, and endorse annual matching: members of Emissions First Partnership such as Amazon and Meta.

How could EAC procurement contribute to the sector transition?

1.5°C-compatible pathway / transition requirements based on IEA (2023b)

Activity avoidance	Moderate relevance	Additional energy efficiency measures and behavioural changes can avoid up to 5% of BAU global energy demand by 2030 (IEA, 2023b).
Technology shift	High relevance	Under the IEA Net Zero Scenario, the share of low-emission sources in electricity generation rises from 39% in 2022 to 71% in 2030 and nearly 100% by 2050 (IEA, 2023b).
Technology improvement	Low relevance	CCUS retrofits and blending low-emissions fuels may only lead to modest improvements in the emissions performance of coal- and gas-fired power plants. Technical potential for permanent carbon storage is limited and entails significant environmental costs and risks (Fuss et al., 2018).

Suitability of EACs to contribute to the sector transition

Location and time-specific EACs are necessary to contribute to the key challenges of the transition.

Renewable electricity is a mature technology with significant market penetration in most regions.

To effectively support the expansion of renewable technologies, EACs must address and help overcome local challenges related to grid integration, which become increasingly hard as renewable energy penetration reaches higher levels.

Interventions within the supply shed (the local grid) are possible and can contribute to these objectives. Interventions beyond the supply shed may be cheaper and easier to organise, but will not help to overcome these most relevant challenges for the next phase of the energy transition (NewClimate Institute, 2024).

Suitability of existing EACs to contribute to additional decarbonisation highly depends on the procurement construct.

Long-term contractual constructs for certificates that are bundled with electricity purchases are far more likely to have impact for additional renewable capacity than standalone certificates (NewClimate Institute, 2024).

2.3 SUSTAINABLE AVIATION FUELS (SAF)

What is the approach for commodity certificates?

SAF certificates might be purchased by airlines to claim reductions from fuel burned (scope 1 emissions and scope 3 category 3) and by logistics companies to claim a decrease in CO_2 emissions from contracted transportation (scope 3 category 4). Companies who use air freight for transportation of materials or products can purchase SAF certificates to reduce upstream transportation (scope 3 category 4) and all sorts of companies may use such certificates to claim a reduction of business air travel emissions (scope 3 category 6).

Technology status

SAF market penetration is very low (<0.1% in 2022) and SAF is not cost-competitive with standard jet fuel (Boehm et al., 2023). Most SAFs on the market today are biofuels, which have sustainability limitations, while synthetic low-carbon fuels remain nascent.

Potential certification type (see Tab. 2 Section 3.1 for category definitions)

EACs from near-zero emissions tech

Example: Renewables-powered electric arc furnace using green hydrogen and based on direct reduced iron or scrap steel (RMI, 2024b).

Not available

EACs from low carbon or near-zero emission *compatible* tech

Example: SABA Eligible and SABA Preferred SAFs, which reduce GHG emissions by at least 60% compared to standard jet fuel.

Advanced Biomass-to-Liquids can reduce GHG emissions by 66-94% and Power-to-Liquids by 89-94% compared to kerosene (Braun et al., 2024). However, these SAFs will likely not fully reduce the non-CO_2 impacts of aviation, which are estimated to account for two-thirds of the sector's net radiative forcing impact (Lee et al., 2021).

Available

EACs from marginal emission reductions with conventional tech

Example: SAF that reduce GHG emissions by less than 60% compared to standard jet fuel.

Available

Key actors (non-exhaustive)

Standards, certification bodies and registries: The Roundtable on Sustainable Biomaterials (RSB) and the International Sustainability & Carbon Certification (ISCC) certify biobased SAF.

Producers: Such as, Neste, World Energy, SkyNRG.

Buyers Alliance: Sustainable Aviation Buyers Alliance (SABA), whose members include companies like Bank of America, Google, lululemon and Novo Nordisk.

How could EAC procurement contribute to the sector transition?

1.5°C-compatible pathway / transition requirements based on IEA (2023b)

Activity avoidance	**High relevance**	Avoided aviation demand from behavioural measures needs to account for 9%, 14% and 20% respectively for 2030, 2035 and 2050 (IEA, 2023b). EACs cannot support demand reduction.
Technology shift	**High relevance**	Under the IEA Net Zero Scenario (IEA, 2023b), SAFs should account for 11%, 26% and 70% of aviation fuel demand respectively for 2030, 2035 and 2050. By 2050, most of this should be synthetic hydrogen-based fuels.
Technology improvement	**High relevance**	Both technological and operational efficiency are needed.

Suitability of EACs to contribute to the sector transition

EACs could potentially play a role to support this transition by providing a demand signal, even if companies were to invest in interventions beyond their supply sheds.

SAF compromised less than 0.1% of total aviation fuel consumption in 2022 (Boehm et al., 2023). Its costs are two to five times as high as the costs of kerosene (O'Malley et al., 2023). EACs could potentially play a useful role in scaling up SAF, by allowing airlines and logistics companies to signal demand for scaling up SAF production worldwide.

EACs risk distracting from the relevance of reducing aviation activity, noting the sustainability issues associated with SAF.

Almost all SAF on the market today is made from biomass resources, which are limited in supply. Biofuel SAFs often result in direct or indirect land use emissions, which may only be neutralised after decades of SAF consumption (Becken et al., 2023). Their production can also have negative effects on ecosystems and food security, among others. Synthetic SAF based on renewable energy also has trade-offs. Producing synthetic fuels requires large amounts of renewable energy, which is also necessary to decarbonise other sectors (Becken et al., 2023).

2.4 MARITIME FUELS

What is the approach for commodity certificates?

Freight operators could purchase EACs for scalable zero emission fuels (SZEFs) to claim reductions from fuel consumption (scope 1 emissions and scope 3 category 3). Logistics companies and companies using ocean freight for transportation of materials and products can use such EACs to reduce upstream transportation (scope 3 category 4).

Technology status

SZEFs fuels typically include hydrogen, ammonia, e-methanol and electric battery (CAT, 2023). These fuels are considered zero emission fuels only if they are derived from renewable energy. SZEF are at a nascent stage and have very limited market penetration (close to 0% in 2021) (Boehm et al., 2023). Biofuels have a slightly higher market penetration, but are limited by sustainability concerns (Boehm et al., 2023).

Manufacturing capacity for zero-emission hydrogen is concentrated in northwest Europe and China (Baresic et al., 2022). Electric batteries are only available for short distance shipping (Kersey et al., 2022).

Potential certification type (see Tab. 2 Section 3.1 for category definitions)

EACs from near-zero emissions tech — **Not available**

Note: In the process of producing e-methanol, some CO_2 is released. This needs to be captured for the fuel to be a zero emissions fuel (CAT, 2023).

EACs from low carbon or near-zero emission *compatible* tech — **Available**

Example: ISCC-certified marine fuels with at least a 70% GHG emissions reduction compared to fossil-based fuels. The 70% threshold is in line with the EU Regulation on renewable and low-carbon fuels in maritime transport (EU, 2023).

EACs from marginal emission reductions with conventional tech — **Available**

Biobased marine fuels, for example: marine fuels certified by the RSB.

Key actors (non-exhaustive)

Certification bodies: For instance, the ISCC and the RSB certify marine fuels.

Buyers Alliance: Zero Emission Maritime Buyers Alliance (ZEMBA), whose members include companies like Bauhaus, Patagonia and Philips.

Ship owners, operators and cargo owners: For instance, Maersk and Hapag-Lloyd.

How could EAC procurement contribute to the sector transition?

1.5°C-compatible pathway / transition requirements based on IEA (2023b)

Activity avoidance	**Low relevance**	International shipping activity increases under the IEA Net Zero Scenario (IEA, 2023b).
Technology shift	**High relevance**	SZEF adoption is the most important shipping mitigation lever and SZEF (hydrogen, ammonia, methanol) share in final energy consumption accounts for 11%, 23%, 66% in 2030, 2035, and 2050 respectively (IEA, 2023b).
Technology improvement	**Low relevance**	Limited potential identified.

