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Direction Générale de l'Énergie et du Climat

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PRODUCTION ET INFRASTRUCTURES HYDROGÈNE : CADRE RÉGLEMENTAIRE ET SOUTIEN PUBLIC EN FRANCE

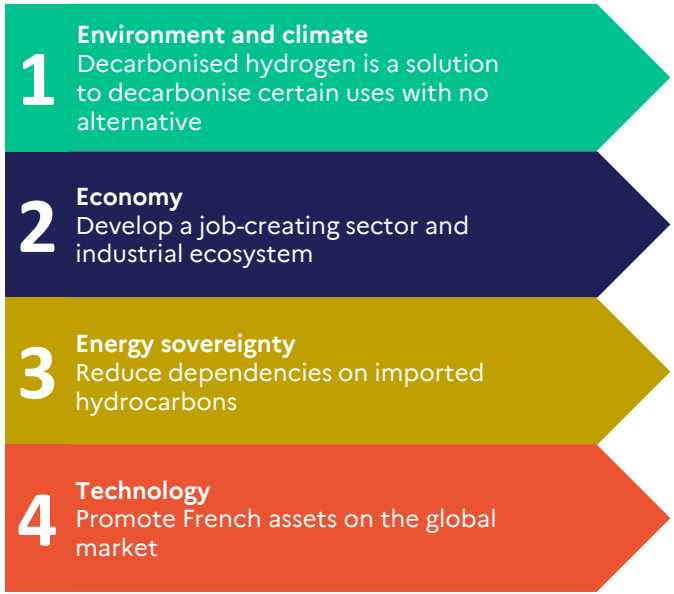
French national strategy pillars

Background

After energy savings and direct electrification, decarbonised hydrogen is part of the key solutions to reach climate neutrality

- **Replacing fossil hydrogen in industry applications**
- **Decarbonising sectors that would be new hydrogen offtakers (industry, heavy duty mobility)**

Bringing down production costs is necessary to enable these uses and decarbonation



Reaffirming an ambitious strategy

Goals

1. Decarbonise hydrogen for industrial applications and ramp-up of the market
2. Prepare tomorrow's uses: fundamental research, financing large pilots, development of key components
3. Deploy a more mature sector with dedicated tools

Encouraging first results, need for an update

Substantial support already deployed

- Priority Research and Equipment Programme (PEPR) 83 M€
- "Technological building blocks and demonstrators" call for projects 350 M€
- Important Projects of Common European Interest (IPCEI) 3,08 bn€
- "Local ecosystems" call for projects (2020 – 2023) 46 projects supported
- OPEX support mechanism 4 bn€

Key structural changes since 2020 requires the update of the national strategy

- Slower than expected rollout, inherent to all new technologies
- Ukrainan crisis that shaked energy prices
- European regulatory framework
- Development of different national strategies across the world

Hydrogen will play an important part in the decarbonisation of industry and certain segments of mobility sector

Mobility

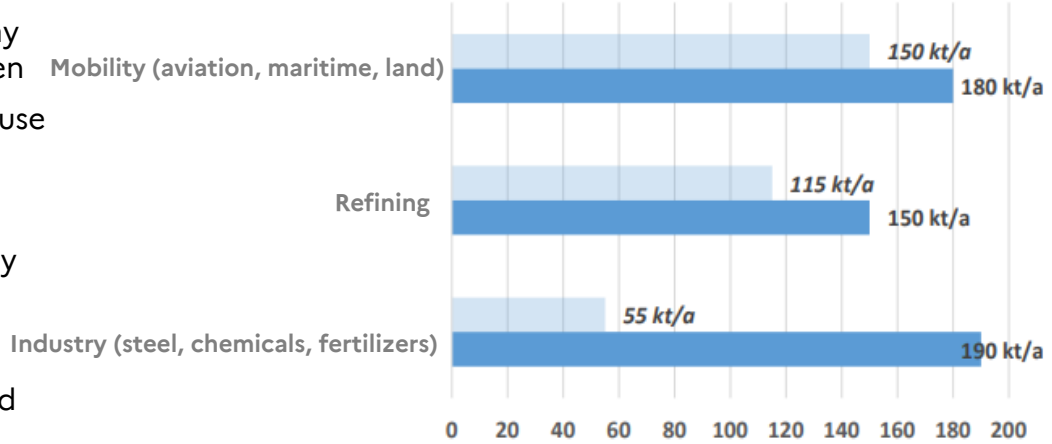
- Alternative fuel's synthesis (aviation and maritime) may require important quantities of decarbonised hydrogen
- Hydrogen can be used in road mobility, for certain use cases where batteries reach their technological limits

Reffineries

- Biggest hydrogen offtaker in France with the possibility of an easy switch

Industry

- Different time scales for the adoption of decarbonized hydrogen
- Competitive costs issues for fertilizers, steel and chemicals



