SUMMARY OF TOITŪ CARBONREDUCE CERTIFICATION

MCKECHNIE ALUMINIUM SOLUTIONS LIMITED
ALUMINIUM LOG PRODUCTS

Year 2 of 2 year certificate period

McKechnie Aluminium Solutions Limited meets the requirements of Toitū carbonreduce product certification having measured the cradle to grave life cycle greenhouse gas emissions of its selected aluminium log products in accordance with PAS 2050:2011 and committed to managing and reducing the emissions intensity of the product in respect of the selected aluminium log products.

The core business of McKechnie Aluminium Solutions is the extrusion of Aluminium sections. There is a combination of architectural and structural profiles that are manufactured. McKechnie Aluminium Solutions can apply the surface treatments of Anodising and Powdercoating. McKechnie Aluminium Solutions also offers a value-added downstream processing facility to fabricate customer specific components.

An increase in GHG emissions and consequently global warming will raise awareness to the need for the building industry to source material that can be recycled such as Aluminium. Products manufactured by McKechnie Aluminium Solutions typically consists of 80% recycled Aluminium. All Aluminium process scrap generated onsite is remelted. Scrap is purchased both locally and internationally in order to reduce the reliance on and consumption of primary Aluminium. The process of remelting Aluminium also uses 5% of the energy required to extract primary Aluminium from ore.

McKechnie Aluminium Solutions is committed to its Environmental responsibilities and is depicted by its ISO 14001 and Enviro-Mark Diamond certification. The addition of Toitū carbonreduce certification is yet another step towards a more environmentally responsible attitude. Commitment to the company's Environmental Management System is an integral part of the Occupational Health & Safety, Environmental and Quality Policy.

- Product Group Name: Aluminium log products
- Functional Unit: kg of Aluminium Log product

TOITŪ CARBON REDUCE PAS 2050 PRODUCT

EMISSIONS SUMMARY[1]

McKechnie Aluminium Solutions' product emissions for this year (01/07/2018 to 30/06/2019) were 6.5 $kgCO_2e$ per kg of product. The table below shows the GHG emissions and removals included for each life cycle stage and unit process:

Post Audit Totals		
Upstream	0.06	$kgCO_2e/kg$
Core	7.84	$kgCO_2e/kg$
Downstream	-1.56	$kgCO_2e/kg$
Total inventory	**6.50**	**$kgCO_2e/kg$**

Table 1: Product carbon footprint summary by lifecycle activity

Life cycle stage	Emissions ($kgCO_2e/kg$)	% contribution to footprint
Upstream		
Supply of scrap and primary Al	0.09	1.3%
Al melting and casting	6.88	105.8%
Core		
Homogenising	0.15	2.3%
Billet Cutting	0.00	0.0%
Extrusion	0.39	6.0%
Aging	0.04	0.7%
Anodise	0.19	2.9%
Semi-fabrication	0.02	0.3%
Powdercoating	0.21	3.3%
Packaging	0.07	1.1%
Omega	0.00	0.0%
Other emission sources	0.00	0.0%
Other electricity	0.08	1.2%
Downstream		
Distribution	0.06	0.9%
Installation of aluminium	-0.04	-0.6%
EOL Aluminium after use	-1.64	-25.3%
Landfill of thermal breaks	0.00	0.0%
Total $kgCO_2e$ per kg	6.50	100%
Total tCO_2e	**53,879.77**	

Table 2: Detailed breakdown of product carbon footprint

NOTE: Emissions are indicated by "+" and removals by "-".

[1] **Disclaimer:** This Disclosure Statement is a summary of the verified information considered for certification and the certification decision. It should not be taken to represent the full submission for certification. Whilst every effort has been made to ensure that the information in this Disclosure Statement is accurate and complete, Enviro-Mark Solutions Limited (trading as Toitū Envirocare) does not, to the maximum extent permitted by law, give any warranty or guarantee relating to the accuracy or reliability of the information.