Suitability of EACs to contribute to the sector transition

EACs could potentially play a role to support this transition by providing a demand signal, even if companies were to invest in interventions beyond their supply sheds.

The global share of SZEFs, including green ammonia, green hydrogen, e-methanol, and synthetic e-fuels produced from renewable sources of energy, in shipping is currently close to 0% (Boehm et al., 2023). 1.5°C-compatible scenarios show that this share should reach 5% by 2030 (Smith et al., 2021; Boehm et al., 2023). SZEFs are significantly more expensive than heavy fuel oil (HFO). For example, ships fuelled by green ammonia and methanol have a total cost of operation that two to four times as high as for vessels fuelled by HFO (Velandia Perico et al., 2023)

EACs could potentially play a useful role in scaling up SZEFs. Buyers of EACs, for instance companies that rely on ocean freight for transportation of materials or final products, can help bridge the price gap between SZEFs and heavy fuel oil.

2.5 STEEL

What is the approach for commodity certificates?

EACs for near-zero or low-carbon steel production could potentially allow companies to claim reductions in their scope 3 emissions footprint for energy-related emissions deriving from steel manufacturing (usually in category 1: purchased goods & services).

Technology status

Near-zero emission technologies — such as renewables-powered electric arc furnace using green hydrogen and based on direct reduced iron or scrap steel — are commercially viable and being implemented. The market penetration of near-zero steel remained limited at below 1% in 2023 (de Villafranca Casas et al., 2024).

Potential certification type (see Tab. 2 Section 3.1 for category definitions)

EACs from near-zero emissions tech

Example: Renewables-powered electric arc furnace using green hydrogen and based on direct reduced iron or scrap steel (RMI, 2024b).

Planned
by RMI's SSBP in North America (timeline unclear)

EACs from low carbon or near-zero emission *compatible* tech

Example: Renewables-powered electric arc furnace using grey hydrogen produced with fossil gas.

None identified

EACs from marginal emission reductions with conventional tech

Example: Basic oxygen furnace alongside implemented measures for partial emission reductions.

Available
for example XCarb™ green steel certificates from ArcelorMittal Europe

Key actors (non-exhaustive)

Standard setters: ResponsibleSteel co-founded by steel manufacturers (Responsible Steel, 2024).

Mobilising initiatives: First Mover Coalition and Climate Group SteelZero that aim to facilitate and pool higher-level demand commitments.

Producers: ArcelorMittal Europe already sell EACs from emissions-reduced steel produced with (marginally) improved conventional technologies (ArcelorMittal, 2024). The Sustainable Steel Buyers Platform (SSBP) aims to facilitate the set-up of a first near-zero steel production facility in North America for generation of commodity EACs.

How could EAC procurement contribute to the sector transition?

1.5°C-compatible pathway / transition requirements based on IEA (2023b)

Activity avoidance	Moderate relevance ⊖	Moderate role for avoidance identified accounting for ~15% of steel sector's emission reductions between 2022–2050 in IEA's Net Zero Scenario (IEA, 2023b). EACs cannot support demand reduction.
Technology shift	High relevance ✓	95% of global steel production through near-zero emission production technologies by 2050 (IEA, 2023b), reaching 7% and 19% by 2030 and 2035 respectively.
Technology improvement	Low relevance ✗	Limited potential identified.

Suitability of EACs to contribute to the sector transition

The emergence of near-zero emission technology is regionally differentiated. EACs should derive from within companies' supply sheds to contribute to regional challenges and to avoid potential disincentives for direct action.

Given the limited role for activity avoidance, along with the need to shift to commercially viable yet not mainstreamed technologies, EACs for steel produced using near-zero emission technologies may be well-suitable to support the sector's pathway in the nascent phase.

However, looking forward, near-zero emission steel production might undergo a scaling-up phase in some jurisdictions. The IEA estimates that globally announced projects as of 2023 will meet 12% of the global 2030 near zero emission iron production needs (IEA, 2023b), most of which located in Europe. While this leaves a major gap in installed zero-steel production capacity needed for a successful transition by 2030 and beyond, some jurisdictions like the European Union might already reach a significant market penetration of with their target to produce 30% of the EU's primary steel using renewables-based hydrogen by 2030 (European Commission, 2022).

Not all types of EACs contribute the same way to the sector transition.

Existing certificates for improved conventional technologies such as ArcelorMittal's XCarb certificates may not be suitable as a 1.5°C-compatible transition hinges on the deployment of near-zero technologies, rather than the adoption of marginal emission reduction measures on conventional basic oxygen furnace (BOF) technologies. Some producers use so-called 'internal carbon banks' to pool emissions reduction projects for conventional BOF technologies, enabling them to artificially claim some of their products as zero-emissions steel (RMI, 2024b).

2.6 TRUCKING

What is the approach for commodity certificates?

EACs for decarbonised heavy-duty trucking allow companies to claim reductions in their scope 3 emissions footprint for emissions related to road freight services.

Technology status

Zero emission technologies of **battery electric vehicles (BEVs)** and **full cell electric vehicles (FCEVs)** have reached an advanced status and are already being sold by major HDV manufacturers (IEA, 2024), Although only representing ~1% of annual global sales as of 2022. Market penetration remains limited as of 2024 but significant increase in key jurisdictions is expected towards 2030 (IEA, 2024).

Potential certification type (see Tab. 2 Section 3.1 for category definitions)

EACs from near-zero emissions tech

Example: BEVs or FCEVs running on zero emission fuels such as green electricity or green hydrogen.

Planned

by Zero Emission Trucking Alliance (ZETA) using FCEVs (The AIM Platform, no date) and Green Market Activation (GMA) Trucking (GMA Center, 2024b; GMA Trucking, 2024)

EACs from low carbon or near-zero emission *compatible* tech

Example: BEVs or FCEVs (partially) running on conventional fuels such fossil fuel generated electricity or non-green hydrogen.

None identified

EACs from marginal emission reductions with conventional tech

Example: Efficiency-improved internal combustion engine heavy-duty trucks running on conventional fossil fuels or biofuels.

None identified

Key actors (non-exhaustive)

The Zero Emission Trucking Alliance (ZETA) founded in 2023 currently onboards new members and aims an initial collective procurement of EACs from FCEVs running on green hydrogen by mid-2024 (The AIM Platform, no date).

The Green Market Activation (GMA) Trucking founded in 2024 as a demand aggregation buyers' alliance launched a pilot request for proposals (RFP) process for interested trucking carriers (GMA Center, 2024b; GMA Trucking, 2024), for deployment of zero-emission vehicles in the United States.

How could EAC procurement contribute to the sector transition?

1.5°C-compatible pathway / transition requirements based on IEA (2023b)

Activity avoidance	**Low relevance**	Limited potential identified despite general importance (e.g. shifting road freight to train freight).
Technology shift	**High relevance**	Global sales share of zero-emission heavy duty trucks (BEVs and FCEVs) must reach 37% by 2030, 65% by 2035 and 100% by 2050. For advanced economies and China, a 100% sales share should be reached by 2040 already.
Technology improvement	**Low relevance**	Limited potential identified.

Suitability of EACs to contribute to the sector transition

The emergence of near-zero emission technology is regionally differentiated. EACs should derive from within companies' supply sheds to contribute to regional challenges and to avoid potential disincentives for direct action.

Given the limited identified relevance for activity avoidance and the need to shift to commercially viable but not yet mainstreamed BEV and FCEV vehicles reaching only ~1% of global sales in 2022, EACs for decarbonised heavy-duty trucking with zero emission technologies using zero emission electricity or fuels may be able to support the required sector pathway in the nascent phase.

Latest forecasts based on stated policies project a global market penetration of BEVs and FCEVs exceeding 10% by 2030 and over 20% by 2035 (IEA, 2024). Advanced economies like the US (>40% by 2035), the EU (>30% by 2035) and China (>40% by 2035) will go significantly beyond these global developments over the course of the next 10 years, reaching a scaling-up phase in the nearby future.

