



RioTinto

# Metal Bulletin Iron Ore Conference

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Atlantic Basin

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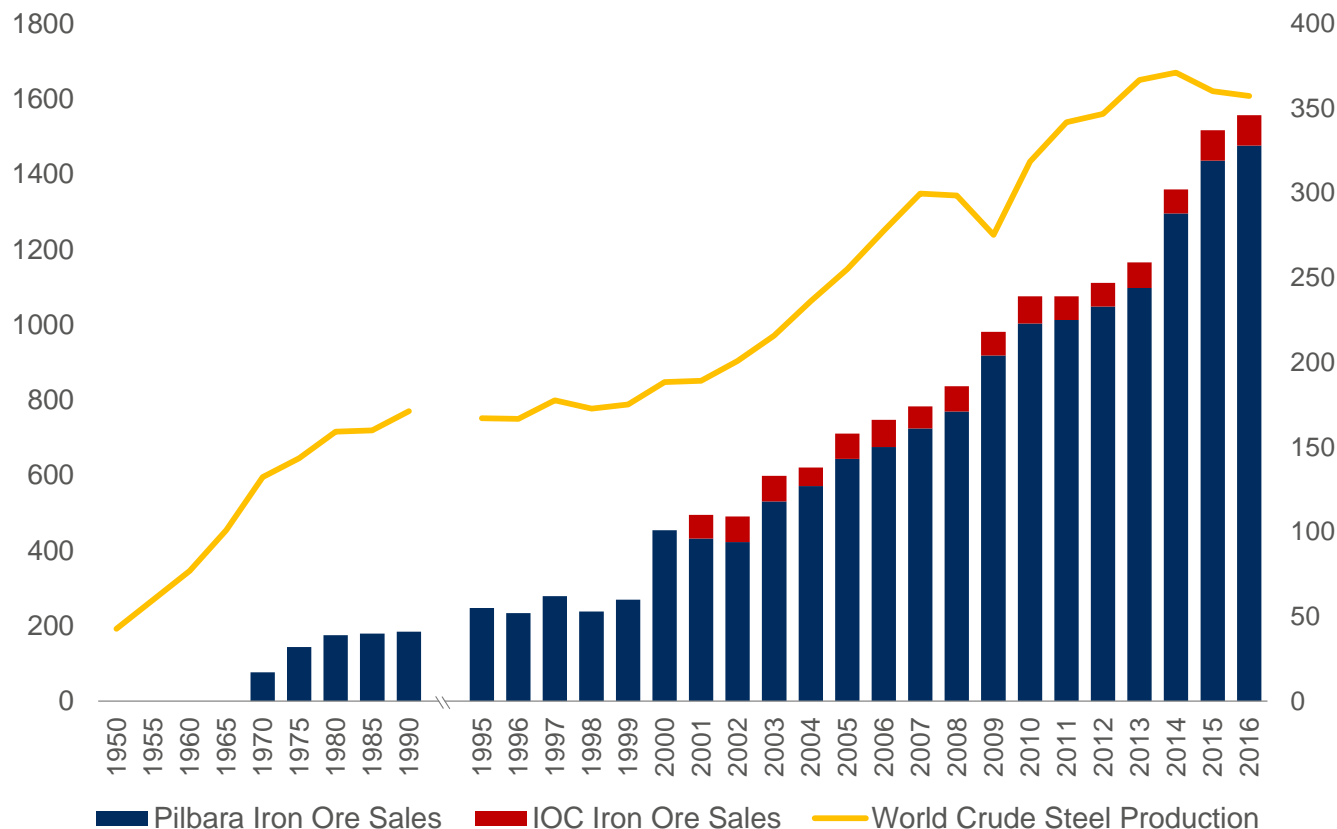
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# Rio Tinto has supported the world's growing demand for steel from the Pilbara and Iron Ore Company of Canada

