Pathways to a sustainable future; governance of CO2 removal & mitigation strategies for industry

The case of the Chilean steel industry

December 11th, 2019

OUR APPROACH TO THE CLIMATE CHANGE CHALLENGE

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CLIMATE ACTION

Risk

We **measure** the climate-related risks that influence investments and projects

Opportunity

We formulate **business models** and deliver **policy guidance**, to accelerate climate change adaptation and mitigation actions

Financing

We **enable** the mobilization of financial resources to promote sustainable investiments

OUR CLIENTS

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giz

BHP

MITIGATION STRATEGIES IN THE INDUSTRY

Our work for Fundación Bariloche and GIZ: **Analysis of climate change technology needs for the Steel sector in Chile**

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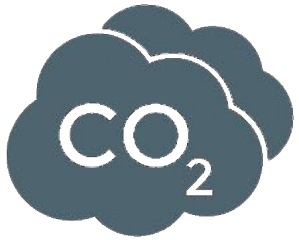
CLIMATE CONTEXT



Among the risks linked to climate change, there are risks associated with a **transition to a low-carbon economy**.

Some of these risks can be **new environmental regulations** aligned with reaching the commitments declared in the Paris Agreement, or even facing **market shifts** linked to consumers being more sensitive to the climate crisis.

The **steel** industry is a **highly vulnerable sector** to transition risks, due to its high level of GHG emissions with respect to the value of its product and its exposure to international trade.

How to Assess the sector in the transition to a low carbon economy

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Identifying barriers, the most emission-intensive processes, and technological gaps.

Setting goals and a decarbonization pathway on a scientific basis.

Establishing which technologies are most cost-effective and viable for reaching the decarbonization goals.

Designing adequate investment plans and roadmaps to access funding.

Setting ambitious targets

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Transition to a low carbon development

