

Iron Ore 2022 & The Road Ahead



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Downtrend in IO prices in 2H 2022



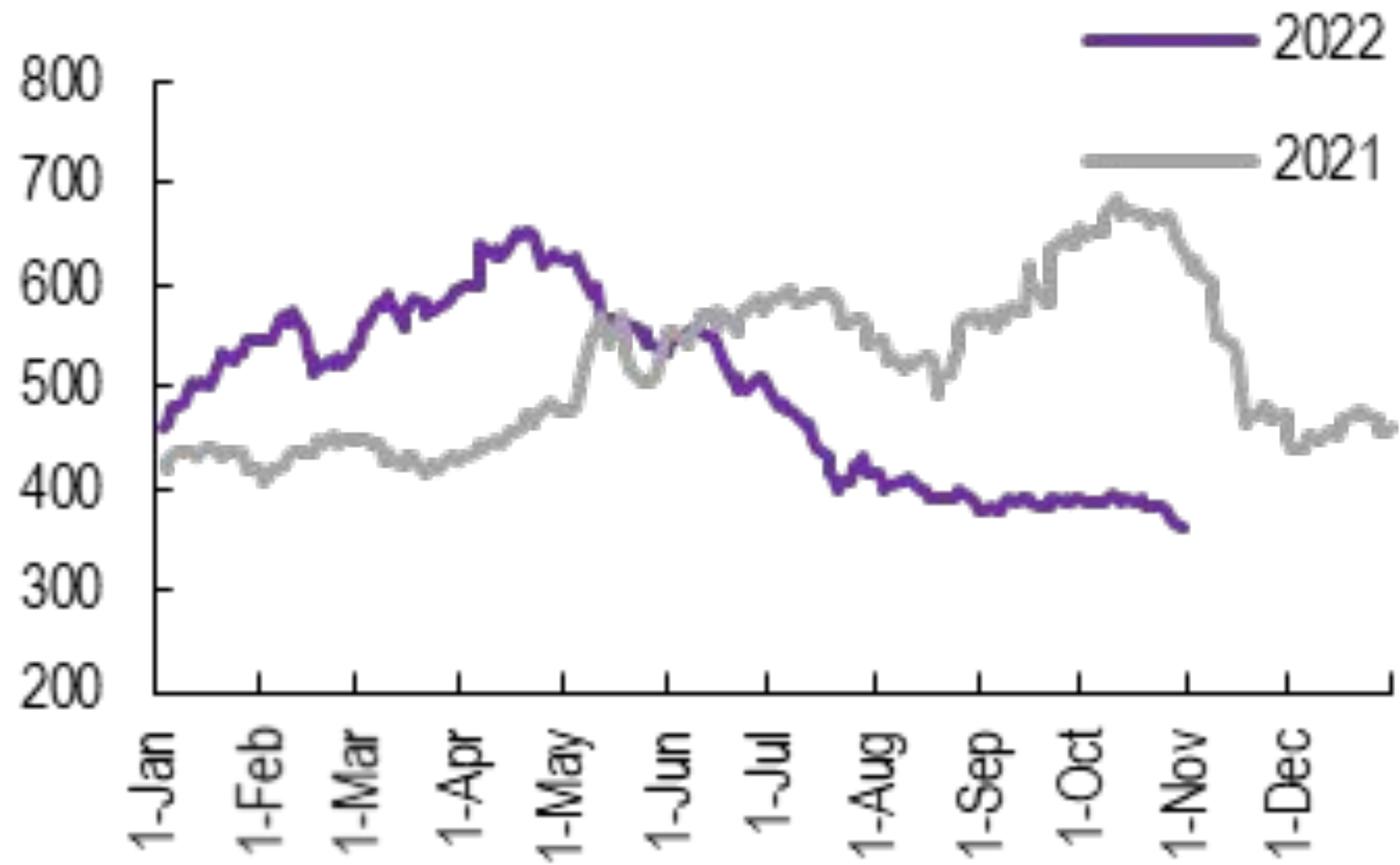
Weakness in domestic and export demand for downstream steel products

