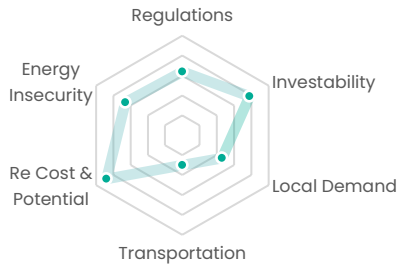
# Chile

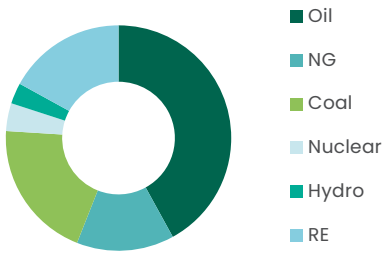
**Index rank** **#14** | **Aggregate score (out of 5)** **3.3**

| | |
|---|---|
| GDP - USD (bn): | **253** |
| GDP per capita - USD: | **13,232** |
| Land area ('000 km2): | **744** |
| Population density (per km²): | **25** |
| Grid emissions factor (gCO²/kWh): | **608** |

### Hydrogen Drivers Matrix




### Primary Energy Mix




**3.2 Regulatory commitment**
- First-ever hydrogen tender successfully launched
- Existing carbon tax but low
- Net zero by 2050

**1.5 Transportation**
- Existing domestic ammonia infrastructure

**3.9 "Investability"**
- Rated A by S&P
- 59th in WB Ease of Doing Business

**4.4 RE cost and potential**
- Best solar irradiation and wind speeds in the world
- Actual installed capacities low (5GW) relative to resource potential

**2.3 Local demand potential**
- Opportunity for ammonia import localization
- Some refining capacities

**3.3 Energy insecurity**
- 65% net energy exporter

## Significant initial steps, but challenges in transformation into energy exporter

Northern Chile has the world's highest solar irradiation, and Southern Chile, by far the world's best onshore wind resource with capacity factors of over 60%. Over the past five years, Chile has set world record lows in renewable electricity prices. The Chile National Strategy for Green Hydrogen, launched in November 2020, is precise and realistic in scale. It plans for three distinct "waves" of development: the first wave (through 2025) will see green hydrogen replacing imported ammonia, grey hydrogen substitution in refineries, and use in long-distance mobility; the second wave (2025-2030) will see green ammonia export scaling up, further mobility penetration for hydrogen, and grid blending; and the third wave (2030 onwards) will see Chile export synthetic fuels.

While a carbon tax has been in place since 2017, the USD5/tCO2 flat rate provides limited economic incentive for local consumption. An emissions trading scheme is under consideration and expected to be operational by 2023, but the scope of the scheme is unclear today. The export transportation challenge also needs to be addressed, as, while rich in renewable resources, Chile is competing against similarly endowed countries that attract far cheaper capital, and that have decades of entrenched experience in, as well as existing infrastructure for, the global energy trade: Chile today has no ammonia or LNG export infrastructure, vs, for instance, Saudi Arabia as the largest ammonia exporter in the world, and Australia benefiting from a better position vis-à-vis large East Asian importers.

### USD50m hydrogen auction

Chile in September 2021 launched a tender for green hydrogen projects that received 10 submissions, from predominantly European developers. A total of USD50m was made available with a max. of USD30m to any one project. Submissions averaged 20MW and projects must start operation by Dec 2025 at the latest.

### USD12b green H2 pipeline

A request for information (RFI) released by Chile's economic development agency, CORFO, yielded eighteen green hydrogen project submissions, totaling USD12bn in investment value.

### Mega projects by European developers

Engie and Enaex are leading the HyEx initiative in the Antofagasta region that will use 2GW solar/1.6GW electrolyser to produce green ammonia for an Enaex fertiliser plant, starting with a 36MW solar/26MW electrolyser pilot targeting operations by 2024. Chile's state petroleum company ENAP, Enel Green Power, Siemens, Porsche, and Andes Mining and Energy are developing a 'Highly Innovative Fuels' pilot project in Magallanes to produce 600tpa of methanol and synthetic fuels, commissioning in 2022.

### The Export "Hydrogen Mission"

A working group within the German-Chilean Energy Partnership was announced in June to identify viable green hydrogen projects, and Chile signed a green hydrogen export MOU in June with the Port of Rotterdam, Europe's largest port. In February, Chile signed an MoU with Singapore, the world's largest bunkering hub, to collaborate on blue and green hydrogen technologies and also partnered with the UK last October to invest in hydrogen.

hydrogen investability index

Cranmore Partners energy estate.