

6/2/2026

Via online submission

HILT CRC Submission to Public consultation on the Exposure Draft of the Guarantee of Origin (GO) Methodology Determination Amendment (the Amendment)

The Heavy Industry Low-carbon Transition Cooperative Research Centre (HILT CRC) was established in November 2021 to support the decarbonisation of the Australian iron/steel, alumina, and cement/lime sectors. Since commencing operations, HILT CRC has co-developed a groundbreaking research program to develop new technologies and address non-technological barriers and enablers to heavy industry decarbonisation, in collaboration with over 70 partners from industry (including heavy industry, end users and technology providers), government, academia and non-governmental organisations (our current member list is provided in Attachment A).

HILT CRC congratulates the Department of Climate Change, Energy, the Environment and Water (DCCEEW) on developing the Amendment to the Product Guarantee of Origin (PGO) Methodology Determination to enable additional production pathways¹ for hydrogen and a production pathway for aluminium. We note that this achievement is part of ongoing efforts to expand the range of products and production pathways that are covered by the PGO.

HILT CRC appreciates the effort and care taken in the way the Amendment addresses Section 29(9) of the GO Act regarding Determinations². In particular, the Amendment provides consistency and comparability with relevant domestic and international approaches, including the National Greenhouse and Energy Reporting Scheme (NGERS). This consistency and comparability will assist in promoting a fair (non-discriminatory) policy and regulatory environment, as well as reducing regulatory burden. For further discussion of these principles, please see Aisbett & Burkitbayeva (2025).

HILT CRC applauds the ‘modular’ approach to the construction of the production pathways. Modularity helps to promote consistency, interoperability and flexibility as per Aisbett & Burkitbayeva (2025) and

¹ We note that “production pathway” is defined as per the [Future Made in Australia \(Guarantee of Origin\) Act 2024](#) Section 29: A production pathway, for a product, is a set of production modules. And a production module is a step in the production of a product and includes:

- (a) the use of particular equipment; and
- (b) a particular process.

² 29(9) In making a determination under this section, the Minister must have regard to:

- (a) the objects of this Act; and
- (b) the extent to which the determination was developed in accordance with the following objectives:
 - (i) to be transparent and complete, by representing an accurate accounting of all material greenhouse gas emissions for a product’s supply chain without carbon offsetting using carbon credits;
 - (ii) to be consistent with other determinations made under this section and comparable with internationally agreed standards, taking into account domestic circumstances or requirements;
 - (iii) to be practical and minimise the regulatory burden on registered persons;
 - (iv) to be based on the latest available scientific evidence as aligned with international frameworks.

White et al. (2021). Modularity, as currently employed and referred to in the PGO, allows optional downstream supply chain steps to be included. We note, however, that the intention to develop production pathway methodologies for upstream products (i.e. ‘inputs’ such as alumina) represents upstream modularity and is equally applauded.

HILT CRC supports the granularity of the proposed methodologies including temporal (i.e. batch level), process-level and greenhouse gas-level. In addition to supporting interoperability and flexibility, this granularity promotes transparency and integrity and encourages ongoing emissions reduction efforts (OECD, 2024).

The noted intention to develop production pathways and associated methodologies for alumina production in 2026 is welcomed by HILT CRC. This development will allow aluminium smelters to benefit from sourcing alumina from the least-emissions-intensive producers, creating a more explicit market for low-carbon alumina.

HILT CRC is well placed to provide input to DCCEEW’s development of the alumina decarbonisation pathway drawing from a range of activities including:

- Development and assessment process configurations for net-zero steam generation and recovery within the Bayer circuit ([Project RP1.013 – AlumiNEXT](#)) and thermal energy storage ([Project RP2.017 – High temperature thermal energy storage](#))
- Development of net-zero calcination technologies with a focus on brownfield retrofits (Project RP1.013 – AlumiNEXT)
- Development and assessment of energy infrastructure options for different demand and energy-supply scenarios ([Project RP3.006 – Energy infrastructure investment](#))
- Low-carbon alumina production short courses
- A new initiative, led by HILT CRC in conjunction with ARENA and the Green Metals Innovation Network (GMIN): Alumina Decarbonisation Technology Implementation Reviews – Unlocking the Roadmap to Decarbonise Australian Alumina.

