




# PROJECT DATA

## Woolnorth Wind Farm

	<b>CLIENT</b>	Hydro Tasmania Renewables Development
	<b>PROJECT LOCATION</b>	Tasmania
	<b>DATE OF PROJECT</b>	1999 onwards
	<b>SERVICES PROVIDED</b>	<ul style="list-style-type: none"><li>• Site identification and liaison with land owner to secure site</li><li>• Feasibility study including wind monitoring and energy estimates</li><li>• Obtaining development approvals</li><li>• Detailed designs and specifications for:<ul style="list-style-type: none"><li>○ civil works (roads, foundations, control building); and</li><li>○ electrical works (cabling, protection, communications) components of the project.</li></ul></li><li>• Supervising and assisting with construction</li></ul>

The Woolnorth Wind Farm project is one of several planned staged developments to harness Tasmania's world-class wind energy resource.

The wind farm site is located on the historic grazing property of Woolnorth, on the far north-west tip of Tasmania and generates electricity from the cleanest air in the world. The nearby Cape Grim air monitoring station has recorded the air purity of the winds that blow in from the Southern Ocean as the cleanest ever measured on Earth.

### Design and construction

Wind Energy Solutions designed Stage 1 and Stage 2 of one of Australia's largest wind farms located at Woolnorth on the north-west coast of Tasmania. Stage 1 and stage 2 consist of 6 x 1.75MW turbines complete in 2001. The full development consists of 37 x 1.75MW turbines plus transmission line, with a total capacity of 65MW completed in 2004.

Wind Energy Solutions has completed all technical and economic feasibility analysis for the construction of another 74MW at Woolnorth.

Detailed design for the third phase will be complete by the end of 2005 with construction scheduled for 2006.



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## **Feasibility**

Wind Energy Solutions conducted a feasibility study for Woolnorth Wind Farm and Transmission Line connection. The services provided included the technical feasibility, environmental approvals, land acquisition and pre-tendering for major equipment components. The technical feasibility included wind resource modelling, wind farm site selection, wind turbine selection, geological assessment, transmission line and switchyard project design, preliminary cost estimates, economic and risk analysis. Contract and procurement services included calling for expressions of interest, pre-qualification of wind turbine suppliers plus construction packaging and supervision.

## **Approvals process**

Before a wind farm development project can proceed, appropriate approvals are sought from Local, State and Federal governments.

At Woolnorth, this involved meeting the stringent requirements of the recently proclaimed Commonwealth Environment Protection and Biodiversity Conservation Act, as well as relevant State and Local government legislation.

## **Environmental impact assessment**

Wind Energy Solutions carried out the environmental impact assessment and approvals process for the 139MW Woolnorth wind farm and the transmission line. Key issues included bird collision risk and management strategies, vegetation management, visual effects and transmission line siting and stakeholder issues. Innovative techniques were developed to meet the new Commonwealth Environment Protection and Biodiversity Conservation (EPBC) Act, triggered by the presence of threatened and migratory bird species.

Visual assessment was aided by Hydro Tasmania's sophisticated 3D modelling capability.

The transmission line route was determined by utilising leading edge GIS modelling to determine the least social and environmental impact corridors, which were further optimised through extensive liaison with landowners and other stakeholders.

## **On-going benefits for Tasmania**

Vestas, the world's leading wind turbine manufacturer, has constructed a plant to assemble the turbine nacelles and is manufacturing fibreglass components in North West Tasmania. (The nacelle is the unit containing the generating and control equipment that sits on top of the wind turbine tower.) These manufacturing opportunities are a major new source of employment for the state, with significant growth potential as future wind power developments proceed.

