



NAVARRA'S GREEN HYDROGEN AGENDA

Gobierno
de Navarra



Nafarroako
Gobernua



November 2023

Introduction

Hydrogen is an alternative, clean and sustainable fuel that facilitates the use of renewable energies in the global economy. The large-scale implementation of a sustainable Hydrogen Economy or Green Hydrogen will change the current energy, economic and political paradigm, by 'democratizing' the production of a renewable and alternative fuel to fossil fuels.

Compared to other technological alternatives, Hydrogen admits storage and different transport options, which makes it more flexible and offers diverse ways to exploit it and boosting its consumption. This situation has led to the recent publication of various strategies for the development of Hydrogen as a technological vector at European and national level, establishing different actions for its promotion and development at all levels, since, in general, the approach combines the potential as a technological vector with the impact on economic development in the different ecosystems.

In the case of Spain, and specifically Navarra, the significant potential in renewable energies places us in a very favourable position in the future market of Hydrogen technologies.

The use of Hydrogen as an energy vector can have a very positive impact on our region since it has a business fabric with high potential to make the most of this opportunity. In fact, in the Hydrogen sector and its associated technologies (renewable energies, fuel cells, etc.), niches of opportunity are emerging that both existing companies and new ones that may be created will profit from.



In short, from this technological development new possibilities will arise that can and should contribute to the economic development of Navarra and where Navarra wants to play a meaningful role.

However, in the field of Hydrogen, not everything can be considered 'green', since there are numerous obstacles that have prevented its development and that motivate the slowness in its adoption: regulation, lack of standardized markets, prices for consumption, lack of infrastructure or technological immaturity, these are just some of the factors that are being worked on.

The **Navarra Green Hydrogen Agenda**, with a temporary scenario in this first conception until 2030, emerges as a regional planning instrument, aimed at identifying the challenges where Navarra must adopt an active role. As well as the actions and measures that allow a harmonious development of the Hydrogen economy, contributing to the decarbonization of the current energy model and the mitigation of climate change.

The **Navarra Green Hydrogen Agenda** constitutes a management instrument towards the development in Navarra of an energy, industrial, technological and talent ecosystem around Green Hydrogen, an energy vector that is considered an opportunity for the economic and energy development of the *Foral* Region in the coming years.

Strategic framework

Vision and objectives of the 2030 Agenda

The agenda establishes a vision and objectives for Navarra in 2030. The vision of Navarra is aligned with international policies and strategies and is specifically articulated:

It is expected that by 2030 several flagship Hydrogen production facilities may have been built, prompting various actions in terms of infrastructure for hydrogen-based mobility. The hydrogen economy will be a reality with companies in Navarra operating in international value chains and an industrial technological ecosystem with new skills and capabilities

The specific associated objectives are:

- **Production:** The objective is to install 150MW of green hydrogen production from electrolysis in Navarra, a first phase being necessary by 2024 of between 10 and 30MW through the first flagship facilities. The objective will be the installation of a demonstrator for obtaining Hydrogen from renewable Biogas.
- **Infrastructures:** The objective of the availability of 3 Hydrogen stations is established for the supply of Hydrogen, especially to the heavy transport segment.
- **Industry:** In line with national and European strategies and taking into account that Navarra does not have a large volume of Hydrogen as raw material, a target of 5% of the total replacement of industrial natural gas consumption by the end of 2030 is established. This is an ambitious objective which requires a high level of replacement in the facilities with the highest volume of consumption.
- **Transport:** There will be three transport lines powered by Hydrogen and

fuel cell technology, and a target of 50-75 light and heavy vehicles for freight transport is also established.

- **CO2 reduction:** A reduction goal of 1,500 thousand tons. equivalents of CO2 is established.

In order to address these objectives, the NextGenEU Funds are being promoted, which will allow undertaking pilot projects to start the associated industrial technological development. In the phase of preparing this agenda, an estimate of the investment mobilized to achieve these objectives has not been achieved, although it will be an objective to estimate it within the review of the same.

Strategic framework for action

The strategic framework for action is represented in the attached figure:



AXIS 1: TO DEVELOP AND PROMOTE RENEWABLE ENERGIES AS A BASIS FOR THE PRODUCTION AND EXPORT OF GREEN HYDROGEN

A1.1: Incorporation and specific sizing of renewable energies needed in the new Energy Plan for Navarra.

A1.2: Promotion of a favourable tax framework for the promotion of renewable energies linked to the production of Green Hydrogen.

A1.3: Study and analysis of potential sites for the implementation of dedicated renewable energy.

