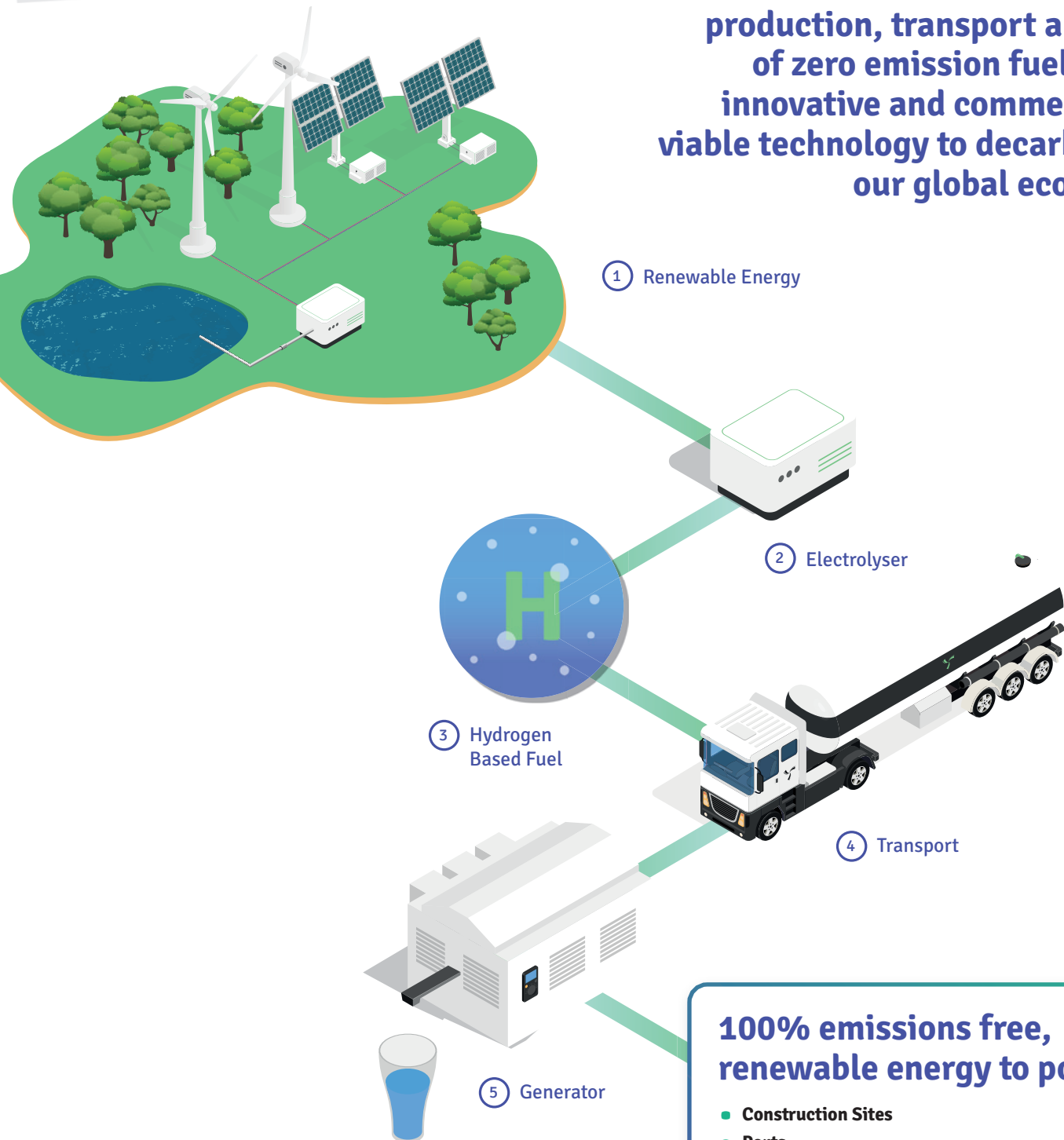


GeoPura is enabling the production, transport and use of zero emission fuels with innovative and commercially viable technology to decarbonise our global economy.



