

Power-to-gas Market to Incur Rapid Extension during 2031

Power-to-gas Market Expected to Reach \$84.4 Million by 2031 — Allied Market Research

PORTLAND, OREGON, UNITED STATE, May 4, 2023 /EINPresswire.com/ -- Power-to-gas is the process of converting surplus renewable energy into hydrogen gas through the PEM electrolysis technology. Hydrogen can be injected into the natural gas grid. Hence; hydrogen can displace natural gas, reducing greenhouse gas emissions and reliance on high-carbon fuels. Hydrogen manufactured from renewable energy is called green hydrogen, which can be used to store, transport, and utilize renewable energy. This technology helps to minimize variable renewable energy curtailment from sources, such as wind and solar, providing long-term storage and grid balancing services through electrolyzer. The power-to-gas industry was valued at \$30.3 million in 2021, and [power-to-gas market](#) size is estimated to reach \$84.4 million by 2031, growing at a CAGR of 10.8% from 2022 to 2031.

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According to the International Energy Administration (IEA), hydrogen demand stood at 90 million ton in 2020, almost all of which was made from fossil fuels. However, green hydrogen capacities have been growing steadily and have doubled over the last 5 years, reaching nearly 300 MW in mid-2021. In addition, nearly 350 projects with an aggregate capacity of 54 GW are currently under development and are expected to commercialize by 2030, while more than 40 other projects, which account for nearly 35GW capacity, are in the early stages of development that are expected to be commissioned by 2030.

The green hydrogen produced by electrolyzer can also be directly used as a fuel, either for transport, replacing oil in light vehicles, railways, and marine applications, or as a feedstock for industrial applications. Green hydrogen fuel cells can also be used for energy storage. Due to the falling costs of renewable energy technologies, such as solar and wind, energy storage technologies such as power-to-gas (PtG) technology are becoming increasingly attractive, and the installed capacity of commercial electrolyzer systems has been growing steadily over the past few years. There are only a few commercially viable water electrolysis technologies, and the two most widely used technologies are alkaline water electrolysis (AWE) and proton exchange membrane (PEM) electrolysis.

In 2020, according to the European Commission, the refinery sector accounted for 48% of the hydrogen consumption, followed by fertilizers and chemical sectors. Germany is one of the major countries in the Europe power-to-gas market. As of 2020, Germany was home to around 40 small power-to-gas pilot projects that harnessed surplus green power, mainly from wind and solar projects, to carry out electrolysis by splitting water into oxygen and hydrogen to produce zero-carbon fuel. Furthermore, in July 2020, the European Union unveiled its Hydrogen Strategy that aims to increase its electrolyzed capacity by 6 GW by 2024 and 40 GW by 2030. Furthermore, the strategy targets to increase the production of renewable hydrogen from 1 million ton to 10 million ton per year by 2030. The presence of above-mentioned initiatives and applications is expected to provide ample power-to-gas market growth opportunities for the development of the market.

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The power-to-gas market forecast is segmented on the basis of technology, capacity, use case, application, and region. On the basis of technology, the market is segmented into electrolysis and methanation. On the basis of capacity, the market is bifurcated into less than 100KW, 100-999KW, and 1000KW and above. On the basis of use case, the market is segmented into wind, solar, and biomass. On the basis of application, the market is segmented into residential, commercial, and utility.

Region-wise, the market is studied across North America, Europe, Asia-Pacific, and LAMEA. Presently, Europe accounts for the largest power-to-gas market share of the market, followed by North America and Asia-Pacific.

The major companies profiled in this report include, Hydrogenics, ITM Power, McPhy Energy, Siemens AG, MAN Energy Solutions, Nel Hydrogen, ThyssenKrupp, Electrochaea, Exytron, GreenHydrogen, Hitachi Zosen Inova Etogas, Fuelcell Energy, Avacon, Carbotech, and Aquahydrex. Due to rapid development of industrialization and modernization and exhaustion of fossil fuel resources have led to the innovation of alternative fuels, such as hydrogen. Increase in demand for hydrogen in various sectors has fueled the growth of the power-to-gas market. Additional growth strategies, such as expansion of production capacities, acquisition, partnership, and research & innovation in the solar energy application led to attain key developments in the global power-to-gas market trends.

Key findings of the study

- Europe is expected to exhibit CAGR of 10.4% during 2022-2031.
- As per the global power-to-gas market analysis, by technology, the electrolysis segment accounted for the largest share in 2020.
- By capacity, 1000KW and above capacity power-to-gas was the leading segment in 2021.
- By use case, the solar segment was the highest revenue contributor in 2021.
- By application, the utility segment dominated the power-to-gas market and is expected to

retain its dominance during the forecast period.

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IMPACT OF COVID-19 ON THE GLOBAL POWER TO GAS MARKET

- Emergence of COVID-19 had a negative impact on the growth of the global power to gas market during this period.
- This impact is mostly attributed to the significant disruptions in the raw material transportation, presence of low-labor, led to shutdown of many manufacturing industries led to decline of demand for power to gas during this period.
- The decrease in demand for many non-essential products and shut down of construction and tourism related industries have created a negative impact on the development of the global power to gas market.
- Thus, the abovementioned factors are expected to have negative impact on the global power to gas market growth during the pandemic period.

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