Limited upside for IO prices - narrow mill margins alongside high iron ore inventory

Iron ore 62% Fe fines, cfr Qingdao, \$/tonne
Iron ore 62% Fe low-alumina fines, cfr Qingdao, \$/tonne
Iron ore 65% Fe Brazil-origin fines, cfr Qingdao, \$/tonne



Downtrend in IO prices in 2H 2022



Hot metal cost, usd/tonne

Weakness in domestic and export demand for downstream steel products

Limited upside for IO prices - narrow mill margins alongside high iron ore inventory

Domestic downstream market rocked by poor construction & manufacturing demand



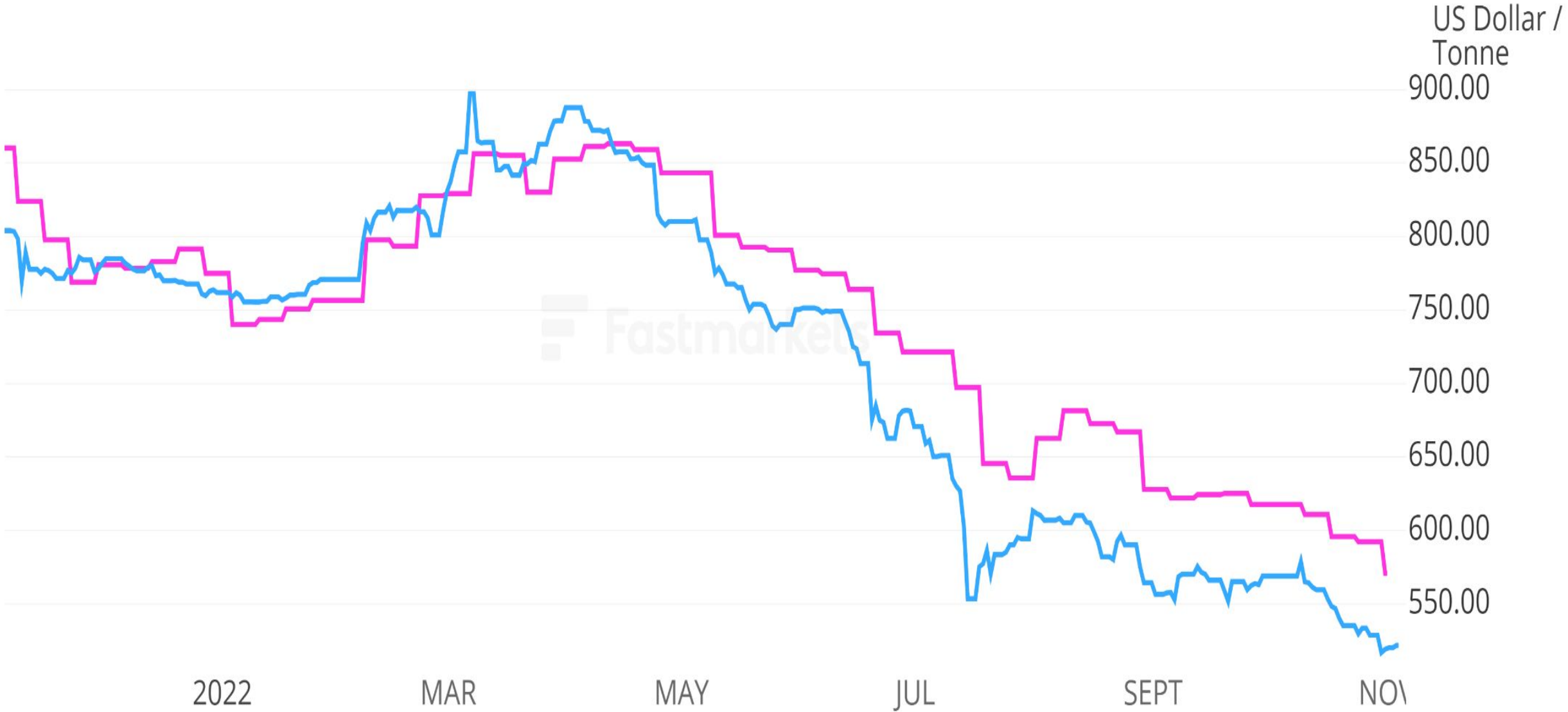
Rebar and HRC prices have tumbled by 20% since June 2022

