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Comparison of Marine Technologies for Mediterranean Offshore Gas Export

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This paper seeks to assess and identify the most viable marine technology to transport natural gas within the Mediterranean Sea. Pipeline, LNG and CNG solutions are put in competition. Techno-economic modelling of each technology is performed to evaluate corresponding Capex and Opex. To enable comparison among the alternative supply chains, estimations of the total cost of investment, shipping tariff, and facilities tariff were taken as primary attributes in the ranking process. Various project fundamentals, e.g. different distances from origin to destination together with different volumes of gas to deliver on an annual basis, are foreseen to highlight which of the three delivery solutions offers the specific minimum supply chain cost. Time to market, technical difficulties to implementation, and footprint are considered too. Number of LNG and CNG ships are developed at conceptual design level and stored in databases which feed optimal composition of fleets, both to compete with subsea pipeline projects whose main technical and cost parameters are available from different sources. Pipeline and LNG cost reductions are considered to make more reliable comparison of these technologies with ready advances in CNG technology.

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