



## Australia's Liquefied Natural Gas (LNG) exports, 2003-04 to 2013-14 and beyond

LNG has been an increasingly important export for Australia in the last decade<sup>1</sup>. In 2003-04, Australia exported \$2.2 billion worth of LNG (representing 1.5 per cent of total goods and services exports). In 2013-14, Australia's exports of LNG were valued at \$16.3 billion (representing 4.9 per cent of Australia's total goods and services exports). LNG was Australia's third largest goods and services export in 2013-14.

Western Australia is the largest supplier of Australia's LNG exports. It accounted for almost all Australia's LNG exports in 2003-04, and 80.3 per cent in 2013-14 (by value). The Northern Territory increased its share of Australia's LNG exports from virtually nil in 2003-04 to 19.7 per cent in 2013-14.

Japan has been the largest export destination for Australia's LNG over the last decade. In 2013, Japan was the destination for 92.4 per cent of Australia's LNG exports by value, and 80.7 per cent by volume. Other major markets include China (4.2 per cent by value), the Republic of Korea (3.0 per cent) and Taiwan (0.4 per cent).

The earthquake and tsunami in eastern Japan in March 2011 impacted strongly on Australia's LNG exports. The value of Australia's exports to Japan increased in annual trend terms by 18.4 per cent from 2011. Export volumes to Japan have also increased by 10.8 per cent.

In 2013, Australia was the world's third largest LNG exporter with around 9.3 per cent of global exports (by volume). Qatar was the leading LNG exporter with 32.5 per cent, followed by Malaysia with 10.4 per cent.

With large LNG projects coming on line, Australia's current LNG production of 62.8 billion cubic metres in 2013-14 is projected to more than double to 150.0 billion cubic metres by 2018-19. Australia's LNG exports are expected to more than triple in value to \$57.1 billion by 2018-19, which will see LNG overtaking coal as Australia's second largest export behind iron ore. Australia is also projected to overtake Qatar as the world's largest LNG exporter by 2018-19.

### Overall trends in LNG exports

Since 2003-04, LNG has been an increasingly important export for Australia.

The value of LNG exports rose from \$2.2 billion in 2003-04 to \$16.3 billion in 2013-14 (**Chart 1**). The annual growth rate was 20.7 per cent in trend terms over the period 2003-04 to 2013-14<sup>2</sup>.

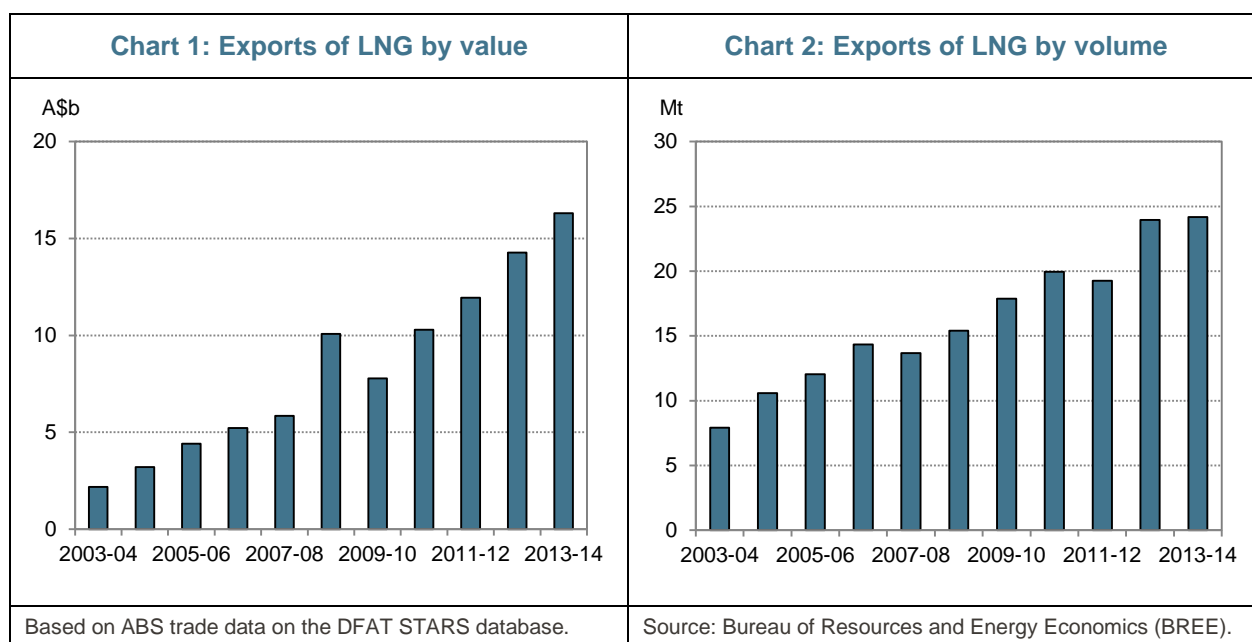
The volume of LNG exports rose from 7.1 Mt (mega tonnes)<sup>3</sup> in 2003-04 to 24.2 Mt in 2013-14 (**Chart 2**). The annual growth was 10.7 per cent in trend terms over the period 2003-04 to 2013-14.

