

Norway residential solar

50 per cent more solar power was installed globally in 2016 than the year before. The EU has committed to increasing the share of renewable energy from 16 to 27 per cent by 2030. Together with wind, solar energy will account for most of the replacement of fossil fuels. Norway is closely linked to the European energy market. Regardless of the growth of solar in Norway, the development in the EU will have consequences for Norwegians.

In contrast to many European countries, Norway does not have fossil power plants that need to be replaced by renewable electricity production. Norwegian hydropower is currently so cheap that power companies do not consider it attractive to build solar power plants in Norway. In recent years, however, companies have started selling or leasing solar systems to private customers and businesses in Norway.

Despite the low energy prices, solar power is growing rapidly in Norway. In 2016 four times as much capacity was installed as the year before, mostly on commercial buildings and private homes connected to the grid. Norwegian companies are also important players in the production of crude silicon and silicon wafers for the solar cell industry.

Although Norway is far north, it is quite possible to produce solar energy here. Ås, a small town south of Oslo, receives 1000 kilowatt-hours (kWh) per square meter annually. This is comparable to many parts of Germany, where solar power has boomed over the last 10 years. By comparison, Spain receives on average 1900 kWh per square meter a year, while Australia receives 2900 kWh per square meter.

Solar cells can be mounted on roofs or integrated into buildings. Facades with integrated solar panels may in some cases have corresponding square meter prices to facades of copper or natural stone, while contributing free energy. In the construction of climate-neutral houses, solar cells have nearly become default. As far north as in the city of Trondheim, the companies Snøhetta, Skanska and Entra are constructing a "Powerhouse" that will produce more energy than it consumes.

Building hydroelectric, gas or coal power plants require large capital investments. Solar power is flexible and can be installed in large solar parks, as well as small units on rooftops and commercial buildings. This allows consumers to contribute to the development.

For private households, solar cells on the roof can pay off in the long term. Depending on efficiency and future energy prices, a rooftop system may be profitable within 10 to 25 years. Interest in technology and a desire to be self-sufficient also help drive the growth in the private market. According to the Norwegian solar energy company Otovo, a typical Norwegian house can produce one third of its annual electricity consumption with a rooftop system.

>>Digital economy: New business models make it easier to acquire solar systems, for example through leasing. Digitized maps allow customers to get quick estimates on profitability and placement of solar panels on their own homes. New sharing economy platforms and "virtual power companies" are emerging.

>>Smarter power consumption: Solar cells on the roof provide a direct connection between production and consumption. Smart home solutions contribute to increased energy efficiency, for example by heating water or washing clothes while the solar production is greatest.

Unlike fossil fuels like coal and oil, solar and wind power has almost no marginal cost. After the installation costs are covered, the price of producing electricity is almost zero. This kind of energy production will push the power prices in the European market down.

In Germany, cheap solar energy has already made coal power less profitable. As European homes increasingly use electricity for heating, the demand for Norwegian gas may also be affected. The profitability of clean Norwegian hydropower may also be challenged by the competition from solar and wind power in the European power market.

Over the next 10 years, Norwegian grid companies plan to spend around NOK 140 billion on upgrading the Norwegian power grid. An important reason for this is the expected increase in future power consumption. The power grid needs to be dimensioned to handle few, but high peaks in demand.

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