2.7 CEMENT AND CONCRETE

What is the approach for commodity certificates?

EACs for low-carbon cement and concrete could potentially allow building and construction companies to claim reductions in their scope 3 emissions footprint for emissions related to construction materials, specifically cement and concrete.

Technology status

Reaching deep decarbonisation in the sector will require the development and commercialisation of new technologies such as clinker substitution using non-fossil-based SCMs, the production of cement made with alternative raw materials, and CCUS (IEA, 2023a). Production and planned production for lower emission cement and concrete remains limited as of 2023 and only small increases are expected towards 2030 (IEA et al., 2023).

Potential certification type (see Tab. 2 Section 3.1 for category definitions)

EACs from near-zero emissions tech

No clear definition yet in existing literature for what constitutes 1.5 °C compatible technology for cement and concrete. First Mover Coalition temporary threshold: cement with embodied carbon below 184 kg CO_2e/t cement and concrete with embodied carbon between 70–144 kg CO_2e/m3 concrete (FMC, 2024). CCUS will be necessary for near-zero emission cement and concrete. The IEA establishes an indicatory threshold of 125 kg CO_2e/t cement production using 100% clinker (IEA, 2022).

EACs from low carbon or near-zero emission *compatible* tech

No clear definition yet.

Exploratory phase

by the Centre for Green Market Activation (GMA)

EACs from marginal emission reductions with conventional tech

No definition.

None identified

Key actors (non-exhaustive)

Standards, certification bodies and registries: The centre for Green Market Activation (GMA) and Rocky Mountain Institute (RMI) have set up the GMA-RMI Concrete Initiative. It is still in its exploratory phase.

Associations: GMA and RMI are planning to set up a collective procurement process like the Sustainable Aviation Buyers Alliance (GMA Center, 2024a).

How could EAC procurement contribute to the sector transition?

1.5°C-compatible pathway / transition requirements based on IEA (2023b)

Activity avoidance	Moderate relevance	Moderate potential for avoidance through use of alternative building materials, reaching overall reduction of 6% of cement production by 2050 compared to 2022 (IEA, 2023a). Shifting to near zero emission clinker can have negative implications: some measures like the use of alternative fuels such as biofuels during the heating process can have indirect sustainability and emission impacts (Fennell et al., 2021).
Technology shift	High relevance	Global production share of near zero emission clinker should reach 8% in 2030, 27% in 2035 and 93% in 2050.
Technology improvement	Low relevance	Limited potential identified.

Suitability of EACs to contribute to the sector transition

EACs could potentially play a role to support this transition by providing a demand signal, even if companies were to invest in interventions beyond their supply sheds.

Deep emission reductions will require further development and commercialisation of new technologies, such as cements made with alternative raw materials and CCUS (IEA, 2023a). CCUS for cement still needs to be demonstrated at scale, while electrification of cement production is technically possible but requires further R&D and demonstration to be economically feasible (Boehm et al., 2023; Goldman et al., 2023). According to current estimates, low-carbon cement production is 75% more expensive than conventional cement production, on average (IEA et al., 2023).

In this stage, EACs could potentially support the transition to near-zero emission cement and concrete if they were to accelerate the emergence of technologies that are currently not commercially viable or still need to be developed at scale.

However, consensus over accounting methodologies and the appropriate combination of technologies for a 1.5 °C-compatible transition is necessary to ensure that marginal emission reductions measures are not applied to EACs.

2.8 MINING

What is the approach for commodity certificates?

EACs for decarbonised mining of metal and minerals could potentially allow companies to claim reductions in their scope 3 emissions footprint for emissions related to the sourcing of metals and minerals (usually in Category 1: purchased goods and services).

Technology status

Many technologies for electrification of low- and medium-heat processes are already commercialised and readily available for adoption (Boehm et al., 2023, p. 61). Zero-emission and low-emission heavy machinery remains more nascent (Hund et al., 2023). There is currently no information on market penetration of zero emission or low carbon mining.

Potential certification type (see Tab. 2 Section 3.1 for category definitions)

EACs from near-zero emissions tech
No definition.
Exploratory phase
by the D3M (AIM, 2024)

EACs from low carbon or near-zero emission *compatible* tech
No definition.
None identified

EACs from marginal emission reductions with conventional tech
No definition.
None identified

Key actors (non-exhaustive)

The Program on Decarbonising the Mining of Metals and Minerals (D3M) was launched by the Advanced and Indirect Mitigation (AIM) Platform (The AIM Platform, no date). So far, D3M has engaged with industry stakeholders to determine decarbonisation options for concerned companies. They are currently issuing a request for information to understand the scale and scope of decarbonisation projects.

How could EAC procurement contribute to the sector transition?

1.5°C-compatible pathway / transition requirements based on IEA (2023b)

Activity avoidance	**High relevance**	Circularity solutions (recycling, waste recovery, reuse) should play a significant role in reducing emissions for certain key minerals. For example, recycled nickel sources become the dominant supply source by 2050 (World Bank, 2023).
Technology shift	**High relevance**	Heavy machinery used for mineral extraction will need to shift away from diesel towards zero-emission haulage trucks in the medium-term (IEA, 2021). The final technological transition needed is process heat electrification and use of green hydrogen, but this applies to mineral processing and not extraction (World Bank, 2023).
Technology improvement	**Moderate relevance**	Efficiency measures and process optimisation will play an important part in reducing emissions in the short-term (IEA, 2021; World Bank, 2023).

Suitability of EACs to contribute to the sector transition

Tailored programme designs may be needed for EACs to focus on the specific transition needs for each mineral. EACs also risk distracting from the relevance of reducing mining activity through circularity solutions.

Low-carbon transitions will increase the need for key minerals and metals. Demand for key minerals is set to grow 1.5 to 7 times by 2030 under the IEA Net Zero Emissions by 2050 Scenario (IEA, 2023b). The technologies for zero emission mining are still undeveloped or not yet commercially viable, so EACs for zero-emission mining processes might be able to support the required sector pathway in the nascent phase.

However, some analyses show that solutions to decarbonise most emissions from mining will become economical by 2030 (Legge et al., 2021). The first wave of technology necessary which includes renewable energy, energy efficiency and process optimisation can be and already is implemented without EACs (World Bank, 2023). Still, EACs might lead to more demand for low or near zero emission mining as most mining and metal customers are not signalling willingness to pay for decarbonisation solutions (The AIM Platform, no date).

In a second phase of decarbonisation, less advanced technological developments such as zero-emission haulage trucks and electrifying heat processes could potentially be supported by EACs. The current broad scope of the D3M project could make it complicated to evaluate and create such a system. AIM acknowledges that each metal and mineral have their own emission hotspots, so each case would require tailored programme design (The AIM Platform, no date). It is also unclear if the D3M project will cover both mineral extraction and processing, which have different decarbonisation pathways.

/\ 03 PROSPECTS AND CHALLENGES FOR COMMODITY CERTIFICATES

This section presents some of the key prospects and challenges for the implementation of a system for commodity EACs, informed by the overview of potential commodity EACs provided in → **Section 2**.

We identify and discuss the following issues:

FRAGMENTATION OF CERTIFICATE TYPES

The landscape of potential commodity EACs is complex. We observe broad differences in the multiple types and definitions of certificates under development for commodity EACs.

We consider that only certificates representing a transition towards technologies compatible with a 1.5°C trajectory can serve as a potentially useful instrument for indirect interventions aimed at accelerating sector transitions. We question whether it is practical and realistic to develop robust frameworks and maintain oversight of multiple different certificate types and eligibility criteria for each individual commodity and geographical association.

SUPPLIER ASSOCIATION, TRACEABILITY AND PROCUREMENT CONSTRUCTS

The origin of EACs, their traceability to the supply chain, and the methods used for their procurement are critical factors that impact how EAC procurement could support sector transitions. There may be some specific circumstances in which the procurement of commodity EACs from beyond companies' supply sheds could support sector transitions. However, the relatively poor historical track record of existing EAC frameworks (e.g. carbon credits and renewable electricity certificates) demonstrates that these factors represent significant challenges. It might be irresponsibly optimistic to assume that crediting systems without traceability and physical association could be developed for multiple other commodities in a reasonable timeframe, while ensuring that they are effective and robust. Given the high degree of uncertainty, we consider that it may be more appropriate for commodity EACs beyond the supply shed to be used to channel *contributions* to beyond value chain interventions and not used for GHG inventory adjustments or emission reduction targets.