**100% emissions free,
renewable energy to power**

- Construction Sites
- Ports
- Events
- Scalable EV Charging
- Permanent Off-Grid Requirements

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Introducing GeoPura's Fuel Cell Technology

The clean energy service that goes further than the grid

GeoPura has harnessed the power of hydrogen to generate and distribute the vast amount of zero emissions energy required to decarbonise our economy. Our 100% renewable energy is delivered directly to where it's needed, providing power free from traditional grid connection and capacity constraints.

Green hydrogen can be stored and transported as a gas or a liquid and converted to 100% emissions free electricity using fuel cell technology. GeoPura uses this process to provide an independent, 100% renewable, NOx free energy source almost anywhere in the world. We can support applications where extra grid capacity is non-existent, relatively limited, or expensive; especially where emission restrictions are in place.

Whether you are looking for a temporary or permanent power source, our green hydrogen and fuel cell technology provides a reliable 100% off grid, renewable energy installation. The future has arrived.



What We Offer

Construction

Zero emissions on-site power generation

Ports

Cold Ironing, craneage etc

Permanent Off-Grid

Purpose-built fuel cell generation at your site and ongoing fuel supply

Events

On-site energy generation from 20kW to 2MW and beyond

100% Emissions Free

The use of green hydrogen means that our off-grid energy is 100% renewable

EV Charging

Fuel Cell Technology generation and charge points for temporary or permanent installations



H₂O

Our offer

A GeoPura fuel cell installation and renewable fuel supply can be provided as a standalone renewable energy source or as Combined Heat and Power (CHP) provision. Electric Vehicle (EV) charging can be incorporated for both temporary and permanent installations and our units can run alongside other renewable energy sources, such as solar, to provide continuous renewable energy provision. Direct hydrogen refuelling capability for vehicles is also an option.

As global economies increasingly move away from fossil fuels there is an increasing need for electricity and hydrogen fuel. Using fossil fuels to augment the grid is increasingly unacceptable in a whole range of applications such as construction, events, scalable EV charging and shipping ports. Our solution can meet this demand with 100% emissions free, renewable energy.

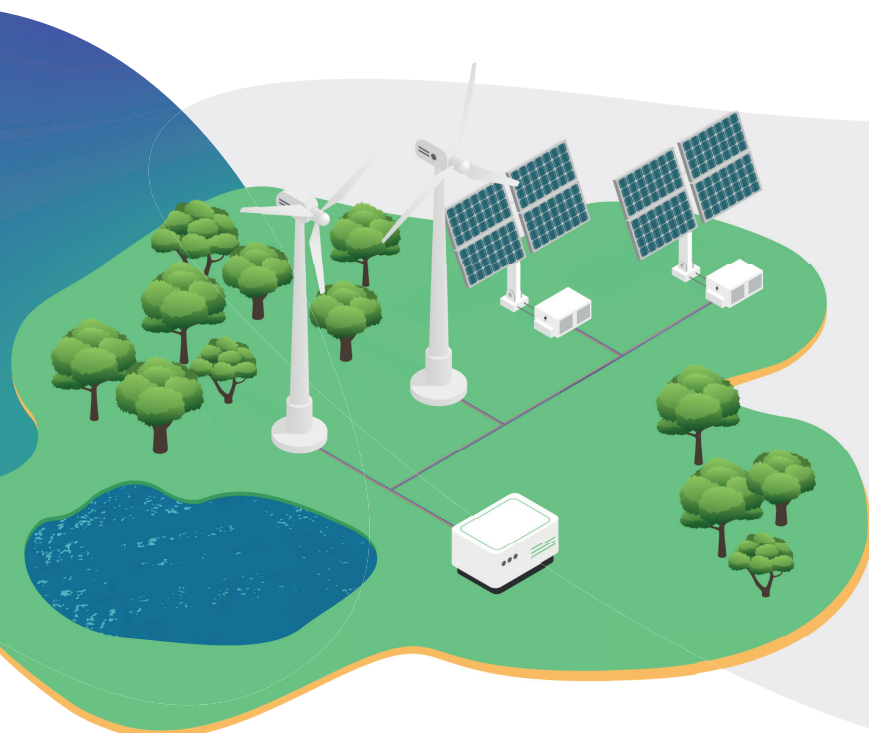
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Using green hydrogen to store and transport renewable energy

GeoPura install electrolyzers adjacent to wind turbine and solar PV farms. Our electrolyzers use renewable energy to split water into its component elements of oxygen and hydrogen. When hydrogen is generated in this way using renewable energy, it's referred to as green hydrogen.

