

Meridian Energy Limited

Meridian Energy Limited, in respect of its Meridian Electricity Facility, meets the requirements of carboNZero certification having measured its greenhouse gas emissions in compliance with ISO 14064-1, committed to managing and reducing its emissions and neutralised its remaining unavoidable emissions in respect of all the electricity supplied to customers of the Meridian Electricity Facility and the parts of the organisation undertaking the renewable generation, corporate and retail activities related to this product.



Introduction¹ – Meridian is New Zealand’s largest electricity generator, supplying electricity to the Bluff Aluminium Smelter, and over 180,000 residential, business and rural customers. The Meridian Energy Group of companies is a state owned enterprise and is made up of: Meridian Energy Limited (the “Parent”); and subsidiaries (together the “Group”); and the Group’s interest in associates and joint ventures.

Meridian undertakes a variety of energy related activities. Its primary activity is the renewable generation and retail of electricity – this activity is undertaken within the boundaries of the Meridian Electricity Facility.

Boundary – Figure 1 (next page) shows the division of Meridian’s organisational structure for greenhouse gas reporting purposes. The dark blue ‘double bubble’ shows the boundary used for the GHG emissions inventory of the Meridian Electricity Facility and represents the parts of the company covered by this carboNZero certification. The other bubbles represent facilities (subsidiary companies and non-electricity business units) separate from the Meridian Electricity Facility and not covered by this certification.

Note that non-trading entities are not shown in this diagram. These do not have any GHG emissions associated with them.

Figure 2 (next page) shows the value chain boundary for “the Meridian electricity product” supplied to the customers by the parts of the organisation which constitute the Meridian Electricity Facility. The dotted line shows which processes to which emissions are attributed and included in the emissions inventory.

Construction emissions derive from: combustion of fuel on site, emissions embodied in major construction materials, international shipping and transport of major components to site.

Generation operational emissions derive from: combustion of fuel used to generate electricity, and used in boats and in backup generators; electricity consumed in power stations; fugitive SF₆ emissions; combustion of fuel by customers to provide load

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. While every effort has been made to ensure that the information in this Disclosure Statement is accurate and complete, Landcare Research does not, to the maximum extent permitted by law, give any warranty or guarantee relating to the accuracy or reliability of the information.

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reducing generation; emissions embodied in maintenance materials; combustion of fuel by contractors undertaking maintenance activities.

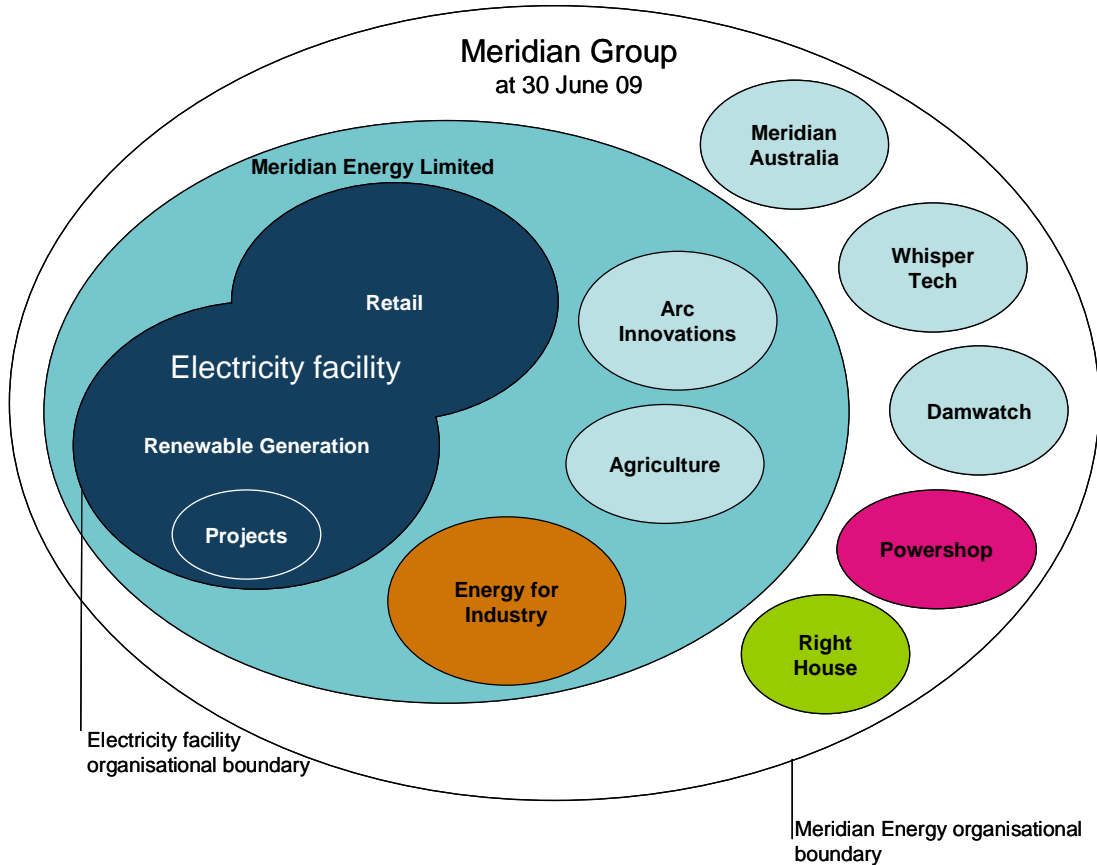


Figure 1: Organisational boundary for Meridian Electricity Facility within the Meridian Group.

