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| **THE WORLD IRON ORE MARKET** |

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| Major global iron ore1 suppliers | * Western Australia accounted for two‑thirds of the world’s additional iron ore supply between 2009 and 2019. * Western Australia is the largest iron ore supplier in the world, accounting for 38% of global supply in 2019, followed by Brazil (17%). * China (12%), India (10%) and Russian Federation (5%) are major global iron ore suppliers, but retain most of their production for domestic steel manufacturing. * In 2019, iron ore supply from:   + Western Australia fell 1% to 879Mt.   + Brazil fell 13% to 389Mt.   + China rose 13% to 270Mt.   + India rose 15% to 235Mt. |
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| 1 Mined iron ore.  Source: Wood Mackenzie, Global Iron Ore Markets Long-term Outlook Data 2020 Q3. |

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| Asian iron ore1 demand | * Asia accounted for 78% of global iron ore demand in 2019, with China (57%), India (9%), Japan (5%) and South Korea (3%) having the largest shares. * In 2019, Asia’s iron ore demand rose 4% to 1,690Mt. Within Asia, iron ore demand from: * China rose 4% to 1,247Mt. * Japan, South Korea and Taiwan combined fell 2% to 209Mt. * Rest of Asia rose 5% to 233Mt. * Wood Mackenzie forecasts Asia’s iron ore demand will fall by 59 million tonnes from 2019 to 2039. Lower demand in China (down 249Mt) and Japan, South Korea and Taiwan combined (down 28Mt) will be largely offset by growth in the rest of Asia (up 217Mt). |
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| 1 Total iron ore consumption. (a) India, Indonesia, Vietnam and other Asian countries.  Source: Wood Mackenzie, Global Iron Ore Markets Long-term Outlook Data 2020 Q3. |

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| Iron ore1 and steel product2 prices (annual average) | * China’s rapid increase in iron ore demand lifted the iron ore price from US$28 a tonne in 1999-00 to US$173 a tonne in 2007-08. The iron ore price fell to US$52 a tonne in 2015‑16 as China’s demand slowed and there was excess supply in the market. * In 2019-20, the iron ore price rose 16% to US$94 a tonne, despite steel product prices falling 8%. The disparity was largely due to disruptions in global iron ore supply, particularly from Brazil, which raised the iron ore price despite weaker steel demand. * In August 2020, the iron ore price rose 12% to US$121 a tonne, and steel product prices rose 2%. |
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| 1 China spot price in nominal US dollars, cost and freight (CFR). 2 China steel product price index (2007-08 = 100.0).  Source: World Bank, Commodity Markets; CEIC, China Premium Database. |

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| **WESTERN AUSTRALIA’S COMPETITIVENESS** |

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| Estimated1 iron ore resources | * Western Australia has large iron ore reserves, accounting for 28% of the world’s crude iron ore reserves in 2019.2 * Western Australia had an estimated 48 billion tonnes of economic demonstrated iron ore resource in 2018‑19, which could sustain current production for 53 years. * Western Australia’s reserves had an average iron content of 48% in 2019, in line with the world average of 48%.2 * Western Australia’s iron ore production had an average iron content of 62% in 2019, above the world average of 60%.2 * Western Australia’s iron ore exploration rose 12% to $349 million in 2019-20, compared with an average annual decline3 of 3% over the past ten years. |
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| 1 Based on Western Australia’s share of Australian iron ore production. 2 US Geological Survey. 3 Compound annual growth rate.  Source: ABS 5204.0 Australian System of National Accounts. |

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| Total cash cost1 of seaborne iron ore exports2: 2019 | * Western Australia’s iron ore miners are among the world’s lowest cost seaborne iron ore exporters. * The average total cash cost1 of Western Australia’s iron ore exports was US$29.6 a tonne in 2019, below the world average of US$40.9 a tonne, and below its main competitor in Brazil (US$36.1/t). * Western Australia’s major iron ore ports are close to the largest iron ore markets in Asia, reducing shipping costs relative to some of its competitors. * According to Wood Mackenzie, Western Australia’s average iron ore freight rate to China rose 2% to US$7.7 a wet tonne in 2019, well below Brazil’s rate of US$18.6 a wet tonne. |
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| 1 Total cash cost per dry metric tonne in US dollars, cost and freight (CFR). 2 Includes the 10 largest producers only.  Source: S&P Global Market Intelligence, Mine Economics Model. |

