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Improved battery technology holds key to electric cars and home power

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ELECTRIC cars are set to become an affordable alternative to current petrol and diesel rivals within five years – if battery technologies become cheaper and more advanced, scientists say.

And home batteries used to store power from home solar panels could become competitive in the 2030s, Imperial College London scientists said.

Advances in battery technology could make the planned £19.6 billion Hinkley Point C nuclear power plant projected to produce 3.2 gigawatt (GW) of power on demand from 2025 obsolete the moment it came on stream, they claimed.

If the same amount were invested in large-scale lithium-ion batteries, by 2025 these would be able to deliver 21 to 41 GW of power when charged. This is more than 10 times the UK's current electricity storage capacity, enabling the use of significantly more wind and solar energy.

Currently, many motorists are put off from switching to electric cars because of the cost, limited range of batteries and few charging points.

So the scientists developed a new tool to predict the future cost of energy storage technologies under different scenarios and said electric cars could be a viable alternative from 2022. Using a large database, it can predict how much consumers will have to pay in the future for energy storage technologies based on cumulative installed capacity, current cost and future investment.

Study lead Oliver Schmidt, from the Grantham Institute and the Centre for Environmental Policy said: "With this analysis tool we can quantify when energy storage becomes competitive and identify where to invest to make it happen, thereby minimising investor and policy uncertainty."

Wind and solar energy only produce power intermittently when conditions are right and without adequate storage when there is a glut it is wasted.

Energy storage technologies, including traditional pumped hydroelectric storage, rechargeable batteries and fuel cells, could help avoid this wastage and provide electricity when demand is high.

However, many of them are still very new technologies, so are not very widespread and are expensive.

Yet as new technologies are rolled out and enter mass production, it is predicted costs should fall due to economies of scale and improvements in manufacturing and deployment.

> "Many motorists are put off from switching to electric cars due to cost