Construction activity expected to remain thin throughout winter

Steel reinforcing bar (rebar) domestic, ex-whs Eastern China, yuan/tonne

Steel hot-rolled coil domestic, ex-whs Eastern China, yuan/tonne

Limited upside in regional export market



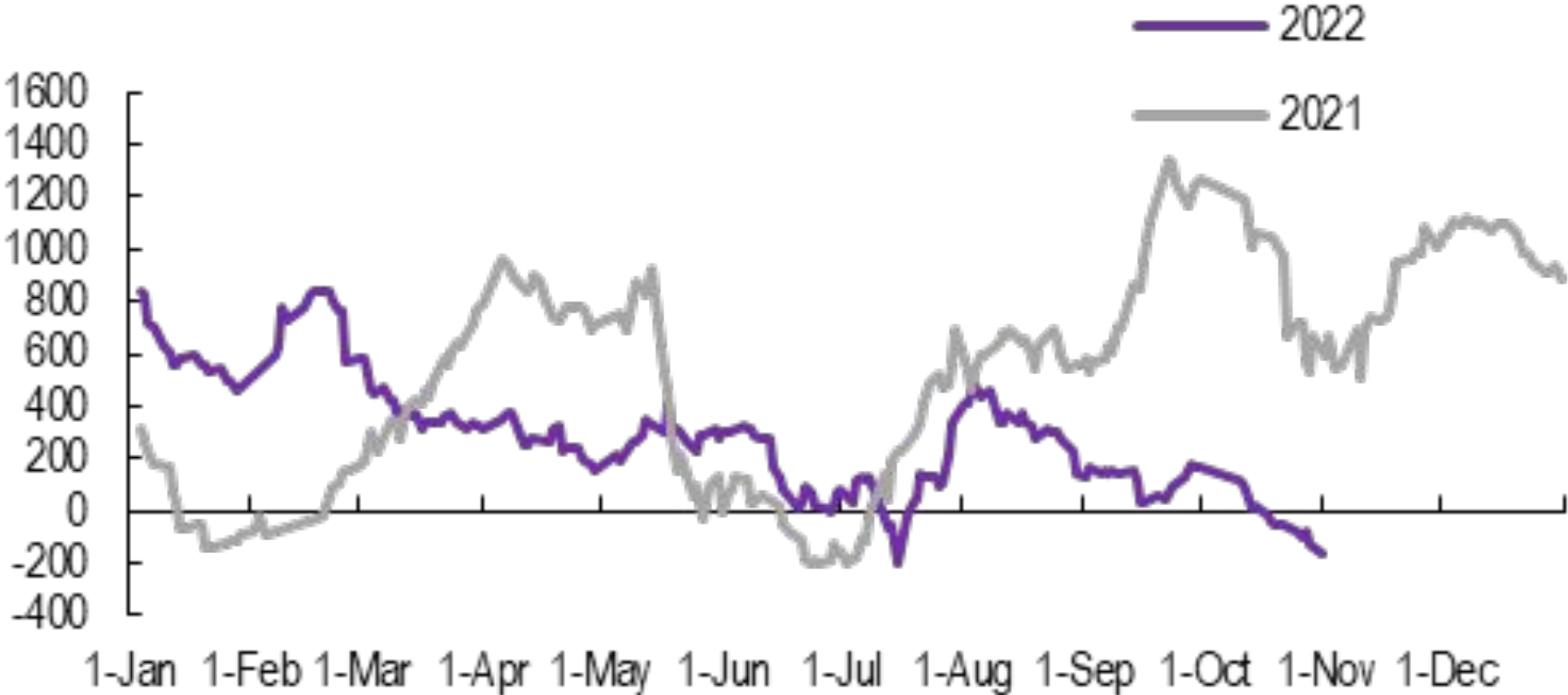
Poor consumption from major importers in JKT and Vietnam

