



FGV-IRENA WEBINAR

Energy Transition: The role of hydrogen, global and Brazil



December 2020



VALE

We are Vale

A global mining company;
one of the leaders in iron ore,
pellets and nickel.

We also produce manganese, ferroalloys,
copper, metals of the platinum group, by-
products of gold, silver, cobalt,
metallurgical and thermal coals.

We operate logistic systems integrated
with mining activities, including railroads,
maritime terminals and ports.

We have stakes in energy and steel assets



Our **New Pact**
remains steady
as we are
vigilant and
responsive to
the needs of
Society

2030 Commitments



Climate change

Reduce GHG emissions
by 33% and be carbon
neutral by 2050



Energy

100% global electricity
consumption of clean energy



Forest

Recover and protect
+500,000 ha



Socioeconomic contribution

Health care, education
and income generation



Water

Reduce new water
collection by 10%



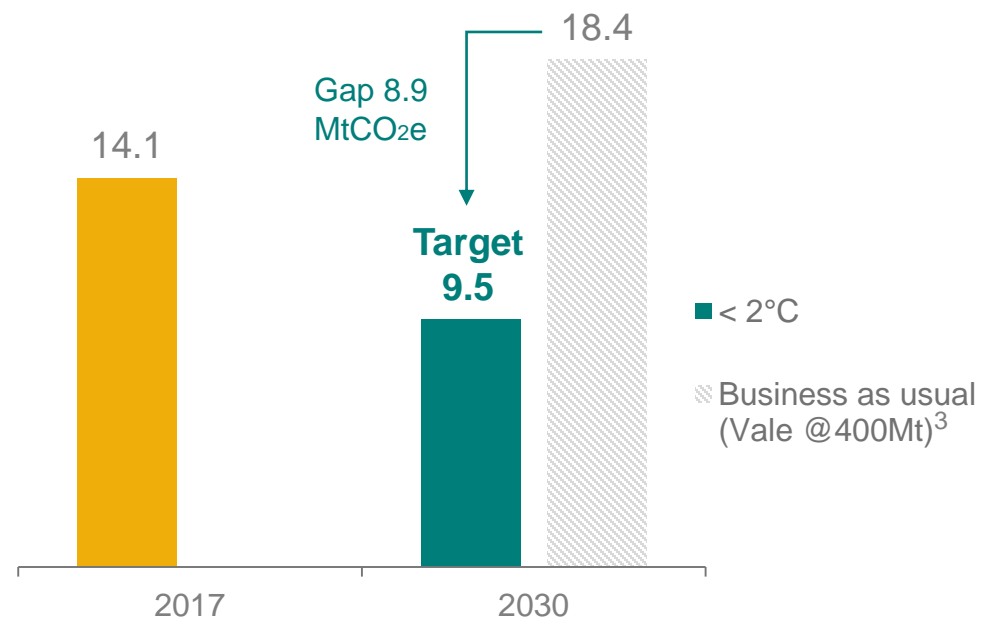
ESG gaps

Eliminate main
ESG gaps

Our commitment for 2030: reduce 33%¹ of scope 1 and 2 emission

Become a net zero emission company by 2050

Absolute emissions (MtCO₂e)²



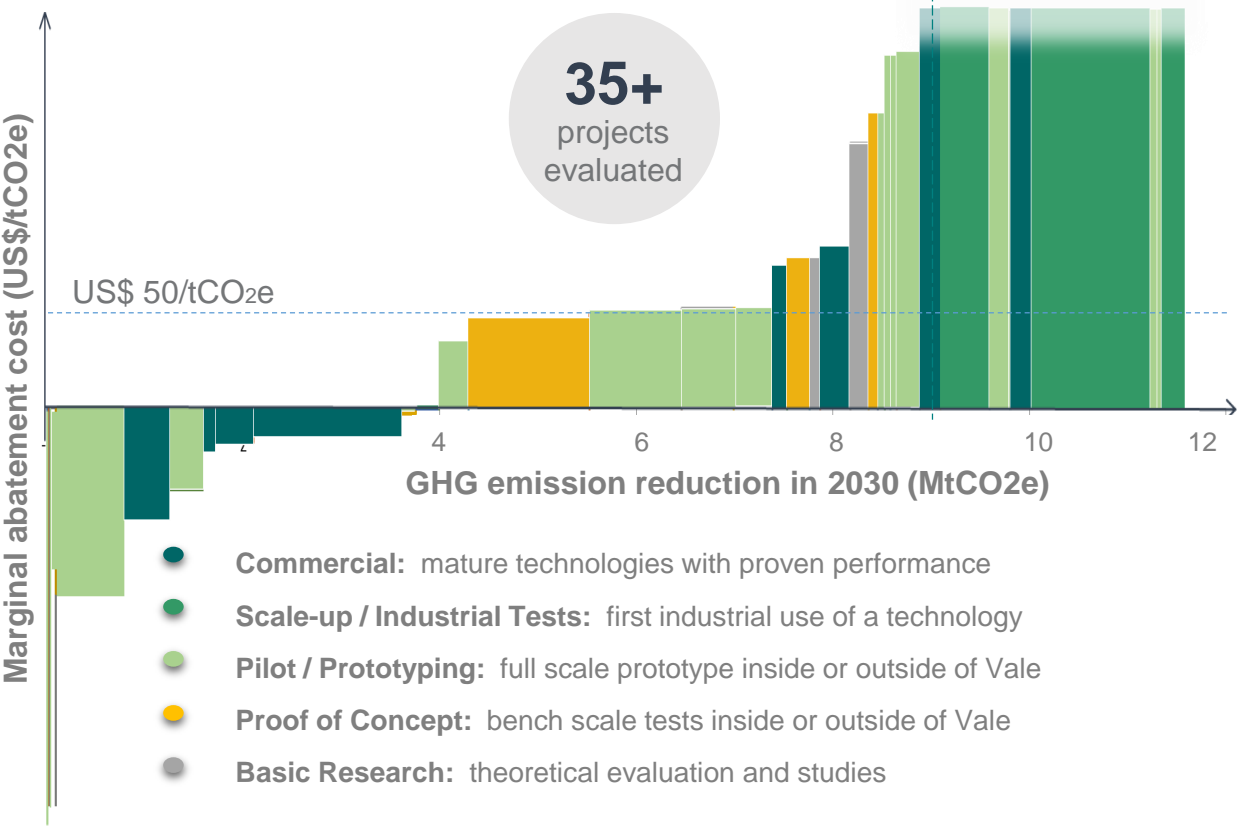
- Alignment with the Paris Agreement
- Roadmap for 2030 based on NPV+ projects
- US\$ 2 bn investments in renewable energy
- Renewable power and forest as competitive advantages