**World crude steel (LHS) and Rio Tinto iron ore sales (RHS - 100% basis)**

Million tonnes



Supplying iron ore to the steel industry for over 50 years

Shipped over five billion tonnes of iron ore to our customers worldwide

Invested over \$33 billion in the last decade to supply the world's growing demand for iron ore and steel

Reliable partner in the supply of iron ore products to our customers

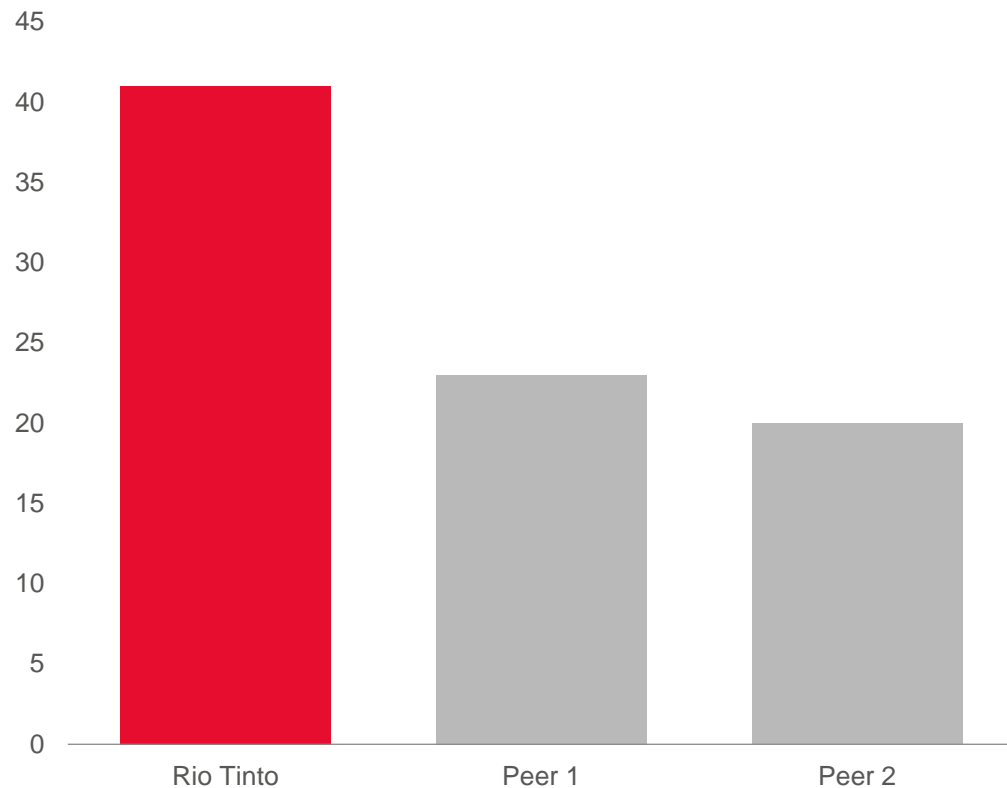
Portfolio of iron ore products with stable and consistent quality

Source: World Steel Association and Rio Tinto

# And we consistently promote price transparency by providing liquidity in the physical iron ore market

## 2016 reported spot market transactions by major producer

Million tonnes



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Rio Tinto has a long track record of supporting an open and transparent market

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Rio Tinto is a major provider of physically traded iron ore on spot markets to support price formation

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Pilbara Blend fines is the most traded physical iron ore in the market

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Rio Tinto has consistently sold fixed price cargoes in the spot market to support open market price discovery