Green Hydrogen can be converted into 100% emissions free electricity using GeoPura Fuel Cell Technology, making this process an effective way of storing and transporting renewable energy.



Supporting renewable energy producers

GeoPura supports renewable energy producers in entering the hydrogen production market with a serviced package that delivers the required equipment, purchase contract and ongoing service and maintenance.

Our offer enables renewable energy producers to expand their operations over and above what their current grid connections support.



Introducing GeoPura

GeoPura launched on Clean Air Day (20 June) 2019, with an offer to make any car park a renewable energy fuel station generating 100% emissions free off-grid electricity and powering unlimited numbers of charging points. Our initial focus was to support the rapidly growing number of EVs using green hydrogen and GeoPura Fuel Cell Technology to provide permanent or temporary off grid renewable energy installations.

A growing number of customers require renewable, quiet, zero-emission electrical power where traditional grid distribution is not available or can't be achieved with sufficient capacity or at a reasonable price point. Traditionally the temporary and off-grid power market has been fulfilled using fossil fuel powered internal combustion engine generator sets, and for many applications this will continue. However, many customers are now forced to comply with zero-emissions zones, corporate and legislative emission targets and constraints in terms of customer requirements and perceptions. Diesel generators have been outlawed in many applications due to unacceptable emissions of CO₂, particulate, NO_x and noise.

GeoPura has achieved a global first in harnessing the power of hydrogen to generate and distribute zero emissions energy, preparing the market for what will be required to decarbonise our transport network; heat our homes and businesses; and achieve our net zero ambitions and targets.