¹ Baseline 2017.
² Scopes 1 and 2 trajectory, aligned with the UN Environment “Emissions Gap” range for limiting global temperature rise to 1,5°-2°C.
³ Considering the highest CO₂ emissions level according to Vale’s current production master plan (assuming no actions for reduction of emissions) and the 2030 goal.

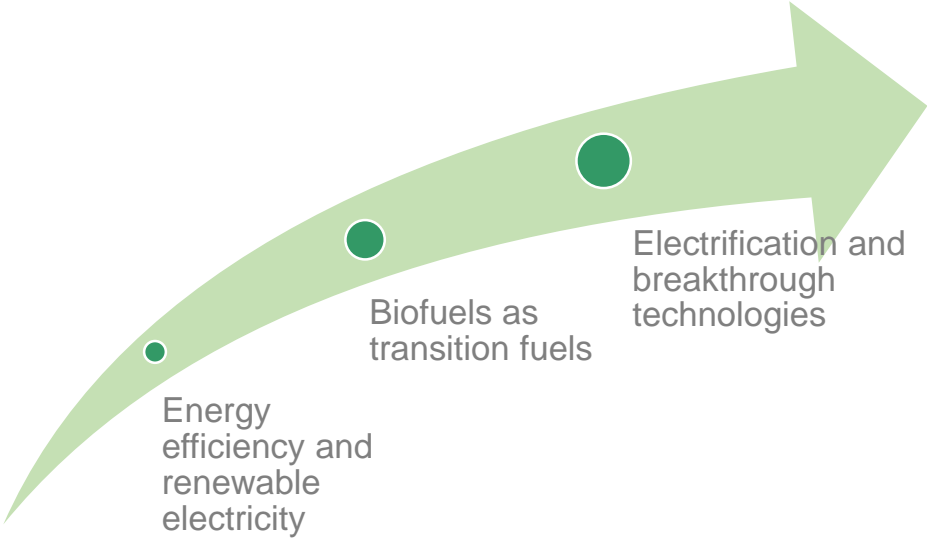
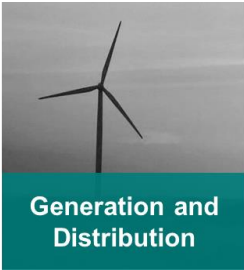
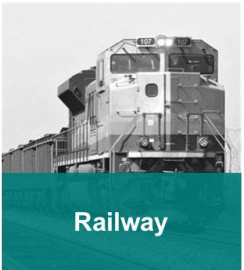


The pathway to achieve our commitment by 2030

Marginal abatement cost
(Curve under development)



Main processes



¹ The reduction goal is based on the highest CO₂ emissions level according to Vale's current production master plan (assuming no actions for reduction of emissions) and the 2030 goal, as detailed in the previous slide. Note: Some projects are in early stage of maturity with technologies under development. The assumptions and scenarios could be redefined, and therefore, change the estimates given in the graph.

Vale's electricity portfolio is already most renewable

VALE'S CURRENT GENERATION PORTFÓLIO



BRAZIL ASSETS

- **1,8 GW** installed capacity
- **100% RENEWABLE GENERATION**
- 21 Hydropower plants (direct and indirect owned)
- 1 wind power plant (indirect owned)
- 1 wind power plant PPA and equity call option



CANADA ASSETS

- **70 MW** installed capacity
- **80% RENEWABLE GENERATION**
- 5 Hydropower plants



INDONESIA ASSETS

- **500 MW** installed capacity
- **100% RENEWABLE GENERATION**
- 3 Hydropower plants



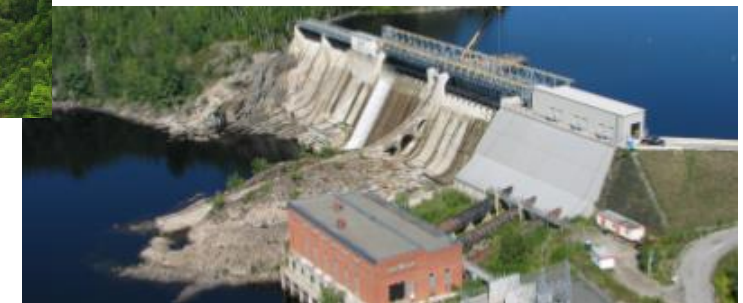
Belo Monte Hydro: 11 GW



Estreito Hydro: 1 GW



Karebee Hydro: 130 MW



Big Eddy Hydro: 30 MW ⁶

Hydrogen to replace fossil fuels in the processes

Hydrogen has the potential to be the solution in the low carbon global agenda. Competitiveness is still an issue