POTENTIAL DISINCENTIVES FOR DIRECT VALUE CHAIN DECARBONISATION

We observe the risk that using commodity EACs to claim emission reductions toward an emission reduction target or adjustments to a GHG inventory may ultimately discourage *direct* value chain decarbonisation. This risk may be partially mitigated if commodity EACs are used for more targeted claims framed as contributions to sector transitions achieved through EAC procurement. This approach might maximise transparency, encouraging genuine value chain decarbonisation alongside the complementary use of commodity EACs.

INTEGRITY OF THE INFRASTRUCTURE AND GOVERNANCE SYSTEM

The use of commodity EACs requires the development of a sound and reliable infrastructure and governance system. This should include a certification standard, a certification procedure, a claim standard, a registry and an accounting and reporting standard. Robust and reliable governance must ensure that each of these infrastructure components are developed in a science-aligned and high-integrity manner. A failure at any one of the steps risks undermining the system's integrity. This brings distinct governance challenges into focus, such as the potential for influence by established actors with vested interests. We consider that an EAC system designed for contribution claims is likely less vulnerable to influence from vested interests than a system designed for market-based accounting and GHG inventory adjustments.

3.1 FRAGMENTATION OF CERTIFICATE TYPES

The current landscape of potential commodity EACs is complex. We observe broad differences in the multiple types and definitions of certificates under development for commodity EACs. These range from those representing a transition to near-zero emission technologies to those that represent only marginal emission reductions on conventional technologies (as summarised in → **Tab. 1** in → **Section 2.1**).

These differences are crucial for the certificates' value and integrity, as they define the extent to which they can support the necessary transitions towards 1.5°C-compatible technologies. The key differences between these types of certificates raise complex questions on how to define and account for the use of certificates. These questions likely need to be explored on a case-by-case basis for each commodity:

- **What types of certificates should be allowed to ensure that the procurement of certificates plays a role towards advancing net-zero compatible technologies?** The draft AIM Platform Criteria propose that certificates procured from beyond a company's supply shed should only be eligible if they represent a minimum 60% emission reduction compared to the baseline of conventional technologies (The AIM Platform, 2024). Such a threshold would likely rule out certificates that represent only marginal emission reductions, but may be too arbitrary to

lead to the right technology transitions in each case. The AIM Platform criteria also indicate no restriction for the type of certificates that could be eligible when procured from within companies' supply sheds.

→ **Is it appropriate for single certification schemes to cover multiple technologies without differentiating how they should be accounted for, given that incentivising a range of different technologies is crucial for achieving 1.5°C compatible pathways?** For example, RECs cover both renewable energy technologies and biomass, SAFs cover both biofuels and synthetic fuels.

→ **Is it practical and realistic to develop robust frameworks and maintain oversight of multiple different certificate types, potentially with different emission reduction factors, for each individual commodity?** (→ **Section 3.4** Integrity of EAC infrastructure)

→ **Is there a theoretical basis for having differing eligibility criteria for certificates according to their supplier association (i.e. from within and beyond companies' supply sheds)?** Is it practical and realistic to operationalise and maintain oversight of differing parallel eligibility criteria?

NewClimate Institute's POV

We consider that **only certificates representing a shift towards technologies compatible with a 1.5 °C trajectory can serve as a potentially useful instrument** for indirect interventions aimed at accelerating sector transitions.

We question whether it is practical and realistic to develop robust frameworks and maintain oversight of:

- Multiple different certificate types for each individual commodity; and
- differing eligibility criteria for certificate types depending on the degree of their association with companies' supply sheds.

Tab. 2

Fragmentation of commodity EAC types with regards to alignment with 1.5°C transitions

NewClimate Institute's POV

There are no standardised definitions of 1.5 °C aligned EACs. Not all types of EACs can play the same role in contributing to the necessary sector transitions.

	Type A Near-zero emission tech The EAC is based on the transition to near-zero emission technologies, and (if relevant) is also operated with near-zero emission energy sources.	Type B Low carbon or near-zero emission *compatible* tech The EAC is based on the transition to 1.5 °C compatible technologies, although not sufficient to fully decarbonise the emission source, or not yet operated with near-zero emission energy sources.	Type C Emissions-reduced conventional tech The EAC is derived through the aggregation of marginal improvements on conventional technologies, which are fundamentally not compatible with a net zero emission destination for the sector.
Electricity	Renewable Energy Certificates(RECs) from renewable energy technologies. Carbon free energy (CFE) from renewable technologies.		Renewable Energy Certificates (RECs) from biomass. Carbon free energy (CFE) from CCUS.
Aviation fuels	-	Low carbon SAFs with Sustainable Aviation Buyers Alliance (SABA) criteria (min. 60% emission reduction). (Current SAF certificates include both synthetic and biofuels without distinction)	SAFs from other certification standards and with emission reductions of less than 60%, compared to standard jet fuel.
Maritime fuels	-	Synthetic marine fuels with a GHG emission reduction potential of at least 70% compared to fossil-derived fuels.	Biobased marine fuels.
Steel	Certificates from renewables-powered electric arc furnace technology, e.g. RMI's Sustainable Steel Buyers Platform (planned).	-	Conventional basic oxygen furnace technology alongside measures for partial emission reductions, e.g. XCarb green steel certificates from ArcelorMittal Europe.
Cement & concrete	-	Under exploratory phase by the Centre for Green Market Activation (GMA).	-
Mining	Under exploratory phase by the AIM Platform.		-
Trucking	Planned for 2024 by Zero Emission Trucking Alliance (ZETA) using FCEVs, and Green Market Activation (GMA) Trucking using BEVs and/or FCEVs.		-

3.2 SUPPLIER ASSOCIATION, TRACEABILITY AND PROCUREMENT CONSTRUCTS

The origin of EACs, their supplier association, and the methods used for their procurement are critical factors that impact how EAC procurement could support sector transitions **(→ Fig. 3)**. This section describes these differences and reflects on the extent to which they may affect the feasibility of designing an effective and robust crediting framework for multiple commodities.

SUPPLIER ASSOCIATION AND CHAIN OF CUSTODY

The Advanced Indirect Mitigation platform (AIM) offers three distinctions regarding these associations: physical association, close association and sector association. We consider that the theory underpinning the value of EACs varies according to these different associations:

Physical association

Origin

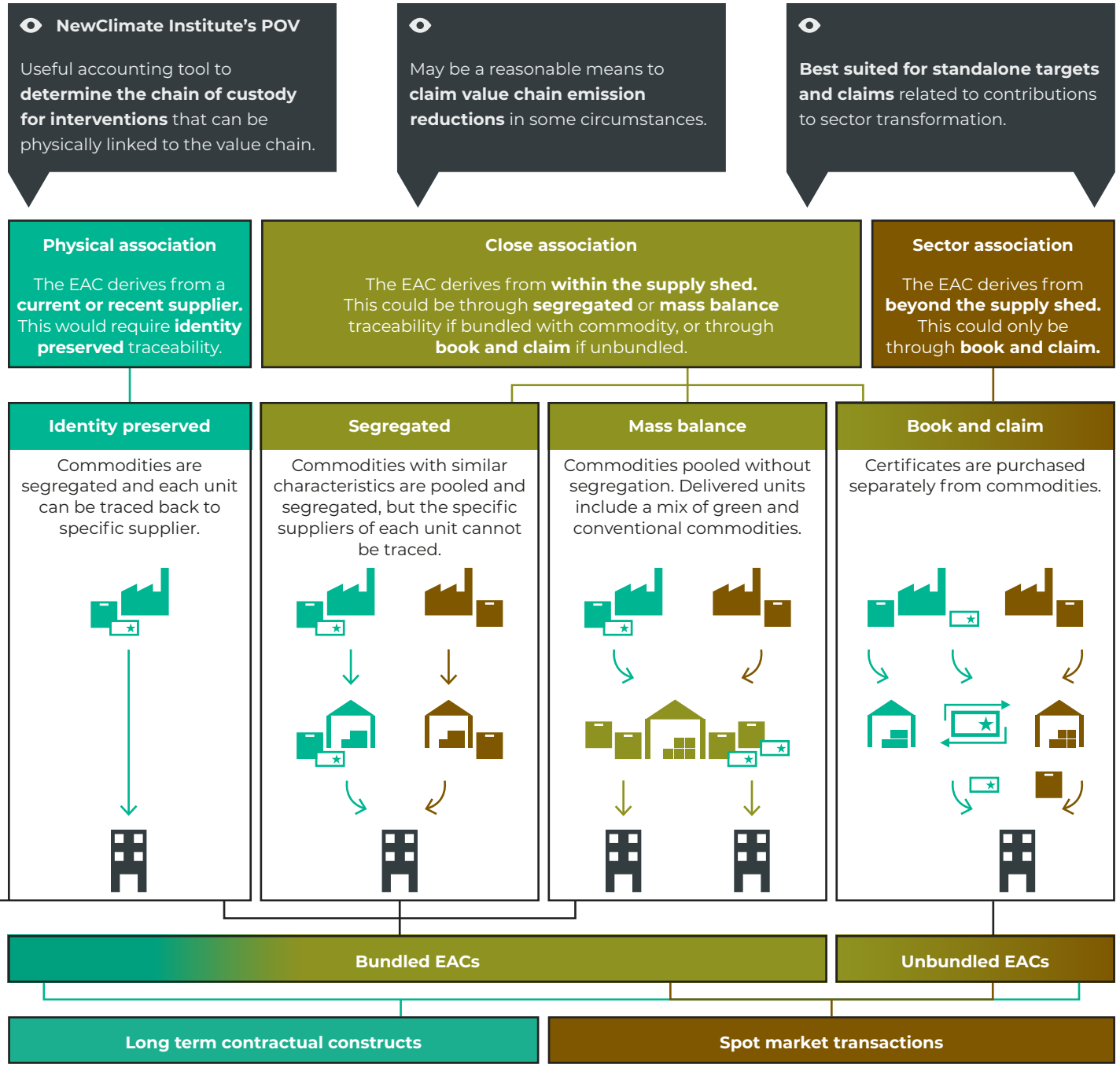
The intervention and the EACs can be traced back to a specific current supplier of the company. In the case of the AIM Platform criteria, physical association includes not only current suppliers but also suppliers have had or will have an active contract within 5 years. This is intended to address the challenges that value chain investments may be hindered by how frequently suppliers change (The AIM Platform, 2024). This could be delivered through an **identity preserved** method of traceability, in which commodities are segregated and each can be traced back to a specific supplier. For example, each steel product could be delivered with a physical label or stamp that identifies manufacturing methods and origin. This would be a **book and claim** approach if the origin of the specific EAC is a historical supplier rather than being bundled with the procurement of the commodity directly.

Potential use

In this case, the EAC may serve simply as an accounting tool for emission reductions that should appear directly in a company's normal inventory. This may be useful in the case that companies do not receive granular bottom-up data from each supplier, or in case they want to use EACs to track the proportion of supplied materials that adhere to certain characteristics, such as the proportion of zero emissions steel.

Fig. 3

The supplier association, chain of custody model and procurement construct critically affect the theoretical basis for EACs to support sector transitions, which varies for each commodity



Supplier association (AIM Platform, 2024) **& chain of custody** (SBTi, 2024)

Under what conditions can EACs from beyond the supply shed potentially support sector transitions?

Under what conditions are EACs from within the supply shed sufficient to drive transitions, and when is physical association to specific suppliers more appropriate?

Procurement constructs

Is *bundled* procurement of EACs more effective in decarbonising the specific emission source?

Are long-term procurement constructs necessary for EACs to have an impact? (Noting that the theoretical impact of spot transactions for RECs has never materialised in practice.)

Close association

Origin The intervention and the EACs derive from within the company's supply shed. This could be achieved through various methods of traceability, including **segregation**, **mass balance** or **book and claim (→ Fig. 3)**.

Potential use The theory of this approach is also to lead to the direct reduction of emissions from a companies' group of suppliers; it could enable a company to make an investment with a member of their supply shed, even if it cannot be certain they source from that specific individual supplier (The AIM Platform, 2024). This may be relevant, for example, where physical segregation of certified and non-certified resources is not feasible or even possible, such as with the procurement of grid-supplied electricity.

Sector association

Origin EACs could derive from beyond the company's supply shed, from interventions anywhere in the world. This could only be delivered through a **book and claim** model with unbundled certificates.

Potential use The approach could be relevant to support the initial stages of sector transitions when expensive and ambitious new technologies are geographically limited and require significant financial support to commercialise and scale (The AIM Platform, 2024). This could be relevant for example for sustainable aviation fuels, which were estimated to account for just 0.5% of global aviation fuel demand in 2024 (IATA, 2024).

PROCUREMENT CONSTRUCTS

The value of commodity certificates as an approach for accounting corporate interventions for GHG emission reductions may also depend on the extent to which those certificates are **bundled** or **unbundled** with the commodities companies procured, and whether the certificates are procured through **spot transactions** or **longer-term contractual constructs**, which may send different signals for investments in emission reducing interventions.

In this regard, several decades of experience and analysis of the most mature commodity certificate – Renewable Energy Certificates (RECs) – offer useful orientation. The report Navigating the nuances of corporate renewable electricity procurement (NewClimate Institute, 2024) identified that distinguishing between bundled and unbundled certificates is not a sufficient marker of integrity. Rather, another important distinction is

between the procurement of "**standalone certificates**" and the use of certificates as an accounting tool combined with **long-term contracts** for procuring the renewable electricity. Contractual instruments like Power Purchase Agreements which offer long-term conditions for project developers send a far clearer signal for the installation of additional renewable electricity than the purchase of standalone certificates in spot transactions **(→ Box 1)**.

CRITICAL QUESTIONS

The key differences here between the geographical associations, methods of traceability and procurement constructs raise complex questions about the contribution of commodity EACs to the 1.5°C transition. These questions may need to be explored on a case-by-case basis for each commodity:

- **Under what conditions can EACs from beyond the supply shed potentially support sector transitions?** In the case of the most globally-nascent technologies, there is an argument that the procurement of EACs from anywhere can provide a demand signal to stimulate accelerated emergence of those technologies. As technologies start to emerge and achieve limited market penetration, the situation and challenges for the transition may become highly region-specific. In such cases, the ability to procure EACs from beyond the supply shed could potentially distract or disincentive addressing these local challenges. The AIM Platform (The AIM Platform, 2024) proposes an evaluation based on market penetration, and a cut-off point of 5% market penetration for companies to procure commodity EACs from beyond their supply sheds. The examples of commodities considered in this report, summarised in → **Tab. 1**, indicate that a 5% market penetration cut-off could be reasonable in theory. However, there are also questions about what exactly market penetration means and whether it can be reliably defined. For example, in the case of heavy-duty trucking, should a market penetration threshold relate to annual sales volumes, or the total vehicle stock in operation? The examples in → **Tab. 3** also raise the question of whether this concept is worth further elaboration, given that many of these commodities, if not all, will likely exceed a 5% market penetration threshold in most regions within the next few years, before a robust system for commodity EACs could ever be established and operational for many commodities.

- **Under what conditions are EACs from within the supply shed sufficient to drive transitions, and when is physical association to specific suppliers more appropriate?** Companies could face disincentives to take direct action for supply chain decarbonisation if they are offered the ability to make and account for interventions within the broader supply shed rather than working with specific suppliers directly. Yet, interventions within the supply shed may be

a reasonable approach if supplier traceability is not feasible, for example with electricity flows within a grid. Whether the procurement of EACs from the supply shed could be a reasonable approach is likely dependent on the nature of the commodity, the claim associated with the intervention, and the definition of the supply shed.