Asia-Pacific region rocked by headwinds in from slow construction and manufacturing demand

Steel reinforcing bar (rebar) index export, fob China main port, \$/tonne

Steel hot-rolled coil index export, fob main port China, \$/tonne

Mill margins under threat



Chinese mills saw thinner profit margins amid weak downstream steel market

China's Steel Mill rebar margin proxy, yuan/tonne

Mill margins under threat

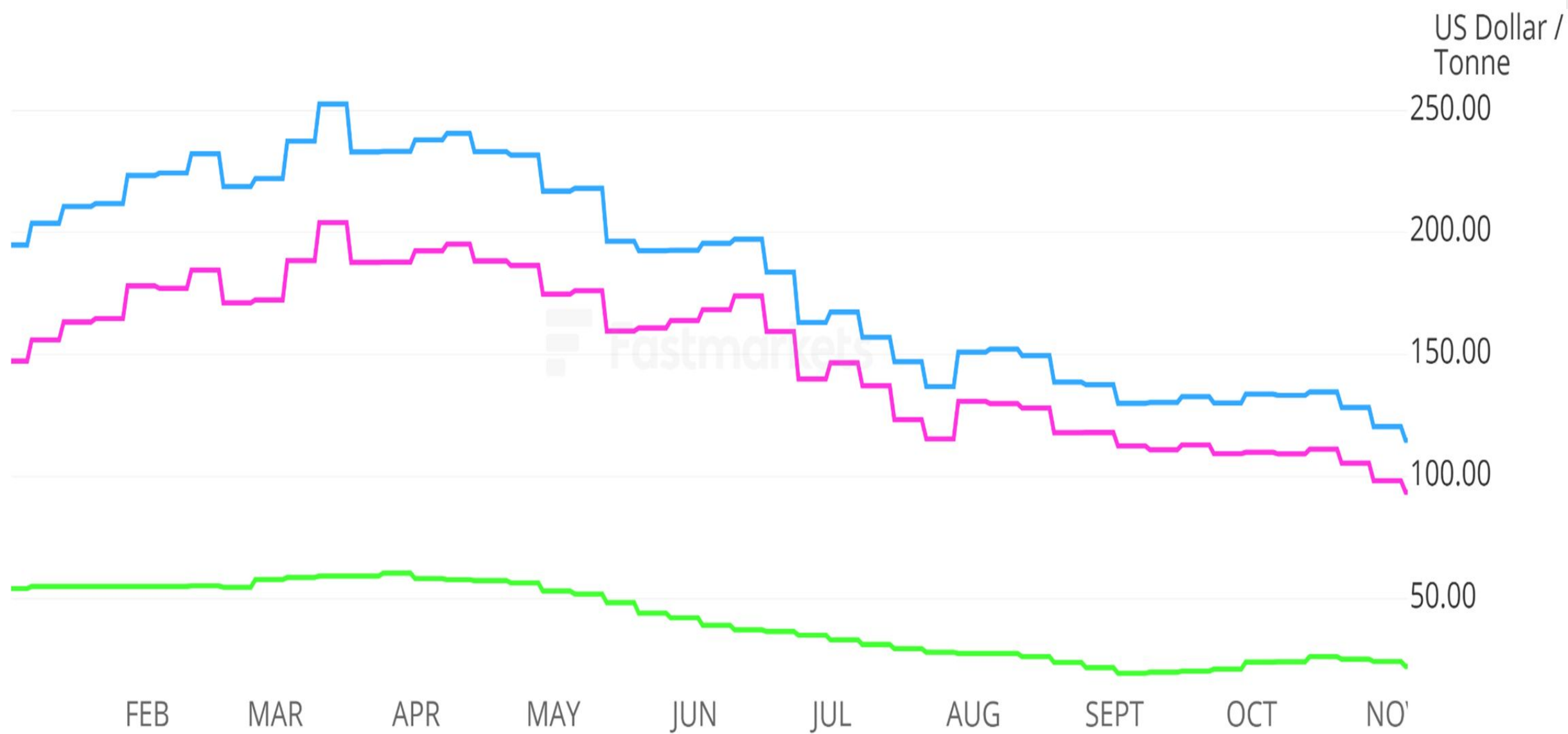


Chinese mills saw thinner profit margins amid weak downstream steel market

China's Steel Mill HRC margin proxy, yuan/tonne



High-grade IO market in doldrums



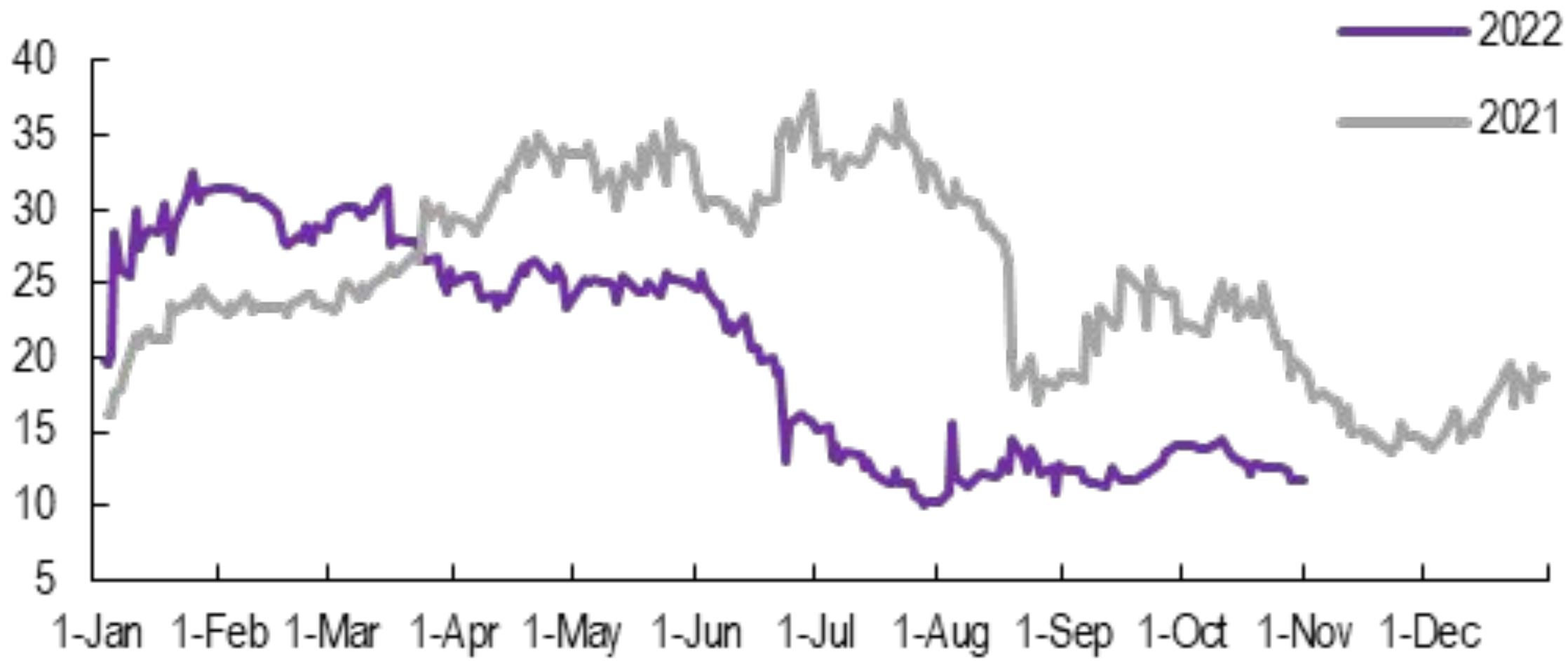
Strong preference for low-cost sinter fines amid tight margins

