

Summary of carboNZero certification: Meridian Energy–Meridian Energy Facility



Introduction¹ – Meridian Energy Ltd is a State Owned Enterprise and New Zealand’s largest renewable electricity generator. Currently Meridian operates nine hydro stations in the South Island, the Te Apiti wind farm in the Manawatu, the White Hill Wind Farm in Southland which was commissioned in 2007, and a wind turbine in Wellington. It is currently constructing the West Wind wind farm in Wellington. Meridian supplies electricity to around 182,000 residential and business customers throughout New Zealand.

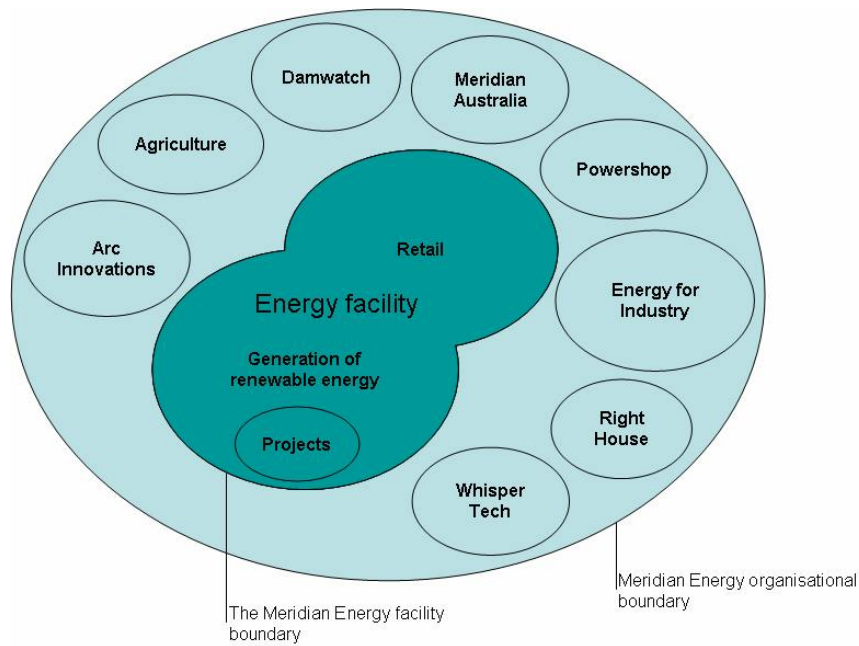
In 2006 Meridian set itself a goal of progressively becoming carbon neutral. Meridian began the journey toward carbon neutrality by ring-fencing the “energy” facility responsible for Meridian’s core activities, generating and retailing electricity from renewable sources. Meridian first achieved carboNZero^{Cert™} certification for this facility in February 2007. Meridian is committed to progressing other ‘facilities’ outside of its core business towards carbon neutrality. Meridian subsidiary company Right House Ltd achieved carboNZero certification in September 2008 and Meridian business unit Energy for Industry was awarded CEMARS[™] certification at the same time.

Boundary – The figure below illustrates the break-down of the Meridian Energy Group into a number of facilities for greenhouse gas (GHG) emissions accounting. The dark blue ‘double bubble’ shows the boundary used for the GHG emissions inventory of the Meridian “energy” facility and represents the parts of the company covered by this carboNZero certification. The green circles represent separate facilities (subsidiary companies and non-electricity business units) not included in the Meridian Energy Facility inventory and not covered by this certification.

