
Zero Sun
Solar power is an important piece of the puzzle for the future energy supply. But how can a house be totally self-sufficient, running only on solar energy, in a place with limited sunlight? Follow one of Sweden's most exciting energy experiments at zerosun.se

”Have you heard about the power company that built a solar-energy house in a place where the sun never shines?”

At first glance, the story of Zero Sun may seem a bit far-fetched: more like the beginning of a joke than the pioneering energy experiment that it really is. Close to Vitberget in Skellefteå, in the far north of Sweden, we at Skellefteå Kraft and our collaborative partners are building a normal house with unique possibilities. A house completely self-sufficient on solar power – 24 hours a day, all year round. Zero Sun is a unique project in which we challenge the norm, from tried-and-tested technology to our own business model. All for the sake of learning important lessons about future energy supply and making solar technology available to more people. This is an energy initiative moving with the times, because by 2040 all of Sweden will have switched to 100 per cent renewable energy.
If we can make it here, we can make it anywhere.

Energy self-sufficient – how it works!

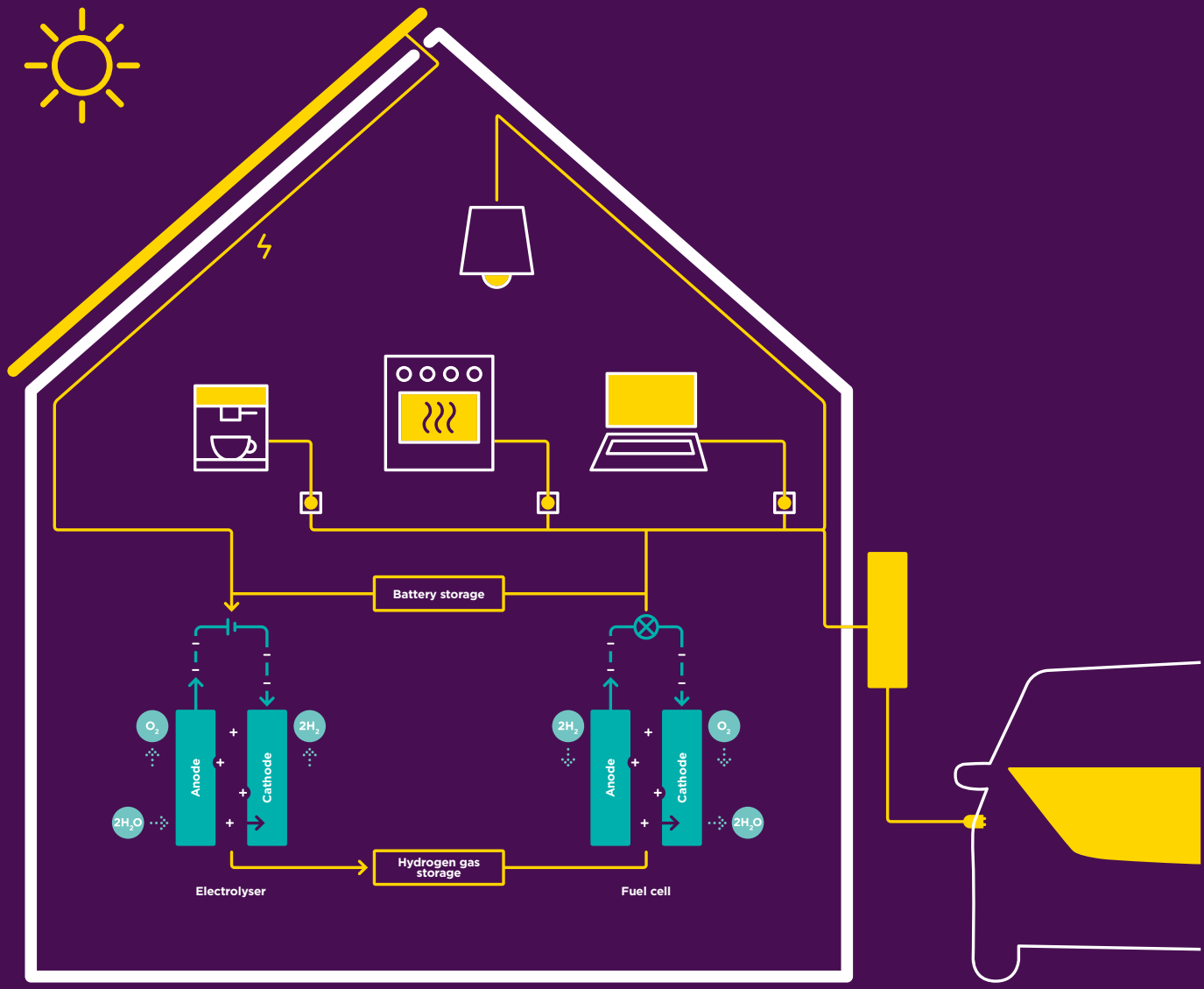
The energy supply in the house builds upon an interplay between solar energy, batteries and fuel cells. This is the technology that allows solar energy to work in a place where the sun seldom shines.

On the south side of the roof are the solar panels that account for all of the production of electricity for the house. The surplus energy is stored in the batteries during the summertime.

Once the batteries are full, the remainder of the surplus energy is used to generate hydrogen gas in an electrolyser. The hydrogen gas is then stored in a repository in the garden.

During the winter, once the level in the batteries has gone down and the sun is largely absent, the gas is used to produce electricity and heat for the house via a fuel cell.

The entire technology package fits into the attached garage.



About the house

- Modern family house from the Swedish A-hus standard range
- Living space/garage/technology space 140/33/8 m2
- 122 m2 solar cells on the roof, total output 27 kW
- Hydrogen gas storage in a safe place underground on the property, with a total of approx. 2,000 Nm3 and an output of 6,000 kWh
- The possibility to charge a car with electricity

Contact

Zero Sun is formed in collaboration between the partners that contribute to the development of the project.

Communications related to Zero Sun should be consulted.
Please contact zerosun@skekraft.se

Skellefteå Kraft