Diverted volumes amid slowdown in EU BF activity

Iron ore 66% Fe concentrate, cfr Qingdao, \$/tonne
Iron ore 65% Fe blast furnace pellet, cfr Qingdao, \$/tonne
Iron ore pellet premium over 65% Fe fines, cfr China, \$/tonne



High-grade IO market in doldrums



Iron Ore 65% Fe Fines/62% Fe Fines Differential, usd/tonne

Strong preference for low-cost sinter fines amid tight margins

Diverted volumes amid slowdown in EU BF activity

**Has the decarbonization drive
in the ferrous industry taken a
backseat in 2022?**



Decarbonization down the IO chain



Scaling back on Scope 1 and Scope 2 emissions

Curbing environmental impact of mining operations

Weaning away from fossil fuel-based production towards renewable energy

Rio Tinto to invest \$7.5bln to meet emission targets

Rio Tinto will invest \$7.5 billion to reduce emissions and meet its carbon targets earlier than planned, the company announced on Wednesday September 20.

Fortescue announces execution plan for industry leading decarbonisation

- US\$6.2 billion capital investment by 2030 to eliminate fossil fuel risk and reduce operating costs by US\$818 million per year.

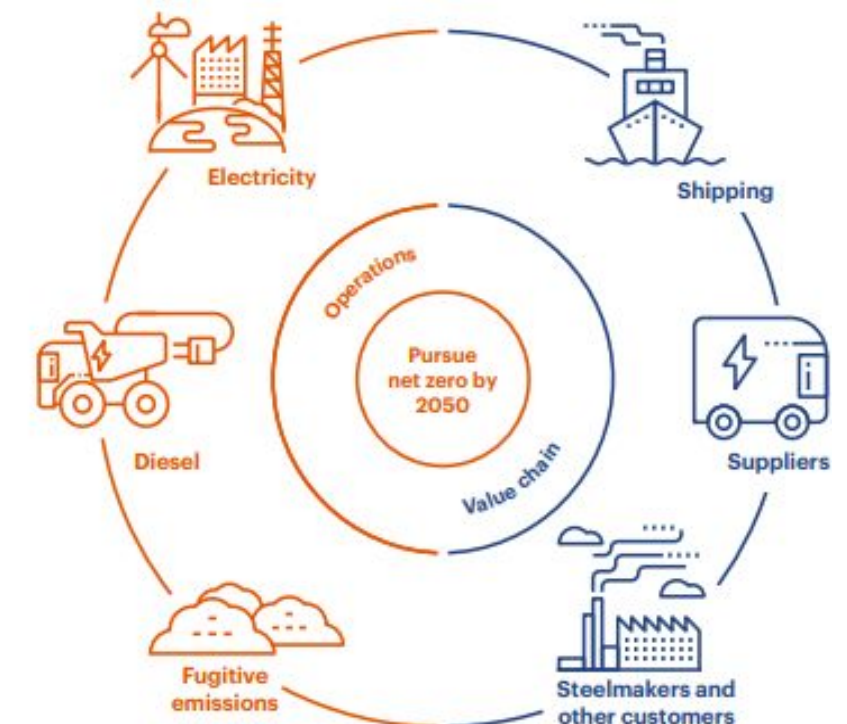
Operations (Scopes 1 and 2)

FY2030

Target Reduce operational greenhouse gas emissions by at least 30% from FY2020 levels.

2050

Goal Achieve net zero operational greenhouse gas emissions.



Decarbonization down the IO chain



Scope 3:

Producing multiple pathways to green steel through its feedstock

'Green' Iron Ore

Vale pushes 'green briquette' to reduce GHG

Brazil's Vale has launched a new iron ore product that will reduce greenhouse gases (GHG) by up to 10% in the steel production process, it said on Thursday September 9.