A1.4: Streamlining of environmental procedures to produce renewable energies for Green Hydrogen and promotion of simplified processing in the event of changes in the scope of projects.

A1.5: Processing simplification, especially environmental in renewable energy electrical interconnection projects.

AXIS 2: TO SUPPORT THE DEVELOPMENT OF THE INDUSTRIAL VALUE CHAIN

A2.1: Analysis of opportunities in the industrial value chain of Hydrogen and technological and productive synergies with the industry.

A2.2: Promotion of investment instruments and fundraising for the development of new initiatives and entrepreneurship in the sector.

A2.3: Support in industrial policies and clustering for the development and competitive reinforcement of Green Hydrogen.

A2.4: Priority support for the implementation and alliances of technology companies with local industry.

A1.5: Processing simplification, especially environmental in renewable energy electrical interconnection projects.

AXIS 3: TO PROMOTE INNOVATION AND TECHNOLOGICAL DEVELOPMENT

A3.1: Promotion of working groups of a technological nature that can centralize the technological and strategic surveillance associated with the development of the sector- Pooling and coordination through the Hydrogen board.

A3.2: Promotion of specific R&D&I lines related to Hydrogen in the Navarra Science and Technology plan.

A3.3: Support to entities in Navarra for their adherence to existing technology networks and initiatives around Hydrogen.

A3.4: To support the preparation of teachers through stays, exchanges and agreements with other knowledge centers.

A3.5: The incorporation of knowledge and curricular development related to Hydrogen in professional training and university education.

A3.6: Promotion of ongoing training for the development of industry professionals.

AXIS 4: TO PROMOTE PRODUCTION, DISTRIBUTION AND CONSUMPTION AS AN ENERGY VECTOR

- A4.1:** Promotion of flagship production projects through electrolysis in models of public-private participation and promotion such as IPCEI of some of them.
- A4.2:** Analysis of the potential for hydrogen production from waste, biogas and biomass gasification and subsequent associated boost.
- A4.3:** Promotion of pilot projects to produce synthetic fuels or biofuels from renewable hydrogen.
- A4.4:** Promotion and support for the transport of Hydrogen in the gas network to favour its distribution to industry and mobility.
- A4.5:** Support for projects for the deployment of backbone networks and hydrogen distribution networks.
- A4.6:** Analysis of Navarra's potential for hydrogen storage in natural infrastructures.
- A4.7:** Analysis of opportunities and possibilities on industrial decarbonization, including a sectoral and territorial mapping of consumers and the analysis of potential consumer hubs.
- A4.8:** Awareness and training to the industry to promote and develop industrial consumption.
- A4.9:** Establishment of aid and direct measures to support industrial investment
- A4.10:** Promotion of the CAT project for grouped consumption for the industry in the area.
- A4.11:** Development and promotion of the implementation of hydrogen stations.
- A4.12:** Sizing and adaptation of incentives to promote the transition towards sustainable mobility.
- A4.13:** Actions to promote the decarbonization of homes with hybridization of technologies.

AXIS 5: TO ENABLE THE EXISTENCE OF AN ADEQUATE REGULATORY AND ADMINISTRATIVE FRAMEWORK

- A5.1:** Adequacy and regulatory development regarding soil and environmental authorizations for Hydrogen production projects.
- A5.2:** Training and awareness-raising for professionals and technical teams of local entities regarding Hydrogen installations.
- A5.3:** Declaration of Hydrogen production and hydrogeneration projects as of public utility or of regional interest.
- A5.4:** Promotion of the administrative simplification of small facilities.
- A5.5:** Support for the 'regulatory sandbox' to facilitate the deployment of projects.
- A5.6:** Institutional support and coordination with the agents involved in the establishment of the guarantee of origin system.
- A5.7:** Citizen awareness plan.

AXIS 6: MULTIPLYING OUR POTENTIAL THROUGH NETWORKS AND ALLIANCES

- A6.1:** To join Navarra to European networks and initiatives through the direct participation of the Administration or the different agents of the ecosystem
- A6.2:** Promotion of the presence of Navarra projects in the Hydrogen PERTE or new development instruments derived from NextGenEU Funds.
- A6.3:** Active management and inventory of the linkage of agents in Navarra to the different calls, networks and alliances at the state and European level.
- A6.4:** Promotion of cross-border pilot and experimental projects with the Nouvelle Aquitaine-Euskadi-Navarra Euroregion
- A6.5:** Creation of dialogue frameworks, coordination and monitoring with geographically close Autonomous Regions, with which to establish synergies and specifically with the Basque Country, La Rioja, Aragon or Catalonia.