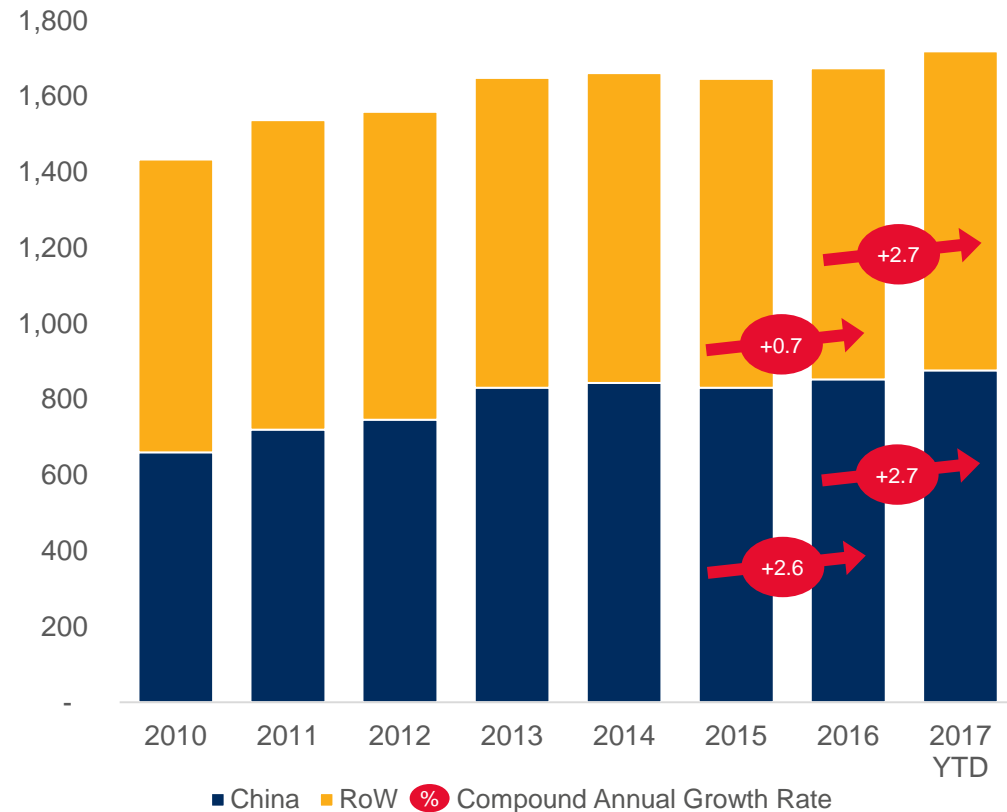
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Source: Platts, Argus, Metal Bulletin and Rio Tinto

# Improved steel market conditions

## World crude steel production

Million tonnes



Steel demand recovery strengthened so far during 2017 with growth coming from China and other regions

Healthy global demand combined with ongoing capacity cuts in China supported global prices and margins

Chinese steel exports have fallen in H1 2017, driven by an improvement in domestic demand

Improved steel market conditions with higher capacity utilisation, supporting steel mills margins

