

The Hydro-Electric Corporation's (trading as Hydro Tasmania) Public Profile

1 COMPANY PROFILE

The Hydro-Electric Corporation (trading as Hydro Tasmania) is Australia's largest producer of clean, renewable and greenhouse friendly electricity with systems generating a total of 10,000GWh per annum, in seven catchment areas, with the Bell Bay thermal power station as backup. With consulting expertise and over 80 years experience in hydro-power design, construction and operational experience, Hydro Tasmania has gained an international reputation for excellence in its field. Hydro Tasmania employs 667 people and its annual revenue is more than \$320 million.

2 TAKING UP THE CHALLENGE

With Hydro Tasmania's current system about equal to the demand for electricity in Tasmania, further dry periods and growth in the market will require running Bell Bay thermal station. This provides the setting for additional renewable development, replacing what would otherwise be greenhouse gas generating electricity.

Hydro Tasmania has a commitment to being a leader in environmental management, and participation in the Greenhouse Challenge program is a logical extension of this commitment that is consistent with Hydro Tasmania's position as a responsible corporate citizen. Hydro Tasmania is pleased to be able to present here its Cooperative Agreement as a detailed statement of its commitment the Greenhouse Challenge.

In response to the Greenhouse Challenge, Hydro Tasmania is committed to expansion of Tasmania's source of renewably generated electricity through development of the Woolnorth Wind Farm, King Island Wind Farm expansion, Butler's Gorge and Parangana mini-hydro schemes. Hydro Tasmania is also committed to improving its energy efficiency through systems efficiency upgrades, vehicle fleet management and internal energy efficiency programs. All of these measures will directly contribute to reducing greenhouse gas emissions.

Actions initiated in Hydro Tasmania's Cooperative Agreement in 1997 are still part of Hydro Tasmania's responsibilities, and were developed further in 2000. These actions include:

1. Pursuit of the Renewable Energy Strategy:
King Island wind farm continues to reduce CO₂-e emissions by 1,900t/annum.
2. Woolnorth Windfarm:
The EIS has been prepared and approval is pending.
3. Wind Power Feasibility Program:
Modelling of the resource continues.
4. Revision of the Hydro Tasmania's cloud seeding policy to maximise greenhouse benefits:
Cloud seeding continues.
5. Generation System Efficiencies:
A study and report identified Hydro Tasmania's opportunities for efficiency gains.
6. Mini-hydro investigations:
Butler's Gorge and Parangana mini-hydro projects are being implemented.
7. Hydro Tasmania Vehicle Fleet Management Study:
Previous studies and recommendations were reviewed, a business case prepared, and a program is to be implemented.
8. Internal Energy Efficiency Study:
Previous studies and recommendations were reviewed, a business case prepared, and a program is to be implemented.
9. SF₆ Management:
Hydro Tasmania continues to contribute to the AGO Working Group.

In preparing the Cooperative agreement, the personnel involved in key areas of emissions production and reduction were engaged to ascertain the current status of work and highlight areas where emissions and efficiency improvements could be found. As part of its GHC commitment, Hydro Tasmania earlier commissioned internal energy and vehicle fleet

emissions studies. These studies led to preparation of business cases to initiate action in 2001. Hydro Tasmania's large-scale actions committed to involved preparation of comprehensive prefeasibility studies, feasibility studies, and EIAs.

3 EMISSIONS

In 1990 Hydro Tasmania's emission levels were 560kt CO₂, while 1995 emissions dropped to 21kt, and 2000 levels dropped further to 17kt, due to decreased operation of Bell Bay. Hydro Tasmania's emissions per unit of output energy were 0.00174t/MWh in 2000, compared to national average emissions per unit energy generation of 1t/MWh, around 575 times larger.

4 ACTION PLANS

Hydro Tasmania is committed to developing wind energy and supports the Basslink project. Basslink will provide access for Hydro Tasmania renewable energy to the wider Australian market, resulting in anticipated GHG reduction. Hydro Tasmania's GHC action plans are listed below.

Woolnorth

Subject to development approval, this wind farm will begin operation with an initial 10.5 MW wind farm, due early 2002. Emissions savings during the period of this cooperative agreement will be around 23,700 t CO₂-e/annum. The full windfarm, with a generation potential of 130 MW, is expected to come on-line in stages and will see increased CO₂ savings.

King Island

An expansion of the existing wind capacity on the island from 0.75 MW to 2.45 MW, in a component of an integrated renewables project that includes mini-hydro. Attributable savings are approximately 2,760 t CO₂-e/annum. This project is expected to be operational around mid 2002.

Butler's Gorge Mini-hydro

Butler's Gorge is the site of a proposed mini-hydro development, due in 2003. The scheme will produce a nominal 2.5 MW, or 12 GWh/annum, saving around 7,710 t CO₂-e/annum.

Parangana Dam Mini-hydro

Parangana dam, part of the Mersey-Forth Power Development, is the site of another proposed mini-hydro development, due in early 2002. It has the potential to produce approximately 3.6GWh/annum, saving around 2,300 t CO₂-e/annum.

