



# MH<sub>2</sub>

ENERGY KINGDOM  
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## MILFORD HAVEN:ENERGY KINGDOM

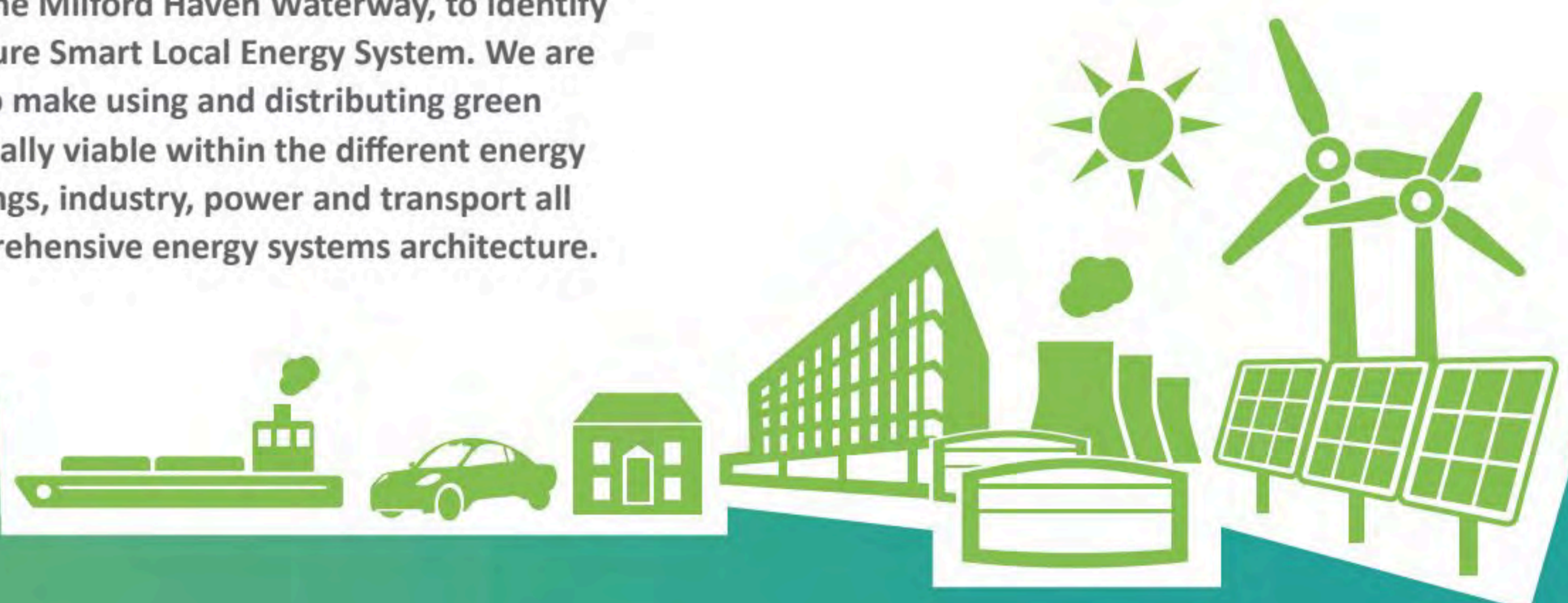
MH:EK is exploring the potential of zero carbon hydrogen alongside renewable electricity to meet all of our future energy needs for buildings, power generation and fuelling transport.

MH:EK is one of the chosen “detailed design” projects within the *Prospering from the Energy Revolution* (Pfer) programme of works funded by UKRI as part of their Industrial Strategy Challenge Fund (ISCF).

MH:EK is gathering detailed insight into the whole energy system around the Milford Haven Waterway, to identify and design a future Smart Local Energy System. We are exploring how to make using and distributing green hydrogen financially viable within the different energy sectors of buildings, industry, power and transport all backed by comprehensive energy systems architecture.



UK Research  
and Innovation



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READ MORE: [www.pembrokeshire.gov.uk/mh2-energy-kingdom](http://www.pembrokeshire.gov.uk/mh2-energy-kingdom)