Carbon-free sponge iron

We are developing the production of carbon-free sponge iron. This way, we're taking a step forward in the value chain, increasing the value of our products and giving our customers direct access to the carbon-free iron needed to build the sustainable world of the future.

Green Iron Ore

IO produced with lesser emissions

IO that reduces emission load in steelmaking

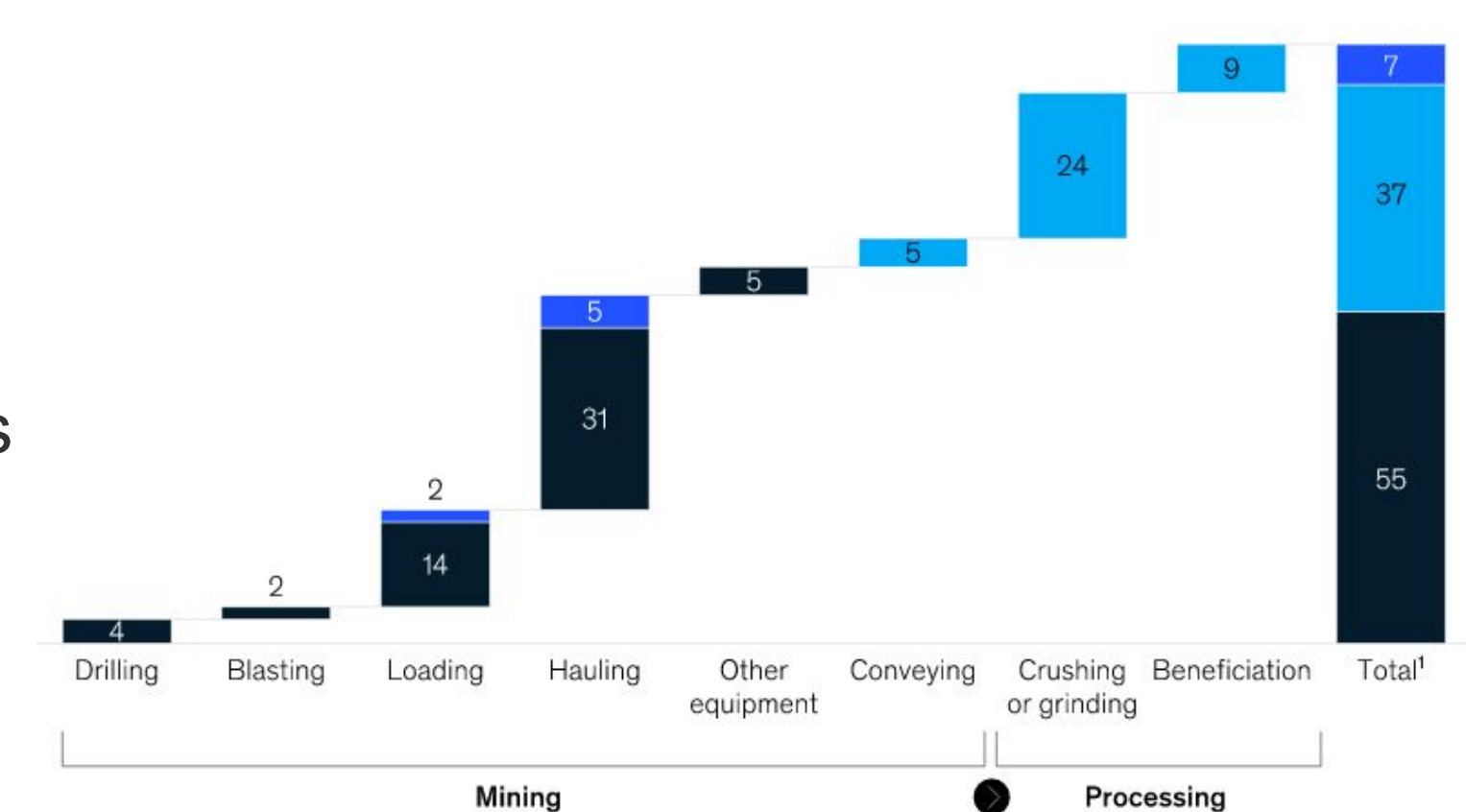
Weaning the ferrous industry from high-impurity fines

Minimizing sinter load

- High-grade sinter fines
- Lowering reduction burden
- Direct charge material

Addressing emissions from multiple sources is key to the decarbonization of mining.