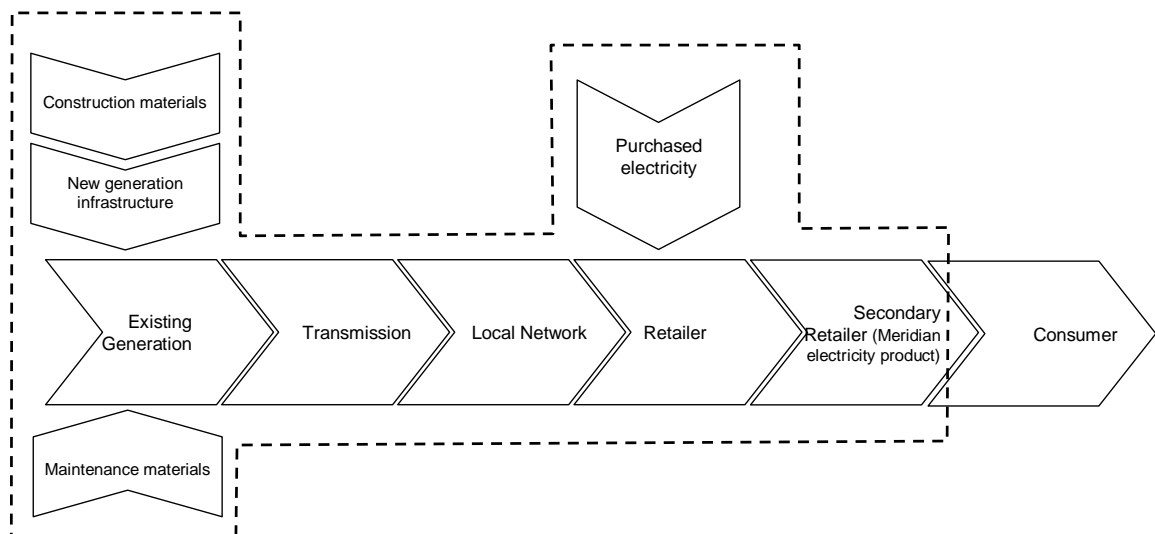


Figure 2: Value chain for the “Meridian electricity product”.

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Retail emissions include emissions embodied in purchased electricity calculated on a net annual basis. Specifically, Meridian from time to time purchases electricity from the grid to supply to its retail customers in excess of the electricity supplied by Meridian to the grid. For the purposes of GHG reporting, the difference between electricity generated by Meridian and the electricity supplied to its retail customers is calculated on an annual basis at financial year end.

Financial instruments such as contracts for difference do not involve the physical supply of electricity. Agency relationships such as that between Meridian and its grid-connected customers with Market Services Agreements are retail activities within the boundaries of the Meridian Electricity Facility but the electricity consumed by these customers is not sold by Meridian under these arrangements is not reported as a source of emissions.

Retail emissions also include emissions from combustion of fuel by contractors for meter reading and field service activities. The calculation of emissions associated with purchased electricity includes an allowance for transmission losses on the national grid and is based on the volume of electricity purchased at the entry point for local network distribution rather than at the customers' meter thereby taking into account losses due to transmission and distribution.

Supporting corporate emissions derive from: electricity consumed in offices; combustion of fuel in vehicles, business travel including air travel, rental cars and taxis, line losses from electricity consumed in offices; and waste.

Consolidation approach – Equity share

Base year – 1 July 2007 to 30 June 2008

Measurement period – 1 July 2008 to 30 June 2009

GHG emissions source inclusions – Figure 3 (next page) shows the sources of operational and the electricity product-related GHG emissions reported in the GHG inventory for the Meridian Electricity facility. Total emissions for the Electricity Facility for this period were 14,927 tonnes carbon dioxide equivalents (CO₂e) comprising 1,080 tonnes CO₂e Scope 1, 2,262 tonnes CO₂e Scope 2 and 11,585 tonnes CO₂e Scope 3 emissions. Scope 3 emissions comprised 5,640 tonnes CO₂e operational emissions and 9,287 tonnes CO₂e one-time non-operational emissions.

GHG emissions source exclusions – The emission sources below have been identified and excluded from the GHG inventory. These emission sources are considered: not material to stakeholders; and not material in the context of the inventory; and quantification is not technically feasible or cost effective at the present time.