<sup>1</sup> Note that LNG exports in this article refer to exports of HS 2711.11 - *Natural gas, liquefied*. Note that exports of HS 2711.21 - *Natural gas, in gaseous state* are not included in this analysis.

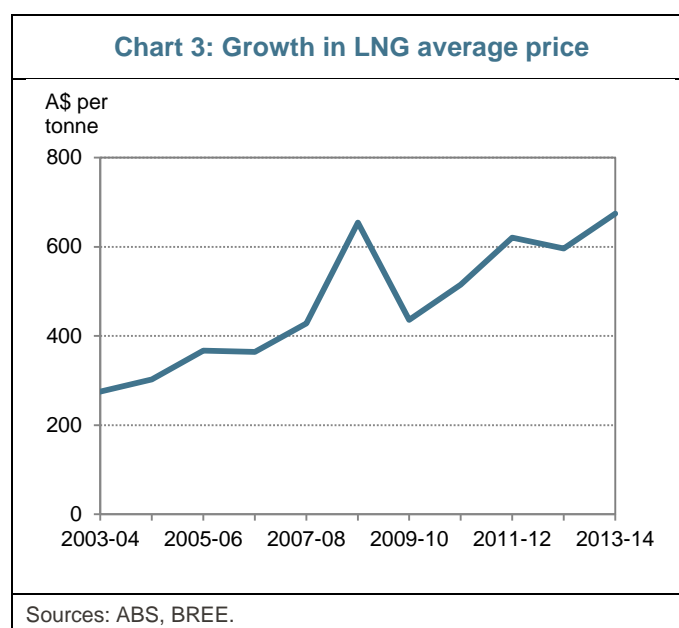
<sup>2</sup> As a comparison, the annual trend growth rates of Australia's two largest exports, *Iron ore and concentrates* and *Coal*, were 30.1 per cent and 13.9 per cent (respectively) over the same period.

<sup>3</sup> A mega tonne is one million tonnes.

LNG was Australia's third highest goods and services export in 2013-14, behind iron ores & concentrates (\$76.7 billion) and coal (\$40.0 billion)<sup>4</sup>. LNG exports represented 4.9 per cent of Australia's total goods and services exports in 2013-14 (up from 1.5 per cent in 2003-04).



**Chart 3** shows the average price of Australia's LNG exports over the period 2003-04 to 2013-14. In 2013-14, the average price was \$674 per tonne, compared to \$275 per tonne in 2003-04. The annual growth rate was 9.0 per cent in trend terms over the period 2003-04 to 2013-14. Note the large spike in 2008-09 was largely driven by an increase in world energy commodity prices<sup>5</sup>.

