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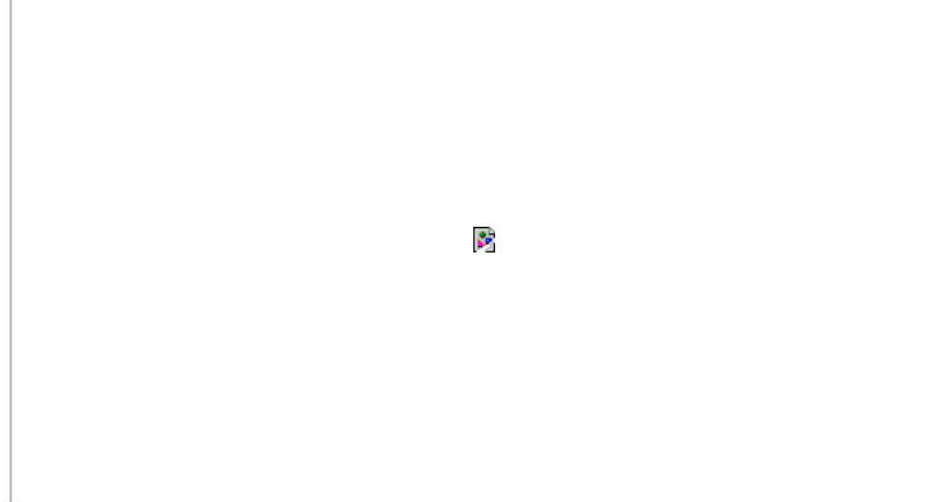
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UK inventor tests the first air car

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UK inventor tests the first air car



Cars, homes and factories could be powered using the air we breathe in the future, according to engineers at a special summit.

British scientists developing the technology say normal air can be used to store energy by cooling it to -190C, turning it into a liquid.

When the liquid air is later warmed, it rapidly expands into a gas, creating high pressure that can drive the piston engine of a car, or generate electricity in a turbine.

Dr Tim Fox, of the Institution of Mechanical Engineers, which has organised the summit of experts, said: 'We're coming out of the cave blinking on this one and we're only just getting an inkling of how great the energy storage benefits of liquid air could be.'

One company, Highview Power Storage, has built a pilot plant next to a power station in Slough to prove the technology works.

At times of low demand for electricity, the plant uses the excess energy from the power station to suck air through refrigerator-style compressors turning it into a liquid, which it then stores in an insulated tank.

When consumer demand spikes, the energy is returned to the national grid. The tank, which stores 60 tons of liquid air, can power 6,000 homes for one hour.

The company's chief executive officer Gareth Brett told Sky News the technology is far cheaper than storing energy in batteries.

'The trouble with batteries is they are best suited to small applications like your laptop,' he said.

'What we are talking about here is the national grid, which requires very large amounts of electricity to be stored.'

'There are relatively few ways of doing that and we think with liquid air we have found one of the few technologies that is truly scalable to grid scale usage.'

The technology could make wind turbines more viable, by storing excess production at high wind speeds, releasing it again in calm weather, he said.

Research by Imperial College suggests energy storage could reduce the number of power stations and national grid infrastructure needed, saving 10bn.

Engineering firm Ricardo is also developing a car engine fuelled by liquid air, based on a prototype



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built by inventor Peter Dearman.

Using a beer keg to store the liquid and copper pipes from a DIY store, he generated enough power to drive his Vauxhall Nova.

'I've probably done 35mph. It probably would go faster but I haven't taken it out on the open road, so I've been limited on space,' he said.

He said a liquid air car would overcome some of the problems with electric cars, which are expensive, use scarce materials in their batteries and are best suited to short distances.

'It's not the range of the electric car that is the problem, it's the recharging,' he said.

'With liquid air you have the convenience of the petrol engine in that you can refill it quickly, simply by pouring it into the tank.'

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