

## Scientific and Technological Research at the Service of the Territory for a Coherent Hydrogen Roadmap

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**Abstract :** Nowadays, the islands have a very high carbon content in their energy mix, and their insularity means that they are highly dependent in terms of energy supply. Although the Corsican electricity mix is characterised by a very high proportion of renewable energies (RE), the island remains dependent on external supplies for almost 87% of its total primary energy consumption in 2022 (fuels for transport, liquefied petroleum gas for heating in particular, fuels for electricity production, electricity imports via the interconnections with Italy and Sardinia, etc.). As electrical energy in Corsica is 09 times more carbon-intensive than in continental France, the connections of energy systems to the insular electrical grid highlight the limits to the integration of intermittent renewable energy sources into the energy mix. As a result, this raises questions about the possible levers for accelerating an efficient transition and leads us to define an R&D strategy that puts potential solutions for the coming years into perspective, particularly in terms of storage, networks, and intelligent systems. The R&D strategy of University of Corsica is to develop technology platforms in order to validate modelization and optimization of systems and so in order to have robust digital twins. This choice enables us to offer to propose renewable energy systems viable. Two platforms have been developed: MYRTE, a hydrogen chain and PAGLIA ORBA, a smart Grid. We propose to present an exemple of transferring our research through these Platforms.

**Keywords :** energy, hydrogen, policy, technology-platform

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