

# The power supply of the future

If one day, the power supply is mainly generated from wind and solar energy sources, flexibility technologies will be necessary to keep generation and demand in balance. Private households and companies can help to mitigate short-term fluctuations by adapting their consumption to the power generation: Electric vehicle batteries and photovoltaic plants can store electricity when the sun is shining and the wind is blowing. Pump storage and electric heating systems with hot water tanks can likewise compensate for fluctuations. In order to bridge dark and windless periods of several weeks, electricity can be converted into hydrogen or methane by means of the power-to-gas technology. It can then be stored for subsequent use in gas power plants. Provided there are sufficient grid capacities, power could also be imported from solar thermal plants in the Mediterranean. Coal-fired power plants, on the other hand, will no longer be of significance. They produce about thrice as much carbon emissions per kilowatt hour as gas power plants. Assuming that the price for carbon emissions will rise in the future, the operation of coal-fired power plants will no longer be profitable.

