



# Megatrends & Energy Transition in the Mining Sector

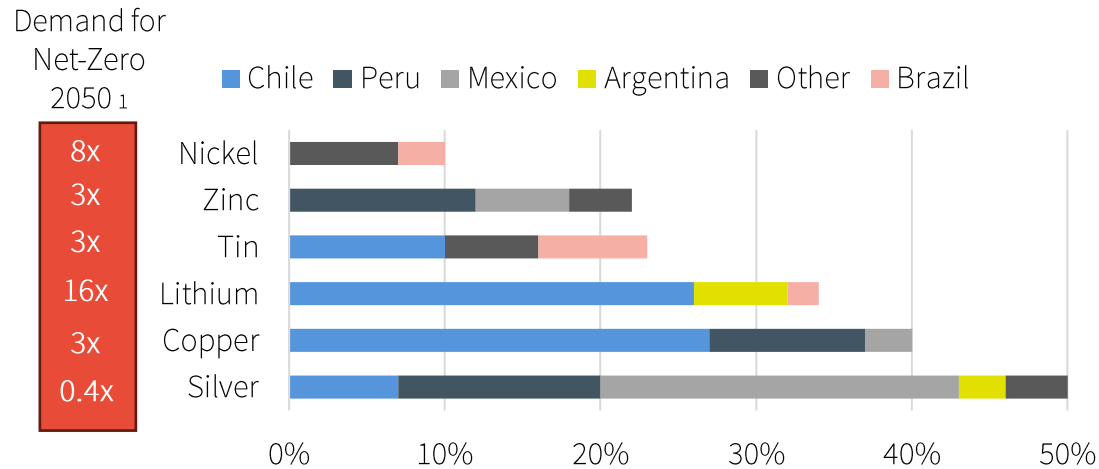


Climate Change | Trevor Bergfeldt  
April 10, 2024

# Sustainable development in South America is required to meet the growing demand for metals and minerals

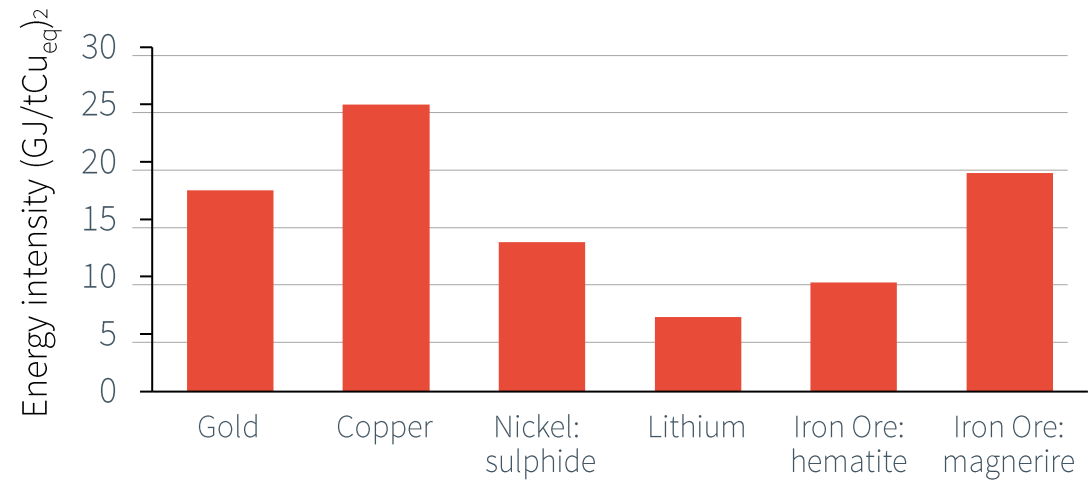
## South America's Role in the Energy Transition

Increased demand for metals especially for Net Zero



## Resource Recovery is Energy Intensive

Mining & metals account for 10% of global GHG emissions (59 Gt) and 3.5% of global energy consumption (12EJ)



Latin America's Share in Production<sup>1</sup>

Renewable energy, new technologies and new approaches to mining and metallurgical processing required

(1)2023, Critical Minerals Data Explorator, IEA, (2) 2021, Mining energy consumption, Engenco

