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Mokihinui Hydro Project



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The Mokihinui Hydro Project, which received resource consent in April 2010, will enhance the security of electricity supply to the West Coast and upper South Island. It will generate between 370 and 420GWh of renewable electricity a year, enough to meet the needs of the equivalent of more than 50,000 average households. This brochure provides an overview of why the project is important, key benefits and how Meridian plans to manage and mitigate effects.

The need for new electricity generation

Electricity is essential to the well-being of individuals as well as to the local, regional and national economy. Over the coming years, New Zealand's electricity consumption is expected to increase, which means that without new generation capacity demand will outstrip supply. While taking steps to become more energy efficient is important, additional generation will also be needed.

Already today there is greater demand in some parts of the country than there is generation capacity. In the upper South Island, which includes the West Coast, peak demand at 1,000MW far exceeds the existing generation capacity north of the Waitaki River at less than 150MW.

For the West Coast this means that its electricity supply needs are met by importing electricity via one of the longest transmission routes in the country, with significant electricity losses along that route. As a result West Coast homes, farms and businesses face power interruptions and the highest retail power prices in the country.

The Mokihinui Hydro Project would make a real difference to electricity supply on the West Coast and the upper South Island. As a renewable energy project, it would also contribute to meeting the Government's target for 90 percent of electricity generation to be from renewable sources by 2025.

While other hydro projects are proposed for the West Coast, these are on a smaller scale, including TrustPower's 46MW Arnold River scheme and HDL's 25MW Stockton scheme, which combined would not meet the West Coast's demand for electricity.

Why the Mokihinui River

Meridian is committed to only developing new generation capacity that uses renewable resources. While the West Coast does not have strong potential for wind energy and other renewable options such as solar power are not yet readily available, it has consistently high rainfall levels, making hydro the best option for new renewable electricity generation. New hydro generation offers the scale and flexibility to make a significant difference to electricity supply, from a renewable energy source.

Over 80% of land in the Buller District is administered by the Department of Conservation. Almost any hydro project will therefore involve the Department of Conservation. The identification of the Mokihinui River for a proposed hydro project on the West Coast was made after an assessment of a wide range of alternative sites throughout the region. Not all rivers have the ability to support a moderate scale hydro-electricity generation, or are accessible via the existing electricity transmission network. While most rivers are protected – as they are located within a national park, ecological reserve or scenic reserve, or have Water Conservation Orders such as the Buller and Grey Rivers – the Mokihinui River is not.

Project description

The Mokihinui River mouth is located in the Buller District, approximately 40km north of Westport. It has a catchment area that includes the Glasgow, Matiri, Lyell, Allen and Radiant ranges. From the junction of the north and south branches at Mokihinui Forks, the river runs 25km westward through the naturally formed Lake Perrine, the steep sided Mokihinui Gorge





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and a short lowland valley near Seddonville before reaching the Tasman Sea at Mokihinui.

Meridian plans to construct an 85m high dam, power station and substation in the Mokihinui Gorge, about 3km upstream of Seddonville. The development will create a 340 hectare “ribbon lake” extending 14 kilometres eastwards, approximately 500m past where Specimen Creek joins the river. A 28km transmission line will run south to a substation at Cedar Creek in the upper Waimangaroa Valley.



Top: The Mokihinui Gorge from Seddonville flats, the dam would just be visible at the entrance to the gorge.

Bottom: View from above the dam towards Seddonville.