Current emissions

Diagnosis

Mitigation pathway

Direct emissions

\+

Indirect emissions

Actions

Objective

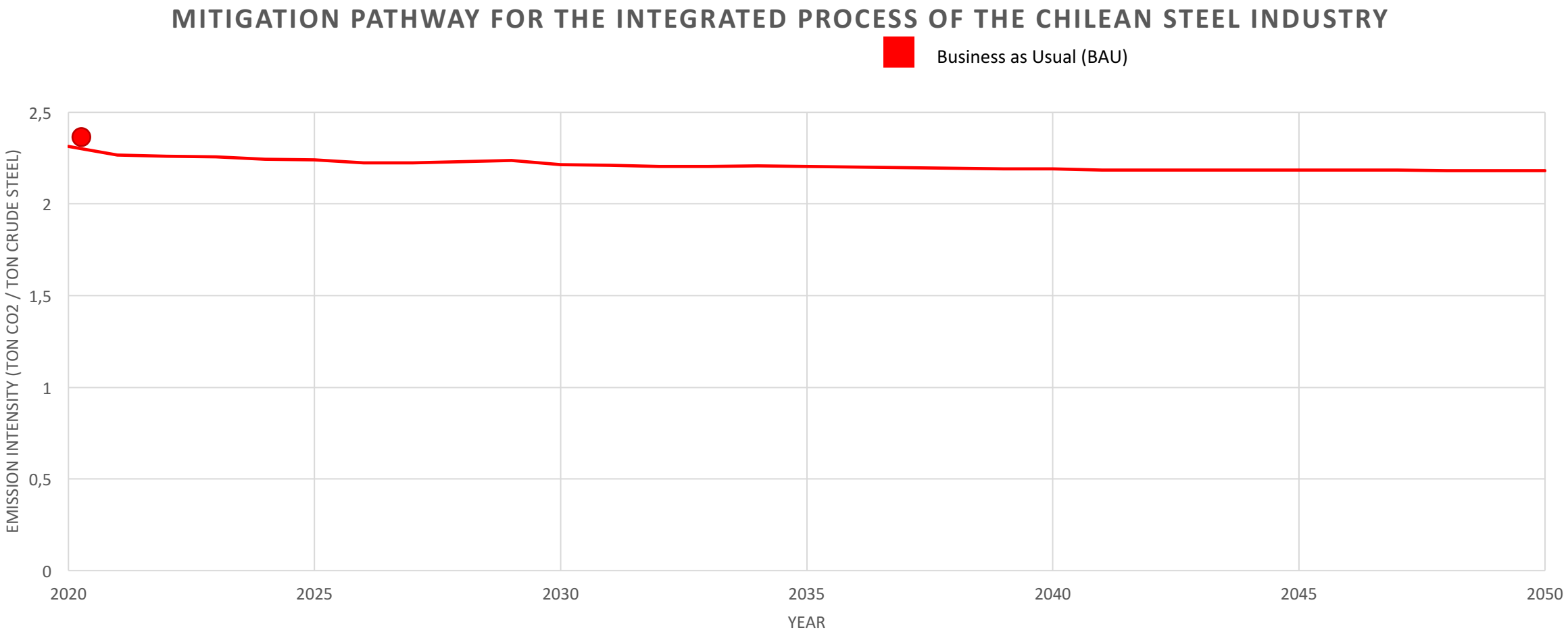
↑ 1,5°C @ 2100

Consistent with science

SCIENCE BASED TARGETS
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

