

Product Information

March 2022

Use electricity from renewable energies:

Energy transition with Power-to-X solutions

Nordheim (Germany) – March 09, 2022 – In order to be able to optimally use electricity from renewable energies, Power-to-X solutions are in demand. In addition to balancing supply and demand, these technologies for converting electricity into other energy sources can also reduce global CO2 emissions.

Power-to-X, also called P2X or PtX, describes the conversion of renewable electricity from wind, water or sun into gas, oil or heat. These energy sources can be stored for later use, transported to low-energy destinations, or consumed in industrial sectors that do not have direct access to renewable energy.

The various P2X technologies can be divided into Power-to-Gas, Power-to-Liquid and Power-to-Heat. In Power-to-Gas solutions, water is split into hydrogen and oxygen with the help of electricity. The hydrogen can be used for hydrogen cars or converted into methane. Methane is an important basic material for the chemical industry, vehicle propulsion and a possible source of electricity. Power-to-Liquid technologies rely on liquid chemical compounds such as methanol or petrol, which can be produced from methane and hydrogen. These are used as fuels for vehicles, in the chemical industry or to generate electricity. Power-to-Heat means that electric heaters such as fan heaters or radiant heaters use electricity for heating.

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Advantages and challenges

Power-to-X technologies offer many advantages: The gap between variable renewable energy generation and load is closed, renewable energy projects are easier to implement due to maximized energy use. Fossil fuels are replaced by carbon neutral alternatives. Long-term storage of energy from renewable sources and the coupling of renewable electricity with heating, cooling and transport is possible.

And yet the commercialization of the technologies is associated with some challenges: P2X solutions are more expensive compared to corresponding fossil fuel-based alternatives. This is due to higher energy costs and considerable investments in infrastructure. Other problems concern hydrogen storage, whose energy efficiency and service life are still too low. There is also a lack of regulations and standards for hydrogen.

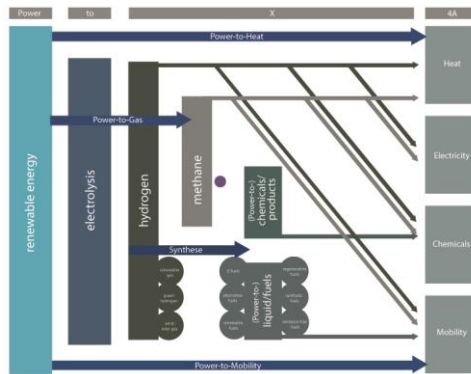
Numerous Power-to-X projects have already gone into operation worldwide. Although most of these pioneering projects have been implemented on a limited scale, the data and experience gained can facilitate the implementation of solutions already planned and installed. Energy producers, utilities, logistics solution providers and large industrial energy consumers are preparing to implement Power-to-X solutions and benefit from their advantages.

Scope: 2,678 characters including spaces

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Captions:



Picture 1: T Power-to-X technologies by energy form.

Pictures by: Armaturenfabrik Franz Schneider GmbH + Co. KG

About AS-Schneider

The family-run company, AS-Schneider, was founded in 1875 and with approx. 400 employees, is one of the leading manufacturers of Instrumentation and Double Block & Bleed Valves. In the market segment for Large-Bore Diesel Engine Valves such as those used in marine propulsion and the generation of electricity, AS-Schneider is even the world market leader. With our own subsidiaries in Romania, Singapore, Dubai (UAE), Houston (USA), India and professional partners in more than 20 countries worldwide, we are located everywhere our customers need us.

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