

Pioneering the Future: Introducing a New Framework for Europe's Hydrogen and Gas Market

Italy

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Italy's 2020 National Hydrogen Strategy

Outlines the Government's strategy on hydrogen as a key enabler of decarbonization and energy security, aligned with the EU Hydrogen Strategy, the European Green Deal and long-term climate goals.

The Strategy sets forth important targets

Hydrogen Production: 5 GW of electrolyser capacity by 2030; 2% of the final energy demand by 2030 and 20% by 2050.

Sectoral Applications: industrial decarbonisation (chemical production, refining, and primary steel); mobility sectors (long-haul trucks, trains, and public transport); blending in the gas network (target: ~2% by 2030).

Infrastructure Development: hydrogen valleys (geographic areas combined into an integrated hydrogen ecosystem that ideally should cover the entire value chain: production, storage, distribution, and multiple end-uses); Leverage existing gas infrastructure for hydrogen distribution and storage

Shortcoming of 2020 National Hydrogen Strategy

The Government's strategy sets out objectives without specifying concrete measures or financing mechanism necessary to achieve them

Hydrogen remains considerably more expensive than alternative energy sources

Italy's recovery and resilience plan (NRRP)

Italy's NRRP is the largest national plan under the Next Generation EU (NGEU) instrument

Approved by the Council on 13 July 2021, was updated on 8 December 2023 with the inclusion of a new energy-focused REPowerEU chapter

Seven fields of intervention ('missions') divided in 17 components, each to be implemented through specific measures including a mix of investments and reforms

Mission 2 ("Green revolution and ecological transition") component 2 ("M2C2. Renewable energy, hydrogen, grid and sustainable mobility") includes **measure 3** dedicated to hydrogen (Fostering production, distribution and final uses of hydrogen).

The NRRP provides financing of EUR 3.19 billion for several expected reforms and investments dedicated to the development of the hydrogen market in Italy

NRRP Investments

Production of hydrogen in brownfield sites (EUR 500 million). Supports the development of hydrogen valleys with an average capacity of at least 1-10 MW each.

Use of hydrogen in hard-to-abate sectors (EUR 2 billion). Supports the transition towards zero emissions green hydrogen in the most polluting and hard to convert industrial sectors (chemicals, petroleum, steel, cement, glass and paper).

Experimenting hydrogen in road transport (EUR 830 million). Promotes the establishment of hydrogen refuelling stations along motorways.

Experimenting hydrogen in rail transport (EUR 300 million). Supports the conversion of diesel trains travelling on non-electrified railway lines into hydrogen-powered trains

Hydrogen research and development (EUR 160 million). Supports measures to improve knowledge of hydrogen-related technology for the production, storage and distribution phases in order to increase competitiveness and gradually reduce costs..

NRRP Reforms

Administrative Simplification and Reduction of regulatory barriers to hydrogen development

- safety standards for hydrogen production, transport, storage and use;
- simplification of administrative procedures to set up small green hydrogen production plants;
- participation of hydrogen production facilities in grid services;
- setting out of a system of Guarantees of Origin (“GO”) for renewable hydrogen.

Measures to promote hydrogen competitiveness

Introduction of tax incentives to:

- support the production of green hydrogen
- promote the consumption of green hydrogen in the transport sector.

Shortcomings in NRRP Implementation

Calls for proposals under the NRRP impose very strict conditions in term of eligibility requirements and deadlines for works completion

Projects viability depend non only on its capital expenditures (CAPEX), but also on its operational costs (OPEX), which remain significantly high

While the NRRP supports the establishment of hydrogen refueling stations along motorways, demand for fuel cell vehicles remains low because of high costs

Despite the provision of incentives and the issuance of public calls for proposals, few hydrogen projects have been implemented

Steps Forward

Hydrogen Valley project in Puglia promoted by SNAM, included among the IPCEIs (Important Projects of Common European Interest) to support the hydrogen value chain (Hy2Infra wave, approved on February 15, 2024)

1MW AEM electrolyser systems for green hydrogen production promoted by power engineering firm Ansaldo Energia, included among the IPCEIs Hy2Tech scheme, has been awarded €317m by the Italian Government in June 2025

By Ministerial Decree dated 3 July 2024 a fund of approximately EUR 22.2 million has been set up to support innovative hydrogen technologies and solutions in the mobility sector, including road, sea and air transport, following the EU Commission's decision dated 28 May 2024, which authorised seven EU countries (including Italy) to grant state aid totalling EUR 1.4 billion for the implementation of the IPCEI Hy2Move (or Hydrogen 4)

SNAM (the Italian gas transmission system operator), according to its 2023-2027 Strategic Plan, will be involved, in partnership with other European TSOs, in the construction of a 3,300 km-long hydrogen backbone that will connect North Africa, Italy, Austria and Germany (Project “SouthH2 Corridor”).

Italy's 2024 Hydrogen Policy

2024 PNIEC

On 30 June 2024 the 2024 National Integrated Energy and Climate Plan ("**2024 PNIEC**") has been sent to the EU Commission for its approval

Hydrogen production will be promoted both through the capital contributions provided for by the PNRR and through a new tariff measure that will make remunerative investments in a sector that today is far from competitiveness.

2024 National Hydrogen Strategy:

Hydrogen as one of the fundamental solutions for achieving decarbonization objectives

The Strategy includes actions regarding: (i) hydrogen demand; (ii) hydrogen production and supply; and (iii) hydrogen transport and infrastructure.

DM Opex

A specific ministerial decree, not yet approved, will define the modalities for providing incentives to producers of renewable hydrogen.

Conclusive Remarks

Although Italy represents a high-potential market for the development of green hydrogen, it still has to face major obstacles:

- high cost of electrolyzers,
- limited availability of renewable energy sources
- lack of infrastructure.

However, significant investments have been made in hydrogen technologies in recent years, and more are in the planning stages.

THANK YOU FOR YOUR ATTENTION