Systems efficiency program

An internal Hydro Tasmania report in 2000 identified and prioritised Hydro Tasmania's opportunities for gains in efficiency from existing assets. Asset improvement is ongoing, and during the 2001-2004 period Hydro Tasmania is committed to refurbishing the Serpentine Pump Station by the financial year ending 2002. Expected to produce an additional 7.7GWh/annum, this will save around 4,970 t CO₂-e/annum.

SF₆ replacement program

Hydro Tasmania is involved in, and contributing to, AGO SF₆ workshops. Hydro Tasmania is committed to continuing this process, and further, to activating an inventory of SF₆ during the 2001-2002 financial year.

Internal Energy Management Program

Hydro Tasmania is committed to carrying out a Head Office Energy Audit, Head Office Energy Efficiency Program, and Power Station Internal Energy Management Program for selected power stations, including the Strathgordon Visitor Centre.

Vehicle Fleet Management Program

Hydro Tasmania is committed to updating its existing database management facility to an effective vehicle fleet management software, and implementing a vehicle rating and choice incentive scheme for favouring "greenhouse preferred" vehicles.

Table 1: Summary of actions

Action	Greenhouse Abatement Action	Site	Target Saving Per annum (t CO ₂ -e)	Year to commence	Ultimate potential savings by end of 2004 financial year (kt CO ₂ -e)
1	Wind	Woolnorth Wind Farm	23,700	Early 2002	59.1
1.2		King Island Wind Farm Expansion	2,760	Mid 2002	5.52
2	Mini-hydro	Butler's Gorge	7,710	2003	11.6
2.2		Parangana	2,300	Early 2002	5.75
3	Systems Efficiency Program	Serpentine pump refurbished	4,970	June 2002	9.93
TOTAL					91.9 kt CO₂-e

Note: Renewable emissions savings estimates based on comparison to Bell Bay running on gas (GHC Factors and Methodologies, 2001)
 Note: rounding to 3 significant figures.

5 FORECAST EMISSIONS AND SAVINGS

For Hydro Tasmania, the Key Performance Indicator will be CO₂ equivalent produced per unit of energy generated, equal to approximately 0.0345t CO₂-e/MWh in 2004 (compared to 1.05 t CO₂-e/MWh for the NEM average for electricity generation). Figures 1 and 2 and table 2 summarise the emissions benefits expected to be achieved via Hydro Tasmania's actions as a result of our commitment to the Greenhouse Challenge.

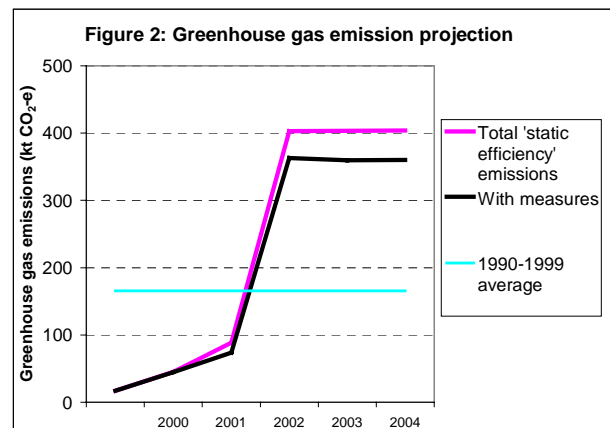
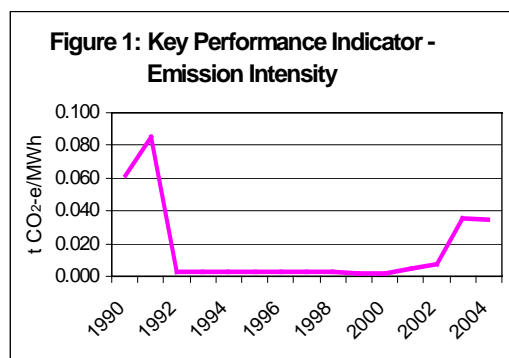


Table 2: Emissions benefits expected to be achieved

Without actions	t CO ₂ -e/annum	With actions	t CO ₂ -e/annum
Emissions for 2000	17,400	Emissions for 2000:	17,400
Emissions forecast for 2004. Increase is due to operation of Bell Bay on gas from mid-2003 until at least NEM entry	403,000	Emissions forecast for 2004: Increase is due to operation of Bell Bay on gas from mid-2003 until at least NEM entry.	362,000
Emissions savings in 2004	0	Emissions savings in 2004:	41,400
		As % of 2000 emissions:	238%
		2004 emissions intensity (tCO ₂ -e/MWh):	0.0345

6 FUTURE VISION

Hydro Tasmania's vision is to be Tasmania's world renowned energy business. A key aspect of this is utilising Basslink and broadening our renewables production and product range in order to meet our objective of providing at least 30% of the 9,500GWh p.a. of new renewable energy mandated for 2010 by the Federal Government.