

Hydrogen house is 'greenest in Europe'

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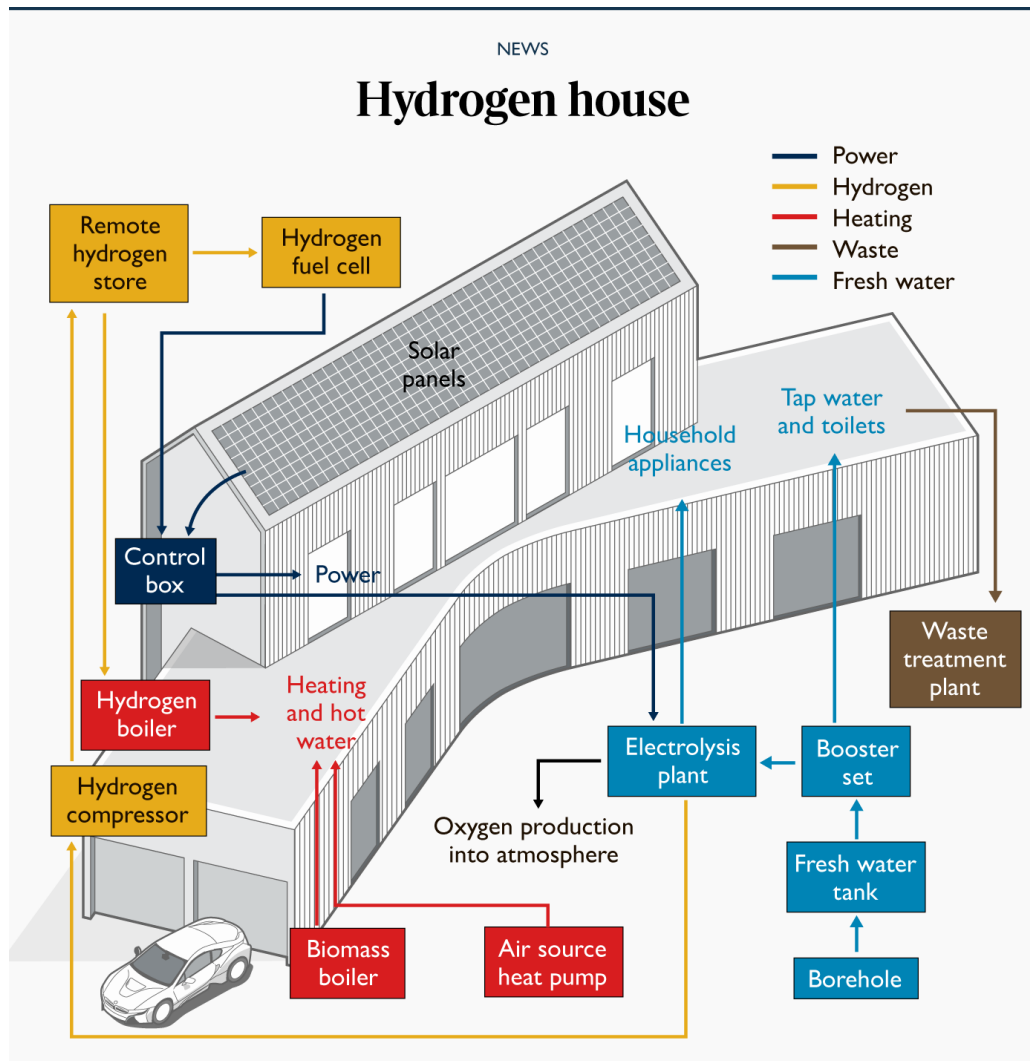


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A hydrogen-powered house that is off-grid and said to be the first of its kind in Europe is being built by a family in Devon.

The house near Exeter is called Autarkic, which means self-sufficient, and will generate power from solar panels, store it in hydrogen tanks and treat all water and sewage on site.

Nick Moffat, 38, and his wife, Kyrenia, 37, are constructing the four-bedroom house in a woodland clearing in the grounds of a Grade II listed manor house owned by Mrs Moffat's parents, who gave them the plot as a wedding present.



It took the couple, who have two children, Max, five, and Amelia, three, seven years to get planning permission under rules that allow “truly innovative” new homes on rural land.

Built to the ultra low-energy Passivhaus standard, the building will generate electricity from 72 photovoltaic panels. “Rather than store it in traditional electrical batteries, which aren’t very efficient or good for the environment, we are putting the energy through an [electrolysis](#) plant and creating our own [hydrogen](#) inside the house,” Mr Moffat, the director of a building

company, said. The hydrogen is then stored at high pressure.

“At night and in winter we can take the hydrogen from the store and put it back through a hydrogen fuel cell, similar to those in buses, to power the house. We can also put it through a hydrogen boiler to heat the house.” Any spare hydrogen can power the hydrogen cars they plan to buy.

A borehole supplies drinking water, which is purified in a reverse osmosis plant. A rainwater-harvesting system captures water for lavatories and the garden. A treatment plant breaks down sewage into relatively clean water, which flows into a soakaway. Putting the technology into the house is thought to have cost about £500,000.

Some schools and universities will have a right to visit the house, for which the couple are fitting a viewing window to their plant room. The government is funding research into how hydrogen can help to meet its target of net-zero carbon emissions by 2050. The technology to make hydrogen at scale does not yet exist.

The couple, who have started a company called Autarkic Living, to help other people who want to build houses along similar lines, hope to move in by July.

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