



**DECARBONIZATION OF THE FRENCH ECONOMY:  
ONE OF THE THREE PRIMARY OBJECTIVES OF THE  
ECOLOGICAL TRANSITION**



# INDUSTRIAL DECARBONIZATION: AN AMBITIOUS PROJECT WITH KEY OBJECTIVES

Reduce CO2 emissions by 81% by 2050 compared to 2015

Reduce primary energy consumption from fossil fuels (-20% in 2023 and -35% in 2028 compared to 2012) and reduce overall energy consumption

Aim for renewable heating to amount to 38% of heating consumption by 2030

Support for energy efficiency and the adaptation process to significantly reduce greenhouse gas emissions

Support for low-carbon industrial process heat (replacement by more energy-efficient industrial heaters, heat pumps for industrial processes)

Aim for renewable and low-carbon hydrogen to amount to 20% to 40% of hydrogen consumption by 2030





# DECARBONIZATION OF INDUSTRY : MAIN MEASURES

Support investment projects in energy efficiency

Support the transition to low-carbon industrial heat and the use of biomass boilers

Support large-scale process transformation projects

Creation of a dedicated desk to support smaller-scale investment projects in energy efficiency

**1,2BN€ BY 2022 DEDICATED TO IMPROVE ENERGY EFFICIENCY AND DEVELOP MANUFACTURING**

**France welcomes all companies committed to addressing environmental impacts !**





## 1.2BN€ BY 2022 DEDICATED TO IMPROVE ENERGY EFFICIENCY AND DEVELOP MANUFACTURING

Call for projects entitled "Energy efficiency of processes and utilities in industry" to support investment projects in energy efficiency (for investment projects worth more than €3 million)

Call for projects entitled "Investment and operating aid to support the decarbonization of industry" to facilitate the transition to low-carbon industrial heat and the use of biomass boilers instead of coal, oil or gas

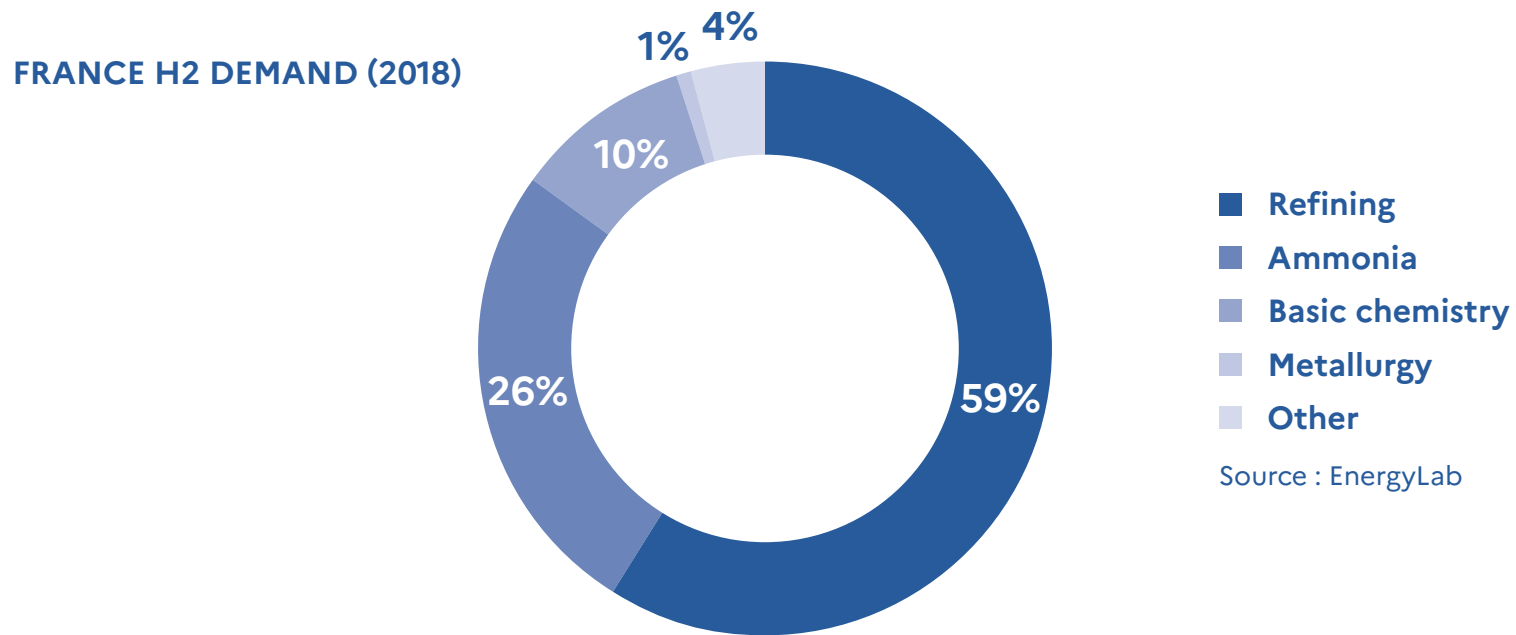
Call for expressions of interest entitled "Process development and decarbonizing industry" to support large-scale projects for the transformation of industrial processes contributing to their decarbonization

