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As such, PtX technologies are not an element for the retreat from a global world, but rather a global contribution to climate protection and international trade.

Discover how new revolutionary Power-to-X technologies can play an increasingly crucial role in our path towards a sustainable and carbon-neutral future.

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Large-scale heat pumps in district heating systems with thermal energy storage are an especially attractive option for power-to-heat: they offer exceptionally high efficiency for balancing excess wind and solar power, and they can be profitable investments.

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Power-to-X (PtX) is an innovative approach to energy conversion that plays a pivotal role in the global transition towards a greener, more sustainable energy system. At its core, PtX technologies convert renewable electricity into other forms of energy carriers, such as hydrogen, synthetic fuels, chemicals, or heat.

The switch to green hydrogen, electrofuels and Power-to-X technologies is underway and will dominate from 2030 and onwards. We are supporting governments, energy companies, infrastructure owners and developers, investors and end users alike and are experienced in public and private collaborations.

Power-to-X refers to the suite of process technologies that convert electricity (electrons), those ideally generated from renewable sources, into an industrial feedstock, such as hydrogen through electrolysis.

TTP works with start-ups, scale-ups, and global corporates to tackle their challenges in the development of power-to-X technologies. Our clients need to balance competing factors from ...

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TTP works with start-ups, scale-ups, and global corporates to tackle their challenges in the development of power-to-X technologies. Our clients need to balance competing factors from delivery against ambitious timescales to reducing the capital cost of equipment; from maximising economies of scale to achieving the lowest levelized cost of ...

OverviewPower-to-heatPower-to-fuelOther forms of power-to-XImpactSee alsoThe purpose of power-to-heat systems is to utilize excess electricity generated by renewable energy sources which would otherwise be wasted. Depending on the context, the power-to-heat can either be stored as heat, or delivered as heat to meet a need. In contrast to simple electric heating systems such as night storage heating which covers the complete heating requirements, power-to-heat systems are hybrid systems, which additionally h...

The Kopernikus project P2X deals with technologies for sector coupling, which make it possible to transfer energy from renewable power generation to other sectors that are still primarily based ...

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