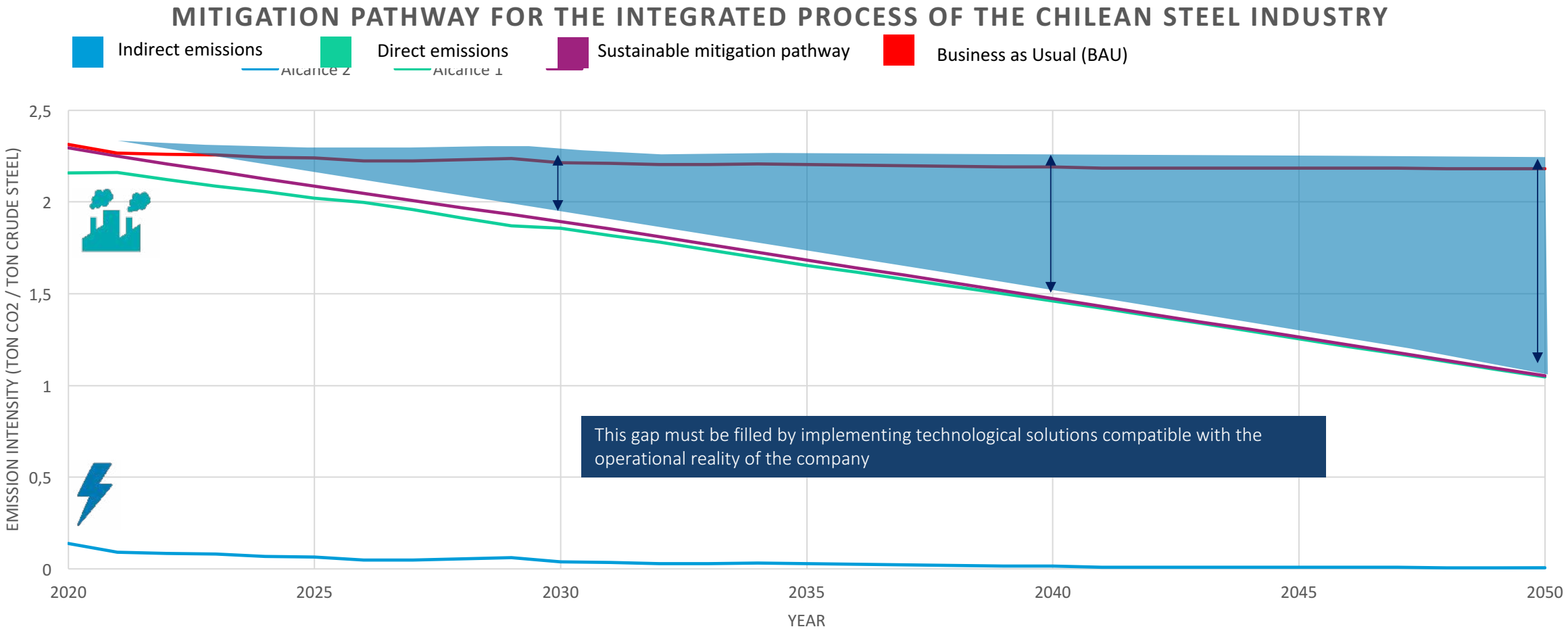
iea International Energy Agency

Steelmaking: highly intensive in direct emissions*



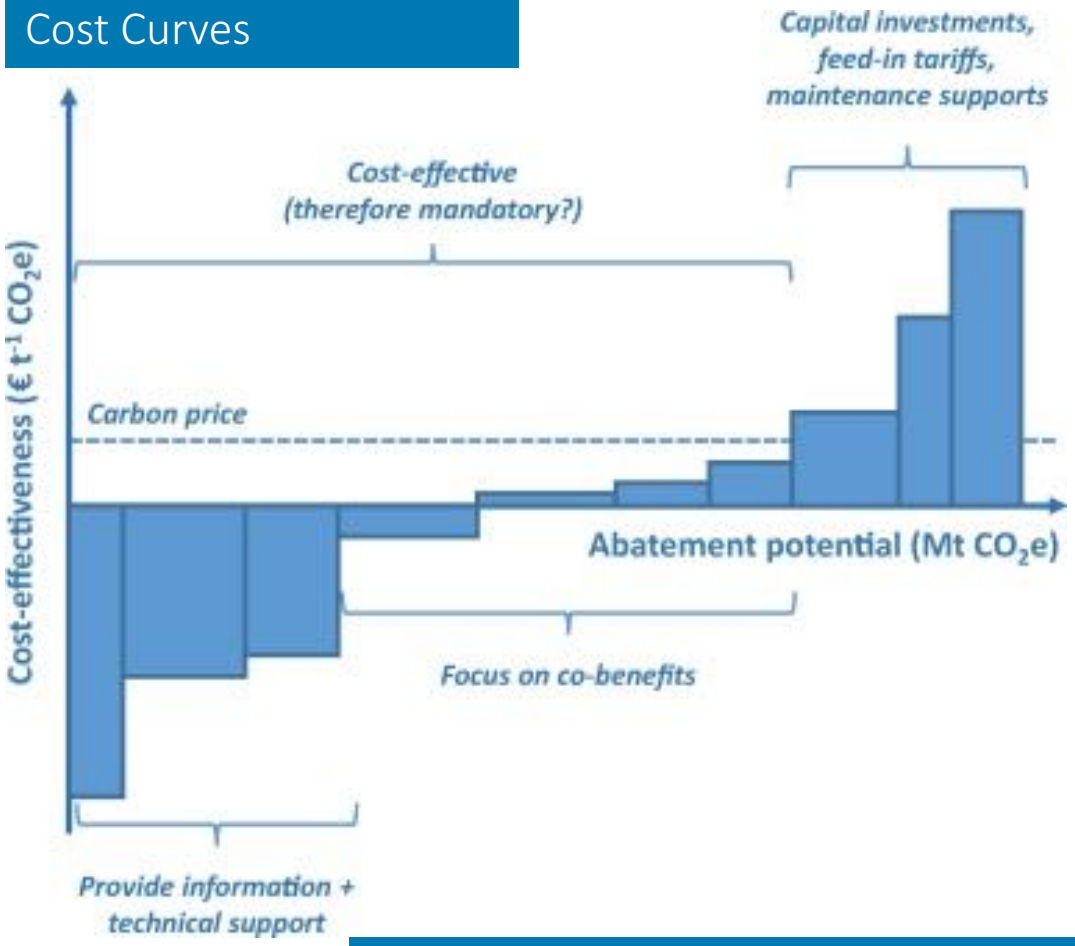
**considering the integrated process, which corresponds to producing Steel from iron ore.*