- Fugitive emissions (HFCs) from air conditioning and refrigeration for some sites
- Electricity consumed at Manapouri is netted off before the electricity is exported to the grid
- Emissions embodied in minor construction and maintenance materials and the emissions from freight to deliver these materials to site

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- Emissions from combustion of fuel used by contractors undertaking meter reading
- Emissions from fuel used by couriers

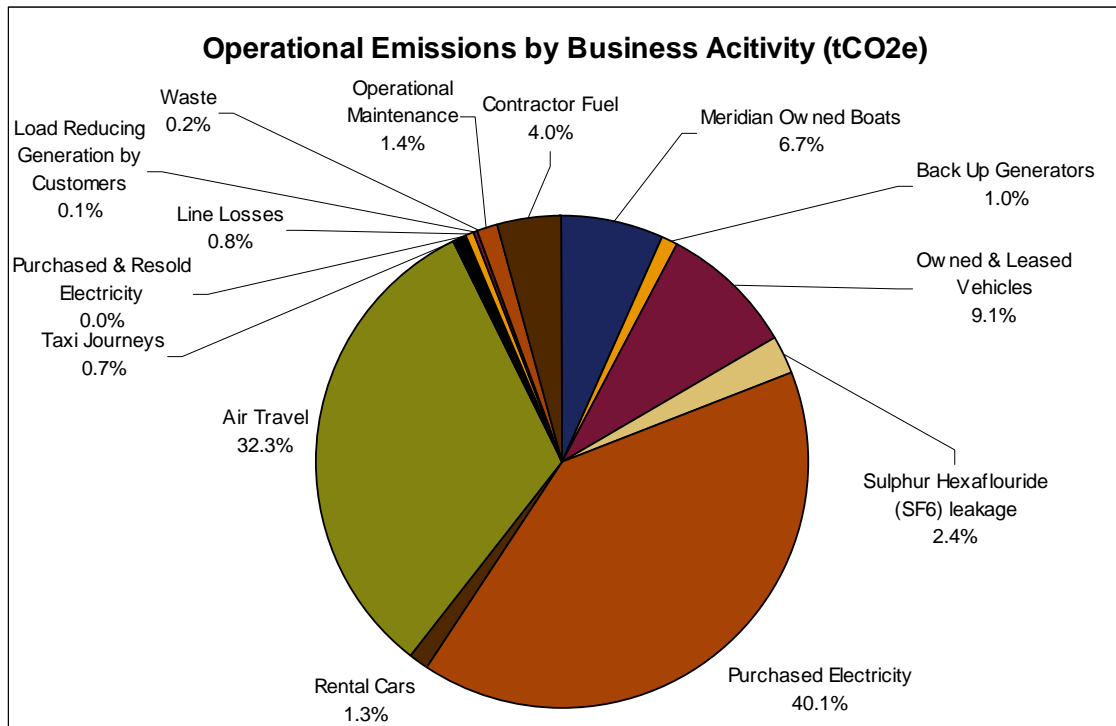


Figure 3: Greenhouse gas emissions profile for Meridian Electricity Facility and the “Meridian electricity product”

GHG emissions reduction commitments – Meridian has developed a GHG emissions reduction plan. Meridian aims to reduce the operations intensity of operations by at least 3% on average over a five year period. Some targets, compared to our base year, are to:

- Achieve a 5% reduction in emissions intensity from air travel (in tCO₂e/GWh sold)
- Limit to 6% increase in emissions intensity from electricity used in offices (in tCO₂e/GWh sold)
- Limit to 36% the increase in emissions intensity from Meridian vehicles (in tCO₂e/GWh sold)
- Achieve a 19% reduction in emissions intensity from rental cars (in tCO₂e per GWh sold)
- Achieve a 53% reduction in emissions intensity from waste to landfill (in tCO₂e per GWh sold)

GHG emissions reduction report against last year’s plan – In 2008/09 Meridian achieved a 4% reduction in operational emissions when compared to its 2007/08 base year. Some of the recorded reduction in emissions is attributable to the application this year of a lower electricity emission factor than in 2007/08. Other

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significant influences of the Electricity facility emissions volume include application of higher emission factors for distances travelled in petrol and diesel vehicles, and by air, and expenditure on taxis. We have also included a new emissions source not reported in 2007/08, specifically fuel used by contractors undertaking field services. Normalising out changes in emission factors and emission sources since the base year, the operational emissions attributable to the Meridian Electricity facility have reduced by just over 2% in the last year.

One time emissions have reduced significantly this year by comparison with 2007/08. Volumes of one-time emissions depend on individual major refurbishment and generation development projects and can vary widely.

Offset – 14,927 tonnes CO₂e. 2007 Gold Standard VERs² from Meridian’s White Hill wind farm. Serial numbers GS1-1-NZ-340-12-2007-11-307 to 15233 have been retired on the Gold Standard Registry.

Verified by – Deloitte.

Threshold of materiality – Excluded emissions do not exceed 5% of the total footprint for organisation and product boundaries stated.

Level of assurance – Reasonable assurance.

Certification status – carboNZero certified “product” in respect of all the electricity supplied to customers of the Meridian Electricity Facility and carboNZero certified “partial organisation” for the parts of the organisation undertaking the renewable generation, corporate and retail activities related to this product.

Certificate number – 2009057J

Valid until – 30 September 2010

² The Gold Standard VERs were issued for emission reductions achieved by Project White Hill in 2007.