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| Major iron ore export markets | * Western Australia’s iron ore industry has established long-term trade relationships across Asia. * Over 83% of Western Australia’s iron ore exports went to China in 2019-20, with exports rising 8% to 709 million tonnes. * Iron ore exports to Japan, South Korea and Taiwan combined fell 7% to 123 million tonnes in 2019-20. * Iron ore exports to all other countries1 fell 14% to 18 million tonnes in 2019-20. * In 2019, Western Australia accounted for a large proportion of the iron ore imported by China (65%), Japan (49%) and South Korea (71%). |
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| (a) Included mainly Vietnam, Indonesia, Hong Kong (SAR of China), Malaysia, Singapore and India in 2019-20.  1 Excludes China, Japan, South Korea and Taiwan.  Source: ABS 5368.0 International Trade in Goods and Services. |

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| **WESTERN AUSTRALIA’S SUPPLY** |

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| Iron ore sales volumes | * Growth in Western Australia’s iron ore sales is slowing as China’s demand slows and new mines reach full production. * In 2019-20, Western Australia’s iron ore sales rose 5% to 836 million tonnes, below annual average growth1 of 8% over the past 10 years. * Western Australia’s iron ore sales are forecast2 to rise to 878 million tonnes by 2023-24. * Western Australia produced mainly iron ore fines (72%) in 2019, followed by lump (25%) and concentrate (3%). |
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| 1 Compound annual growth rate.  Source: WA Department of Mines, Industry Regulation and Safety, Resource Data Files; and 2 WA Government State Budget 2020-21 (October 2020). |

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| Major iron ore miners’ sales123 | * Western Australia’s major iron ore miners Rio Tinto, BHP and Fortescue Metals Group (FMG) are the largest global iron ore producers behind Vale from Brazil. * Rio Tinto (360Mtpa) and BHP (290Mtpa) are developing new mines by 2022 to utilise additional rail and port capacity developed over recent years. * Rio Tinto’s iron ore sales rose 3% to 332Mt in 2019-20 and its sales guidance for 2020 is 324-334Mt.1 * BHP’s iron ore sales rose 5% to 283Mt in 2019-20 and its production guidance for 2020-21 is 276-286Mt.1 * FMG’s iron ore sales rose 6% to 178Mt in 2019-20 and its sales guidance for 2020‑21 is 175-180Mt.1 |
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| 1 Western Australian operations. 2 Wet tonnes. 3 Inclusive of third party tonnes.  Source: Company production reports. |

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| Major iron ore export ports | * Port Hedland is the world’s largest bulk export port, while Cape Lambert and Dampier are also major bulk export ports. * Port Hedland (60%) exported most of Western Australia’s iron ore in 2019-20, followed by Cape Lambert (21%), Dampier (15%) and other ports (5%). * Port Hedland’s iron ore exports rose 5% to 507Mt in 2019-20. Cape Lambert’s iron ore exports rose 6% to 176Mt in 2019-20. Dampier’s iron ore exports fell 4% to 126Mt in 2019-20. * Rio Tinto expanded Cape Lambert and Dampier in 2015, raising annual capacity to 210Mt and 150Mt respectively. Annual shipping capacity in Port Hedland increased to 617Mt in 2019 due to investment in port dredging, marine technology and other port efficiencies. |
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| Source: ABS 5368.0 International Trade in Goods and Services. |

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| **CONTRIBUTION TO WESTERN AUSTRALIA’S ECONOMY** |

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| Value of iron ore sales and royalties | * The iron ore industry is a large part of the Western Australian economy, accounting for 20% of the State’s gross state product and 56% of its mining industry value added in 2018-19. * Iron ore accounted for 55% of the value of Western Australia’s merchandise exports and 77% of Western Australia’s minerals sales in 2019-20. * The value of Western Australia’s iron ore sales rose 26% to $103.4 billion in 2019‑20, above annual growth2 of 11% over the past 10 years. * Iron ore accounted for 84% of Western Australia’s royalties1 in 2019-20 and 18% of State government revenue in 2018-19. * Iron ore royalties rose 60% to $7.8 billion in 2019-20. |
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| 1 Includes North West Shelf Grants. 2 Compound annual growth rate.  Source: Western Australian Department of Mines, Industry Regulation and Safety, Resource Data Files. |