A dedicated support desk for smaller industrial energy efficiency investments : for projects of less than €3 million, particularly for SMEs and micro-enterprises





# DEMAND FOR HYDROGEN DRIVEN BY INDUSTRY IN FRANCE



## 3 SECTORS RESPONSIBLE FOR 2/3 OF INDUSTRIAL EMISSIONS

18.2 Mt of CO<sub>2</sub> come from chemicals,  
17.2 Mt of CO<sub>2</sub> from the manufacture of non-metallic minerals and construction materials (cement, glass, plaster, etc. )  
and 15.8 Mt of CO<sub>2</sub> from the metallurgy of ferrous metals (steel industry, foundry, etc.)

## TARGET SECTORS

Refining, which boasts a growing market for the desulfurization of fuels  
Chemicals, in particular the production of ammonia and methanol.  
Electronics and the food industry





## A GROWING INTEREST FROM MANUFACTURERS AND INVESTORS



April 2019, EDF launches its Hynamics subsidiary intended to offer a low-carbon hydrogen product.



April 2019, Michelin and Faurecia announce the creation of a joint venture surrounding Symbio, bringing together their activities dedicated to fuel cells.



January 2019, Air Liquide acquires a 18% stake in the capital of hydrogen production equipment manufacturer Hydrogenics Corporation



October 2019, Total, already a Sunfire shareholder since 2014, partners with the German company to produce renewable methanol and hydrogen.

February - September 2019, The Kouros investment fund announces several investments in the hydrogen sector, including in green hydrogen production companies Haffner Energy and Ergosup.





# BUSINESS COMMITMENTS TO SUPPORT INVESTMENT PROJECTS IN ENERGY EFFICIENCY

Faced with regulatory constraints and societal pressure, major CO2-emitting manufacturers have developed roadmaps to reduce their emissions

## ACHIEVE CARBON NEUTRALITY BY 2050

In December 2019, ArcelorMittal set an ambitious target for its activities in Europe, in line with its objective to reduce up to 30% its CO2 emissions by 2030 and achieve carbon neutrality by 2050.

In July 2019, the German steelmaker and engineer ThyssenKrupp was on the same course.

In November 2018, Air Liquide decided to reduce its carbon intensity by up to 30% by 2025.

Solvay aims to reduce its carbon intensity by up to 40% by 2025.

## ARCELOR MITTAL PROJECT ON ITS DUNKIRK SITE

A green blast furnace based on the recycling of iron and steel gases (reduction in CO2 emissions by 17%),

A pilot project carried out with Total and IFPEN for capturing and storing CO2 (8% reduction),

Steel recycling with the integration of twice as much recycled steel in its production (up to two million tons per year, generating a 8% reduction in CO2 emissions).





# ENERGY RENOVATION, CORNERSTONE FOR ECOLOGICAL TRANSITION

## AN AMBITIOUS ENERGY RENOVATION PROGRAM (6.7 BILLION EUROS)

### Energy renovation of public buildings (4BN€)

Directed towards craftsmen and companies in the construction and public works sector in order to revitalize local SME and VSE networks.

### Energy renovation and rehabilitation of social housing (500M€)

A national call for projects which aims to financially support significant renovation of social housing (target: 40 000 underperforming housing units). Part of this envelope (40 M€) will be aimed at deploying innovative and integrated industrial solutions for energy renovation by strengthening processes (according to the dutch "EnergieSprong" concept).

### Energy renovation of the premises of VSEs and SMEs (200M€)

Improve the energy efficiency of buildings, working conditions and public facilities (offices, shops, warehouses, etc.).

## FRANCE, AN INNOVATIVE LEADER IN THERMAL RENOVATION

Energy-efficient building materials, renovation techniques, energy management tools, heat pumps and other heating and cooling systems.







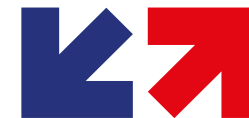
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