Moving further upstream, HILT CRC encourages the development of production pathways and methodologies for bauxite and other mining operations. Australian miners are making significant investments to lower (or indeed eliminate) emissions from their operations. It is important that these efforts can be measured and rewarded through the PGO – including allowing downstream users to demonstrate their lower product embedded emissions.

HILT CRC encourages the development of carbon capture and storage (CCS) modules which could be optional modules for the gas reforming, solid gasification and pyrolysis hydrogen pathways. The timing of this development should be such that it is materially able to support the inclusion of these processes to help decarbonise fossil-fuel-based hydrogen production. Noting the potential for CCS across a range of emissions-intensive industries, elements of carbon capture and/or storage could be added to the “common production emissions sources” methodology.



HILT CRC notes that in the draft Amendment, default scope 3 values are used for fuels (solid, liquid or gas). In future, moving beyond default values through development of production pathways and methodologies for fuel extraction, processing and transport could encourage and reward decarbonisation of this important Australian industry. HILT CRC is of the understanding that this development should not require significant government or business resource investment since Australian producers of fuels are largely covered by the Safeguard Mechanism and associated reporting requirements.

We look forward to continuing to offer specific insights based on HILT CRC's wide portfolio of research relevant to the GO scheme and its expansion. HILT CRC Project RP3.006 is of particular relevance given it focuses on the certification of low-carbon products for heavy industry and includes mapping of relevant Embedded Emissions Frameworks and regulations in Australia and globally. Spreadsheet tools have been developed as part of this project that use a modular approach to estimate batch-level embedded emissions for iron/steel, alumina/aluminium and cement. We would be delighted to share these tools in a workshop with the DCCEEW GO team. More information on Project RP3.006 is available here: [Certification and verification for the Low-Carbon Transition](#).

The broader research portfolio of HILT CRC also includes numerous projects investigating decarbonisation technologies and pathways for heavy industry – this research could help to inform and future-proof the expansion of the GO scheme to new products and pathways. Information on the full range of HILT CRC projects is available here: [Projects | HILT CRC](#)

HILT CRC thanks the Government for the opportunity to comment on the Amendment.

If the Government would like to discuss any elements further, I can be contacted via ceo@hiltcrc.com.au.

Kind regards,

A handwritten signature in black ink, appearing to read 'Jenny Selway', is positioned above the typed name.

Jenny Selway

Chief Executive Officer,
HILT CRC

References:

Aisbett, E. & Burkitbayeva, S. (2025) Designing a high-performance international regime for embedded emissions accounting. ANU CCEP working paper <https://crawford.anu.edu.au/ccep/research/designing-high-performance-international-regime-embedded-emissions-accounting>

OECD (2024), Towards more accurate, timely, and granular product-level carbon intensity metrics: challenges and potential solutions; An IFCMA report, Inclusive Forum on Carbon Mitigation Approaches Papers, OECD Publishing, Paris.
www.oecd.org/content/dam/oecd/en/publications/reports/2024/11/towards-more-accurate-timely-and-granular-product-level-carbon-intensity-metrics-challenges-and-potential-solutions_c7b5c87e/87bbd6bf-en.pdf

White, L.V., Fazeli, R., Cheng, W., Aisbett, E., Beck, F.J., Baldwin, K.G., Howarth, P. and O'Neill, L. (2021) Towards emissions certification systems for international trade in hydrogen: The policy challenge of defining boundaries for emissions accounting. *Energy*, 215, p.119-139.

ATTACHMENT A – HILT CRC MEMBER LIST

OVER 70 PARTNERS AND GROWING



CORE PARTNERS



KEY PARTNERS



AFFILIATE PARTNERS



ASSOCIATE PARTNERS



INTERNATIONAL TRADING PARTNERS

