

ENERGETICS

Ateneo - Analysis and optimization of national strategies for the development and management of the hydrogen supply chain

Funded By	Politecnico di TORINO [P.iva/CF:00518460019]
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Context of the research activity	<p>Hydrogen technologies can play a fundamental role in reducing pollutant emissions by mid-century and be part of the mosaic of solutions necessary for mitigating climate change. In particular, green hydrogen can serve as the link between renewable energy sources and end uses, helping achieve decarbonization goals at various levels (energy conversion, industrial use, mobility).</p> <p>The European Union aims to meet its defossilization targets by 2050 through a 24% increase in hydrogen use, generating economic movements of €820 billion, with the creation of approximately 1 million high-profile jobs by 2030 and 5.4 million by 2050.</p>
Objectives	<p>In this context, the Italian Public Administration, both at central and local levels, is developing strategies for the growth and management of this technological and economic option, including the optimization of the Hydrogen Valleys policy. This topic requires the support of technical and scientific experts trained at the PhD level.</p> <p>Specifically, the Ministry of Environment and Energy Security/General Directorate for Financial Programs and Incentives (PIF) within the Department of Energy is supporting research on these topics. The PhD role must be capable of assisting public administration technicians and decision-makers across all sectors of the hydrogen value chain: production, storage, transportation/logistics/infrastructure, end uses (stationary, transport, industry, residential, and fuel cells), smart integrated infrastructure management systems, safety, codes and standards, as well as the socio-economic aspects arising from the transition to hydrogen usage</p>
Skills and competencies for the development of the activity	<p>Thermodynamics and kinetics of electrochemical and thermocatalytic processes;</p> <p>Hydrogen systems (production, transport, storage, end uses).</p>