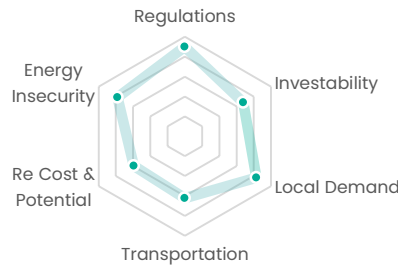
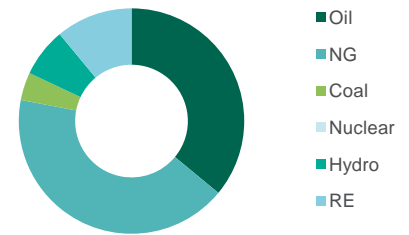


GDP - USD (trn):	1.9
GDP per capita - USD:	31,676
Land area ('000 km2):	298
Population density (per km ²):	203
Grid emissions factor (gCO ₂ /kWh):	327

Hydrogen Drivers Matrix



Primary Energy Mix



4.5 Regulatory commitment

- EUR3.7bn in hydrogen funding
- Target 2% hydrogen penetration in total energy demand by 2030
- Snam (Gas TSO) a key industry driver

3.1 Transportation

- Gas pipeline nexus between Europe and North Africa
- Geographically well positioned for shipping from MENA

3.4 "Investability"

- Rated BBB by S&P
- 58th in WB Ease of Doing Business

3.0 RE cost and potential

- Excellent solar resources but LCOE higher than Spain/Portugal
- Disappointing 2021 RES1 auction
- Average onshore wind potential

4.2 Local demand potential

- 11th largest steel manufacturing
- 12th largest oil refiner
- 20th busiest container port traffic

3.9 Energy insecurity

- 80% net energy import

Government funding support driving continental H2 hub ambitions

Italy's location in the Mediterranean positions it ideally to act as the gateway for hydrogen trade between the Middle East-North Africa countries and Northern Europe, and its rich solar resources makes it well suited to become a green hydrogen producer. Italy aims to reach 2% hydrogen penetration in final energy demand by 2030, including applications in long-distance freight transport, heavy industry, refineries and blending into the gas grid. To supply this demand, 5GW of electrolysis capacity is expected to be installed over the same period. Progress is held up in part by a regulatory roadblock, as the current framework provides only for production of hydrogen via SMR, not electrolysis, and needs to be updated. While EUR3.19bn in funding has been directly allocated towards hydrogen spending as part of Italy's NextGenerationEU recovery plan, there appears to be little/no concrete schemes as yet to absorb this. Given Italy has one of the highest net energy import ratios in Europe at 80%, green hydrogen has potential to become one of the key levers in reducing energy dependency.

Funding in hydrogen-related sectors

In April this year, the government announced that its COVID recovery package – funded by the EUR750bn NextGenerationEU plan – will earmark EUR3.2bn for hydrogen, EUR4.1bn for energy infrastructure, and EUR5.9bn for renewable energy. Concrete schemes to disburse this funding do not yet appear to have materialised.

Snam actively reshaping a gas and shipping hub

Italy is well connected by way of transmission infrastructure not only within Europe but also via long distance gas pipelines to Tunisia, Algeria and Libya, where future renewable energy (and possibly hydrogen) may be sourced. It also operates three LNG import terminals which may have future synergies with future hydrogen import infrastructure. Snam today is experimenting with 10% hydrogen blending in some parts of its network, serving two thermal plants, and has stated that 70% of its natural gas grid is "hydrogen ready". Snam will invest 50% of its EUR7.4bn (USD8.7bn) 2020-2024 business plan to repurpose the rest of its 33,000km domestic network. Hydrogen storage may be an issue with limited suitable sites identified.

Refinery and steel industrial base

Italy is the EU's second largest steel producer and oil refiner, together a strong basis to jump start hydrogen demand. Enel and Eni are studying two pilot projects to supply green hydrogen to selected Eni refineries, increasing capacity to more than 2GW by 2030. ENI is currently the largest producer and user of hydrogen in Italy (69% of the country's total) through its refineries.

Vertical integration

Italy has ambitions to start an electrolyser manufacturing base and is raising EUR1.5bn to build a 1GW/y electrolyser factory, of which EUR450m has already been earmarked from public funding. The technology provider is yet unannounced.