TDV-FS-0011-02

ENERGY AND ENVIRONMENT

ENERGY

How much energy does the plant need to operate?

About 90MW a year is required to power the plant and pipeline when it is operating at 150GL a year.

This is 100 per cent offset by renewable energy.

AGL supplies Renewable Energy Certificates (RECs) from its overall portfolio of renewable energy generation assets now and in the future, including from a new wind farm near Glenthompson in Western Victoria.

How do the Renewable Energy Certificates work?

It would be impractical to power the plant directly with wind, solar, tidal or other green energy, so Renewable Energy Certificates (RECs) from generation commissioned after 1 July 2007 are purchased to offset the electricity that the plant and the transfer pipeline will use.

This means that the same amount of renewable energy will be injected into the electricity grid, as is taken by the plant and transfer pipeline during operations.

What measures have been put in place to increase the plant's energy efficiency?

AquaSure has introduced a number of innovative systems to minimise power consumption within the plant including world-leading energy recovery and re-use devices that significantly reduce power consumption in the reverse osmosis process.

The plant's compact, modular design reduces pipe work and eliminates inefficient energy use.

Energy is further saved by having constructed the plant at a low level relative to sea level.

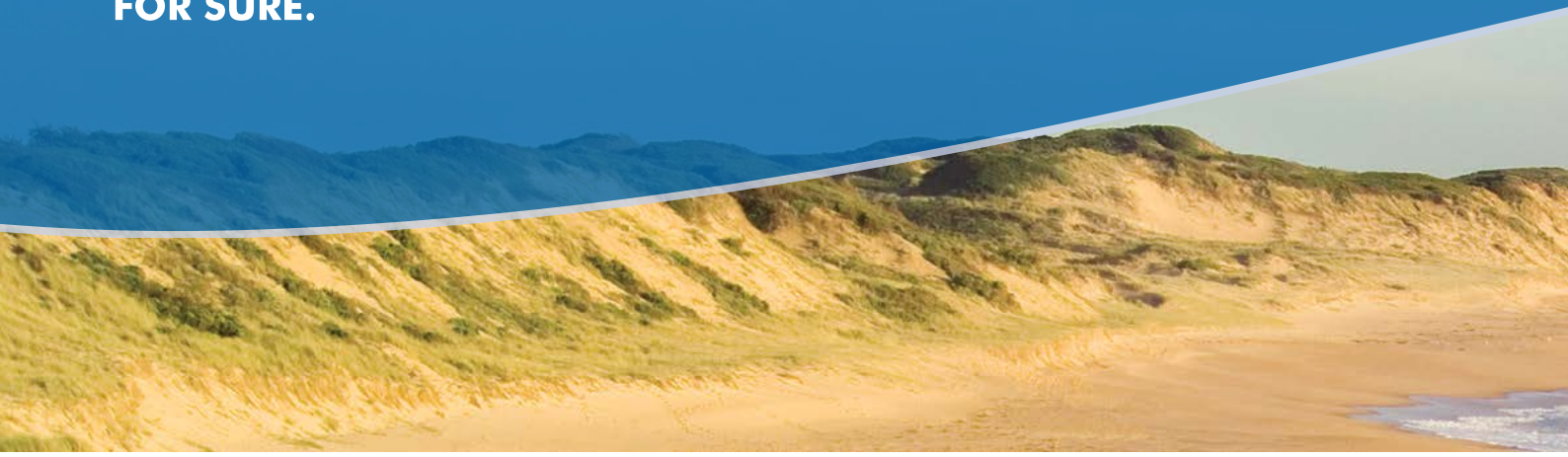
This reduces the amount of energy needed to lift seawater into the plant.

Other energy reducing features such as variable speed drives, high efficiency motors and low energy use membranes have also all been adopted.

Quick facts:

- A standard 4-star fridge would use about the same energy as the desalination plant per household per day.
- A standard hot water service uses almost eight times as much energy as the desalination plant per household per day.
- A recent CSIRO report found that if Victorian homes used 15 per cent less hot water each day, the energy savings would offset all the power used to produce and deliver our water for a year.

**WATER NOW
AND FOR THE FUTURE.
FOR SURE.**



ENVIRONMENT

What sort of environmental management practices are being put in place for the project?

Minimising the impact on the environment is a key aim of the Victorian Desalination Project and this has been built into the contract between AquaSure and the Government through the inclusion of 221 environmental performance requirements across 38 areas.

The key tool for environmental management is the Environmental Management Plan (EMP).

The EMP is a publicly available document and can be found on the AquaSure website www.aquasure.com.au.

It identifies key environmental issues, management strategies and controls and provides a reference point for direction on day-to-day works.

The project team is working closely with a range of government stakeholders – including Department of Environment and Primary Industries (DEPI), the Environment Protection Authority (EPA), the Department of Primary Industries (DPI), Melbourne Water, South Gippsland Water, South East Water, local councils and Catchment Management Authorities – to ensure that environmental management controls and the EMP is implemented in an effective manner.

Environmental issues with specific management plans include:

- Soil management
- Hazardous materials
- Air quality
- Noise and vibration
- Archaeology and cultural heritage
- Flora and fauna
- Water and wetlands
- Resource efficiency
- Water quality and erosion control
- Marine

What is being done to protect the marine environment?

Extensive marine surveys were carried out as part of the Environment Effects Statement.

A marine monitoring program for the design and construction phase was developed in accordance with the requirements set out by the Minister for Environment and Climate Change, including habitat and ecosystem mapping, flora and fauna surveys and water quality monitoring.

Marine monitoring work was undertaken to help confirm the location of the intake and outlet structures and provide further confirmation of the baseline marine conditions.

A marine monitoring program for the operation and management phase of the project also has been developed.

How is the project's environmental management performance be monitored?

The Environmental Management Plans are implemented by a specialist team of environmental personnel based at the desalination plant and along the pipeline and power alignment.

These teams ensure environmental impacts are minimised during day-to-day activities.

AquaSure has also appointed its own Environmental Management Representative, who serves as the environmental leader for the project and ensures that all work is carried out in compliance with the EMS and EMPs.

Supporting this role, for the first time on a major project in Victoria, is an Independent Reviewer and Environmental Auditor (IREA), who has been appointed to review the design, construction and environmental management of the project as it progresses, to seek to ensure safety is maintained and to assist in ensuring compliance with the numerous technical, environmental and social requirements of the contract documents.

The IREA will continue in its role as environmental auditor during the operation and maintenance phase of the project through to the end of the 30 year term of the contract.

Other organisations, such as the Victorian Environment Protection Authority (EPA), are involved in the approval and monitoring of environmental management.

What happens to the waste from the plant?

During the desalination process, screening and pre-treatment of sea water results in an amount of pre-treatment waste, including dissolved salts and organics, and small and large solids such as vegetation, sediment and micro-organisms.

Ferric sulfate – a common coagulant used in water treatment facilities around Australia and throughout the world – is used in the pre-treatment process to make particles in water flock together so that they can be filtered out.

The resulting waste is a non-toxic substance which, if it weren't for the salt content, could be reused as an additive for soil remediation.

However, because of its salt content, it currently has no reuse. It has been classified as general industrial waste in accordance with EPA guidelines and is disposed of at Taylors road Landfill in Dandenong South.

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Hooded Plover chicks head out for a stroll on Williamsons Beach.

Photo courtesy Kailash Willis and Ecology Partners Pty Ltd

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