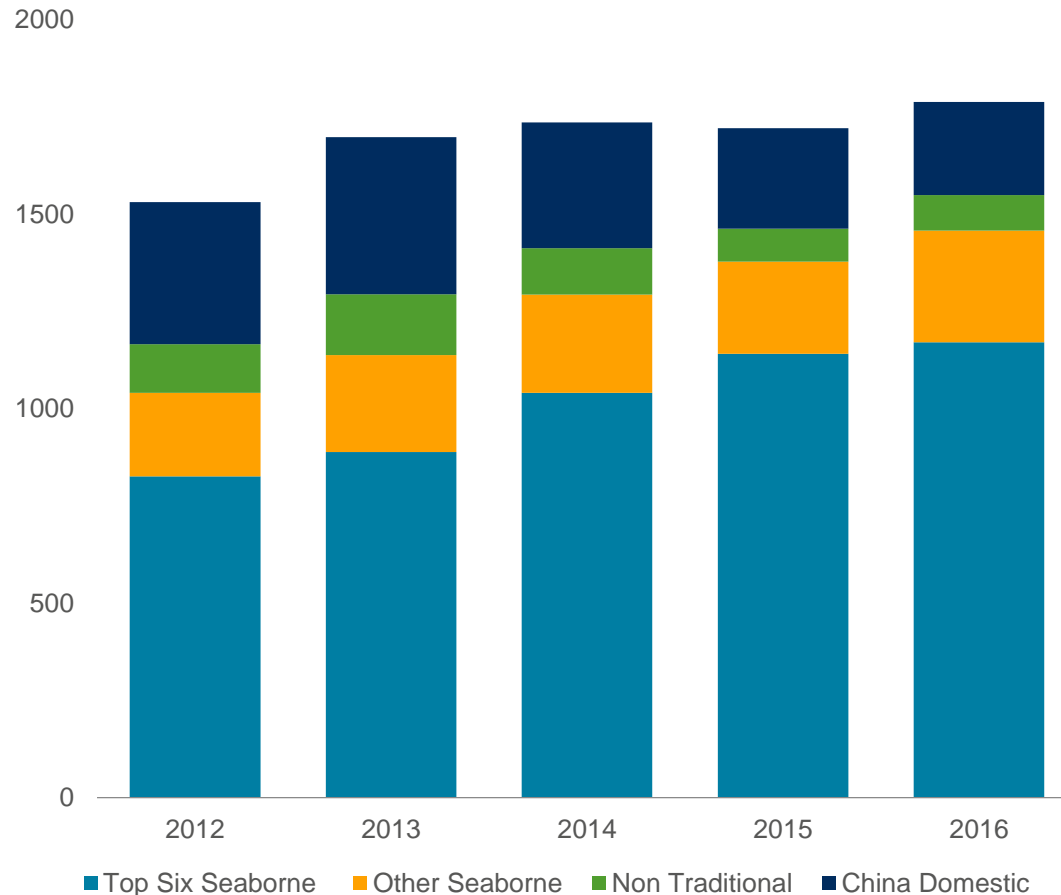
Rising demand for high-grade fines and the tightening pellet market

Source: World Steel Association and Rio Tinto. 2017YTD is not a forecast and is based on Jan-Apr data annualised.

# Existing seaborne supply projects to be delivered

## Contestable iron ore supply

Million tonnes



China domestic production continues to form a significant proportion of contestable supply

Non-traditional supply peaked in 2013 and has since almost halved due to declining returns and government actions

Low grade ores, more distant, higher cost mines without their own infrastructure are at risk as low cost capacity is delivered

Mine depletion in early / mid 2020s will impact quality and require capex to maintain / increase supply

Existing supply regions with existing infrastructure and low country risk will offer the lowest capex options

Source: Rio Tinto

**RioTinto**

# Major trends influencing the iron ore market

## Steel production resilient.....

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Steel market outlook; growth in emerging Asian countries

Consolidating steel industry in China

Replacement cycle a more significant driver of steel consumption

Increased role of scrap in the future

## Changing nature of financial markets.....

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Increased liquidity in iron ore paper markets influences sentiment

Presence of non-physical players in market creates more price volatility

## .....iron ore supply / demand

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Exits of higher cost producers / low value ores to continue

Impact of depleting mines on quality and quantity

Larger BFs, requiring higher quality raw materials

Impact of growth in DRI / HBI capacity on pellet market

Reduced availability of coarse sinter feed

## ...and of regulatory frameworks

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Environmental restrictions: emissions and CO<sub>2</sub>