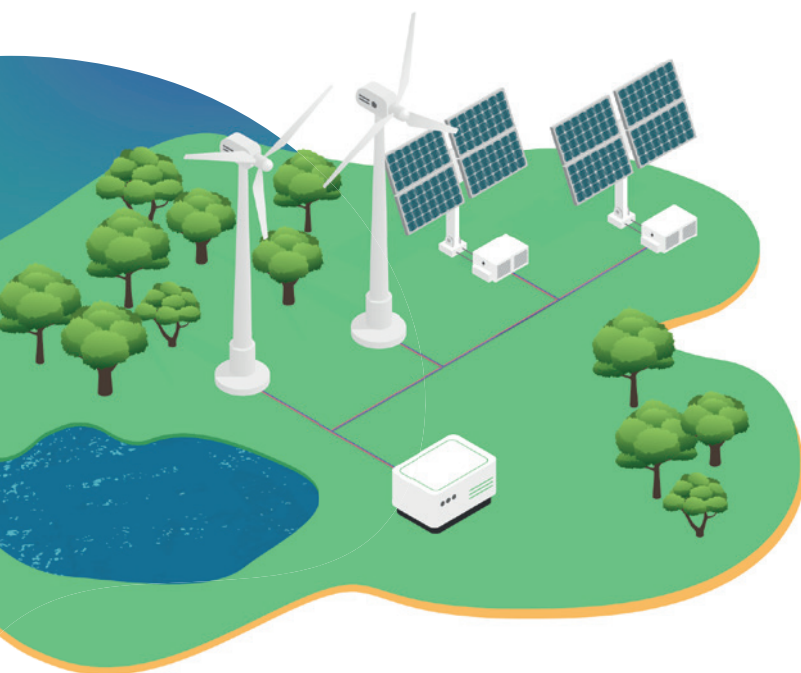
Green Hydrogen

Fuel of the future

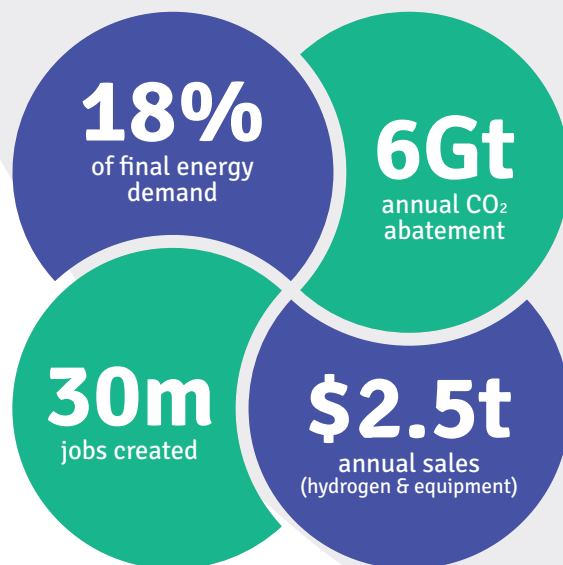
We are at the start of something powerful.

As the world looks for emission-free alternatives to replace our reliance on fossil fuels. Green, renewable hydrogen is the fuel of the future. Renewable energy demand is about to increase dramatically as we decarbonise our economy and look to heat our homes and businesses and electrify our transport network. It is estimated that in the EU alone we will invest over €180 billion by 2050 to roll out hydrogen power.

To deliver our net-zero commitments, a carbon-free future needs to be fuelled with renewable energy, way beyond the capabilities of any electricity distribution network. GeoPura have found a way to store and transport renewable energy as a fuel so that it's available when and where we need it. From Government policy makers to global market analysts, green hydrogen is considered the stand out fuel of the future.



The potential hydrogen economy in 2050*



*Source: The Hydrogen Council

Green hydrogen production

Our reliance on fossil fuel is largely due to the ease in which we can release and use energy. Fossil fuel is stored energy that we call upon as and when we need it.

Renewable energy is not quite as convenient. One of the limitations of most renewable energy is a reliance on particular weather conditions or time of day to maintain supply and huge fluctuations in generation that can be experienced. That's why green

hydrogen is becoming so important; it provides a way of economically storing large amounts of renewable energy for future use.

Batteries are excellent for storing and supplying short bursts of energy, but a fuel allows us to store energy for hours or even months.

Using renewable energy to power water electrolysis and produce hydrogen provides renewable energy generators with an additional, lucrative income stream. Their wind, solar or hydroelectricity production is no longer limited. If the sun is shining, wind is blowing, or water is flowing their operations can produce renewable electricity and store any additional capacity.

The opportunity for renewable energy producers

Extract more value from your renewable generation

Instead of being forced to export at a low return or curtail generation, hydrogen production allows a local, higher value use for your renewable electricity.

Expand your operation

Don't be limited by your current grid connection. Your operation can expand to produce green hydrogen.

Renewable energy storage

Green hydrogen is the answer to storing renewable energy for use at a later date.