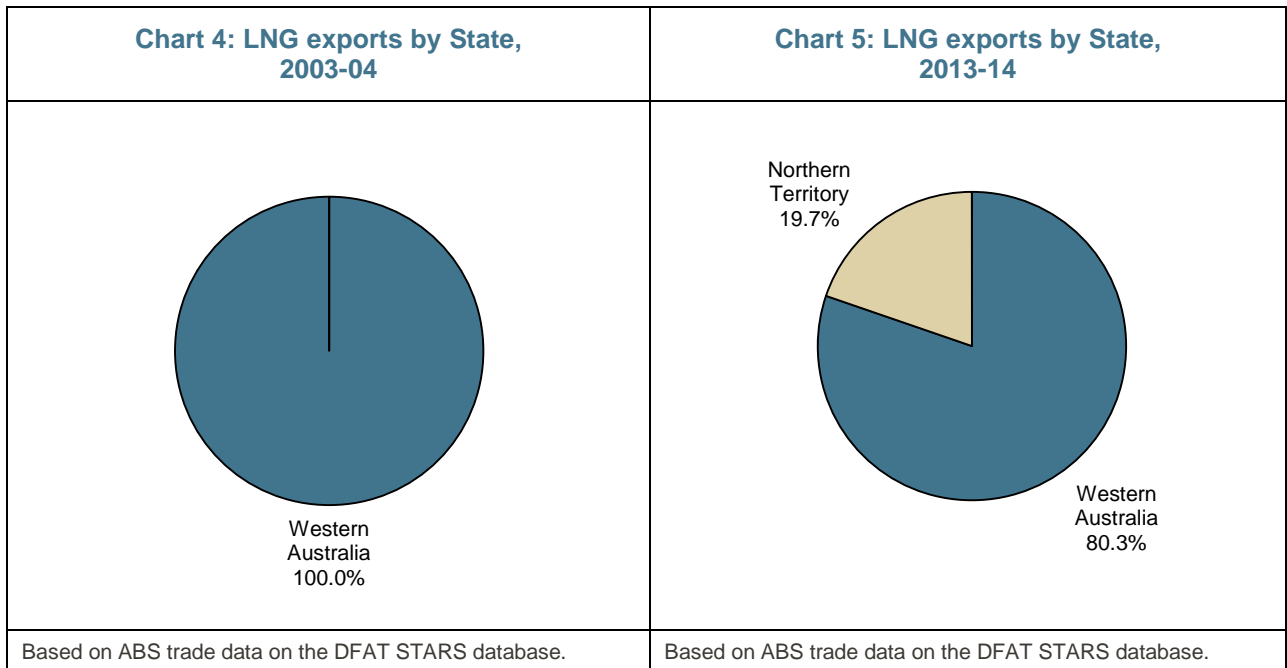


**Charts 4 and 5** shows the breakdown of LNG exports by State or Territory in 2003-04 and 2013-14. In 2003-04, Western Australia was responsible for almost all of Australia's LNG exports (by value)<sup>6</sup>. In 2013-14, Western Australia was responsible for 80.3 per cent of Australia's LNG exports, with the Northern Territory accounting for 19.7 per cent of LNG exports (by value).

<sup>4</sup> Education-related travel services (\$15.7 billion) and Personal travel (excluding education) services (\$13.9 billion) complete the top five ranked exports.

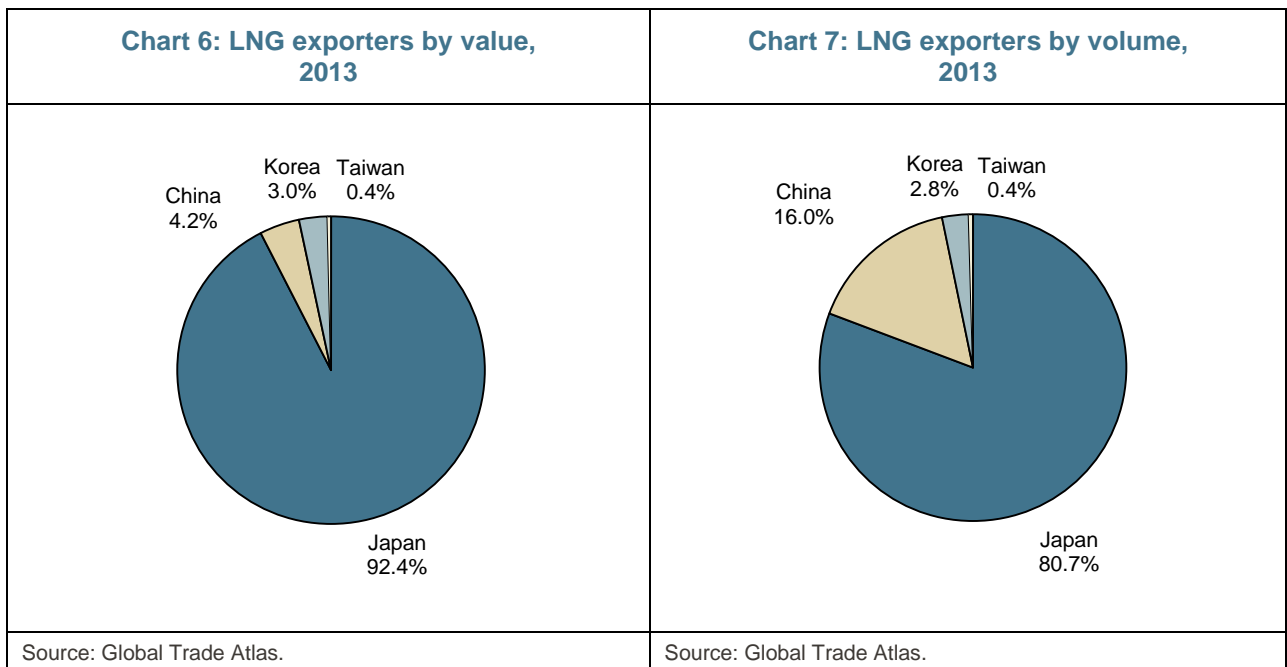
<sup>5</sup> World crude oil prices increased strongly in 2008-09. LNG prices have tended to follow similar fluctuation patterns to other energy commodities including crude oil.