Construction

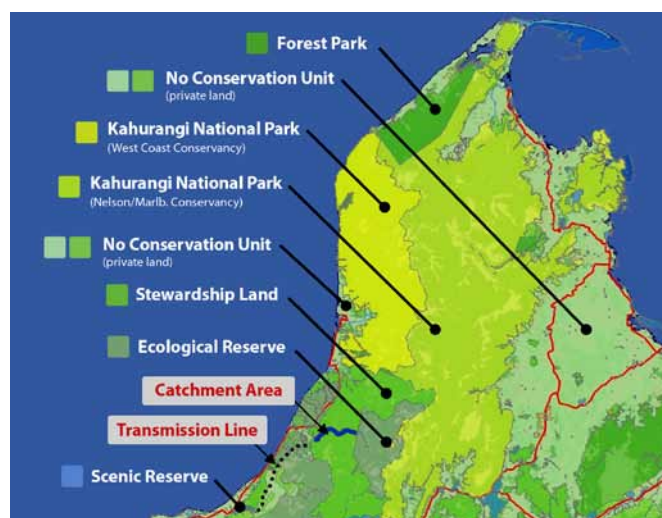
Construction activities are expected to take three years with the peak of construction work taking around 18 months. Some aspects of the work need to be done in a continuous 24 hour working day, seven days a week programme to meet construction requirements, and will shorten the duration of construction related effects.

The main construction activities over the three year period would include:

- Creating access tracks and widening existing roads
- Clearing vegetation
- Bypass channel works
- Construction of the dam
- Power station, switchyard and transmission line construction
- Site rehabilitation

A comprehensive Construction Environmental Management plan would be put in place for the project. Key initiatives to manage and mitigate effects would include:

- Limiting noisy activities to certain times of day – through good noise control practices noise is expected to easily comply with daytime and night time noise limits



- Limiting traffic movements to the hours of 6am and 10pm, making improvements to local roads, and sourcing aggregate on site to reduce the need to bring this in by truck
- Setting up temporary waste water treatment plants
- Using single poles for the transmission line, installed using helicopters to reduce the need for vegetation removal.
- Those which live in the estuary such as inanga and giant kokopu. The project will have no effect on these whitebait species.
- Those which migrate upstream such as various bully species, shortfin eels and torrentfish. The project might have a minor effect on these species.
- Those which migrate well upstream such as koaro, banded kokopu, shortjawed kokopu and longfinned eels. Moving upstream easily is a significant issue for these species.

Ecology

Native fish

With its catchment of 75,000 hectares and a high rainfall, the Mokihinui River has large and regular changes in river flows. Fish and other organisms are accustomed to these changes, which typically range between 16 to 1800 cumecs over a year. Natural floods and freshes will still occur downriver of the project as the project operating range will be 16 cumecs to 145 cumecs. Any flows greater than 145 cumecs will discharge over a spillway. The proposed minimum flow of 16 cumecs will maintain a healthy river for the diverse fish community.

All 12 species of native fish present in the river are migratory and are typical of West Coast river fish. There are three main types:

A ‘trap and transfer’ system is proposed to help juvenile migrant fish and eels move upstream of the project. This is a proven method that has been successfully used in many other hydro projects in New Zealand.

The project is likely to have minor effects on native fish populations downstream of the project, with little or no effect on the whitebait fishery.

Native vegetation and wildlife

The area of conservation stewardship land affected by the project (approx 300ha) is small relative to adjacent protected reserve and park areas e.g. the Mokihinui Forks ecological reserve

Meridian has selected an operating range of 3m to maintain lake level changes similar to that of a natural lake.



(60,000ha) and the Kahurangi National Park (450,000ha). Within this regional context the effects of the Mokihinui Hydro Project are considered to be minor.

The nearby ecological reserve and national park areas provide high value habitats for native wildlife near the Mokihinui Gorge area, supporting birdlife such as blue duck, great spotted kiwi and the New Zealand falcon, along with native snails and bats.

In addition, key measures to protect native habitat include:

- Introducing a 776ha predator control area (with a 3,500ha predator control buffer) in an adjacent ecologically significant area to provide enhanced habitat for native wildlife, including native snails, whio (blue duck) and other native birds.
- Timing catchment clearance and lake filling to avoid the breeding season of the blue ducks if they have not moved to suitable habitat in adjacent areas.
- Extensive replanting and weed control at the dam site and along the transmission route.

