



Low Carbon Aluminium Specification Guide

Market feedback requested guidance on how to specify low carbon aluminium in projects. This brief guide will help you ask the right questions and build your specifications for collaboration.

What does 'low carbon' mean?

Before getting into the detail around specifications, what do we mean when we talk about 'low carbon' aluminium? Typically low carbon aluminium refers to aluminium with a carbon intensity less than the 'global average'. This could mean the product contains recycled content, but current market products are much more likely to be virgin aluminium produced with a percentage of, or entirely with renewable energy.

Through the use of renewable energy sources like hydroelectricity, virgin aluminium's footprint can be reduced on average to approximately 4.0 kg CO₂e per kg aluminium - a third of the global average. This can be reduced even further using recycled content. Products with 75% post consumer recycled scrap can have emissions of 2.3 kg CO₂e per kg aluminium...or lower.

Procurement pathways are numerous for sourcing aluminium below the global average of approximately 12. However, while options below 4.0 kg CO₂e / kg AL are available, they are challenging to secure and would require extensive engagement with your supply chain well in advance of a particular project need.

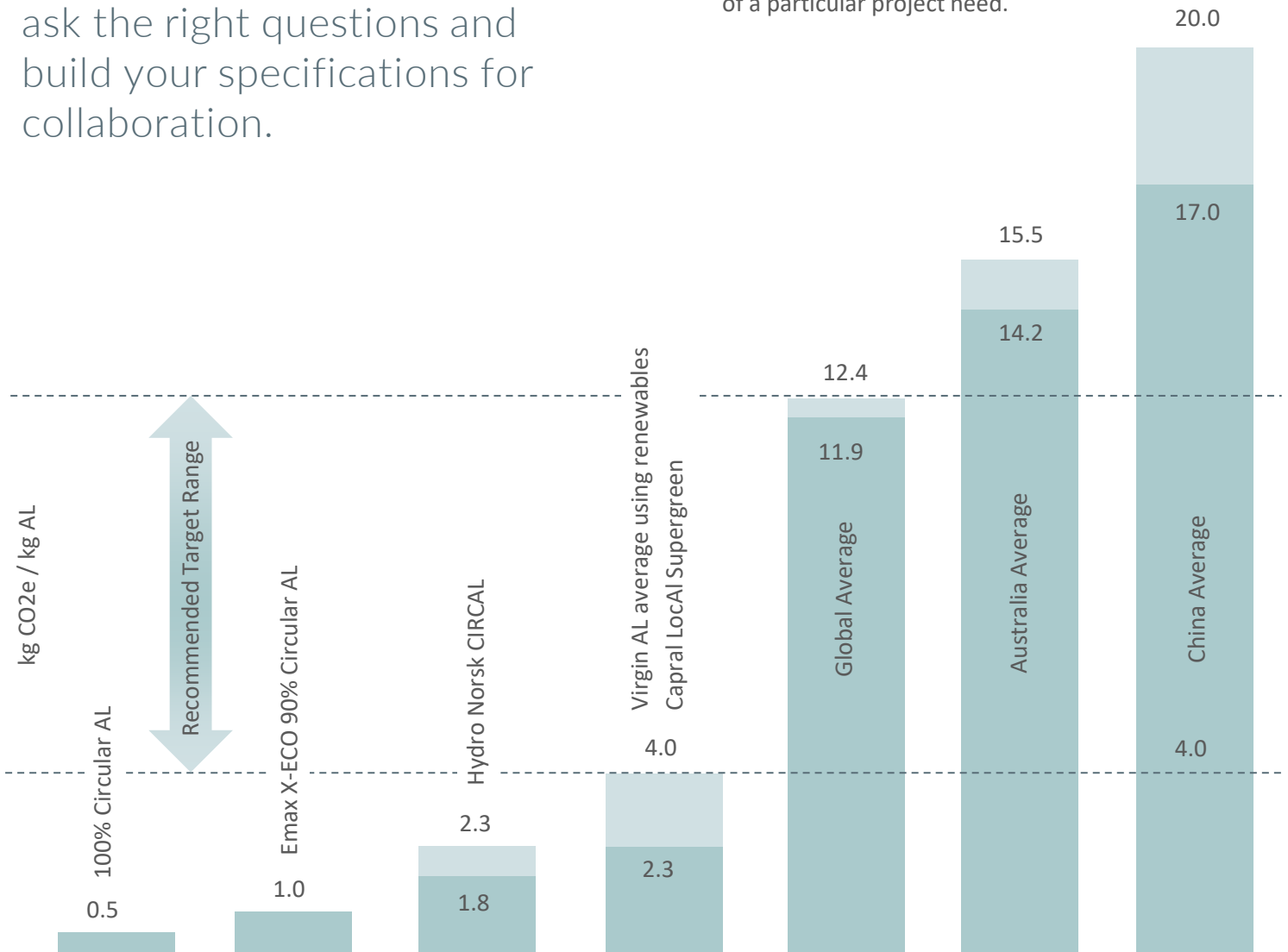


Table of Aluminium Carbon Intensities compiled from multiple sources.⁸

Ask for ASI Certification

Nominate ASI certified aluminium.

The ASI (Aluminium Stewardship Initiative) works together with producers, users and stakeholders in the aluminium value chain to collaboratively foster responsible production, sourcing and stewardship of aluminium.

ASI has developed an independent third-party certification program to ensure sustainability and human rights principles are increasingly embedded in aluminium production, use and recycling. ASI's Performance Standard and Chain of Custody Standard are designed to link responsible production with responsible sourcing, and thus support increased emphasis on sustainability in procurement practices.

The link to 'green' ratings tools

Green Star has undertaken a considerable update to their ratings scheme by mapping out a pathway that will require all project certifications to achieve a minimum of 40% reduction on upfront carbon by 2030. Achieving this target will not be possible without addressing aluminium.

New projects registering from 2023 will be required to achieve a minimum of 10% reduction, with a 20% reduction required for 5 Star scheme.

Green Star's Responsible Products Framework also links to ASI Certification to achieving credits under the Responsible Envelope initiative – further linking the sustainability picture from embodied carbon to broader social, economic and environmental aspects of a material's provenance.

Through NABERS program, the NSW Government is funding the development of a world-leading framework for measuring, benchmarking and certifying emissions from construction and building materials. The framework is being configured to align with Green Star and other widely used building sustainability programs.

Ask for Verified EPD's

The first step is to ensure your specification includes a section on Embodied Carbon that outlines requirements for EPD's and define your project's embodied carbon target. Environmental Product Declarations (EPD's) are independently verified and registered documents that communicate transparent and comparable data and other relevant environmental information about the life-cycle environmental impact of a product.

Not all smelters and producers have EPD's available. Where not available, suppliers should provide complete and detailed information on the processes contributing to the emissions associated with the billet shall be provided.

The below is given as an example of how you may incorporate low carbon aluminium clauses.

Low embodied carbon aluminium billet is defined as billet whose cradle to gate emissions do not exceed 6.5tCO₂eq / t of aluminium billet. Cradle to gate is defined as modules A1-A3 under the EN15804 system boundary.

Build specifications for collaboration

Case Studies have shown that success in obtaining low carbon aluminium for your project is not about nominating a particular supplier or product, but rather about enabling your supply chain to investigate their existing and potential options through specifying an acceptable range of lower carbon aluminium.

Specifying specific products limits a suppliers ability to find an equal or better option that may exist in their current supply chains. It is also likely to prove commercially unviable as suppliers potentially price risk in targeting a particular product that is unfamiliar to them.

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