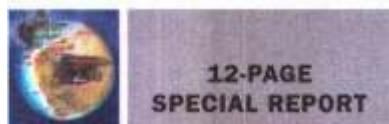


# Downstream processing proves elusive



**Mark Beyer**

INCREASED downstream processing of Western Australia's mineral resources has for many years been the goal of successive governments.

Aluminium smelters, petrochemical facilities and steel mills have been the goal, but they remain elusive.

One of the few recent achievements in this area was the construction of Burrup Fertilisers' \$700 million ammonia plant on the Burrup Peninsula.

Just as notable was the failure of about half a dozen other gas processing projects to proceed, mainly because gas and construction costs rose rapidly to the point where they were not considered commercially viable.

Burrup is hoping to expand its operation with construction of a \$600 million ammonia nitrate plant, subject to completion of a planned capital raising.

The downstream processing that does occur in WA is generally limited to smelters and refineries, which convert large, bulky resources into a more compact form for export.

Alumina refineries, nickel refineries and liquefied natural gas (LNG) plants all fall into this category.

While the state's goal is to attract more downstream processing, the investment that does occur is still very substantial.

The North West Shelf venture's LNG plant on the Burrup Peninsula is the prime example.

A total of \$25 billion has been invested there, making it Australia's single largest resources project.

Woodside Petroleum is investing \$12 billion in its Pluto project, and

most of that will be spent on its new LNG plant on the Burrup (see page 25).

In the south of the state, the biggest project underway is the expansion of Worsley Alumina's operations near Collie.

A total of \$3 billion is being invested by Worsley's owners, led by 86-per cent shareholder BHP Billiton.

The biggest spend is a \$2 billion expansion of the alumina refinery to lift output from 3.5 million tonnes per year to 4.6 million tonnes.

On top of that is \$500 million for the development of a new bauxite mine and \$500 million for construction of a new power station.

The project will attract a peak construction workforce of 1,700 people next year and generate plenty of work for lead engineering contractor Bechtel and the many sub-contractors, including Thiess, RCR Tomlinson and Fleetwood.

The expansion will also add to Worsley's status as one of the South West region's biggest employers, with a workforce of more than 1,500.

Alcoa, which operates three alumina refineries at Kwinana, Pinjarra and Wagerup and the associated bauxite mines, is an even bigger employer.

It has been studying the expansion of its Wagerup refinery for several years and has obtained environmental approval to proceed, but has been deterred by high construction costs in WA.

An added consideration for Alcoa is the rising cost of gas supplies in WA and concerns about security of

supply, highlighted by the recent Varanus Island incident.

Worsley Alumina was helped through that incident by other changes to BHP's operations.

BHP brought forward a major four-month rebuild of its Kalgoorlie nickel smelter furnace in June, following deterioration in its condition.

The smelter normally produces around 100,000 tonnes of nickel-in-matte per year. This is both the feedstock for the Kwinana nickel refinery, which had to shut down during the rebuild, and exported direct to international customers.

The furnace rebuild meant that BHP was able to divert gas to the Worsley Alumina refinery.

A junior company hoping to join Worsley and Alcoa as a bauxite miner and alumina producer is United Minerals Corporation Ltd.

UMC has an ambitious plan to develop its project in the northern Kimberley, in joint venture with Norwegian company Norsk Hydro, which is one of the world's biggest aluminium producers.

UMC is conducting an exploration drilling program in the area.

## PROCESSING

- Substantial investment in downstream processing facilities.
- Projects include \$12b Pluto LNG project and \$3b Worsley Alumina expansion.



**EXPANSION:** Worsley Alumina is investing \$2 billion to expand its refinery near Collie