Hydrogen energy storage doha

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Doha: Qatar has the potential to become a major producer of hydrogen due to an abundance of solar energy in the country that can power the process of generating hydrogen.

Hydrogen is an essential fuel for clean energy. It can power vehicles, ships and aircraft, heat homes and offices, and produce electricity.

As an energy carrier, it diversifies energy sources, reducing dependence on hydrocarbon-based fuels.

In an interview, Dr. Samer Fikry, Professor of Mechanical Engineering at Qatar University College of Engineering, told The Peninsula that despite hydrogen"s unavailability naturally, which makes it an expensive fuel, rapid developments in its processing make its potential high.

"With the rapid development in generating electricity from renewable sources such as solar energy, the cost of generating hydrogen from water through the electrolysis process is decreasing," Dr. Fikry said.

"Qatar has a high potential to be a major producer of hydrogen fuel due to the great availability of solar energy within the country. Qatar has taken major steps towards using solar energy as a part of its energy strategy to depend more on clean energy sources and reduce greenhouse emissions," he added.

The solar power project is expected to generate almost 2,000,000 MWh, the equivalent energy consumption of approximately 55,000 Qatari households during its first year of operation.

Last year, Qatar announced plans to build a $1bn plant to make blue ammonia, a fuel that can be converted into hydrogen by countries looking to reduce carbon emissions. The facility will capture and sequester 1.5 million tonnes of carbon dioxide annually through manufacturing. This follows the country"s commitment via the Qatar National Environment and Climate Change Strategy to reduce greenhouse (GHG) emissions by 25 percent by 2030, enhance ambient air quality standards and update limit values by 2024.

However, Dr. Fikry said fossil fuels remain very important as the primary energy supply worldwide and will continue to be so for the foreseeable future, but advanced innovations and technologies should be implemented to reduce harmful emissions significantly.

According to the International Energy Agency (IEA), based on average natural gas prices over the past five years, over 40% of methane emissions from oil and gas operations could be avoided using well-known existing technologies. Fossil fuel operations account for more than one-third of human-caused methane emissions.

"That does not mean that the current pollution level from burning these fuels should remain the same in the future," Dr. Fikry stressed.

"Advanced innovations and technologies should be implemented to reduce these harmful emissions significantly. This approach can allow the world to continue using fossil fuels in a clean and environmentally friendly way," he added.

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