Lake Margaret Power Scheme

The Lake Margaret Power Scheme is one of the oldest hydro power schemes in Australia. It was built and initially operated by the Mt Lyell Mining and Railway Company Ltd to supply power to its nearby mine and was commissioned 1914.

Operation of the upper power station ceased on 30 June 2006 and is scheduled to recommence in mid-2009.

Safety concerns were a major influence on the recommendation to cease operation due to the following risks:

- hazards of frequent repairs to leaks in the woodstave pipeline
- the risk of collapse of sections of the pipe due to water leaks from the pipes undermining structural supports
- the difficulty of access to the headworks via the hilltop access track
- the need for operators to get to the dam urgently to close the outlet valve in the event of a breach.

The safety issues made it impossible to continue to operate the power station in its current form.

Hydro Tasmania has worked closely with the Lake Margaret Community Liaison Group to develop proposals for redevelopment of Lake Margaret Power Station together with ideas for associated tourism opportunities and the future of the Lake Margaret village.

The Hydro Tasmania Board approved the $14.7M redevelopment of the upper power station in June 2008.

The following questions and answers relate to the future of the power scheme.

What is the future for the Lake Margaret power station?

Redevelopment of the upper station is now in progress.

Once recommissioned the power station upgrade will contribute around 50 gigawatt hours of energy into the power system which will be sufficient to power around 4000 Tasmanian homes. The redevelopment is based on replacement of the King Billy Pine woodstave pipeline in timber and a minimalist refurbishment of the existing power station with modifications to make it safe for unattended operation. The redevelopment will retain the original generating sets.

The redevelopment project includes:

- maintenance and upgrade of the dam
- replacement of woodstave pipeline in timber
- modification of the hilltop valve
- reinstatement of the walking track from the hilltop to the dam
- return of the haulageway to service
- replacement of a transformer
- construction of a visitor access gallery in the power station
- modifications to enable safe unattended operation of the power station and other associated activities

Lake Margaret Upper Station is scheduled to be returned to service in mid 2009. It should have an operational life of many decades, although it will continue to require significant upgrade and maintenance activities.

The village and other parts of the site may be suitable for tourism development which would be subject to an expression of interest process (see further discussion below).

Is Hydro Tasmania working with the community on future options for the site?

Yes. The Lake Margaret Community Liaison Group was established in October 2005. It comprises representatives of Hydro Tasmania, the West Coast Council and people with tourism and heritage interests from the West Coast community. The liaison group has met regularly since its establishment. Hydro Tasmania will continue to meet with the Liaison Group.

Is the wood stave pipeline the largest in Tasmania?

No. There are currently four woodstave pipelines in Tasmania. The other three woodstave pipes are larger in diameter and one is significantly longer.

	Diameter (metres)	Length (km)	Date
Lake Margaret	1.2	2.2	1938 (currently being replaced)
Clarence (Tungatinah)	1.6	6.6*	1953-5
Wayatinah (twin pipes)	both 4.1	1.3	1957
Tarraleah No. 2 Canal	1.9	0.8*	1959

* *length of woodstave used in a woodstave-steel pipeline*

Would it have been possible to insert a new pipeline inside the old woodstave pipe?

This approach to refurbishment of the pipeline was not seen as being a feasible option because the whole composite structure of the woodstave pipeline including foundations and structural supports were badly deteriorated.

What timber has been chosen for the new woodstave pipeline?

Alaskan Yellow Cedar has been selected as the timber for the new woodstave pipeline as recommended by the pipeline suppliers. The timber is grown in sustainably managed forests in Canada, and machined and processed in the USA. Alaskan Yellow Cedar has a class 1 durability index, which is considered to be the critical index for this application. Yellow Cedar has a reputation for being a bug resilient timber and is one of the world's most durable woods with exceptional longevity. Due to this attribute it is used for shingles, posts, poles, marine pilings, small boat hulls, oars and paddles, water and chemical tanks. Alaskan Yellow Cedar is suitable to use without chemical treatment.