### Project partners



### Electrolyser and refueller providers



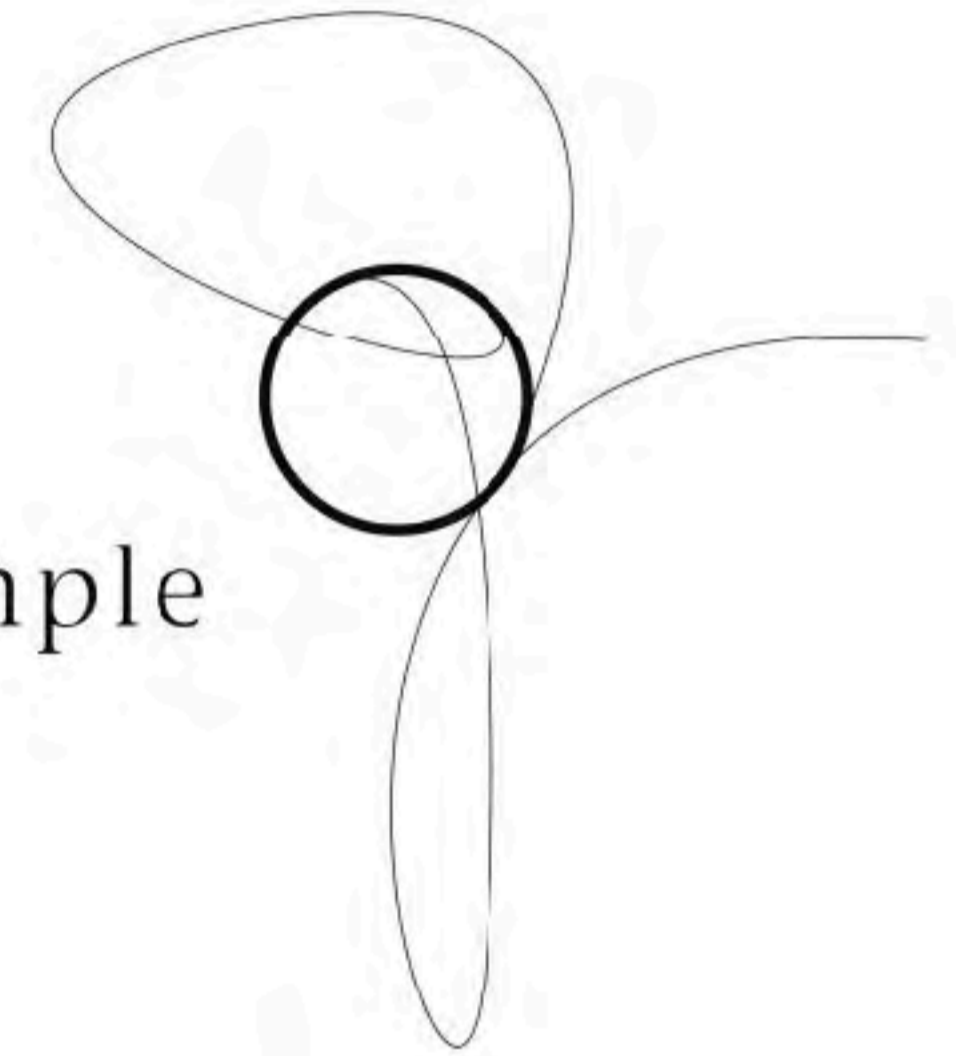
# HYDROGEN FUEL CELL ELECTRIC VEHICLE

The Riversimple Rasa is an electric car powered by hydrogen rather than batteries. The hydrogen passes through a fuel cell, where it combines with oxygen from the air to produce electricity. This electricity flows to small, lightweight electric motors, one in each wheel, which give the car 4 wheel drive. The only emission is water.

## Mobility as a service

Riversimple offers a subscription service for vehicles which offers a move away from vehicle ownership towards an all-inclusive, simplified and clean mobility experience.

riversimple



To read more visit our website:  
[www.riversimple.com](http://www.riversimple.com)



Riversimple are a Welsh company pioneering in the design and development of lightweight, hydrogen fuel cell vehicles.

# THE RIVERSIMPLE RASA



- REGENERATIVE BRAKING INTO SUPER CAPACITORS
- WEIGHS ONLY 655KG
- 4 IN WHEEL MOTORS, GIVING DIRECT 4 WHEEL DRIVE
- EMITS PURE WATER VAPOR



**All Riversimple vehicles will be offered under a service contract, a form of Mobility as a Service**

Customers take a Riversimple vehicle from 1-5 years, paying a fixed monthly fee plus a mileage rate – which covers everything.

After each contract, the vehicle is returned to Riversimple where it is provided to the next customer and so on.

Refurbishments and software upgrades are factored in to keep the vehicles current.



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[www.riversimple.com](http://www.riversimple.com)

# HYDROGEN FACTS

- Hydrogen makes up about 75% of the mass of the universe. It is found in the sun and most stars.
- It is the simplest and lightest element on the periodic table.
- It is also odourless, colourless, tasteless, non-toxic and non-poisonous.
- If released, hydrogen is not a greenhouse gas.

## Is hydrogen safe?

Hydrogen has been safely produced, stored, transported, and used in large amounts within industry - over 60 million tons per year globally - by following standard practices that have been established over the past 50 years.

Hydrogen is just as safe as other transport fuels. Compared to petrol, you would need three times the amount of hydrogen within air to create a flammable mix. This is difficult to achieve when every molecule is trying to escape skywards at 45 mph!

If hydrogen is set alight, it burns with a very hot pale blue flame, but with a low radiant heat. This means it is unlikely to set fire to anything nearby.



# HYDROGEN PRODUCTION AND DISPENSING

This site uses electrolysis to split water into hydrogen and oxygen.

Power is taken from the local green energy grid and run through the electrolyser units. The oxygen produced is vented to the air. The hydrogen is compressed and stored within suitable cylinders.

When a vehicle comes for a fill, the hydrogen is dispensed from the storage using standard industry protocols.