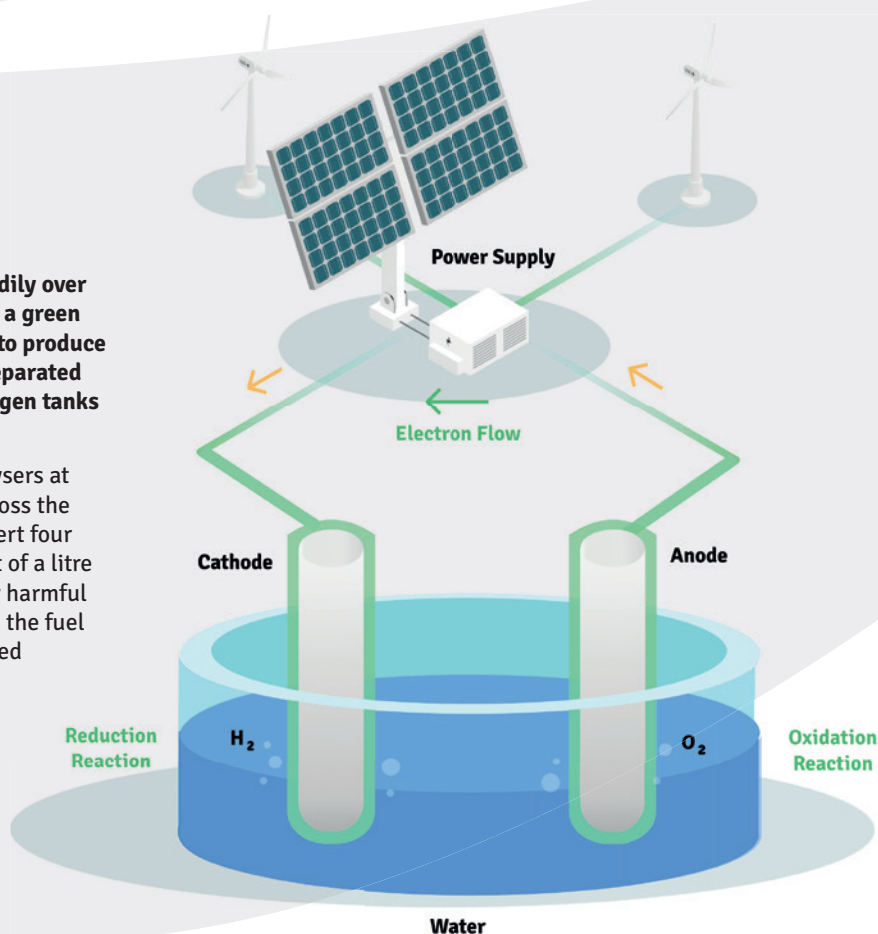
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GeoPura green hydrogen production: electrolysis

Hydrogen technology has been advancing steadily over the last few years. Our technology simply uses a green electricity supply (wind turbine or PV source) to produce hydrogen from water using electrolysis. The separated hydrogen is pressurised and collected in hydrogen tanks that are collected daily.

GeoPura are installing industrial scale electrolyzers at renewable energy sites (Solar PV and Wind) across the globe. Each site uses renewable energy to convert four litres of water into the hydrogen fuel equivalent of a litre of petrol every minute of every day, without any harmful emissions. (We get the water back when we use the fuel and react the hydrogen with oxygen). All provided on a fully serviced basis.



Our service

The comprehensive service solution from GeoPura and Siemens is designed to provide a guaranteed revenue stream through a serviced model. The model includes:

- Hydrogen equipment
- Maintenance / service contract
- Hydrogen purchase contract at known price
- Metering and monitoring
- Transportation
- Your obligation is to provide the electricity, water and site access / pre-preparation

Emissions free production

When renewable energy is used to produce hydrogen through water electrolysis the entire process is 100% emissions free.

Zero Emissions Energy

The only by-product of generating electricity with a fuel cell and green hydrogen is heat and pure H2O.

Green Hydrogen

Renewable energy storage

Renewable energy generation relies on weather and local conditions and generators experience peaks and troughs. Using peak production times to create Green Hydrogen is a way to store excess capacity.

Growing market

Our economy is being decarbonised and electrified. Green hydrogen can be used directly as a fuel or to generate 100% renewable, emissions free electricity to meet this growing demand for clean energy.

Off-grid production and generation

Transporting green hydrogen as either a gas or a liquid fuel enables vast amounts of electricity to be generated locally using fuel cell technology. This means that hydrogen can be produced and increased electricity demand can be managed outside of local grid constraints.

GeoPura FCSM1

GeoPura Fuel Cell System Mark 1

Our standard Mark 1 GeoPura Fuel Cell System delivers 100% renewable, 100% emissions free, 100% off-grid energy when and where it is required.