The possibility of rebuilding the pipeline in King Billy pine was investigated. The cost and timing of available King Billy was an important consideration, as was the potential impact on other users of the timber. It was considered important to engage a supplier skilled in the manufacture and installation of woodstave pipelines. In order to obtain suitable warranties it was necessary to use a timber that suppliers had experience with and recommended, which is no longer the case with King Billy Pine. Also indications from budget pricing was that King Billy Pine, if it was possible to source in sufficient quantity and quality, would be significantly more expensive due to remoteness of harvest locations.

What will happen to the timber when the King Billy woodstave pipeline is removed?

Dismantling of the pipeline (with the exception of three preserved sections) is a necessary part of redevelopment of the site. It is hoped that the timber and steel from the hilltop pipeline can be recycled. The timber is likely to have

some value as craftwood, although it has been coated with creosote which may limit its uses. Expressions of interest for the timber will be called for at an appropriate time. A number of requests have been received for use in community based projects.

How did you choose the sections of woodstave pipeline which are proposed to be retained?

The three sections of pipeline were selected in locations which are most suitable for heritage interpretation purposes. One is at the top of the penstocks where it can be visited without needing to walk up to 2.2 km to the dam. Another section is sited where evidence of three pipelines can be easily viewed and described - the original pipeline from 1914, a retained section of the 1938 pipe and potentially a new pipe. The third section is close to the dam on raised supports and nearby sections of the stone walls constructed by Maltese labourers between 1911-14.

How has the pipe been maintained?

Maintenance activities on the woodstave pipeline have included the following:

- board replacement after blowouts
- replacement of steel hoops when hoop failure occurs
- patching and driving timber wedges into leaks
- stabilisation of foundations (rock walls)
- remedial work on steel support structures.

In the earlier stages of the life of the pipeline the steel hoops were periodically tightened. For approximately the last 20 years the condition of the corroded steel nuts and band threads have been such that tightening of the steel hoops has not been a suitable method of reducing leakage in the pipeline.

How are the heritage values on the site being protected and conserved?

A detailed Conservation Management Plan was completed in March 2006 by Paul Davies Pty Ltd, an independent heritage expert. This plan built on the Conservation Management Plan prepared by Godden Mackay in 1994. The 2006 Conservation Management Plan identifies the heritage values of Lake Margaret and how best to retain these values in light of the range of options available for the future.

Paul Davies has also prepared a detailed Heritage Impact Assessment of the work required to remove the woodstave pipeline, retain three sections of the pipeline and maintain the station for the three year shutdown period.

The Lake Margaret village has seven houses and one hall. Three houses have power connected and are in reasonable condition. Minor works have been done to prevent further deterioration of the other buildings.

Is the site listed by the Heritage Council?

On Friday 4 August 2006, the Tasmanian Heritage Council provisionally entered the Lake Margaret Power Scheme on the Tasmanian Heritage Register. It was listed on the Tasmanian Heritage Register on 28 February 2007.

What profit did the Power Station make before closure?

The Power Station made an annual profit of approximately four hundred thousand dollars. The decision to close the Station was made due to safety issues rather than the generation of electricity or profit.

Is there tourism potential for the site?

Hydro Tasmania has funded a report by tourism and recreation planner John Hepper, of Inspiring Place Pty Ltd. The report found that there are a number of issues and constraints confronting any future tourism development. However, to further advance ideas and opportunities, Hydro Tasmania intends to call for expressions of interest for tourism development at the site.

A copy of the study titled *Indicative Assessment of Tourism Potential for Lake Margaret, June 2006* can be found on the Hydro Tasmania website http://www.hydro.com.au/home/Energy/Cultural+Heritage/Conservation+Management+Plans.htm.

Is the Lake Margaret site open to the public?

Access to the Power Station and village area is generally not possible while construction works are in progress.

Where can I go for further information?

Copies of relevant studies can be found on the Hydro Tasmania website at http://www.hydro.com.au/home/Energy/Cultural+Heritage/Conservation+Management+Plans.htm

Any questions can be forwarded by email to webmaster@hydro.com.au