

The Use of Natural Gas as The Means of The Green Energy Transition: Case-Study Romania*

Cornelia NEAGU, Marius BULEARCĂ, Cristian SIMA and Daniel FISTUNG

Correspondence should be addressed to: Cornelia NEAGU, neagu_cornelia@yahoo.com

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Abstract

The European Green Deal, by its commitment towards greenhouse gas net-zero emissions by 2050, by reducing pollution and restoring biodiversity, transforms climate and environmental challenges into opportunities to change the current unsustainable context in the long term. In this respect, Romania has entered a path of replacing classic fuels with clean energy, which is very efficient and as safe as people are used to; and this is the main objective of this article. In carrying out this approach, in the first part of the paper, the problems related to how gases ensure the continuity of the energy system and the opportunities for the energy transition towards a green economy are addressed, while natural gas remains essential in this process. Therefore, beyond the challenges related to the security of energy supply, Romania must find and adopt a strategy to optimally cross this transition. In this context, the paper considers that gas remains essential to facilitate the integration of renewable and decarbonized energy, by replacing current coal-based energy production capacities, but also by contributing to the creation of hydrogen infrastructure at lower costs. Moving on with the research, in the second part of the paper, the main projects that make natural gas a "partner" for renewable resources are presented; it is mainly about the installation of new wind and photovoltaic energy capacities, and the use of hydrogen as an alternative fuel. In this respect, the paper points out that there are currently investors, but (yet) there is no market, nor sufficient demand for green hydrogen, although the potential is huge. Anyway, in the current context of energy paradigm changes, Romania's major natural gas producers, Romgaz and OMV Petrom, have announced their intention to invest in a joint hydrogen production project in a wind farm in Dobrogea, a first for the Romanian market, which would determine that Dobrogea could become a real "Hydrogen Valley". Finally, the paper concludes that for the energy sector and not only, natural gas represents the optimal solution in this process, while Romania is in the privileged position of owning its resources, and the versatility of natural gas can ensure a just energy transition.

Keywords: natural gas, green energy, renewable resources, hydrogen, green hydrogen, energy transition, decarbonization, Dobrogea