Steelmaking: highly intensive in direct emissions



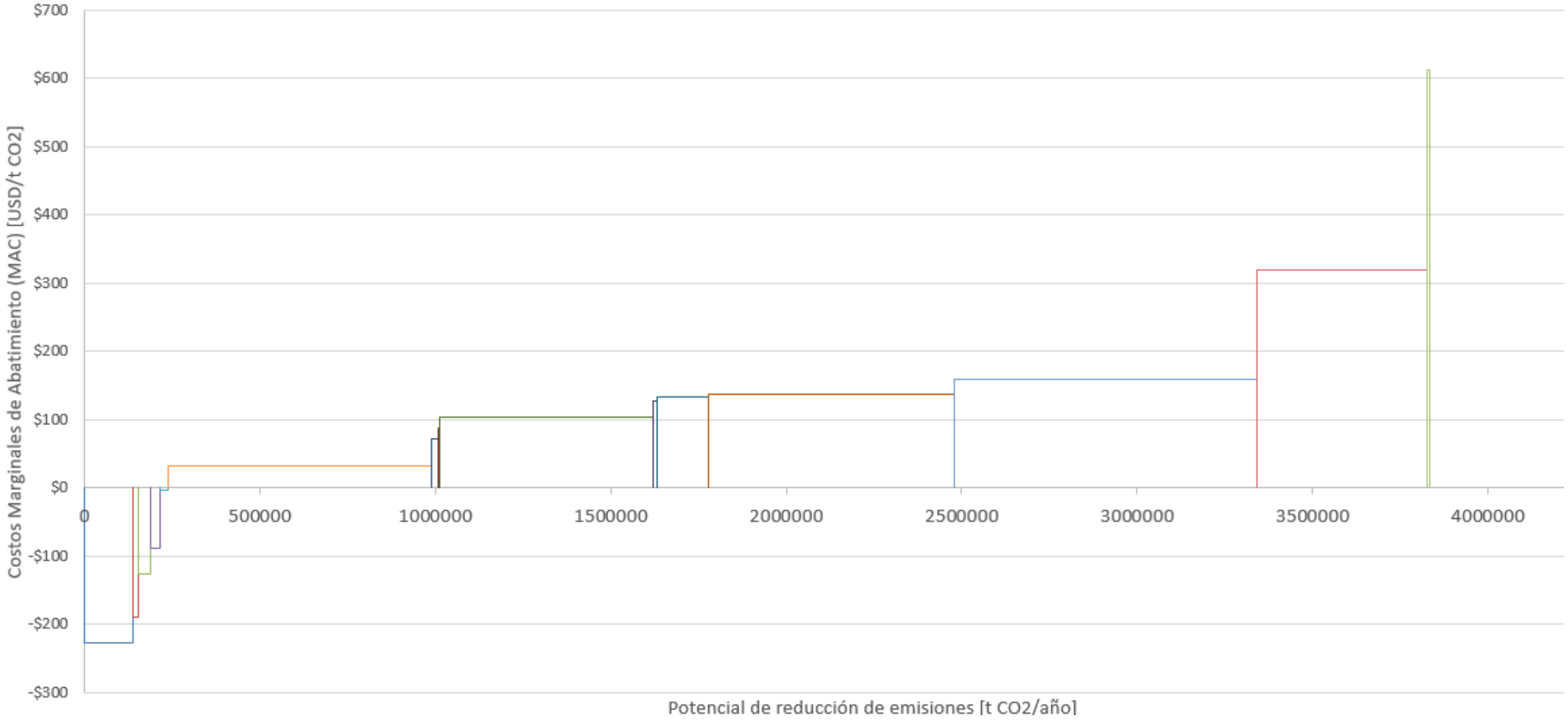
How to pursue and reach the mitigation pathway objectives?

Quantitative approach: Marginal Abatement Cost Curves



+ Complemented with a qualitative approach: Multi Criteria Analysis

Marginal Abatement Cost Curve (MACC) for GHG mitigation technologies (work-in-progress)



Inyección de hidrógeno por las toberas
Automatización de las estufas
Inyección de gas natural por las toberas
Inyección de carbón pulverizado (PCI)
Almacenamiento y mayor aprovechamiento gases de alto horno y coquería
Captura de CO2
Apagado en seco del coque (CDQ)
Laminación
Uso de carbón vegetal como substituto de carbón de coque
Tope sin campana (BLT)
Fusión reductora: Hisarna
Reducción Directa bajo hidrógeno: HYBRIT
Recirculación del gas de tope + captura de CO2
Recirculación del gas de tope
Turbina de recuperación del gas de tope (TRT)

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