→ **Under what circumstances does the procurement construct matter?** Is *bundled* procurement of EACs relevant to the potential contribution of commodity EACs to the 1.5°C transition? To what extent are long-term procurement contracts necessary for the theory of change for how EACs could support the decarbonisation of the specific emission source? Can spot transactions send a signal, noting that the theoretical impact of spot transactions for RECs has never materialised in practice **(→ Box 1)**?

NewClimate Institute's POV

The origin of EACs, their association to the supply chain, and the means through which they are procured, are **critical factors affecting the potential contribution of commodity EACs to the 1.5°C transition**.

There may be some specific circumstances in which the procurement of commodity EACs from beyond companies' supply sheds could support sector transitions. However, the relatively poor historical track record of existing EAC frameworks (e.g. carbon credits and renewable electricity certificates) demonstrates that these factors represent significant challenges. It might be naively optimistic to assume that crediting systems without traceability and physical association could be developed for multiple other commodities in a reasonable timeframe, while ensuring that they are effective and robust.

Given the high degree of uncertainty, **we consider that it may be more appropriate for commodity EACs beyond the supply shed to be used to channel contributions to beyond value chain interventions and not used for GHG inventory adjustments or emission reduction targets.**

Tab. 3

Relevance of supplier association and procurement constructs for EACs from different commodities

NewClimate Institute's POV

The potential for EACs to contribute to sector transitions varies.

Some sectors would require location- and even time-specific EACs.

EACs could distract from the need for activity reduction in some sectors.

Emission sources with *mature* near-zero emission technologies and high market penetration		
Electricity		Renewable electricity is a mature technology with significant market penetration in most regions. EACs can play a useful role in the next phase of the sector transition if they support the scale up of renewable technologies, which requires overcoming local challenges to grid integration and becomes more challenging at higher levels of penetration. **Interventions within the supply shed** (the local grid) are possible and can contribute to these objectives. **Interventions beyond the supply shed** may be cheaper and easier to organise, but will not help to overcome these most relevant challenges for the next phase of the energy transition (NewClimate Institute, 2024). **Long-term contractual constructs** for certificates that are **bundled** with electricity purchases are far more likely to add renewable capacity than standalone certificates (NewClimate Institute, 2024).
Emission sources with *emerging* near-zero emission technologies that need scaling up		
Steel **Trucking**		The deployment of technologies is regionally differentiated. Technologies are projected to gain moderate market penetration in some regions up to 2030 while remaining nascent in others. **EACs would need to derive from within companies' supply sheds** to contribute to regional challenges and to avoid potential disincentives for direct action.
	Steel	While the global market penetration of near-zero steel remains limited at below 1% in 2023, announced projects for near-zero steel production might reach a **scaling-up phase** in some jurisdictions like the European Union within this decade while remaining nascent in most parts of the world.
	Trucking	Latest forecasts expect high market penetration of zero emission trucks in advanced economies like the US (>40%), the EU (>30%) and China (>40%) by 2035, while deployment will be much more limited in other regions.
Emission sources with *nascent* technologies		
Aviation fuels **Maritime fuels** **Cement & concrete**		At this stage, market instruments could support the transition for these commodities if they can accelerate the emergence of technologies and the initial stages of their uptake. EACs could potentially play a useful role to support the transition by providing a demand signal, even if companies would invest in **interventions beyond their supply sheds**.
	Aviation fuels	SAF compromised less than 0.1% of total aviation fuel consumption in 2022 (Boehm et al., 2023). EACs risk distracting from the relevance of reducing aviation activity, noting the sustainability issues associated with SAF.
	Maritime fuels	The global share of SZEFs, including green ammonia, green hydrogen, e-methanol, and synthetic e-fuels produced from renewable sources of energy, in shipping is currently close to 0% (Boehm et al., 2023).
	Cement & concrete	Uptake of technologies for reducing emissions from cement and concrete remains low, and near zero emission clinker market penetration rate was at 0% in 2022. Current estimates put low-emission cement at a 75% premium versus conventional cement production on average.
Emission sources with *especially diverse* needs		
Mining		Each metal and mineral has its own emission hotspots and may require tailored programme design for EACs to focus on the needs of the transitions in each sub-sector. EACs risk distracting from the relevance of reducing mining activity through circularity solutions.

Box 1

Procurement constructs for RECs

Renewable Energy Certificates (RECs) represent the most established form of Energy Attribute Certificates (EACs) and have played a role in facilitating the deployment of renewable energy. However, research has highlighted that the effectiveness of RECs is contingent upon various factors.

Procurement constructs and standalone certificates

After two decades of experience with REC schemes across various regions, the scientific literature clearly indicates that the purchase of standalone RECs is unlikely to directly or indirectly drive the installation of additional renewable electricity capacity, and subsequently to reducing GHG emissions, in major regions (Bjørn et al., 2022; NewClimate Institute, 2024) The oversupply of certificates and the resulting low prices, coupled with implicit double counting, are significant factors in this issue. In Europe, for instance, there is an excess of standalone Renewable Energy Certificates (RECs) available at low prices, largely due to long-established hydropower facilities in Scandinavia (Hulshof et al., 2019; NewClimate Institute and Data-Driven EnviroLab, 2020). Even if REC prices were to increase, it is highly likely that the majority of future renewable electricity generation would still occur independently of a market for standalone RECs (Martinsen and Mouilleron, 2020).

Rather than relying on standalone RECs, long-term contracts for local Power Purchase Agreements (PPAs) are generally more effective in supporting the expansion of renewable capacity within a grid. However, even in these cases, the relationship between these contracts and the additionality of their support is complex and a significant additional climate mitigation impact cannot be guaranteed (NewClimate Institute, 2024).

Granularity of locality and timing

Electricity consumers need to take responsibility to cooperate and overcome the challenges to decarbonising the grids that they use. The complexity and marginal costs of grid decarbonisation increase at deeper levels of system decarbonisation. The first steps to integrate modest shares of renewables into an electricity supply system can be achieved with relative ease and low costs. Reaching higher shares of renewable electricity generations creates significant complexities for the grid system operators, as they must supply electricity where and when it is needed due to the variability of solar and wind resources based on weather conditions. By comparison, fossil fuel generations plants can be switched on and off as and when needed. Decarbonising the electricity generation sector in advanced economies requires incentives for all major system stakeholders to cooperate and innovate to find effective solutions for smarter electricity transmission, storage and load balancing.

The Emissions First Partnership (EFP) from companies including Amazon and Meta proposes to account for EACs with fewer or no geographical limitations. In simplest terms, this means companies could simply buy credits from renewable electricity projects on any other grids, rather than decarbonise their own grids. Companies may not actually reduce their carbon footprint, but instead, they offset their emissions by investing in renewable energy elsewhere. While this might appear to support renewable energy projects, it doesn't lead to addressing the specific challenges faced in the areas where the electricity is consumed.

In contrast, companies like Google and Microsoft are the front-runners for moving from annual matching to 24/7 matching and have set corresponding targets. Matching electricity consumption with renewable electricity on an hourly basis provides an important demand signal for additional and novel renewable energy generation and storage technologies required to completely decarbonise power systems. The hourly matching approach also requires companies to consider when to use electricity (i.e. when generation peaks), and to advocate for and collaborate for conducive policy, recognising that progress towards such granular and challenging accounting frameworks depends on system level improvements.

3.3 POTENTIAL DISINCENTIVE FOR DIRECT VALUE CHAIN DECARBONISATION

Commodity EACs might create disincentives — or even direct disadvantages — for first movers of real value chain decarbonisation if companies can use EACs from beyond their supply sheds to make claims related to their GHG inventories. Ambitious climate action may require:

- **High upfront investments** in financial and organisational resources, for example when negotiating new supplier contracts for low-carbon products such as zero-emission steel or integrating zero-emission heavy-duty trucks into suppliers' logistics.
- **Holistic strategic decisions** to transition business models, for example setting up new production facilities in regions with a fully decarbonised electricity grid and short logistic routes or re-integrating logistics into own operations (scope 1) to more directly and effectively decarbonise them.
- **Organisational resilience to tackle unforeseen challenges** when implementing novel types of climate actions and pursuing related innovations, for example if certain innovations for near-zero production processes face technological hurdles and reach full-market status later than expected.

