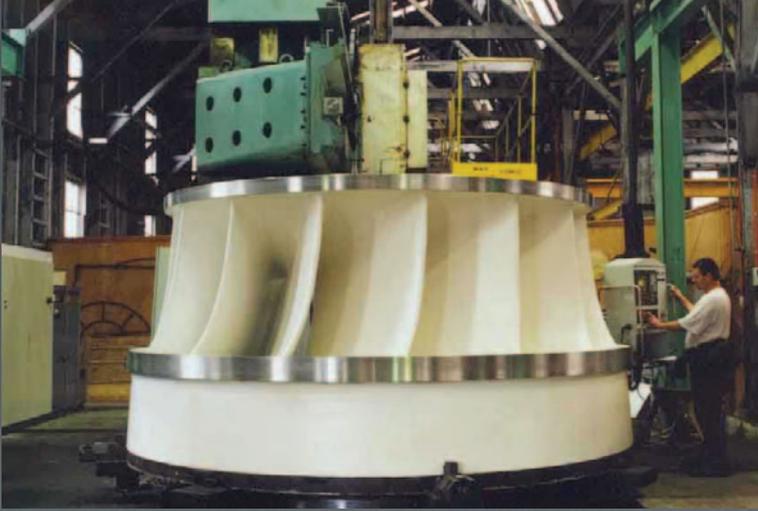


E N E R G Y / H Y D R O





Pioneering Partner in Energy Technologies

In a world increasingly dependent on the efficient harnessing of energy for daily life A&G Price Ltd is working with leading energy companies to develop and maintain the sophisticated technologies needed to help make that happen.

Whether the job entails rebuilding existing plant to exacting specifications or designing and manufacturing precision components for established and emerging technologies, A&G Price delivers world-class products backed by unrivalled customer support.

From the geothermal fields of New Zealand to the unforgiving hydro rivers of Papua New Guinea, no location is too hard, no job is too big or complex, for the 150-strong team at A&G Price. Drawing on expertise gained over almost 140 years of close involvement with industry, the company brings to every project the rare ability to add value through the use of improved materials and optimised designs and processes.

Among the refurbishment projects undertaken by A&G Price is the



Accurate machining of a 'Kaplan' turbine blade

progressive overhaul of eight hydro turbines for the Roxburgh power station in the Central Otago district of New Zealand.

The comprehensive refurbishment programme involves casting, machining and fitting of exotic materials to a high standard. The repair of the 28-tonne turbine runners, required the manufacture of a special powered stand to manipulate them during welding.

As part of the refurbishment, extensive damage from cavitation on the blades of each

Measuring a turbine runner from a 'Francis' turbine during machining



turbine is repaired with stainless steel. The turbines' outer bands are also overlaid with stainless steel before being machined back to standard on the company's CNC-controlled 6.3m vertical lathe.

Similar work involves the repair, maintenance and upgrade of turbines from an even harsher environment — the western province of Papua New Guinea. These stations generate power directly from fast flowing rivers which, after heavy rain, bear huge quantities of suspended solids that scour the machines.

The turbine cassette units are shipped to New Zealand and rebuilt to the specifications of client GE Energy in a complex process that involves guide vane castings in A&G Price's foundry, machining, welding and final assembly followed by client inspection. As an approved supplier, A&G Price works closely with GE Energy to ensure the timely delivery of each refurbished turbine, on budget and to exacting specifications.

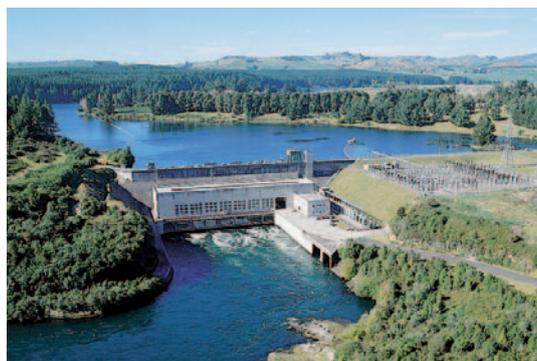
For Windflow Technology's futuristic 520 kW wind turbines, A&G Price manufactured cast gearbox housings and low-speed shafts, creating high-quality class 1 castings to overcome the stresses and strains of the large blades on the shaft.

All engineering work on the wind generator gearbox housing and shaft, including computer drawings, pattern making, casting, heat treatment, machining and non-destructive testing was done in-house by A&G Price. This ensured a high degree of quality control and freed the client from the necessity of committing valuable resources to shepherding the jobs between scattered specialist contractors.

Always at the forefront of engineering



**Windflow
Technology
wind turbine at
Gebbies Pass**



**Mighty River
Power's 84,000kW
hydro station at
Atiamuri**

innovation, A&G Price has a long tradition of working in partnership to achieve optimum results through its design-to-manufacture philosophy. This results in high-quality, cost-effective and reliable components. From its base in Thames, New Zealand, the fully integrated engineering works offers state-of-the-art capabilities to energy sector clients throughout the region.

Capabilities Offered:

Turning capacity 6.3m

Milling capacity 40 tonne,
single set to 10m long

Highly-skilled workforce

Flexible hours and shift work

Wet spec paint systems and
belzona application

3D machining

Heat treatment facility

Engineering design

Telarc ISO 9001:2000 registered

Project management

SM2-qualified NDT personnel

Foundry and metallurgical facility

Stainless and bronze

White metal bearings

Other specialised industries

- Forestry/Pulp and Paper • Marine
- Mining and Quarrying • Defence • Rail
- Steel • Fertiliser and Lime • Keels • Cement



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