



Zero emission power from green hydrogen to decarbonise temporary, back up, off-grid and supplementary power

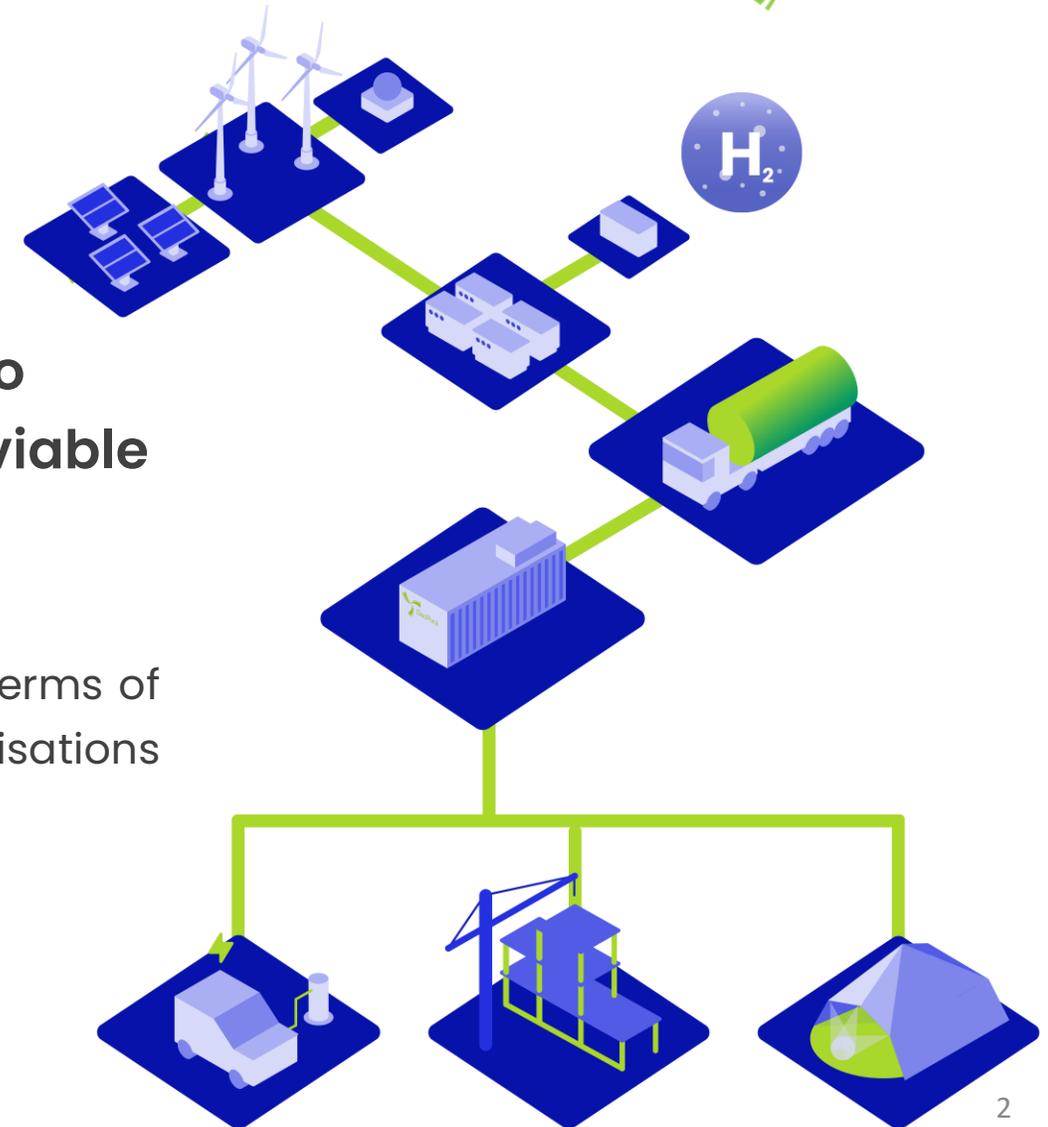
Matt Barney, Business Development Manager, GeoPura

100% renewable
clean energy without limits

To enable the production, transport and use of zero emission fuels with innovative and commercially viable technology to decarbonise our global economy.