<sup>6</sup> Victoria, New South Wales and the Northern Territory accounted for just 0.005 per cent of exports in 2003-04.



### Major markets for Australia’s LNG exports

**Charts 6 and 7** show Japan was the destination for the vast majority of Australia’s LNG exports in 2013<sup>7</sup>, with over 92 per cent of Australia’s global LNG exports (by value) and over 80 per cent (by volume). Australia’s LNG exports to China were 4.2 per cent by value and 16.0 per cent by volume<sup>8</sup>. Exports to the Republic of Korea were 3.0 per cent by value and 2.8 per cent by volume, and exports to Taiwan were 0.4 per cent by value and volume. Over the period 2003-2013, the United States, United Kingdom, Spain, France and India were also ad hoc importers of Australian LNG.



<sup>7</sup> Note that the ABS publishes Australia’s LNG exports at the total level but does not publish LNG exports by country due to confidentiality restrictions. Accordingly, this analysis is based on partner country import data on a calendar year basis sourced through Global Trade Atlas. Data is on a cost insurance and freight (c.i.f.) basis – which includes the cost of the goods as well as shipping and insurance costs.

<sup>8</sup> This reflects the difference in price structures between China and other importers, relating to forward contracts.

## Impact of the Japan earthquake on Australia's LNG exports

The Japan earthquake and tsunami in March 2011 led to change in Japan's energy demands, including a shift from nuclear energy generation to other energy sources including LNG. This increased energy demand by Japan was met by LNG imports from Australia and other global LNG suppliers.

**Table 1** shows Japan's imports of LNG from Australia for the period 2010 to 2013.

	2010	2011	2012	2013	Annual trend growth
Value (A\$ millions)	8,746	10,421	12,622	14,400	18.4%
Volume (Mt)	13.3	14.0	15.9	17.9	10.8%
Average Price (A\$ per tonne)	658.70	745.52	793.14	803.63	6.8%

Source: Global Trade Atlas.

In value terms, Japan's imports of LNG from Australia grew from \$8.7 billion in 2010 to \$14.4 billion in 2013 (an annual trend growth rate of 18.4 per cent).

In volume terms, Japan's imports of LNG from Australia grew from 13.3 Mt in 2010 to 17.9 Mt in 2013 (an annual trend growth rate of 10.8 per cent).