Given the substantial financial, strategic and operational resources required for the holistic implementation of climate action, the use of commodity EACs might incentivise companies to rather continue with their business-as-usual for the foreseeable future without engaging in the *direct decarbonisation of their own* value chains.

The use of commodity EACs might especially undermine *real* value chain decarbonisation if companies procure commodity EACs despite the technology or material being directly relevant to their sector. Companies with no direct link to sourcing may be more justified in sourcing commodity EACs than companies for whom a commodity or technology is directly material. For example, if a tech company procures low-carbon cement certificates for the construction of its new office, this is less likely to disincentivise real value chain decarbonisation, than if a construction company were to procure such commodity EACs. A tech company might not be expected to push for the value chain decarbonisation of the cement industry but if it wanted to push for further decarbonisation of the industry, it could use commodity EACs. However, it is reasonable to expect that companies sourcing materials, even if doing so indirectly, should prioritise value chain decarbonisation over procuring commodity EACs from elsewhere.

The ability for some companies to use commodity-EACs to demonstrate progress could undermine the efforts by leading companies to directly reduce emissions in the short-term. According to our analyses in the Corporate Climate

Responsibility Monitor, several companies including Volvo Group, Mars or Iberdrola already implement ambitious climate actions along their value chains. For example, Volvo Group is currently implementing comprehensive measures to support the phase-in of electric vehicles by 2030 and taking credible steps to address upstream emissions by entering specific supply agreements for low-carbon steel (Section 5.7 in Day et al., 2024). Such measures require substantial investments for their short-term implementation, and first movers also face risks when implementing novel climate actions. If both types of companies – those that predominantly rely on commodity EAC purchases and those using a mix of approaches – can make similar claims about successfully decarbonising their value chains, the widespread use of commodity EACs would make it impossible to distinguish between them.

CRITICAL QUESTIONS

The potential disincentives for direct value chain decarbonisation through introducing market-based accounting through commodity EACs raises several questions that may need to be explored on a case-by-case basis for each commodity:

How would the use of commodity EACs need to be governed to avoid major disincentives — or even direct disadvantage — for first movers of direct value chain decarbonisation?

Could it be more transparent and a better incentive for direct action, if first movers of real value chain decarbonisation can make target and inventory claims while purchasers of commodity EACs can make a separate EAC-specific contribution claim?

Which companies should qualify for purchasing EACs instead of directly pursuing low-carbon solutions? Should there be restrictions regarding how close a company's line of business is to the commodity that it may procure an EAC for?

NewClimate Institute's POV

We observe the risk that using commodity EACs to claim emission reductions toward an emission reduction target or adjustments to a GHG inventory may ultimately discourage direct value chain decarbonisation.

This risk may be partially mitigated if commodity EACs are used for more specific claims framed as contributions to sector transitions. This approach might maximise transparency, encouraging genuine value chain decarbonisation alongside the complementary use of commodity EACs.

3.4 INTEGRITY OF THE INFRASTRUCTURE AND GOVERNANCE SYSTEM

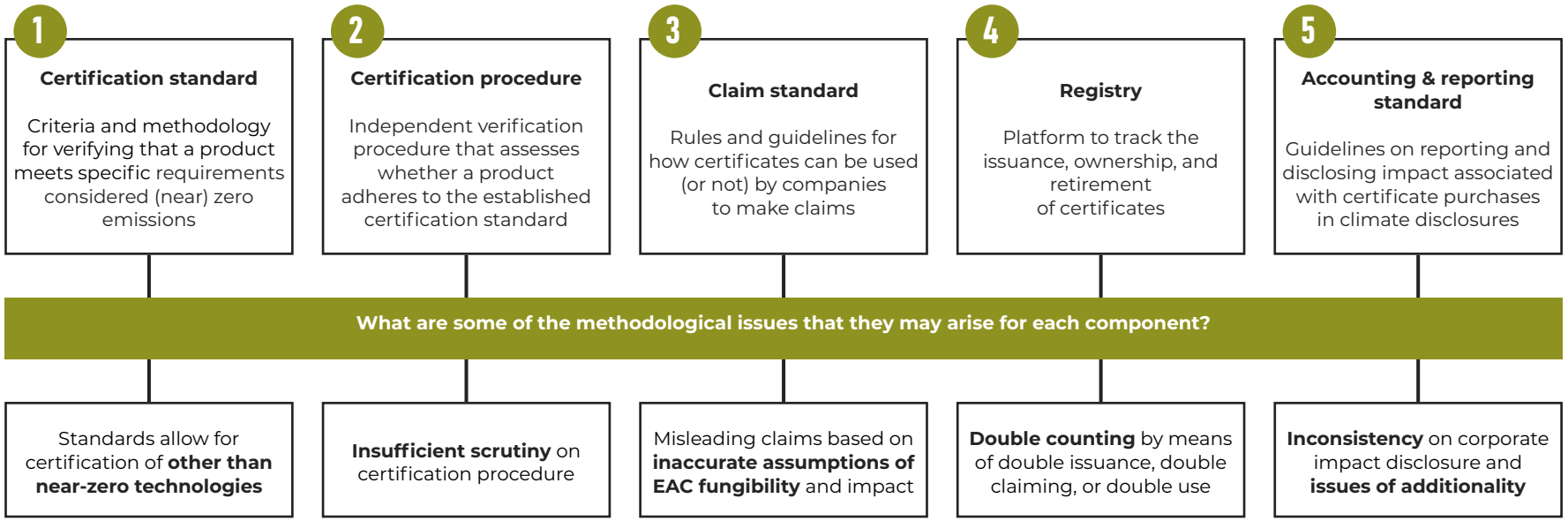
The use of commodity EACs requires the development of a sound and reliable infrastructure and governance system. Recent experiences and evidence with commodity EACs like RECs (NewClimate Institute, 2024) and voluntary initiatives more generally, point to multiple interrelated challenges in establishing a high-integrity system.

Broadly speaking, the infrastructure system comprises five subsequent components that need to be in place to ensure transparency, credibility, and comparability of any claim related to commodity EACs **(→ Fig. 4)** adjusted from RMI (2024a). These include the following:

1. **Certification standard** – A certification standard sets the criteria and methodologies for verifying that a product meets specific requirements be considered (near) zero emissions.
2. **Certification procedure** – The certification procedure defines the independent verification process that assesses whether a product adheres to the established certification standard, providing assurance of its environmental attributes.
3. **Claim standard** – The claim standard outlines the rules and guidelines for how commodity EACs can be used (or not) by companies to make claims.
4. **Registry** – A registry tracks the issuance, ownership, and retirement of certificates, maintaining a transparent and auditable record.
5. **Accounting and reporting standard** – The accounting and reporting standard provides guidelines for how companies report and disclose emissions reductions or environmental impact associated with certificate purchases in their climate disclosures.

Robust and reliable governance must ensure that each of these infrastructure components are developed in a science-aligned and high-integrity manner that can deliver credible and effective outcomes. A failure at any one of the steps — for example if a certification standard uses non-scientific definitions of what near-zero technologies are — risks undermining the system's integrity and would provide loopholes that help companies to exaggerate their action, undermining the efforts of real frontrunners. EAC-specific infrastructure components must take into account the particular and differing characteristics of each commodity: for example, local 24/7 matching of RECs might require different infrastructure than a global book-and-claim system for synthetic SAFs.

Fig. 4
Infrastructure components for the use of EACs and related methodological challenges (non-exhaustive)



Source: Adaptation from RMI (2024a) and Becker (2024).

