



Transport Infrastructure.

15 TRANSPORT INFRASTRUCTURE A GUIDE FOR INVESTORS

The Australian minerals and petroleum industry is a leading provider and user of transport and logistics services. The industry operates highly efficient private rail systems and is also a major customer of public rail transport throughout Australia.

The Australian minerals and petroleum industry is also a major user of public and privately built road facilities and of air services – the latter for the transport of precious metal, key supplies and for the movement of personnel to and from remote and regional areas. It is also a significant charterer of shipping.

The minerals and petroleum industry, along with other private investors are working together with government agencies to invest in new rail and port infrastructure to support resource development and to plan for further capacity building to ensure the provision of adequate land transport (including port and related facilities) infrastructure is available to meet the expanding needs of Australia's trade.

Iron ore transport

Australia is the world's largest exporter of iron ore. In 2008–09 Australia exported 323.5 million tonnes (Mt) of iron ore. Australia's proximity to key Asian markets and low cost of production continues to ensure that it continues to be a major player in the global iron ore trade.

Australian iron ore producers, primarily located in the Pilbara and the Midwest region of Western Australia, have embarked on major mine development and expansion projects to meet a growing global demand for iron ore especially with China and continuing demand from long standing customers in Asia and Europe. Between 2005–06 and 2008–09, average annual exports of Australian iron ore grew by 10%.

Most of Australia's iron ore is produced and exported from ports located in the Pilbara region. Other major iron ore export ports include Geraldton, Port Latta, Darwin and Esperance. Considerable investment is being allocated to the development of expanded and new facilities in the Pilbara region to accommodate planned increases in production. Deep water port facilities at Oakajee in the Midwest region and the Eyre Peninsula in South Australia are also planned and will service emerging iron ore sectors in those regions.

Ongoing investment in bulk infrastructure capacity to service Australia's iron ore sector will help to ensure that Australia continues to remain a reliable, low cost supplier of high quality iron ore to the world.

LNG transport

Australia is also the world's 6th largest exporter of liquefied natural gas (LNG) with Japan being our largest customer. Australia's largest LNG exporter, the North West Shelf (NWS) gas project, is located on the Burrup Peninsula, Western Australia. The plant commenced operation in 1989 and currently incorporates five trains with a combined annual LNG production capacity of 16.3 million tonnes per annum (mtpa). The NWS exports cargoes of LNG to a number of countries, including Japan, South Korea, China, Spain, Turkey, India and the United States.

The Darwin LNG project commenced operations in February 2006 and has a capacity of 3.7mtpa. The first cargo under

long term contract to Japan was delivered in May 2006.

The North West Shelf Shipping Company currently operates a fleet of seven owned purpose built vessels as well as a number of chartered LNG tankers. The first six sister ships are the Moss Rosenberg design featuring four giant insulated spherical tanks, which provide a total cargo capacity of 125,000 cubic metres (57,000 tonnes) of LNG per ship. The newest ship delivered in March 2004, uses the membrane containment system and has a capacity of 137,500 cubic metres (63,000 tonnes). In June 2009, the largest vessel to load at the NWS, the 155,000 cubic metre BP shipping LNG carrier British Ruby, loaded a cargo for delivery to India.

Australia's LNG carriers are among the most advanced ocean craft in the world and have been specially designed to carry the super-chilled LNG safely and efficiently from the Burrup Peninsula to the various receiving terminals in Japan, South Korea, China and other markets. The vessels are propelled by steam turbines designed to provide flexible and economic operation, using gas from their LNG cargoes as the primary fuel.

Responsibility for shipping LNG from Darwin rests with the gas customers.

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Coal transport

Australia is the world's largest exporter of black coal. 262.6 million tonnes (Mt) of coal was exported from Australia in 2008–09. Given the industry's export orientation the coal industry continues to respond positively to customer requirements for reliable, competitively priced supplies. They are continually working to minimise costs to ensure Australian coal is competitive with other energy suppliers around the world.

There are numerous mines, rail, road and port facilities in Australia offering customers numerous supply sources. In addition to transporting the coal they supply services such as logistics management and coal blending, all have access to efficient transport facilities to move export coal to the ports.

The coal industry is supported by a strong equipment and services sector. Australia has world-class expertise in design, construction and operation of mines, transport systems and loading facilities. It also has expertise in training, technical support and project management.

Ports

The coal export industry is serviced by nine coal terminals at six ports along the eastern coast of Australia. Port ownership is a combination of public and private interests. The terminals have a combined annual loading capacity of 361 Mt. This capacity is planned to expand to nearly 480 Mt by 2014.

Road and conveyer

Road transport is used for short distance haulage, and is an effective method when the mine site is located near ports, or far away from the rail head. Conveyor systems are used to transport the coal from mine site directly to the rail head or to coal fired electricity plants.

Rail

Rail is the most effective means of long distance transport in Australia, especially for export coal. Australia has the advantage of the majority of coal mines being located less than 300km from the port of loading and many within 100km. This results in short rail haulage times and fast responses to changes in demand. Australia's current generation of trains can each carry between 2100 and 8600 net tonnes of coal; balloon loops and rapid overhead loading bins ensure efficient loading and unloading.

Queensland

In Queensland, the coal rail network is owned by Queensland Rail (QR), a Queensland Government corporation. Below rail infrastructure is the sole responsibility of QR, while above rail freight services is open to third party competition. Pacific National (PN) entered the Queensland rail market as an above rail competitor to QR in April 2009. PN currently has 4 major haulage contracts and expects to have 6 trains operating in the Goonyella system by early 2010 with a capacity of around 3–4 million tonnes. This will increase to 10 trains in July 2010 with trains operating on both the Goonyella and Blackwater systems.

In Queensland, export coal is handled through six coal terminals at four deepwater ports. A new coal terminal at the Port of Gladstone is also proposed. 159.3 Mt of coal was exported during 2008–09, with Dalrymple Bay, Hay Point, and RG Tanna terminals handling around 87% of the coal.

The private sector is likely to play a greater role in development of coal infrastructure in the future. In June 2009, the Queensland Government announced the proposed sale of a number of strategic coal assets including the northern missing link rail proposal, port facilities at Abbot Point and Queensland Rail's coal freight network. The sale of these assets will be progressed over a 3 to 5 year period.

New South Wales

The main coal chain in New South Wales is the Hunter Valley rail network that is leased by the Australian Rail and Track Corporation (ARTC) from the NSW Government. Pacific National is the primary coal rail haulage operator in NSW, delivering around 93% of all coal to the Newcastle and Port Kembla Ports.

During 2008–09 the coal producers in NSW exported 103.3 Mt of coal from ports in Newcastle and Wollongong. Newcastle port facilities are operated by Port Waratah Coal Services Limited, servicing the northern NSW coal fields. Coal exported from Wollongong is handled by the Port Kembla Coal Terminal.

The Port Waratah Coal Services' (PWCS) Newcastle Coal Terminals exported the bulk of coal in 2008–09 (90.7 Mt), 1.7 Mt above the previous year, with the remainder shipped through the Port Kembla Coal Terminal (12.6 Mt), 1.1 Mt above the previous year.

The ARTC received a \$580 million capital injection from the Australian Government in December 2008 to undertake a \$1 billion rail investment program in the Hunter Valley to expand coal rail capacity. This program will allow rail to match planned increases in coal terminal capacity at the Port of Newcastle.