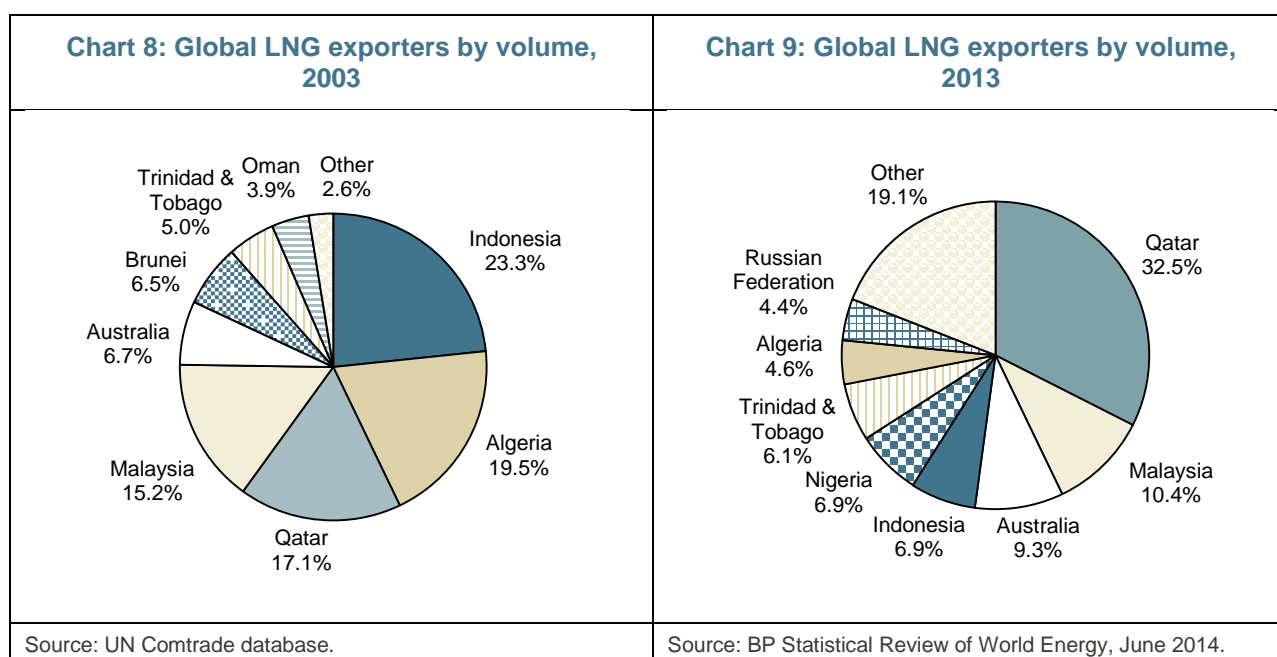
In average price terms, Japan's imports of LNG from Australia grew from \$658.70 in 2010 to \$803.63 in 2013 (an annual trend growth rate of 6.8 per cent).

In terms of market share, Australia's exports to Japan have remained fairly stable before and after the earthquake. Australia accounted for 19.0 per cent of Japan's imports (by volume) in 2010, and 20.5 per cent in 2013. By value, Australia accounted for 20.3 per cent in 2010, and 19.2 per cent in 2013.

## Australia and the global LNG market

In 2013, Australia was the world's third largest LNG exporter with 9.3 per cent of global LNG exports (by volume). Qatar was the world's leading LNG exporter with 32.5 per cent of global exports, followed by Malaysia with 10.4 per cent.

**Charts 8 and 9** provide a comparison of the share of global LNG exports by source in 2003 and 2013. Between 2003 and 2013, Australia increased its share of global exports from 6.7 per cent to 9.3 per cent, and moved from the fifth to third ranked global LNG exporter.



## A bright future outlook for Australia's LNG exports

Over recent years, significant investment by LNG producers and joint-ventures partners in LNG resource projects in Queensland, the Northern Territory and Western Australia has seen these projects migrate from greenfield sites towards full production capability. As a result, Australia's LNG production and exports are set to increase significantly in the period to 2018-19.

The Bureau of Resources and Energy Economics (BREE) Resources and Energy Quarterly, September 2014 provides projections for Australia's production and exports of LNG up to 2018-19<sup>9</sup>.

Excerpts from the BREE publication follow<sup>10</sup>:

*Australian gas production is expected to grow at an average rate of 16 per cent a year over the period to 2018-19 as seven new LNG projects commence production. Current gas production of 62.8 billion cubic metres in 2013-14 is projected to more than double to 150.0 billion cubic metres by 2018-19.*

*Growth in eastern market gas production will be almost entirely associated with the commissioning and operation of LNG projects in Gladstone, Queensland. Eastern market gas production is projected to increase from 22.0 billion cubic metres in 2013-14 to 57.7 billion cubic metres in 2018-19.*

*Western market production will double from 40.1 billion cubic metres in 2013-14 to 80.1 billion cubic metres in 2018-19. The Gorgon and Wheatstone LNG projects will account for the majority of this production.*

*The Northern market, currently the smallest at less than 1 billion cubic metres of production in 2013-14, will grow rapidly in 2016-17 as the Ichthys project begins operations. Total production is expected to exceed 12.2 billion cubic metres a year by 2018-19.*

*Export volumes are expected to grow rapidly over the next five years, more than tripling by the end of the outlook period. Total exports are expected to reach 78.4 million tonnes in 2018-19, making Australia the largest LNG exporter in the world.*

*In line with growing export volumes, export value is forecast to continue increasing from \$18.4 billion in 2014-15 to \$52.2 billion in 2018-19 (in real 2014-15 dollars). This growth is expected to be almost entirely volume driven.*

BREE projections are shown in **Table 2** below<sup>11</sup>.