Example, %: Iron ore; open pit; Australia; Run of mine: 25 Mt per annum



Source: McKinsey Mine Decarbonization Model

Southeast Asia's blast furnace capacity set for 25% growth

Blast furnace (BF)-based steelmaking capacity in Southeast Asia could balloon by 25% over the next few years with the emergence of new projects, the South East Asia Iron & Steel Institute (Seaisi) said recently

Developments in the IO industry



**Ongoing pivot towards high-grade
sinter fines**



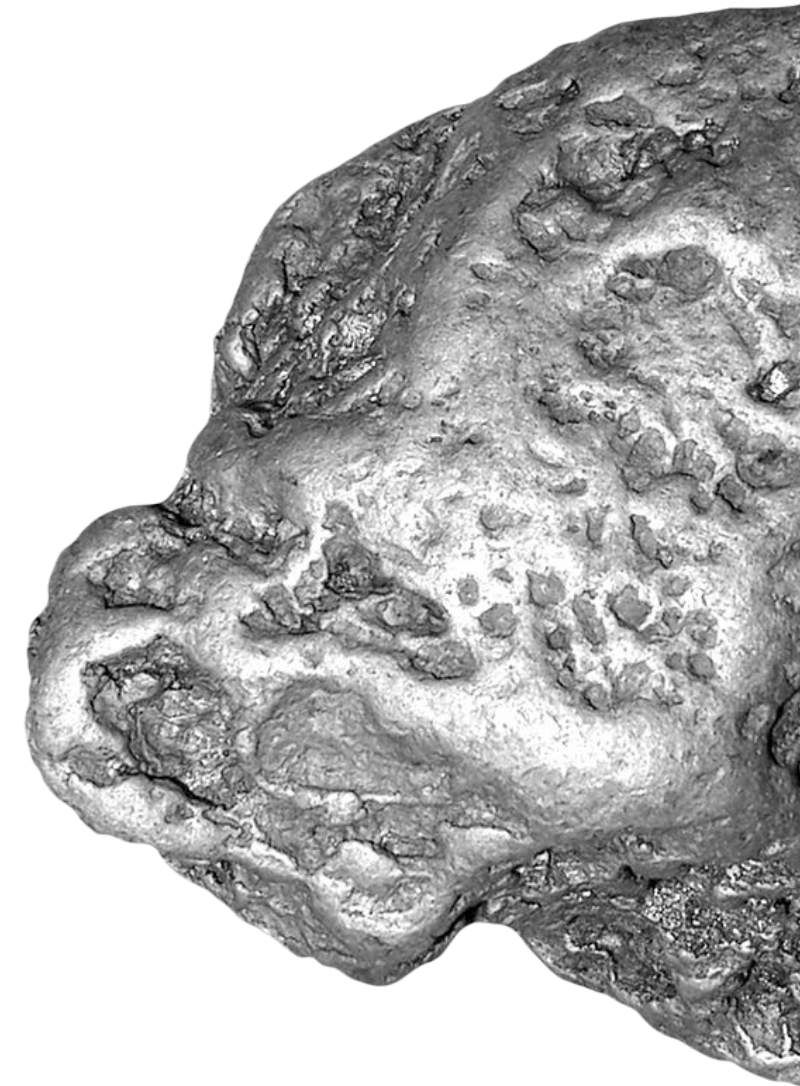
**Expanding the use of BF and
DR-grade pellets**



**Direct Reduced Iron &
Hot Briquetted Iron**



Thank you




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