

## Chapter 11 Manufacturing

### Key Points

- In 2007-08, manufacturing activity in the Territory accounted for 6.5 per cent of GSP and 4 per cent of total employment.
- Manufacturing activity is dominated by the production of alumina and LNG, with production of these two products accounting for almost 64 per cent of total manufacturing value added.
- Manufacturing growth prospects include the helium plant at Wickham Point to be commissioned during 2009, expansion of capacity at the Wickham Point LNG plant to 10 million tonnes a year, and construction of an 8 million tonnes a year LNG plant nearby at Blaydin Point between 2010 and 2014 by Inpex.
- Longer term prospects include further exploitation of petroleum and natural gas resources in the Timor Sea, such as the Greater Sunrise and Evans Shoal fields.

### Background

The manufacturing industry in the Northern Territory accounted for 6.5 per cent of gross state product (GSP) in 2007-08, compared to 9.8 per cent nationally.

In 2007-08, the value of production from the Territory's manufacturing industry increased by 7.9 per cent, compared to 3.4 per cent nationally.

The Territory's manufacturing industry differs from other jurisdictions in that a small number of large resource processing facilities dominate the sector. In particular, the Rio Tinto Alcan alumina refinery facility at Nhulunbuy, and the Wickham Point liquefied natural gas (LNG) plant on Darwin Harbour account for about 64 per cent of manufacturing value added.

The balance of manufacturing activity in the Territory is for local consumption, and includes the manufacture of products for Territory mining companies, wood and paper, and food manufacturing.

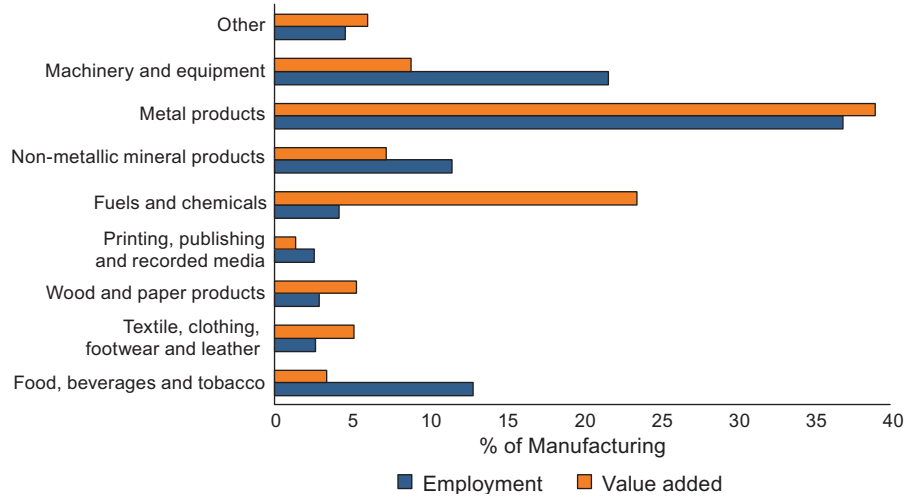
About 4600 people are employed in the industry, accounting for 4 per cent of total employment in the Territory.

### Manufacturing Sectors

The main manufacturing activities in the Territory, as measured by value added, are metal products manufacturing and fuels and chemicals manufacturing, with the Rio Tinto Alcan alumina refinery and Wickham Point LNG plant responsible for most production (Chart 11.1).

Value added is defined as the value of gross output less the value of inputs used in manufacturing these goods.

Chart 11.1: Territory Manufacturing Sector Selected Indicators, 2006-07



Source: Northern Territory Treasury, ABS Cat. No. 8221.0

### Metal Products

Metal products manufacturing in the Territory in 2006-07 (2007-08 data is not available at the time of publication) accounted for about 40 per cent of total manufacturing value added, compared to about 24 per cent nationally.

The processing of bauxite into alumina at the Rio Tinto Alcan alumina refinery accounts for the majority of metal products manufacturing. In 2007-08, 2.2 million tonnes of alumina valued at \$626 million were produced at the Rio Tinto Alcan refinery.

Metal products manufacturing is relatively labour intensive, accounting for about 37 per cent of Territory manufacturing employment, and 1.5 per cent of total employment.

The metal production sectors of the manufacturing industry also include sheet metal fabrication and the production of materials used in the construction industry across the Territory.

### Fuels and Chemicals

Fuels and chemicals manufacturing accounted for 24 per cent of total Northern Territory manufacturing value added in 2006-07 (2007-08 data is not available at the time of publication), compared to 16 per cent nationally.

Production of LNG at Wickham Point began in February 2006, with an estimated 3.3 million tonnes of LNG exported to Japan in 2006-07. Prior to the commissioning of the Wickham Point plant, fuels and chemicals manufacturing accounted for about 2.7 per cent of manufacturing value added.