EMISSIONS REDUCTIONS

To reduce its emissions, McKechnie Aluminium Solutions has developed a GHG emissions management plan and reduction targets. Some of these plans include:

- Reduce gas consumption in Remelt by instituting better PLC during burner idle periods
- Reduce purchased gas in Remelt by improved insulation of furnace roof and walls

This is the fourth year of reporting under Toitū carbonreduce programme. An increase in emissions intensity of 0.29 $kgCO_2e/kg$ has occurred; based upon a 4 year rolling average.

EMISSIONS BOUNDARIES

Cradle to grave scope[2]. Figure 2 below shows the life cycle diagram used for describing the greenhouse gas emissions associated with the product, and what unit processes were included in the product carbon footprint.

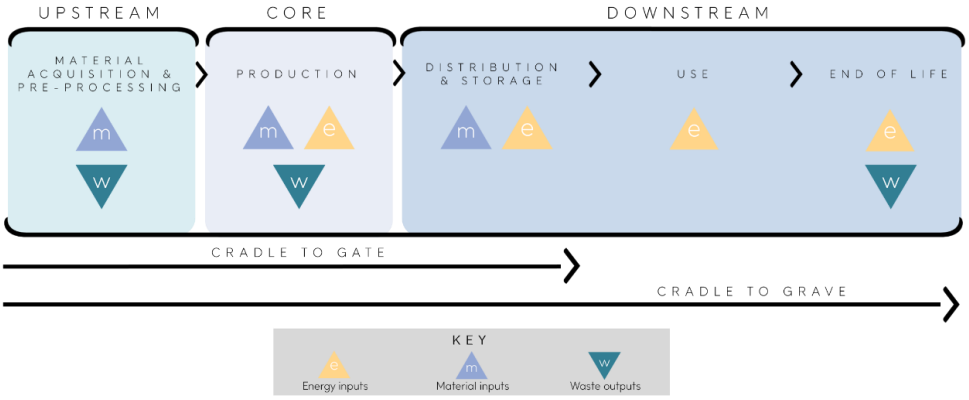

Figure 1: Lifecycle diagram used for describing the greenhouse gas emissions associated with the product

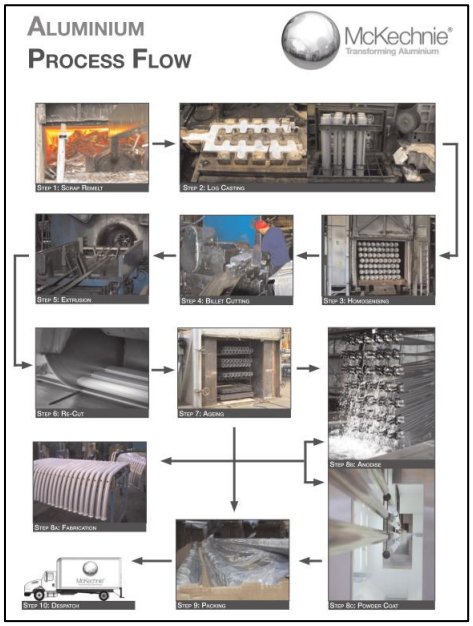

Figure 2: Aluminium process flow

[2] **Cradle to gate** means provision of inputs, including products, to another party that is not the end user (PAS 2050 S3.5). Cradle to grave means provision of inputs, including products, to the end user (PAS 2050 S3.6).

The following emissions sources were excluded from the inventory for this measurement period:

GHG emissions source	Reason for exclusion
Filter media use	Baghouse filters were last replaced 15 years ago. We are assuming that this is insignificant.
Salt cake	No salt cake is produced

CERTIFICATE DETAILS

Certification status – Toitū carbonreduce certified "product".

Certificate number – 2019096J, Year 2 of 2 year certificate period

Valid until – 6 December 2021

Measurement period – 01/07/2018 to 30/06/2019

Base year – 01/07/2015 to 30/06/2016

Verified by – AECOM New Zealand Limited

Materiality – Excluded emissions do not exceed 5% of the total footprint for the product boundary stated.

Level of assurance – No assurance is provided as this was a surveillance check (year 2 of 2)

Data quality score – High