# South America's development anchored in natural resources while committing to climate action

## Peru and Chile In Transition



### Climate Commitments



- 2030 30% emissions reduction from 2015
- 2050 net zero emissions target



### Policy & Climate Actions

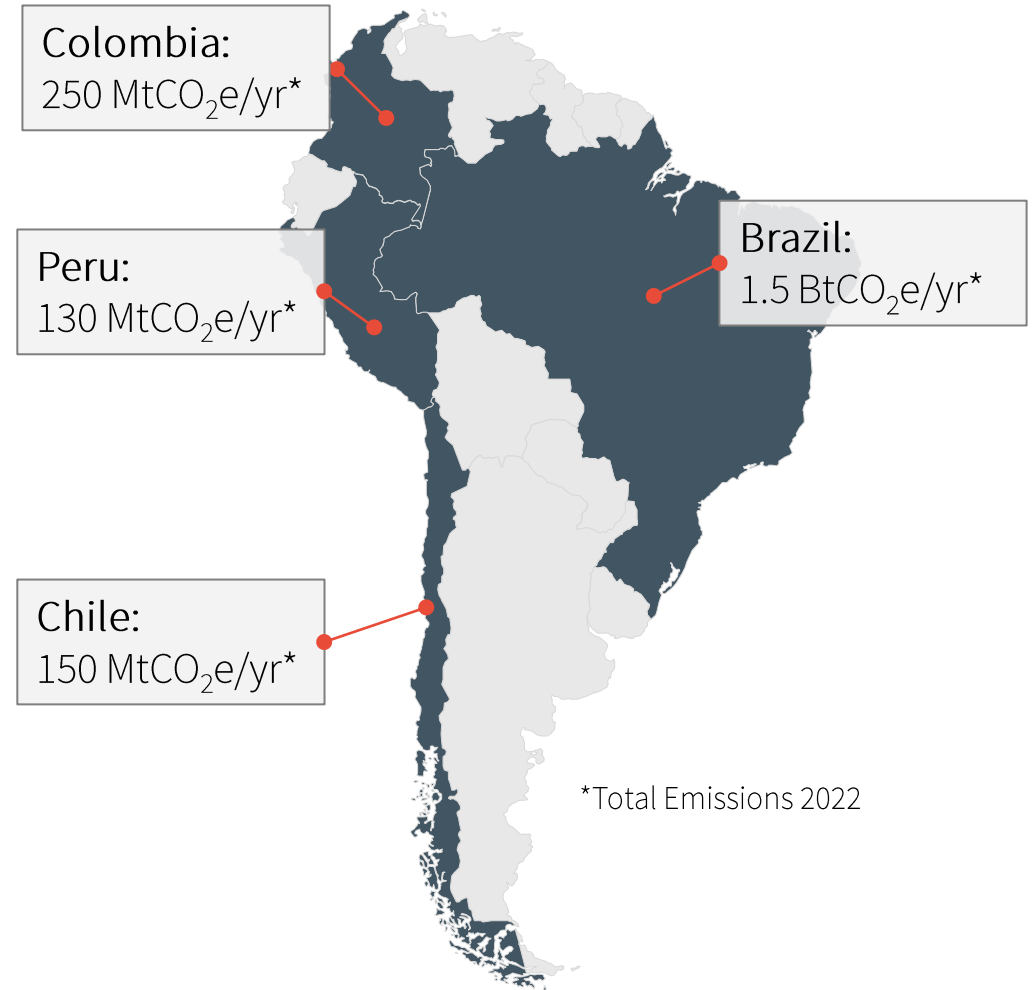
- Increasing renewables penetration
- Details on path to net zero pending



- 2030 30% emissions reduction from 2016
- 2050 net zero emissions target

- 70% reduction in heavy industry emissions by 2050
- Phase out coal fired power
- Carbon neutrality & NDC targets enshrined in law

Nationally Determined Contributions targets will be challenging to meet with current policy mechanisms

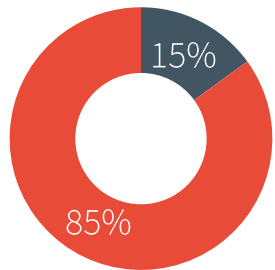


# Current state of climate action in mining sector

## GHG Emissions by Scope (Cu Mining)

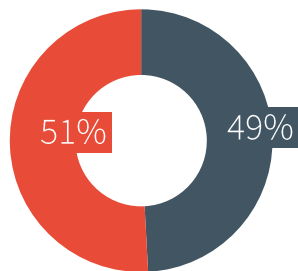
Emission profiles present different challenges & priorities