We have created and are delivering a real game-changer in terms of powering our planet without fossil fuels and are enabling organisations to reduce emissions and work towards net-zero.

Clean, Renewable, Resilient Energy as a Service.



The GeoPura Hydrogen Power Unit (HPU)



High Level specification

- 20ft shipping container form factor
- 250kW maximum power output
- PEM fuel cell
- 100% zero emission
- 216kWh battery storage included in each module
- Off grid, peak shaving, and back-up power modes
- Multiple containers can be combined to provide resilient 2MW system
- Fully redundant, uninterruptible power system rated for full load
- Quiet operation (65dBA at 1m), significantly below the noise levels of an equivalently-sized diesel genset



HPUs are controlled using GeoPura software running on a standard Siemens PLC platform. HPUs are securely monitored and controlled in real time from any standard remote device.

GeoPura – End To End Full-Service Solution



 GeoPura™ hydrogen clean energy system is 100% renewable **clean energy**.

H₂ Production



GeoPura Electrolyser powered by green energy

Storage



Hydrogen Storage

Distribution



Mass distribution



High capacity trailers

Supply



H₂ Supply



Electricity Supply

Energy service contracts



Construction



EV Charging



Festivals



Data Centres



HGV



Mass Transport

GeoPura provides **clean energy as a service** to customers, including the complete upstream hydrogen supply

The local electricity grid is fit for purpose – put not 'all purpose'



A car requires 100kW of power which is the equivalent of approx. 300 solar panels at midday in direct sunlight.

Energy crisis: 'We need a system upgrade to get more renewables'

By Ben Schofield & Pete Cooper
BBC News, East

17 March



BEN SCHOFIELD/BBC
The government wants all electricity to come from clean energy sources by 2035

Source: BBC news, March 2022

News

5th June

Have your say as EDF apply for permit for 200 diesel generators at Hinkley C site

By Steven Salter



PERMIT: The Environment Agency will decide if EDF should be granted the permit for the diesel generators

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Motorway services fear grid not ready for electric cars

Rollout of charging points held back by flaws in power network



Source: Financial Times, 4th January 2020

“

It feels like our power network at times is not fit for purpose to serve this massive charging need that is coming

Simon Turl, chairman of RoadChef

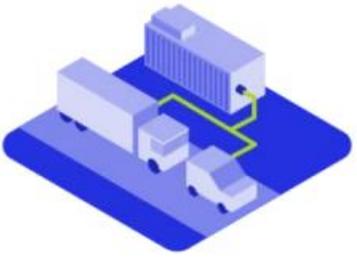
Energy as a service

Operating an Energy as a Service model the GeoPura HPU makes the transition away from traditional diesel generators easy.

- Plug and play solution
- Set up and operated by GeoPura engineers
- Full fuel management system – including storage, delivery and refuelling
- Fully monitored and maintained to optimise performance and energy use



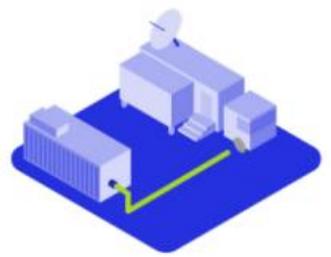
Deployed Across a Range of Industries:



EV charging & transport



Construction



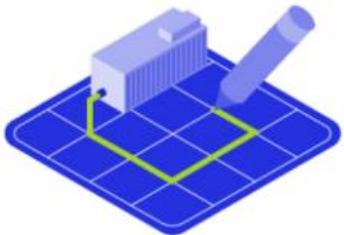
Film & TV production



Hydrogen production



Outdoor events



Bespoke Bespoke



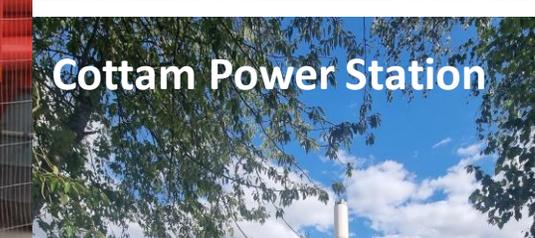
Recent successful deployments



Netflix Ditchley Park



HS2 / SCS



Cottam Power Station



Balfour Beatty A63



National Grid



Netflix UX1



Netflix Troubadour



BBC Springwatch



Low Marnham



Balfour Beatty Leeds

Example Deployment: HS2



Two GeoPura 250kVA hydrogen power units (HPUs) were deployed at HS2's Victoria Road Crossover Box, as a direct replacement for diesel generators to power machinery on the site.

- ✓ Running the units for 400 hours eliminated around 51 tonnes of carbon compared to using standard diesel generators.
- ✓ Quieter than standard diesel generators and the only emission is water.
- ✓ Emission free power derived from a hydrogen fuel cell, with power capabilities ranging from 20kW through to 2MW.
- ✓ Won 'Best Use of Technology Award' at this year's Construction News Awards.



Example Deployment: Uniper



Deployed during a maintenance outage at Uniper's Cottam Development Centre (CDC) natural gas plant in Nottinghamshire.

- ✓ Displaced two traditional diesel generators
- ✓ Saved 94 tonnes of carbon dioxide (CO₂) during the three-month outage
- ✓ Used to power the outage village, including welfare facilities and EV charging for all electric vehicles on site.
- ✓ Powered using hydrogen produced from renewable energy from approximately eight miles away.



Low Carbon Alternatives to Standby Generators in Electrical Substations

- ✓ A ten-week trial to test a hydrogen-powered generator at National Grid Deeside Centre for Innovation, a state-of-the-art testing facility hosting a 400 kV modified substation, designed as a unique environment for development and trial of innovative technologies and practices.
- ✓ Used to provide backup power to a substation for key activities such as cooling fans, pumps, and lighting, enabling it to continue to perform its crucial role in the electricity transmission system.
- ✓ HPUs could save an estimated 500,000 kg of carbon across all National Grid substation sites.
- ✓ Data currently being analysed and shared later this year.





Giants of industry, manufacturing and finance back UK green hydrogen pioneer GeoPura with £36m investment

21 February 2023

- UK company GeoPura secures £36m investment from GM Ventures, Barclays Sustainable Impact Capital, SWEN CP through its fund SWEN Impact Fund for Transition 2 and Siemens Energy Ventures
- Investment will enable the accelerated manufacturing and deployment of Hydrogen Power Units throughout the UK
- GeoPura will scale its green hydrogen business, replacing fossil fuels with zero emission alternatives in power generation applications such as construction, infrastructure, outdoor events, EV charging and back-up power



UK green hydrogen pioneer GeoPura has received £36m investment from global industry leaders, with the round led by GM Ventures, the investment arm of General Motors, and co-led by Barclays Sustainable Impact Capital with participation from SWEN CP and Siemens Energy Ventures to scale its green hydrogen business, which is replacing diesel-fuelled generators and enabling zero-emissions energy across the board to create a more sustainable world.

Working in Collaboration with Siemens Energy to Scale



Working in Collaboration with Siemens Energy to Scale



The HPU is already in bulk production at Siemens Energy's facility in Newcastle, UK.



[Manufacturing site video tour](#)

Working collaboratively with our new strategic partners GeoPura plans:

- High density Green Hydrogen based zero emission fuels
- 5MW+ high power zero emission systems
- Highly portable systems 'HPU Agile' and 'HPU Fast' in prototype now
- High efficiency renewable hydrogen production
- Integrated zero emission refueling systems



1000kVA and Mk2 HPU's under development



250kW 'HPU Fast' deployed since Jan 2022



60kW towable 'HPU Agile' available 2023

clean energy without limits