The Wickham Point LNG plant uses feedstock from the Bayu-Undan gas field in the Timor Sea, which is transported via a sub-sea pipeline. The plant produced 2.9 million tonnes in 2007-08, down from 3.3 million tonnes in 2006-07 as a result of a two month maintenance shutdown in late 2007.

A bio-diesel plant at the Darwin Business Park at East Arm was commissioned in early 2008, with a shipment of 8.8 million litres of bio-diesel exported to the United States in August 2008. However, the high cost of feedstock (palm oil) has since halted bio-diesel production.

Fuels and chemicals manufacturing is less labour intensive than other manufacturing activities, accounting for 4.2 per cent of Territory manufacturing employment. The Wickham Point LNG plant employs

80 to 100 permanent staff, representing about half of those employed in fuels and chemicals manufacturing-related activities.

The importance of this sector has been growing over the past few years as the significant gas resources off the Territory coast in the Timor Sea are developed to supply the growing demand for energy in Japan.

## Machinery and Equipment

Machinery and equipment manufacturing in the Territory is focused on servicing the mining and defence sectors, producing tools and equipment for the maintenance of large defence and mining machinery used throughout the Territory.

Machinery and equipment manufacturing accounts for about 9 per cent of manufacturing value added in the Northern Territory, compared to 17.5 per cent nationally. This sector is labour intensive, accounting for about 22 per cent of Territory manufacturing-related employment.

Machinery and equipment manufacturing also includes the maintenance of Abrams tanks and naval ships, while the development of the Defence Support Hub near Robertson Barracks will offer further opportunities in the manufacturing sector.

The large, and still increasing, defence presence has the potential to increase the contribution of machinery and equipment manufacturing in the Territory through the maintenance of defence equipment such as military aircraft and naval vessels.

## Outlook

The record commodity prices in recent years have boosted metal products manufacturing value added, in turn encouraging investment in this sector. However, the outlook for 2009-10 remains less positive as commodity prices have declined from their record highs as a result of falling global demand (see Chapter 10: Mining and Energy).

Uncertain economic conditions in Australia and internationally are likely to adversely affect demand for those manufacturing products currently, or likely to be, produced in the Territory in the short to medium term.

Nonetheless, a number of manufacturing projects are scheduled to be commissioned during 2009, adding to manufacturing production output. These include:

- The construction of a Linde Group helium plant adjacent to the Wickham Point LNG plant (to use feed-gas from the plant) is expected to be completed in the second half of 2009. The plant is the first in the southern hemisphere, and will produce all of Australia's helium at 750 tonnes of liquid helium a year.
- An expansion of the Rio Tinto Alcan alumina refinery began five years ago to bring production capacity up to 3.5 million tonnes a year. About \$100 million of works are expected during 2009 to bring capacity from 2.5 million tonnes to 3 million tonnes, less than the initial production capacity target of 3.5 million tonnes.

In the longer term, continued global demand for lower emissions-intensive energy sources could spur investment in LNG production in the Territory,

particularly if China and India maintain their longer term economic growth paths. This should lead to increased manufacturing in the Territory as gas reserves in the Timor Sea are developed for LNG processing.

The agreement in February 2007 between the Timor-Leste Government and the Commonwealth on sharing of revenues from the Greater Sunrise field outside the Joint Petroleum Development Area (a highly prospective area in the Timor Sea for natural gas) clears the way for the development of Timor Sea natural gas reserves.

Prospects for further manufacturing activity in the Territory include:

- A gold, copper and cobalt processing plant at the Peko tailings mine east of Tennant Creek, scheduled to be constructed from 2009-10. However, due to weakening economic conditions, uncertainty surrounds the exact timing for the start of processing.
- Processing of copper, cobalt and nickel at the Browns Oxide mine near Batchelor. Some manufacturing occurred at this mine in late 2008, but ceased when the mine owner went into voluntary administration in January 2009. As the infrastructure remains in place, recovery in commodity prices or a better capitalised operator offers the prospect that the mine and processing facility will operate again.
- Expansion of the Wickham Point LNG plant to increase annual production to 10 million tonnes should occur once sufficient gas reserves are sourced to meet production targets.
- Construction of an LNG plant at Blaydin Point by Inpex could start from 2010, for completion in 2014-15. Gas would be brought by an 800 kilometre sub-sea pipeline from the Ichthys gas field in the Browse basin off the coast of Western Australia. An estimated 2000 workers would be needed at the peak of construction.

The availability of natural gas provides an opportunity for development of a downstream gas-based industry in the Territory, including products such as methanol, ethane, ammonia/urea fertilisers and various petrochemicals.

Additionally, the availability of gas and the advent of emissions trading and carbon pricing also means the Territory has the potential to become the home of energy-intensive industry, with gas providing a cheaper and cleaner energy source for the manufacture of alumina, magnesium and other ore concentrates, and for the production of electricity used in other manufacturing activities.