### Underground



Comminution, mine ventilation and pumping are energy intensive

### Open Pit



Higher contribution of emissions from mobile fleet requires innovative solutions

■ Scope 1 ■ Scope 2



## Climate Actions



Setting Targets (ICMM, SBTI Alignment)



Abatement Curves & Roadmaps



Identifying & Quantifying Climate Risk



Renewable PPA's



Carbon Management












Mobile Equipment Optionality / Pilots



Early Stage Project Development & Engineering (FEL1/2)

Current Focus

# Unique challenges to decarbonizing the mining sector

Category		Decarbonization Challenge	
Technology Assessment			Hype vs. Reality Technology expectations do not always align with implementation readiness & performance
			First of A Kind Higher risk profiles, inadequate testing, over reliance on vendors, poor business case, inexperienced teams
Project Economics & Financing			Financial Cost High cost to decarbonize mature brownfield sites not compensated by green premiums
			Project Assessment Decarbonization projects may not meet conventional stage gate criteria and returns
Regulatory & Policy Environment			Green Investments USA & Europe leading green investments driven by government subsidies & incentives
			Policy Uncertainty Uncertainty around supportive policies delaying decisions on decarbonization projects

# Hatch's expertise and differentiators

Track record of partnering with multinational organizations in the development and execution of more than 250 strategic climate change-related programs from concept to implementation

## Hatch Climate Change

- Partner with our clients to achieve their GHG reduction & adaptation objectives
- End to end expertise from transition planning to implementation
- Technical expertise coupled with operational and engineering experience to implement FOAK climate-driven projects