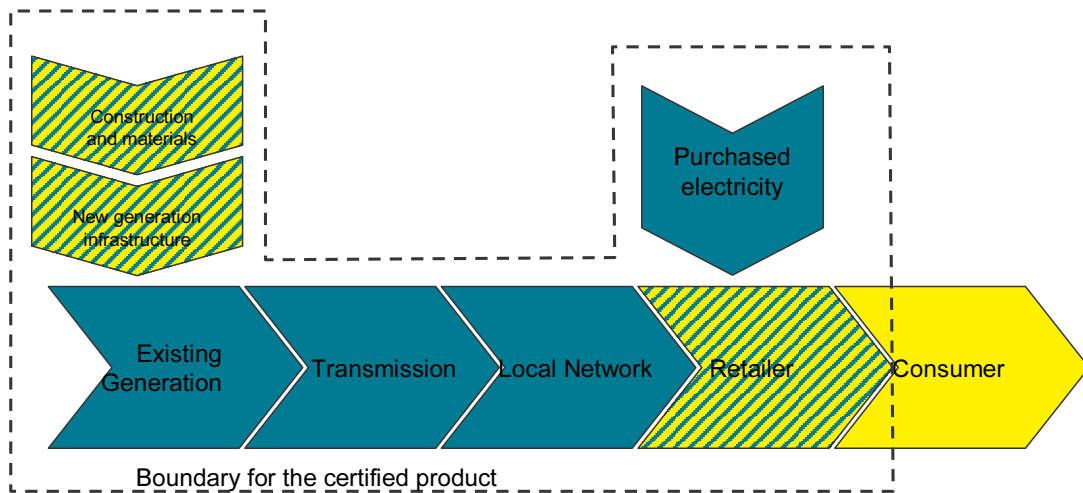
Note that non-trading entities are not shown in this diagram. These do not have any GHG emissions associated with them.

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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The GHG footprint of Meridian’s certified electricity product includes construction, generation, transmission and distribution, and retail emissions as shown in the diagram below. Fully measured life cycle stages are shown in blue below. Life cycle stages covered except for identified emissions exclusions are shown with a striped background. Emissions caused by the consumer’s use of electricity, shown in yellow, are outside the product boundary.



Consolidation approach – Equity share

GHG emissions source inclusions – The Meridian Energy Facility Inventory reports use of marine diesel, diesel, petrol and sulphur hexafluoride as sources of Scope 1 emissions, purchased electricity as a source of Scope 2 (emissions sources and Scope 3 emissions from rental cars, air travel, taxi journeys, line losses, load reducing generation by customers, waste, embodied emissions in operational

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construction materials, and contractor use of fuel. One time Scope 3 emissions caused by contractor activity and emissions embodied in materials used and transported for use in: construction of the Antarctic wind project; the West Wind wind farm; and major refurbishment projects are also reported.

GHG emissions source exclusions – Except for major IT and call centre contracts embedded within Meridian’s operations, emissions created by contractors’ (such as off site consultancy arrangements) are generally excluded from the energy facility. As appropriate, Meridian works with suppliers to ensure that these emissions are managed and, where possible, minimised. Emissions generated by contracted meter readers travelling to rural locations to read meters have been excluded from this inventory because insufficient data was available to accurately quantify the emissions caused by this activity.

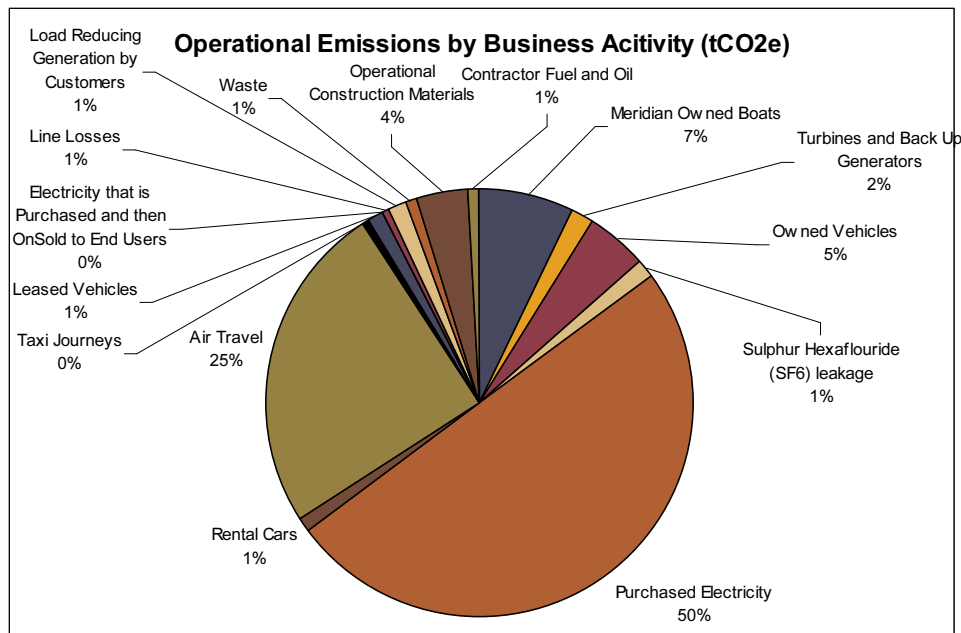
Fugitive hydrofluorocarbon (HFC) emissions from use of air conditioning and refrigerants have been excluded as it is not feasible or cost effective to estimate these at this time.