The introduction of a predator control programme with the

Mokihinui Hydro Project will benefit the overall ecology of the catchment area. The reduction in predators which prey on blue duck nests and snails will benefit both populations, which are known to be in decline due to predation. Reduction of possum browsing on forest and plant species will also benefit vegetation and other bird species in the area.



Recreation

The main recreational uses of the river below the Mokihinui Forks are whitebaiting and angling below the proposed project site. These will not be affected by the project. There is also some white water kayaking, rafting, mountain biking, hunting and tramping the area. Currently, activities above the proposed project site are made difficult by the poor quality

of the access track. Helicopter access is required for kayaking, rafting and is also often used for angling above the gorge area.

Although the Mokihinui Hydro Project would remove the ability to kayak and raft on the affected part of the river, a range of alternative recreational opportunities would be created by the lake and an upgraded and extended walking track around the lake. This includes flat water 'sea-kayaking' and canoeing, lake fishing, tramping and mountain biking. The Mokihinui Gorge track would link with the Old Ghost Road track connecting through to the Lyell. Trout fishing in the nationally significant Mokihinui North Branch will not be affected by the project.

Archaeology

There are a number of archaeological sites within the Mokihinui Gorge, including two memorial crosses, remains of an iron bridge, parts of the old pack track, some mining activity locations and evidence of the small mining settlement of Seatonville. These sites are difficult to access and have been impacted by mining, logging operations and flooding. As part of the Mokihinui Hydro Project some sites would be relocated along the proposed new walking track, which would follow the historical track in places, highlighting special sites such as the remains of Seatonville.





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Process

The resource consent process

The Mokihinui Hydro Project received resource consent in April 2010 in a majority decision of Commissioners appointed by the West Coast Regional Council and Buller District Council, following extensive stakeholder engagement and public consultation. It has since been appealed to the Environment Court, which is the forum for assessing the overall appropriateness of the project. Ultimately, Meridian is required to demonstrate that the Mokihinui Hydro Project represents the sustainable management of natural resources in order for it to proceed.

We are continuing to carry out field work for the project as part of the Environment Court process. An exchange of evidence between parties to the appeal will occur in the latter half of 2011, with the hearing scheduled to commence in April 2012.

Conservation Act process

Meridian is also required to work through a separate Conservation Act process because the project will have an impact on public conservation land. Meridian will lodge a new application with the Department of Conservation for consideration and final approval by the Minister of Conservation, once the Environment Court process is complete.

WHERE TO GET MORE INFORMATION

Full copies of the resource consent materials and technical reports are available on Meridian's website at www.meridianenergy.co.nz/OurProjects/Mokihinuihydroproposal/ or on CDs by contacting Meridian by post, email or phone. They are also available for viewing at the Westport Library.

SEND US A LETTER

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History of the Mokihinui Gorge

According to one reference, the name Mokihinui means 'big reed raft'. This refers to an occasion when a Maori raiding party making its way down the coast constructed a large raft to take all its warriors across the Mokihinui River in one trip, to avoid leaving anyone behind and vulnerable to attack from Ngai Tahu Maori. The raft was apparently used for many years.

The Mokihinui area was the site of two main gold rushes. Gold was first prospected along the beach around the mouth of the Mokihinui River in 1866. A small township of several thousand miners grew about a mile up river from the mouth. In 1873, the river became a focus for gold miners when quartz reef containing good quality gold was found about 20 miles up the river. This area was the main focus of gold mining for the next 60 years, mostly around Maori Creek and Jones Creek.

About Meridian

Meridian Energy is New Zealand's largest electricity generator, supplying electricity to over 180,000 residential, business and rural customers throughout the country. We generate electricity using renewable resources. The benefit of renewable energy over other forms – such as coal-fired electricity generation – is that it is cleaner and produces lower emissions. We own and operate the Manapouri power station and eight hydro stations on the Waitaki hydro scheme in the South Island. We also own and operate the Te Apiti wind farm near Palmerston North, the White Hill wind farm in Southland, and West Wind in Wellington. As New Zealand's demand for electricity continues to grow, we are committed to developing new generation from renewable resources.