Steel capacity reductions / consolidation

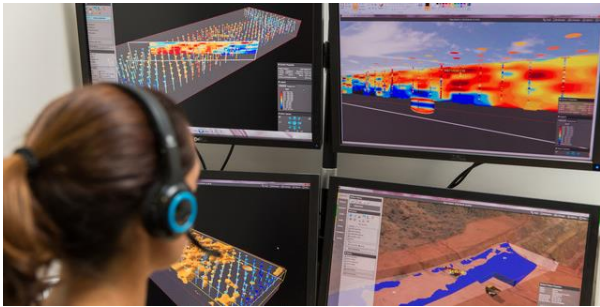
By-product value / disposal costs

# Rio Tinto continues to pioneer progress in mining technology through the Mine of the Future™

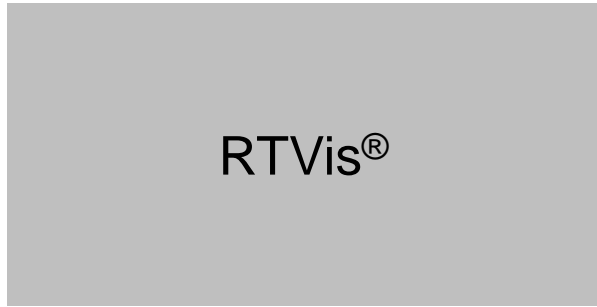
Integrated Operations Centre



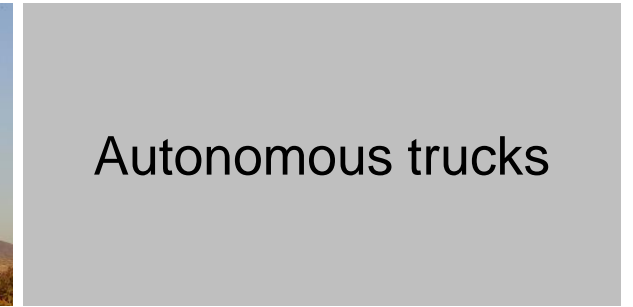
Automated drills



RTVis®



Autonomous trucks



AutoHaul®

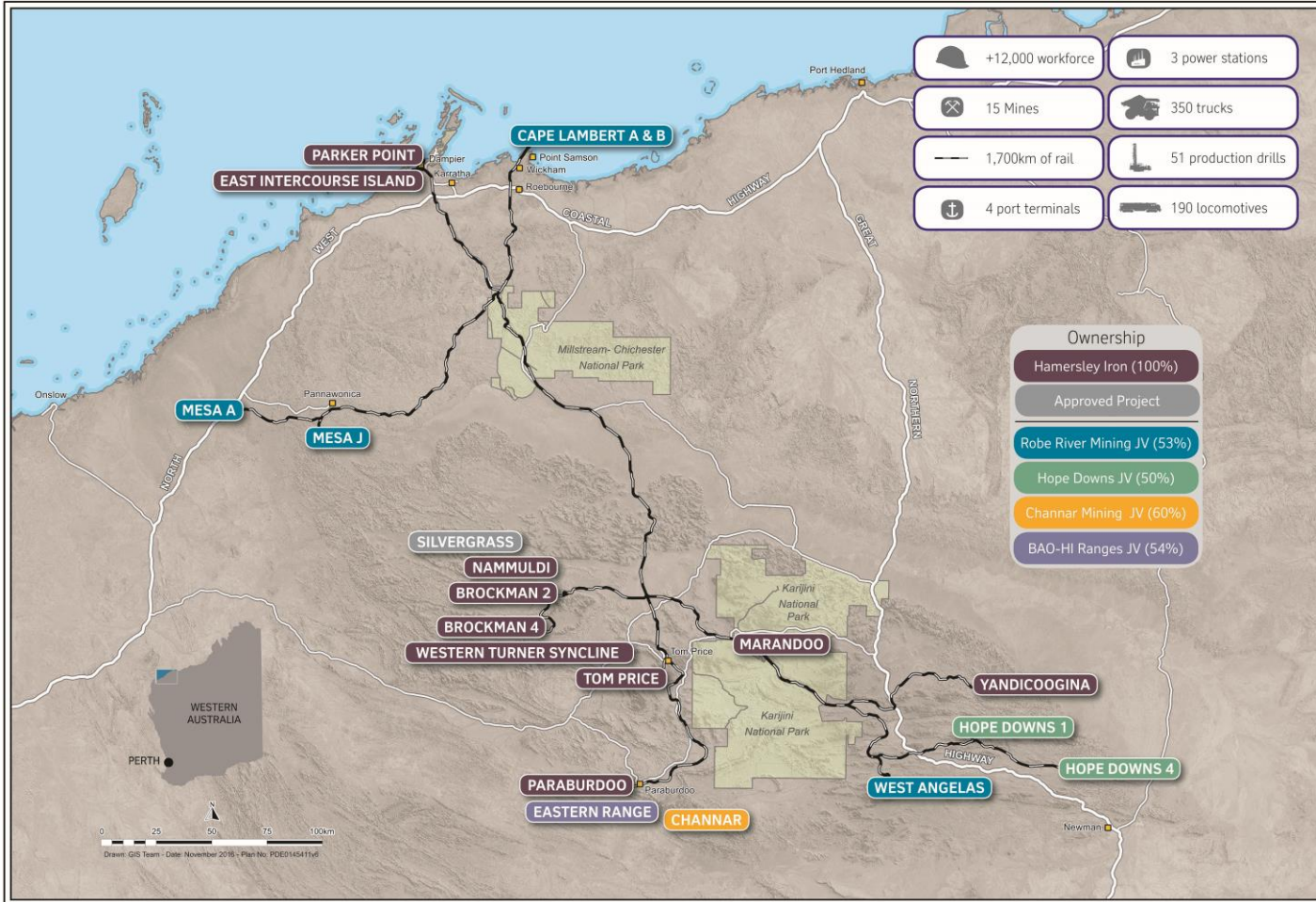


Automated Laboratory





# Our world-class Pilbara assets



Fully integrated system of 15 mines, 1,700km of rail and four port terminals

Ship almost one million tonnes of iron ore per day to our customers

Highly-valued product suite, sustained by significant Mineral Resources

Our Pilbara Blend fines is the most liquid physical iron ore product in the market

Consistency of quality provides predictability to our customers

# IOC – Meeting our customer’s needs with high-grade, world-class low phosphorus and alumina pellets and CFS



High grade consistent quality products; with premium BF and DR pellets matching industry constraints and customer needs

Capacity of 23Mt of concentrate production with over 50% converted into pellets

A 30% increase in concentrate production since 2014; more to come in volume and incremental quality improvements

Low impurities, sustained by significant Mineral Resources, capable of decades of future potential production

Fully integrated and operated mine, concentrator, pellet plant, 420km rail and port

Sept Isle is a deep water port capable of handling vessels up to 250kt with short sailing times to Europe, N. America and MENA

# IOC & Pellet Market



Blast Furnace



DRI /HBI unit

IOC refocused the business with new management, improved operational reliability and consistency; with further upside to come

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Continuous incremental product quality improvements have added to IOC's consistency, reliability, sizing and metallurgical performance

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Pellet production is returning to full capacity of 13Mt/a with added flexibility between BF and DR to meet customer needs

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IOC has developed a pellet product range; from standard acid to high grade BF acid and fluxed pellet plus a continuous improving premium quality DR pellets

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Demand for DR pellets is forecast to rise with new projects in MENA and North America planned

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As the steel market consolidates, BFs get larger and seek better productivity there remains growth in BF pellet demand in EU and JKT

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China's role in consumption of the high grade pellet market in the future is unclear

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# Our portfolio of products ...