Estimated decarbonised hydrogen demand (ktH_2/yr) in France, by sector in 2030

France reaffirms its ambition to produce low-carbon hydrogen by water electrolysis

In order to secure its low-carbon supply, France will massify production on its territory by 2035

Up to 4.5 GW by 2030 taking into account updated demand and slower than initially expected deployment

Up to 8 GW by 2035 accounting for demand increase and end-use deployment

Other hydrogen sources

- Methane steam reforming with CCS is included for specific cases but not a key part of the strategy (it would require a high performance CO_2 capture process and should be limited to particular situations, e. g. industrial facility location/transport and CO_2 storage infrastructures)

- Launch of an investigation on the geological hydrogen potential in order to explore all existing possibilities

Support tools for national hydrogen production

OPEX support mechanism for hydrogen production

- 4 bn€ to support the deployment of 1 GW of electrolysis capacity
- 1st round of 200 MW launched December 2024
- Supports the hydrogen production for industrial applications demand (except refineries) over 15 years

Incentive Tax for the Use of Renweable Eergy in Transport sector (TIRUERT)

- Reneweable and low-carbon hydrogen
- Extended to all energy carriers and majority of means of transportation
- An evolution to provide long term visibility necessary for projects with significant investment like hydrogen.

Development of hydrogen hubs in the main industrial areas

By 2026 define the expected layout of the first hydrogen networks and bulk storage sites

Hydrogen transport and storage infrastructures may provide flexibility to the power grid

Only one level of hydrogen networks are considered in France for hydrogen

Gas package transposition will set the hydrogen infrastructures regulation

The French energy NRA will be granted prerogatives on hydrogen

The international component of the French strategy has been further developed

France will strive to provide equipment globally to contribute to the world wide decrabonisation

- Strengthening existing tools for French equipment providers
- 100 M€ to support export of French equipment
- Setting a national coordinator of the international component of the hydrogen strategy

Hydrogen and hydrogen-based products imports are being considered, especially after 2035 and for e-fuels, if they are more cost-competitive than national production and compliant with EU environmental rules

In short to medium term, national support is reserved to national production

France will continue to actively participate in multilateral fora (IPHE, IEA, NSEC, etc.), as well in standardization technical committees (CEN/CENELEC, ISO/IEC)

Recently reaffirmed cooperation at the highest level

Germany and France are working together closely to prepare for the future and put Europe back on track for growth.

Franco-German engine to work at the international, the EU and the bilateral level and towards joint initiatives and coordinated positions

Eight working groups amongst which

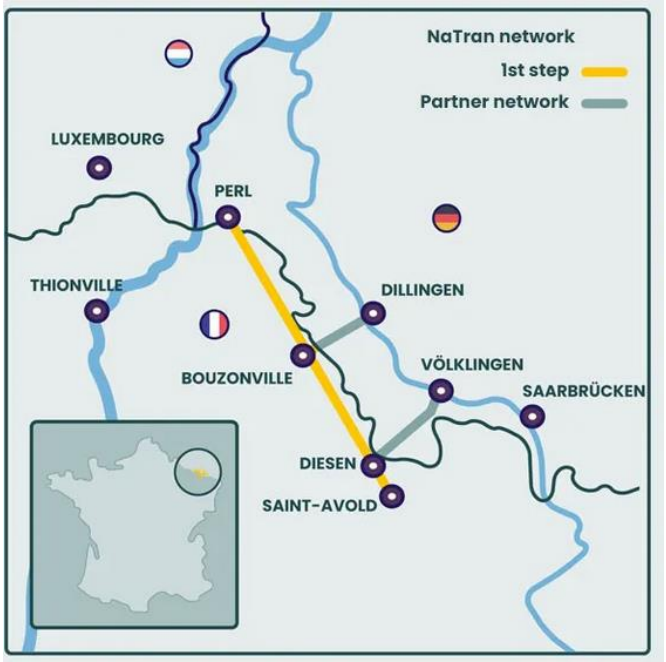
- Cooperation on cross-border energy market integration

- Southwestern Hydrogen Corridor

25th Franco-German Council of Ministers in Toulon
29th of August 2025

Already existing cooperations

- MosaHyc pipeline linking the "Grande Région hydrogène" Between Saarland and Moselle (promoted by CREOS and NATRAN)
- Verso Energy will supply Saarland's steel industry with RFNBO hydrogen produced in CarlHyng electolyser through the pipe.
- Research partnerships already in place some recent some olders/.



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THANK YOU FOR YOUR ATTENTION!

VIELEN DANK FÜR IHRE AUFMERKSAMKEIT!

MERCI BEAUCOUP POUR VOTRE ATTENTION !

General Directorate for Energy and Climate