The multiple and interrelated infrastructure components bring distinct governance challenges into focus, such as the potential for influence by established actors with significant interests (Becker, 2024). In absence of regulated and transparent processes, many of the crucial functions — such as developing certification standards or defining the accounting and reporting rules — might be led by voluntary initiatives at risk of disproportionate influence of private sector actors. For example, a business-driven initiative such as ResponsibleSteel is formed of 31 steelmakers alongside some civil society members to develop standard and certification procedures for their own steel making plants (ResponsibleSteel, 2024).

During 2024, a number of media investigations have shed light on the potential for actors with vested interest to unduly influence standard setting procedures (Financial Times, 2024; Bloomberg, 2024; The Guardian, 2024; Follow The Money, 2024). As an immediate consequence, this can result in the regression of overall integrity and ambition due to excessive 'compromises' between scientifically informed principles and vested corporate interests.

Buyers' alliances to aggregate demand for commodity EACs in different are also forming and taking on various roles in the system. Emerging buyers' alliances such as the Sustainable Aviation Buyers Alliance (SABA), the Zero Emissions Maritime Buyers Alliance (ZEMBA), Sustainable Steel Buyers Platform and the Zero Emissions Trucking Alliance (ZETA) may play a key role in facilitating purchase agreements, mobilising demand for commodity EACs, and educating corporate buyers to navigate a complex and nascent market. However, we observe that buyers' alliances also currently perform additional core functions with regards to establishing the EAC infrastructure. For example, SABA has defined the SAF Sustainability Framework and co-governs the design of the registry rulebook for SAFs (SAFc Registry, 2024). Although such buyers' alliances can play an important role as proactive initiatives to kickstart the EAC system, the execution of these core systems functions by buyer alliances could potentially undermine the integrity of the infrastructure, given the potential interests of those initiatives.

CRITICAL QUESTIONS

The potential pitfalls to ensure high integrity of the EAC infrastructure and governance system raises several questions that may need to be explored on a case-by-case basis for each commodity:

Can a full-fledged infrastructure be developed in a reliable and sound manner for each of the various commodity EAC? Is it realistic to do this in the short timeframe required for the approach to serve the purpose for accelerating nascent technology (i.e. within the next 5 years)?

Which actors would be best placed to perform the various functions of the infrastructure to use commodity EACs?

Who should be responsible for oversight of those actors' governance structures and the overall system design?

NewClimate Institute's POV

The multiple challenges to establish sound and reliable infrastructure and governance systems for each commodity EAC **should be considered** when determining how companies may use EACs and the claims that may be made.

We consider that an EAC system designed for contribution claims is **likely to be less vulnerable to being influenced by vested interests** than a system designed for market-based accounting and GHG inventory adjustments.

/∧ 04 IMPLICATIONS FOR SBTI AND GHG PROTOCOL PROCESSES

The SBTi Scope 3 *discussion paper* presents two potential scenarios for the use of commodity certificates (SBTi, 2024):

- Scenario 1: Use of commodity certificates from value chain activities;
- Scenario 2: Use of commodity certificates from sources with lower or no value chain traceability.

EACs could serve as an accounting tool to determine chain of custody for interventions that can be physically linked to the value chain (SBTi discussion paper scenario 1).

Companies may increasingly set climate targets for their upstream value chain emissions based on the proportion of products or services they procure that align with 1.5°C pathways. For example, companies may set targets to increase the share of near-zero emission steel in their procurement. The SBTi's Scope 3 Discussion Paper sets out such a target setting approach as a possible option for addressing scope 3 emissions in the revised Corporate Net Zero Standard.

Under such a target setting framework, EACs could be a means to address two key challenges for demonstrating that companies' sourced commodities or activities comply with or are produced in a manner consistent with 1.5°C pathways:

→ **Definitions of alignment:** EACs could be used to certify commodities against a standardised definition of what constitutes 1.5°C alignment (i.e. what counts as near-zero emission steel?). The SBTi or GHG Protocol could support this by ensuring that the process for developing standardised definitions is independent and science-aligned, rather than led by private interest groups, as has often been the case for the certification systems already existing or under development for the commodities assessed in **(→ Section 2)**. This could be done by directly taking the role to develop definitions, or by elaborating criteria and guardrails for external programmes and initiatives that the SBTi and GHG Protocol can recognise.

→ **Proof of environmental attributes:** EACs could be used to prove the environmental characteristics of the commodities that companies procure, in the case that there is a robust chain of custody system with identity preservation and physical association with a supplier.

In this case, commodity EACs serve purely as an accounting tool for interventions within the value chain, rather than being a means for flexible approaches or market-based accounting.

For the SBTi's scenario 2, we differentiate between two different situations: EACs derived from interventions *within a specific supply shed*; and EACs *without traceability and close association to the supply shed*.

In some circumstances, commodity EACs derived from interventions within a *specific supply shed* may be a reasonable means to claim emission reductions in the value chain.

Companies could face disincentives to take direct action for supply chain decarbonisation if they are offered the ability to make and account for interventions within the broader supply shed rather than working with specific suppliers directly. Yet, interventions within the supply shed may be the most direct approach possible to decarbonise the value chain in some cases. This could be the case if supplier traceability is not feasible, for example with electricity flows within a grid, or when suppliers change on a frequent basis, as is often the case for the fragmented supply chains for several agricultural commodities. Whether the procurement of EACs from the supply shed could be a reasonable approach for market-based accounting is likely dependent on the nature of the commodity and the definition of the supply shed. The approach would also introduce risks that must be carefully considered. The case-specific development of high integrity crediting mechanisms for each individual commodity will be highly challenging and susceptible to influence from actors with significant interests. Decades of experience with Renewable Energy Certificates has also shown that the procurement of EACs alone without consideration of the specific procurement constructs may be unlikely to have a significant emission reduction impact.

We question whether it is realistic for commodity EACs *without traceability and close association to the supply shed* to be effective and robust enough to be used as market-based accounting instruments. We recognise the significant risks associated with flawed systems.

→ **Section 3** set out our considerations on the prospects and challenges for the use of commodity EACs for corporate climate targets. The development of crediting frameworks for commodities faces several challenges related to fragmentation, traceability, procurement constructs, accounting integrity, and potential disincentives for direct interventions in the value chain.

The relatively poor historical track record of existing crediting frameworks for distinctly less complex commodities (e.g. carbon credits and renewable electricity certificates) demonstrates that these challenges are significant. It might be irresponsibly optimistic to assume that crediting systems without traceability and physical association could be developed for multiple other commodities in a reasonable timeframe, while ensuring that they are effective and robust. Given that the rationale for the use of commodity EACs is often to accelerate nascent technologies, EAC accounting frameworks would need to be operational soon to effectively serve this purpose.

EACs with lower value chain traceability could be used for standalone targets and claims related to contributions to sector transformation. Such targets and claims should be distinct from targets for reducing a company's own emissions footprint.

Commodity EACs without traceability and physical association could potentially still be useful if they are used to channel contributions to beyond value chain interventions and not used for GHG inventory adjustments or emission reduction targets.

The SBTi's Scope 3 Discussion Paper (SBTi, 2024) suggests a more nuanced framework for target setting that prioritises critical emission sources. In this context, it may be reasonable in some circumstances for voluntary standard setters like the SBTi to recognise contribution-framed interventions without traceability as a means of supporting 1.5°C aligned transitions. This could be justifiable for emission sources and circumstances where direct action within the value chain is not realistically feasible.

If commitments to contributions are to be recognised as a means of supporting 1.5°C aligned transitions, they must be clearly framed in those terms; it would be inaccurate and counterproductive for such contribution-framed commitments to be conflated with targets for emission reductions or other specific transitions within the value chain, given the high degree of uncertainty and improbability that the purchase of commodity EACs can really be equivalent to direct action within the value chain. Commitments to contributions should only be considered a temporary option for supporting transitions where new technologies are geographically limited and require significant financial support to commercialise and scale. A clear distinction of such commitments should provide an incentive for companies to set targets for outcomes within the value chain as soon as they have the means to do so.

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