## IOC Products



**DR pellets**

- High Fe 68%
- Low alumina
- Ultra Low phosphorus
- Consistent sizing
- Good Mechanical strength
- Good carbon pick up



**BF pellets**

- Fe 65%-67%
- Ultra Low phosphorus
- Low alumina
- Consistent sizing
- Good Mechanical strength
- Tight size range



**Concentrate**

- High Fe 66%+
- Ultra Low phosphorus
- Ultra low alumina
- Ideal for blending with low-grade, high impurity ores



**Robe Valley Lump**

- 57% Fe
- Consistent quality
- Low phosphorus
- A valuable lump ore



**Robe Valley Fines**

- 57% Fe
- Calcines to higher grade
- Consistent quality
- Low phosphorus
- Coarse sizing aids sinter granulation



**Yandicoogina (HIY)**

- 58% Fe
- Calcines to higher grade
- Low alumina
- Low phos
- Coarse sizing aid granularity
- Ideal chemical composition for Asian sinter blends



**Pilbara Blend Lump**

- 62.5% Fe lump index ore
- Consistent quality
- Most widely available lump product
- Direct charge, avoiding need to sinter



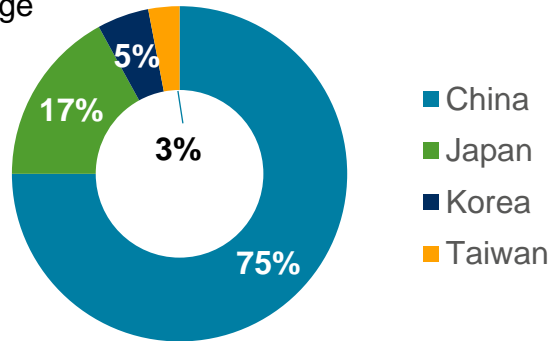
**Pilbara Blend Fines**

- 62% Fe index ore
- Consistent quality
- Most traded physical iron ore product
- Base load sinter blend in Asia

# ...are delivered to our customers around the world

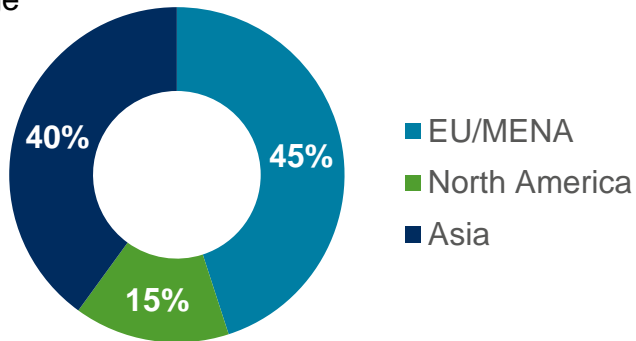
## Pilbara sales by region

Percentage



## Iron Ore Company of Canada sales by region

Percentage



Rio Tinto has a portfolio of products that can meet diverse customer needs

Value comes also from low variability, reliability, consistency and sizing

Our Technical Marketing team engages with customers to listen to customer requirements and assist in the better use of its iron ores

The customer feedback influences Rio Tinto mine developments

## Delivering optimal value from mine to market



# Rio Tinto's value proposition in the Atlantic

## Iron Ore Company of Canada



IOC Fines and Pellets in EU

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High grade sinter feed, ultra low phosphorus and alumina

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BF Pellets from standard to prime low silica quality to premium grade pellets for the DR market

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Consistent quality in cargo and between cargoes

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Clean high grade ores with low alkalis and tramp elements resulting in low emissions

## Rio Tinto Pilbara

Pilbara ores offer value for European mills as freight differential declines

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Natural sinter feed disappearing from Atlantic

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Coarse ore aids granulation in the sinter plant

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Value in consistency, reliability and repeatability

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Lump ore offers diversification of supply for European mills

# Summary

**Rio Tinto has invested to expand iron ore production to meet customer demands**

**Rio Tinto continues to drive superior performance through innovation and technology**

**Rio Tinto consistently delivers consistent quality products to its customers**

**Rio Tinto actively supports index liquidity and price transparency through regular spot sales**

**Rio Tinto has a portfolio of products that can meet diverse customer needs**

**Rio Tinto is a reliable supplier that highly values its customers**