## Mandate



GHG Reduction



Adaptation

## Climate Change Programs – Transition Planning



GHG Accounting & Disclosures



Decarb. Planning



Carbon Pricing



Climate Policy



Innovation Management



Climate Risks



Funding Support

## Technical Expertise



Carbon Management



Fuel Switching



Process Electrification



Fleet Electrification



Bioenergy



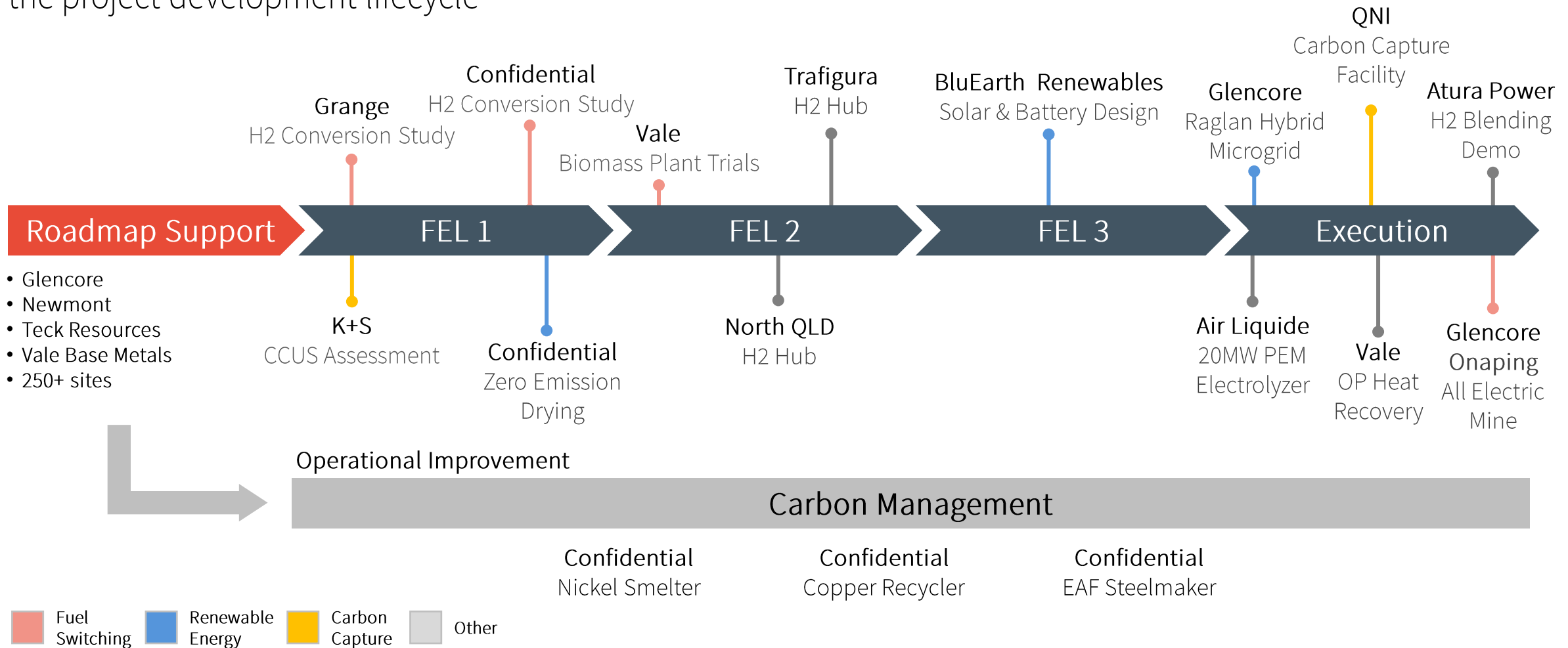
Low Carbon Hydrogen



Carbon Capture & CO2 Removal

# Select examples across the project lifecycle

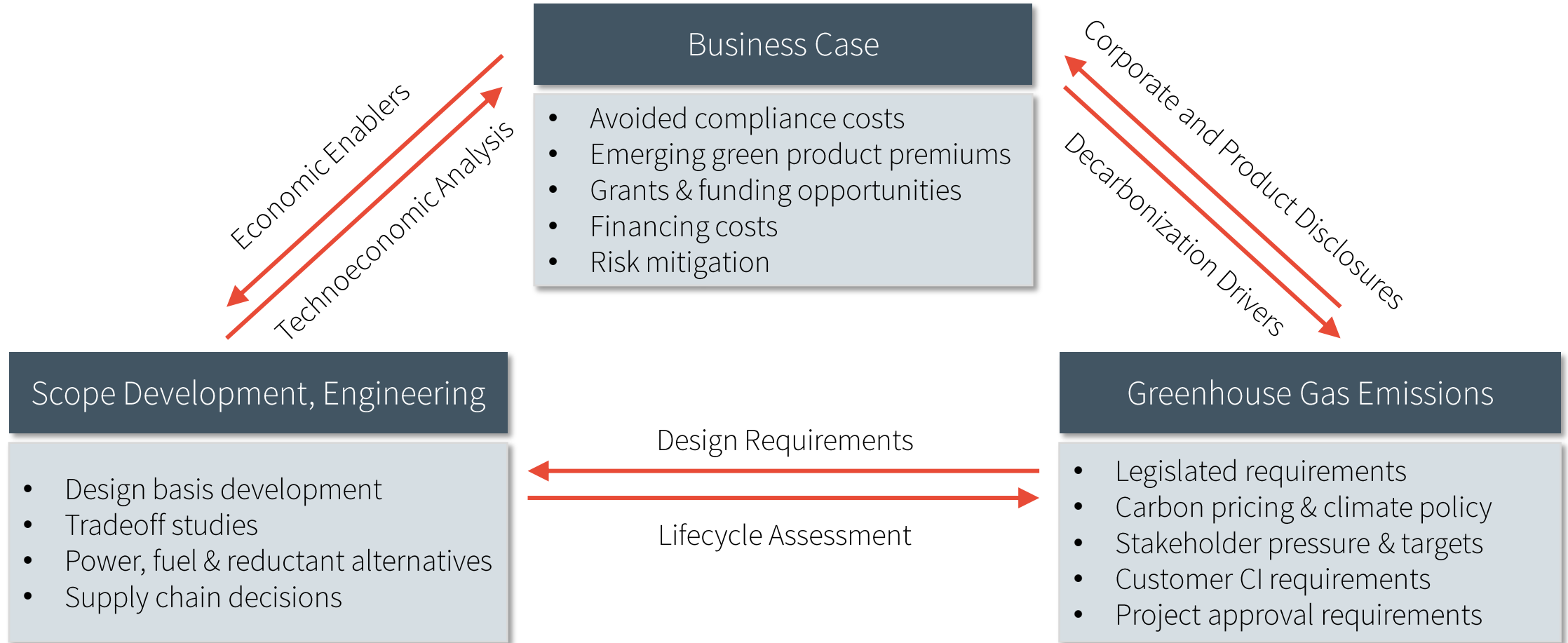
Hatch has supported our clients in the development of their decarbonization roadmaps through the project development lifecycle





# Navigating this complex interdependent landscape towards action

Scope decisions, decarbonization drivers, and greenhouse gas emissions need to be evaluated together to understand viability given the high cost to decarbonize





# First-of-a-kind projects in response to the energy transition

