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Promotion of renewable energy sources in the Portuguese transport sector: A Scenario analysis

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Abstract

Transport is one of the sectors of the energy consumption where the presence of renewable energies is lower and its increase is hard to achieve especially in countries that import all the fuels that they consume. This paper addresses the progress that Portugal is making toward a more sustainable transport sector. Following a description of the energy consumption in the past and a detailed analysis of the trends for renewable energy growth in the transport sector, near- and medium-term scenario analyses are performed. The near-term scenarios aim at portraying the conditions that allow the country to fulfill the target of 10% renewable share in transportation established by the European Union. The medium-term scenarios highlight the implications, in terms of emission reduction and of energy independence, deriving from the use of electric vehicles and natural gas, synthetic and fossil, as alternatives to liquid fuels. The results show that electric vehicles would substantially reduce the total energy consumption and the greenhouse gas emissions, while the promotion of routes for synthetic natural gas would contribute to taking advantage of local resources. The paper also provides some insights about the design of future policies to build a more sustainable transport sector.

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