

ENERGY & HYDRO



ENGINEERS OF EXCELLENCE

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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, drawing on expertise gained over almost 150 years of close involvement with the industry, the company brings to every project the rare ability to add value through the use of improved materials and optimised designs and processes.

One of the refurbishment projects undertaken by A&G Price the progressive overhaul of eight



Accurate machining of a 'Kaplan' turbine blade

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

The comprehensive refurbishment programme involves casting, machining and fitting 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 turbine is repaired with stainless steel. The turbines' outer bands are also overlaid with stainless steel before being machined back to



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

standard on the company's CNC-controlled 6.3m vertical lathe.

We had similar work that involved 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 exact specifications 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 the customer to ensure each refurbished turbines timely delivered, on budget, and exacting specifications.

For Windflow Technology's 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 free's the client from the necessity of project management contractors.

Always at the forefront of engineering 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.



Wind-flow Technology- Wind turbine at Gebbies Pass



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

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

Project Management
Engineering Design
3D Models and manufacturing drawings
Highly skilled workforce
Flexible hours and shift work
Telarc ISO 9001
SM2 qualified NDT Technicians

Foundry and metallurgical facility

- Cast iron to
- Spheroidal Graphite (SG) iron
- Steel
- Stainless Steel
- Nonferrous
- Heat Treatment Facility

Fabrication shop

- Plate rolling 25mm x 3000 wide
- Pressing
- Guillotine 25mm x 3000 wide
- CNC Plasma Oxy acetylene plate cutting
- Sub Arc, MMA, MIG, Flux cored and TIG welding

Machine Shop

- Tuming capacity to Ø6.3 meters x 40 tonne
- Milling capacity to 8 meters single set
- Multi pallet work centres
- Surface grinding
- Gear cutting
- Line boring

Fitting shop for machinery overhaul and assembly Sandblasting and paint shop

Industries where we have expertise include

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|------------------|-----------------|-------------------------------|
| • Forestry | • Pulp & paper | • Marine |
| • Defence | • Rail | • Fertiliser & Lime |
| • Steel smelters | • Cement | • Mining & Quarrying |
| • Aquaculture | • Agriculture | • Aluminium Smelters |
| • Keels | • Manufacturing | • Wind electrical generation |
| • Sculptures | • Sugar | • Hydro electrical generation |
| • Recycling | • Rendering | • Historic replication |



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