	2014-15	2015-16	2016-17	2017-18	2018-19
Production (billion m3)	68.3	94.2	119.7	144.9	150.0
Export Volume (Mt)	27.3	43.6	59.3	76.4	78.4
Export value (A\$b)	18.4	31.8	43.8	56.3	57.1

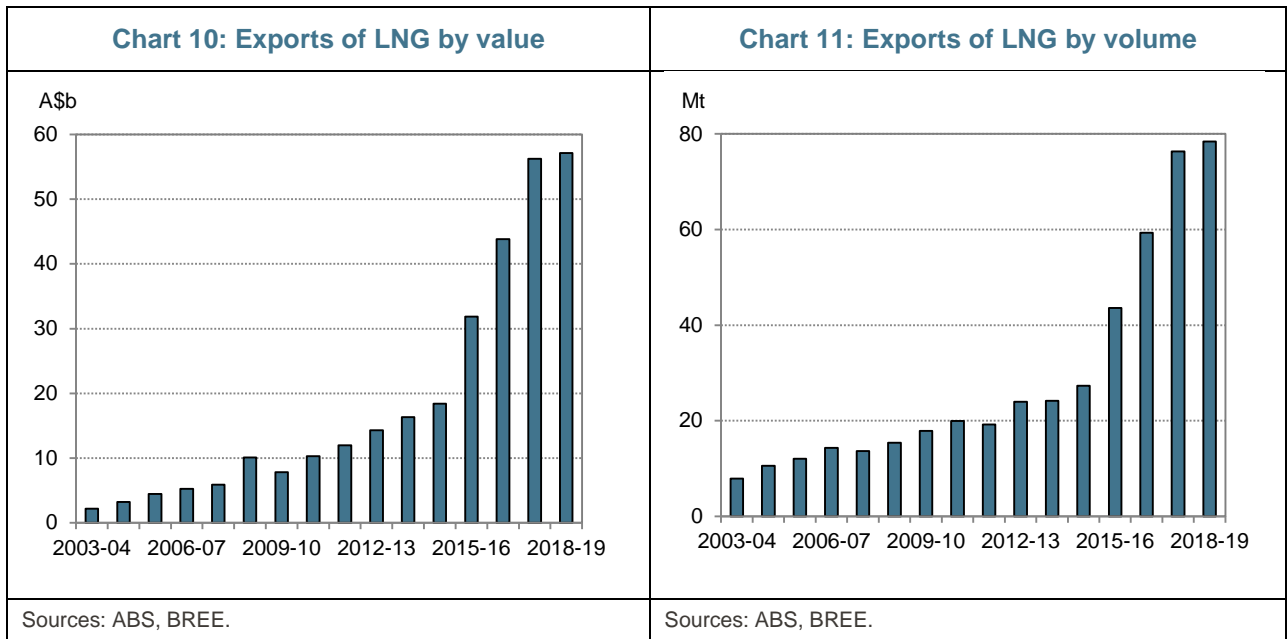
Source: BREE.

**Charts 10 and 11** show actual and projected LNG exports for the period from 2003-04 to 2018-19, highlighting the substantial increase in Australia's LNG exports through the period.

