

## **PRESS RELEASE**

### **Gulf-to-Europe Hydrogen Pipeline: joint AFRY and RINA study points to feasibility and attractiveness**

*June 26<sup>th</sup>, 2023* - RINA, the inspection, certification and consulting engineering multinational, and AFRY, a European leader in engineering, design, and advisory services, have undertaken an initial study of how the Gulf region and Europe could be linked directly with a pipeline to transport low-carbon hydrogen, a key component in climate-friendly energy and industry systems of the future. The results indicate a transformative opportunity to fully unlock the Gulf's immense potential as a cost-effective source of low-carbon hydrogen for Europe.

With abundant Renewable Energy Sources (RES) and Natural Gas reserves, the Gulf region is set to become a leading global producer of green and blue hydrogen, ammonia and other synthesis products.

The concept of a hydrogen pipeline connecting Qatar, Saudi Arabia, Egypt, and traversing the Mediterranean Sea to Europe may seem ambitious, but initial assessment indicates its feasibility. The analysis shows that a suitable pipeline configuration could transport 100 TWh or approximately 2.5 million tonnes of hydrogen annually. Moreover, by constructing additional pipelines of the same nature, the transport capacity could be significantly scaled up.

The cost of transporting hydrogen through this pipeline is initially seen at approximately 1.2 EUR/kg H<sub>2</sub>. The Gulf countries, in turn, could supply green and blue hydrogen to the economic hub of Europe at Levelised Costs Of Delivered Hydrogen (LCODH) of around 2.7 EUR/kg starting from the 2030s, decreasing to around 2.3 EUR/kg in the longer term.

Recent geopolitical challenges have forced Europe to explore alternative avenues for energy security, including linking the Eastern Mediterranean and Europe by pipeline, which was investigated for the EastMed Natural Gas project. At the same time, the discussion around exporting hydrogen and its synthesis products from the Gulf to Europe is currently revolving around molecule transport by ship. These options receive EU subsidies and drive activity within the gas/hydrogen industry, but they may not be most efficient for bulk transport. A competitive and actionable pipeline project from the Gulf region in the near future could provide a viable and powerful complement.

Antonio Nodari, member of the Executive Management Team at AFRY Management Consulting said: "The collaboration between RINA and AFRY provides a unique and highly interesting view of a significant opportunity to take a step forward in the green energy transition for Europe and the MENA region. As well as understanding the opportunities, the expert team who have worked on this report have a realistic view of the obstacles that need to be overcome and have the solutions to address those challenges."

Andrea Bombardi, Executive Vice President at RINA said: “Through the combined expertise of AFRY and RINA, this first-of-its-kind study considers routing alternatives, technical parameters and feasibility, especially for the deep-sea pipeline section, geo-strategic framework conditions and top-level economic estimates of a direct hydrogen pipeline link between the Gulf and Europe as an element of an integrated green energy and industry system across Europe and MENA. The findings of the study represent a decisive contribution to boost the hydrogen economy. Together with AFRY, we have identified a potential stable corridor to bring supply and demand together. The scale-up of hydrogen adoption goes through projects like this.”

*With more than 600 consultants across 5 continents, AFRY Management Consulting works globally to address challenges and opportunities in the energy, bioindustry, infrastructure, industrial and future mobility sectors through strategic advice, forward looking market analysis, operational and digital transformation as well as M&A and transaction services. AFRY Management Consulting is ranked by Forbes and the Financial Times as a leading management consultancy, is part of AFRY, a leading global engineering and consulting group with 19,000 employees in 50 countries. [www.afry.com](http://www.afry.com).*

*RINA, leading certification company and engineering company in Italy, provides a wide range of services across the Energy & Mobility, Marine, Certification, Infrastructure & Real Estate and Industry sectors. With net revenues in 2022 of 664 million euros, 5.300 employees and 200 offices in 70 countries worldwide, RINA is a member of key international organizations and an important contributor to the development of new legislative standards. [www.rina.org](http://www.rina.org)*

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