Scope 3 emissions embodied in materials used in minor operational maintenance activities and associated fuel emissions have been excluded as have scope 3 emissions embodied in minor components of construction projects as it is not cost effective or feasible to estimate them at present.

Approach to electricity emissions – From time to time Meridian 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 the electricity generated by Meridian and the electricity supplied to its retail customers is calculated on an annual basis (“annual netting off”). If, on an annual basis, the volume of electricity purchased exceeds the volume supplied, Meridian reports the net difference as a source of Scope 3 emissions.

Financial instruments such as contracts for difference, and agency relationships such as Meridian’s grid-connected customers with Market Services Agreements are retail activities within the scope of the inventory for the energy facility but the electricity consumed by customers under these arrangements is not sold by Meridian and is not covered by the carboNZero certification.

GHG emissions profile – The diagrams below shows the operational GHG emissions for the Meridian Energy Facility by business activity. The Meridian Energy Facility’s total emissions for this period were 38,284 tonnes carbon dioxide equivalent (CO₂e) comprising 5,848 tonnes CO₂e operational emissions and 32,436 tonnes CO₂e one-time emissions.



GHG emissions reduction commitments – Meridian has developed a GHG emissions reduction plan in respect of the Meridian Energy Facility. The overall KPI is to reduce the overall emissions intensity of operations measured by total emissions relative to volume of electricity sold to customers (tCO₂e/GWh sold). Specific, measurable, achievable, relevant, and time bound (SMART) targets have been developed for the following emission sources:

- marine diesel
- waste sent to landfill
- diesel used in back up generators
- fuel used in vehicles
- electricity used in offices
- business travel including air travel, rental cars and taxi use.

Some projects in this plan include:

- Developing a company travel management plan
- Commissioning a new more efficient boat for transporting staff to the Manapouri power station
- Internal communications around electricity and resource use minimisation.

GHG emissions reduction report against last year's plan – Meridian's 2007/08 Emission Management Plan focussed on initiatives to enable Meridian to better understand the business rationale for its emissions. The analysis undertaken in accordance with this plan has enabled Meridian to set SMART targets for a wide range of emission sources in its 08/09 Management Plan. In the 2007/8 period emission reductions were achieved for diesel used in boats and generators and electricity used in the Wellington office. There was a small reduction in distance travelled by air but a 38% increase in emissions due to a change in emission factor. There was a reduction in emissions from electricity consumption (due to a lower emission factor) although actual electricity consumption increased. Overall there has been an 8% growth in

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reported operational emissions for the Meridian Energy facility since 2006/07 due to the inclusion of emissions which were not recorded in 2006/07.

Offset – 38,113 tonnes CO₂e VERs² generated by Trustpower's Tararua III PRE³ windpower project and retired on Regi. 171 tonnes CO₂e operational emissions from the Te Apiti and White Hill wind farms reported and offset outside of the carboNZero certification process and recorded in the Emissions Inventory Summary as "prior offsets".

Verified by – Deloitte

Level of assurance – This GHG emissions inventory has been verified to a reasonable level of assurance.

Threshold of materiality – When aggregated, emissions source exclusions do not exceed 5% of the total GHG emissions inventory.

Base year – 01/07/2005 to 30/6/2006

Measurement period – 01/07/2007 to 30/6/2008

Certification status – carboNZero certified product and "partial organisation" covering Meridian Energy Facility's electricity product and renewable generation, corporate and retail activities related to the electricity product.

Certificate number – 2008055

Certification valid until – 30 September 2009

² VERs are created by eligible projects for emissions reductions achieved up to the end of 2007.

³ PRE - Projects to Reduce Emissions is a New Zealand government scheme for projects that are eligible under the Joint Implementation initiative of the Kyoto Protocol – see www.mfe.govt.nz