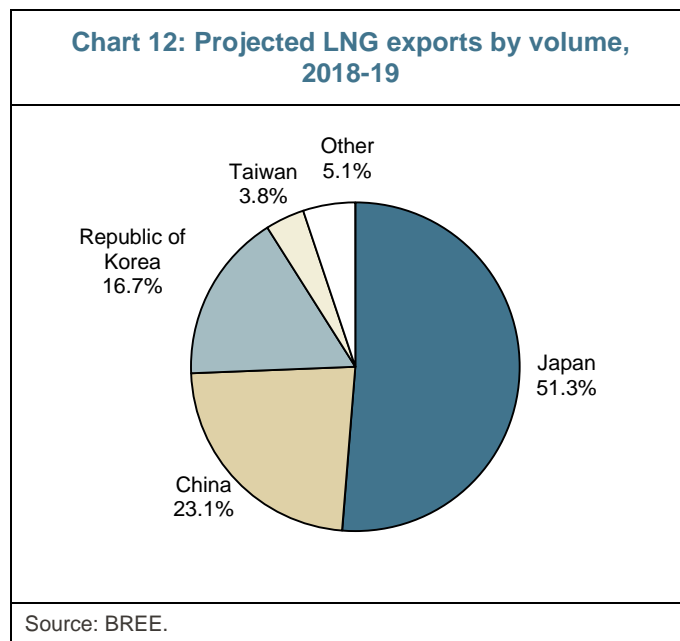
<sup>9</sup> <http://www.bree.gov.au/publications/resources-and-energy-quarterly>.

<sup>10</sup> BREE's *Gas Market Report – 2014* identifies Australia's 3 distinct gas markets: the western market in Western Australia, the northern market in the Northern Territory and the eastern market linking the states of South Australia, Victoria, New South Wales, Queensland and Tasmania.

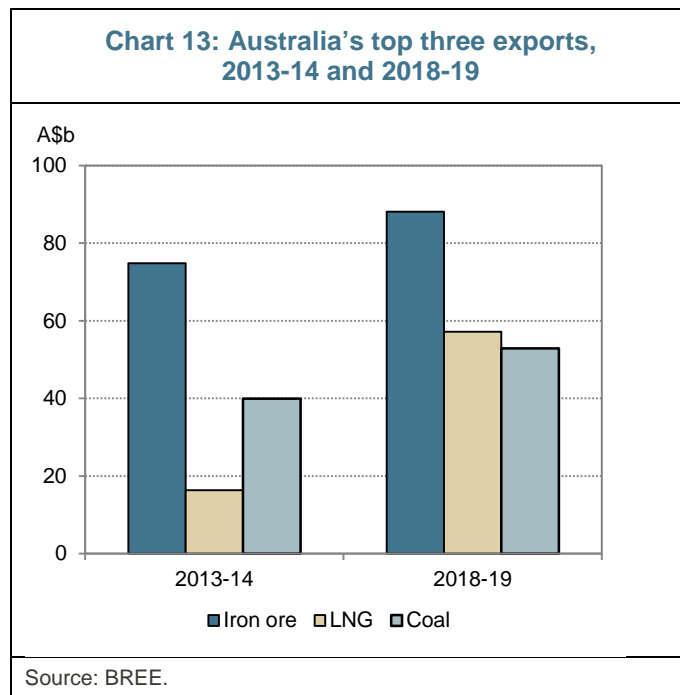
<sup>11</sup> Note that since the BREE September 2014 publication was finalised, global crude oil prices have fallen which will impact prices for other energy commodities including LNG. While BREE has not yet published revised projections across the full timeframe to 2018-19, BREE's *Resources and Energy Quarterly, December 2014* included revised projections for 2014-15 as follows - production of 67.2 billion m3, export volumes of 26.2 Mt and export value of \$17.6 billion, reflecting volume changes and the depreciating Australian dollar. BREE indicates "recent falls in the oil price will have a negative impact on LNG export values but will not be fully felt until mid-2015 due to the lagged oil price link in most Australian LNG contracts".



**Chart 12** shows BREE’s projections for Australia’s LNG exports by destination economy in 2018-19. Comparison with **Chart 6** above shows that China, Republic of Korea, Taiwan and other countries are projected to increase their share of Australia’s LNG exports over the period 2013-14 to 2018-19, whilst Japan will maintain its ranking as Australia’s largest LNG export destination.



**Chart 13** shows a comparison of Australia’s three largest exports (Iron ore, coal and LNG) in 2013-14 with their projected export values in 2018-19. Based on BREE’s projections, LNG is expected to overtake coal as Australia’s second largest export by 2018-19.



## Conclusion

Over the last decade, LNG exports have increased strongly and LNG is now the third largest export earner for Australia. With increased LNG production coming on line, LNG exports are set to increase strongly over the next five years to reach over \$57 billion by 2019. LNG is expected to overtake coal as Australia's second largest export by 2019, and Australia is also expected to overtake Qatar as the world's largest LNG exporter.

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