

## HYDRO ELECTRIC POWER

### A MAMMOTH PROJECT

BOGONG POWER STATION

The Kiewa Hydro Electric scheme was first conceived in 1911, when a private syndicate developed plans to harness the energy of the water in the Kiewa Valley to produce electricity. Even in these early days the idea of using the energy of falling water to drive turbines was not new.

The first hydro electric plant in Victoria was built in 1908 near Victoria Falls on the Victoria River at Cobungra. This required the damming of the river, the construction of a four kilometre raceline, a holding pen for the water and a 100m pipeline down the side of the hill to the power station on the banks of the Cobungra River. Power lines were then run 45 km overland to the Cassilis Gold Mine 25km south of Omeo – which, in its heyday, employed 200 people. This hydro scheme did not last long as the dam burst after about 12 months use, and was never repaired. Remnants of this scheme are still visible if you visit the Victoria Falls Historic Area on the Great Alpine Road at Cobungra.



***Caption:*** Mt Beauty Secondary College student Phoebe Thompson interviews Mike Mehic, the site engineer and multi linguist interpreter, and German speaking Joerg Wrede, the machine assembler for the company Herren Knecht which was responsible for refurbishing the tunnel boring machine (TBM) about the Bogong Power Development Project. Picture courtesy of Mt. Beauty Secondary College

The first hydro electric power station in Australia was constructed in 1896 at Duck Reach on the South Esk River, not far out of Launceston. The power station here has been preserved for posterity and attracts many visitors during the year.

Meanwhile, back to the Kiewa Scheme. In 1912 the syndicate formed the Victoria Hydro Electric Company and applied to the State Rivers and Water Supply Commission to develop this area for the generation of hydro-electric power. This application started much bureaucratic to-ing and fro-ing, some supportive, some not so supportive. A brochure entitled 'The Victorian Hydro Electric Company's Scheme for the Generation of Electricity by Water Power' was released in September 1917. Shortly thereafter, the Bright and District Progress Association requested the support of the Bright Shire Council for the scheme, and lobbied other municipalities.

World War 1 drew to a close and the Minister of Mines announced that 'a Board of Experts will be nominated to control all power schemes in Victoria,' including the proposed Kiewa Scheme. In 1918, the Victorian government passed the 'Electricity Commissioners Act' and appoints several commissioners – one of them being General Monash. General Monash had witnessed brown coal being burned to produce electricity in Germany after the war. Knowing we had vast reserves of brown coal in the Latrobe Valley, it was basically at his instigation that the government of the day developed the coal burning power stations we now have. Of course, no-one at the time was aware of greenhouse gases.

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But, there were still people in the State Electricity Commission keen to see power produced by harnessing the energy of water.

During the 30s, exploratory work was carried out on the high plains and engineers visited hydro schemes overseas. Finally, in 1938, 27 years after the initial plan, government approval was granted for the construction of the main road, Junction Dam (now Lake Guy), Clover Power Station, associated tunnels and pipelines. Further field investigations continued.

At the conclusion of World War 2, construction escalated to the point where in 1951, there were some 3500 workers and 500 staff working on the scheme. Mount Beauty township was being built and things looked promising.

During Prime Minister Bob Menzies 'credit squeeze' of 1951, the State government went to the Federal government for more funds to continue to build our scheme. We were told to 'make your scheme work as it is, and you can draw power from the Snowy Scheme, which we (the feds) are building'. From that point on, our scheme was 'downsized' from the scheme that was going to incorporate five power stations, to a scheme that finally saw three power stations producing 184 megawatts of power.

Since privatisation in the 90s, and with the growing need for green energy, the owners of Southern Hydro (the privatised hydro generation arm of the old SEC) has invested many dollars in upgrading the existing infrastructure, to the point where, from the same amount of water, the scheme is now producing 250 megawatts of power.

As of 25<sup>th</sup> August, 2006, the new proprietors, AGL Hydro took the decision to build a fourth power station, and the associated tunnels, in the Kiewa Hydro Scheme. This 230 million dollar project will see up to 200 staff working on the scheme and will be completed by December 2009. As well as producing another 140 megawatts of power from the same amount of water (all vital green energy), the scheme will realise many other benefits in the area.

Much of the 300,000 cubic metres of rock that will come out of the 6.5km Main Headrace Tunnel will be used to form and seal 37km of the Bogong High Plains Road from Falls Creek to Shannonvale on the Omeo Highway.

Another benefit is the opportunity for local students to learn. To have a project of these dimensions on your doorstep is a once in a lifetime opportunity. A three year project will tell the story of the Bogong Power Development is underway. Mount Beauty Secondary College students have been fleshing out film ideas and visiting the site to record stills and video with the support of professional film maker, Jim Oastler.

Students have covered stories coming from the current development of the Power Station Site and the Portal Site where the Tunnel Boring Machine will commence its 6.5km journey. Students have been learning about camera work, lighting and interview techniques along the way.

AGL Hydro Project Management Team member Doug Connors has met with staff members from the school to plan visiting speakers and site visits for students. Staff have traveled up to Bogong with AGL Hydro's Project Manager John Arnold and Doug to visit the work sites in preparation for student visits.

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The students are very fortunate to be given the opportunity to learn about the many aspects of this project. AGL Hydro's Julie Houghton works solidly each week to coordinate a wide range of meetings that the school students are involved in - whether taking video footage or class visits to the site.

Some of the issues students will have exposure to are: environmental considerations facing the project; the science behind the project and how power is generated using water. With renewable energy so topical at the moment students will also learn how the Bogong Power Development supports 'green' energy.

The many different people working on the project will allow students to see and speak with people in occupations ranging from Ecologist, Project Managers, Engineers, Surveyors, Drivers and Operators of large trucks and machinery - the list is huge.

To date students from Physics, Biology and Careers have all had the opportunity to check out the relevant topics associated with the project.

Ken Bell

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