

# Hydrogen is not a threat but an opportunity for gas exporting countries

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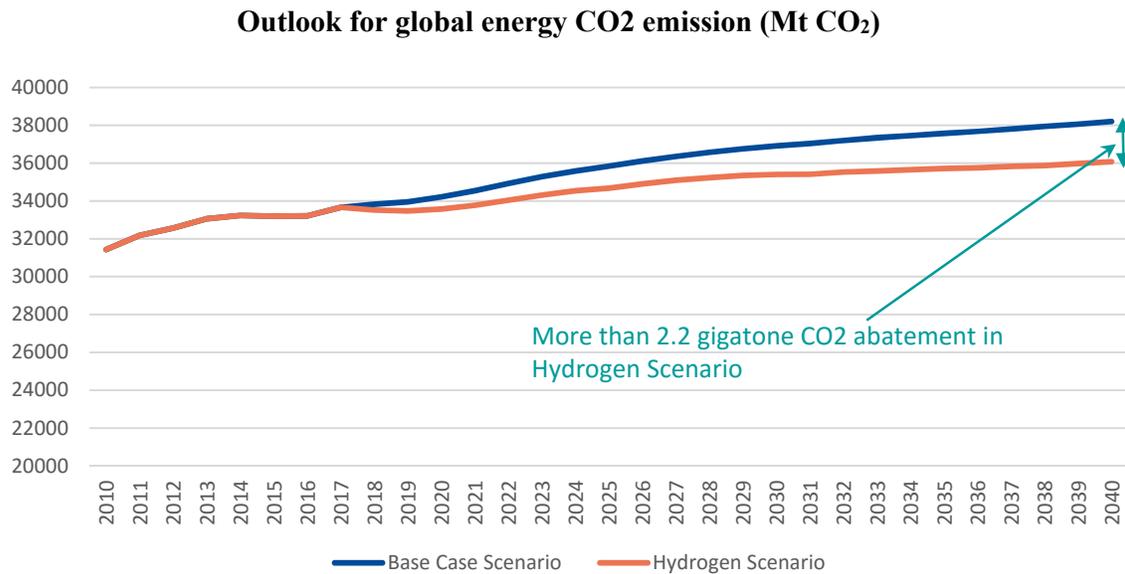
Hydrogen has been receiving a lot of attention these years because of the benefits that it can bring to the whole energy system. Hydrogen is a clean fuel and can be transformed into electricity through fuel-cells. It can get a great role in transport, power sectors, residential, commercial, and industry sectors. There are also varied ways to produce hydrogen that make the hydrogen economy even more interesting and at the same time challenging. The world's interest in the hydrogen economy has accelerated in recent years. The year 2018 marked a very impressive year through historical developments, such as Hydrogen Energy Ministerial Meeting that was the first ministerial meeting on this subject in October held in Tokyo. Besides, the Group of Twenty (G20) meetings also this year were very focused on the role of hydrogen in the energy transition. GECF Secretariat was also involved at high levels in these meetings, including Ministerial Meeting. According to G20 Ministerial Communiqué, hydrogen is recognized as an opportunity to “form energy carriers and storage” in the way of “fostering a cleaner energy future.”

Regarding the hydrogen technologies, there have been very widespread debates among energy analysts, decision-makers, and government officials during these years. There are economic uncertainties about what type of hydrogen technologies can make more contribution to the climate ambitions in the way of the energy transition. Green hydrogen supporters, most of the time, compare the volume of carbon footprint with the grey hydrogen but if CCUS measures are taken into account, it is proved that the volume of the emission can be comparable to those from green hydrogen.

A new modelling study being conducted in GECF Secretariat suggests that blue hydrogen will have a great potential to take a significant role in the hydrogen economy. GECF is developing a new scenario on the future of energy transition in the context of hydrogen economy development that is called “Hydrogen Scenario.” The main aim for developing the Hydrogen Scenario is to assess the impacts of the hydrogen economy on the total energy system, specifically on the natural gas supply system.

The primary results of the Hydrogen Scenario suggest huge potential for blue hydrogen in the long-term and a sizeable potential for enriched natural gas (blended natural gas with hydrogen) in shorter-term. Regarding the latter, some companies in GECF Member Countries have already taken practical steps such as Gazprom.

According to the primary results of the scenario modelling, only 20% of total hydrogen demand will be met by electrolysis that generally uses renewable electricity, by 2040. Hydrogen deployment described in Hydrogen Scenario will result in an annual emission reduction of 2.2 GtCO<sub>2</sub> by 2040. This translates to a cumulative total of more than 31 GtCO<sub>2</sub> from 2019 to 2040.



The share of natural gas in primary energy consumption will increase to 27.1% by 2040 compared with 26% in the Base Case Scenario, and a 4.7% increase from today's value.

The primary results of the Hydrogen Scenario acknowledge that hydrogen economy can be an opportunity for natural gas reserve holders and natural gas exporting countries. Limited water resources, as well as significant electricity needed for electrolysis, will be an obstacle in the way of green hydrogen to gain significant share. This barriers, along with the competitiveness of blue hydrogen in natural gas-rich regions, result in a huge potential for natural gas to maintain its position in hydrogen production in case of hydrogen economy development.

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