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| Major iron ore projects | * Western Australia has over $17 billion of major iron ore projects under construction or committed. * Rio Tinto is developing Koodaideri by early 2022 and approved a $44 million pre‑feasibility study into Koodaideri Phase 2 in late 2018. Rio Tinto also has sustaining projects at its Robe River and Greater Tom Price operations. * BHP is developing South Flank to replace Yandi mine production by mid-2021. * FMG is developing Eliwana to replace Firetail mine production by late 2020. FMG is also developing Iron Bridge (Magnetite) Stage 2 by mid-2022 and Queens Valley (Solomon Hub) by 2022. |
| |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Operator** | **Mine/deposit** | **Capex ($m)1** | **Mtpa** | **Fe (%)2** | **Start-up** | | **Major operating:** | | | | | | | Rio Tinto | Mt Tom Price | n.a. | 40 | 62 | 1966 | | BHP | Newman | n.a. | 100 | 62 | 1969 | | Rio Tinto | Robe River - Pannawonica | n.a. | 35 | 57 | 1974 | | BHP | Yandi | n.a. | 80 | 58 | 1992 | | Rio Tinto | Yandicoogina | n.a. | 50 | 59 | 1998 | | Rio Tinto | Robe River - West Angelas | 1,700 | 35 | 62 | 2002 | | BHP | Mining Area C | 3,000 | 60 | 62 | 2003 | | Rio Tinto | Nammuldi | n.a. | 60 | 62 | 2006 | | Rio Tinto | Hope Downs | 3,400 | 45 | 61 | 2007 | | FMG | Chichester Hub | 8,800 | 100 | 58 | 2008 | | **Recently completed:** | | | | | | | FMG | Solomon Hub | 9,600 | 70 | 58 | 2013 | | Gindalbie | Karara\* | 2,600 | 8-16 | 66 | 2013 | | CITIC Pacific | Sino Iron\* | 12,000 | 24 | 66 | 2013 | | BHP | Jimblebar | 3,800 | 35-55 | 63 | 2013 | | Rio Tinto | Nammuldi (Expansion) | 2,200 | 10-20 | 62 | 2014 | | Hancock Pros. | Roy Hill | 13,700 | 55-60 | 61 | 2015 | | Rio Tinto | Silvergrass | 338 | 10-20 | 62 | 2017 | | Mt Gibson | Koolan Island (Restart) | 97 | 5 | 65 | 2019 | | **Under construction or committed:** | | | | | | | FMG | Eliwana | 1,800 | 30 | 60 | 2020 | | BHP | South Flank | 4,700 | 80 | 62 | 2021 | | Rio Tinto | Robe Valley Mesa B,C & H | 1,300 | n.a. | 62 | 2021 | | Rio Tinto | West Angelas Deposits C & D | 800 | n.a. | 62 | 2021 | | Rio Tinto | Western Turner Syncline 2 | 1,000 | 30 | 62 | 2021 | | Rio Tinto | Koodaideri | 3,500 | 43-70 | 59 | 2022 | | FMG | Iron Bridge Stage 2\* | 3,700 | 10-22 | 67 | 2022 | | FMG | Queens Valley (Solomon Hub) | 400 | n.a. | 58 | 2022 | |
| n.a. – not available or not applicable. \* Magnetite. 1 Includes mines and rail and port infrastructure. 2 Product grade if available, otherwise reserve grade for direct shipping ores. Source: S&P Global Market Intelligence; Wood Mackenzie, Global Iron Ore Markets Long-term Outlook Data; and company announcements, reports and presentations. |

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| Direct iron ore industry employment1 | * Direct employment in Western Australia’s iron ore industry rose 12% to 50,753 in 2019-20. This is 10% (5,515) below the height reached in 2013-14 of 56,268. * Iron ore accounted for 49% of direct employment in Western Australia’s minerals mining industry in 2019-20 (excluding exploration). |
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| 1 Full-time equivalent (average on site).  Source: Western Australian Department of Mines, Industry Regulation and Safety, Resource Data Files. |