- 20ft portable shipping container
- 250kW
- 100% zero emission power (only exhaust is water)
- 216kWh battery storage included in each module
- Off-grid or optional 'peak shaving/grid augmentation mode'
- Multiple containers can be combined to provide fully resilient 2MW system
- Fully redundant, uninterruptible power system rated for full load
- Direct support for connecting grid supply or renewable generation (Solar PV, Wind)
- Connected renewables continue generating during external grid outages/constraints

The unit delivers 250kW 400V 3 phase battery backed critical power and is supplied as a packaged system in a 20 foot shipping container. These units are built and shipped from the Siemens Heaton Works in Newcastle, continuing the engineering pioneering legacy of the site as the location that developed and built the first steam turbine engine and is today producing the first commercial GeoPura Hydrogen fuel cell units.

Our unique FCSM1 has been developed following the successful implementation and evolution of the Mark 1 system in a number of applications.



Options:

- Our FCSM1 can be configured to supply 50kW of hot water (60 Celsius) via a heat exchanger to provide combined heat and power at no additional cost
- Our FCSM1 can be supplied with EV charging posts to create a temporary or permanent off-grid EV charging facility



Choose hydrogen power

- **More Efficient:** Fuel cells convert hydrogen fuel directly into electrical energy. Traditional combustion engines convert fuel into heat and then mechanical work.
- **No Harmful Emissions:** Fuel cells emit water and a little heat. Internal combustion engines emit CO₂ and pollutants such as NO_x and particulates
- **Reliability:** Fuel cells have no moving parts and require less maintenance
- **Clean Fuel:** Green hydrogen is produced with renewable energy and doesn't harm the environment. Oil extraction and refinement can have a devastating impact on natural habitats.

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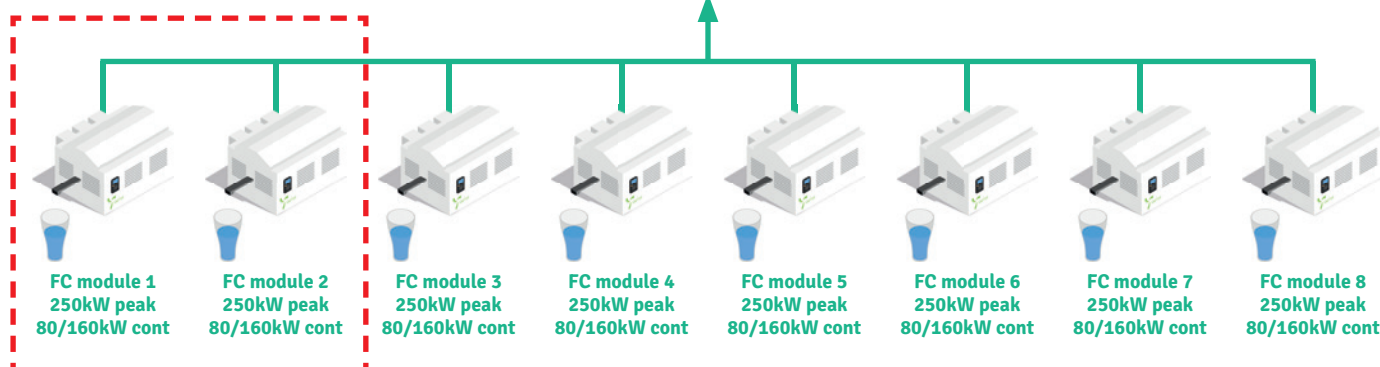
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Multiple container systems

- Each fuel cell system capable of autonomous operation
- Up to 8 fuel cell Mark 1 systems can be combined to provide a maximum of 2MW (20 minutes) peak power and 640kW continuous power
- Standard fully redundant system is 2 off 20ft containers, 500kW peak power and 160 kW continuous power output
- Multiple container systems continue to supply power without any interruption as long as at least one container is operational

2MW peak power (20 minutes) 640kW continuous power



Standard fully redundant system
2 off FC modules (2 off 20ft containers)
500kW peak, 160kW continuous output

GeoPura Support, Maintenance, And Fuel

- Maintenance of the GeoPura FCSM1 is provided within the agreed purchase price.
- Hydrogen fuel will be delivered to site at the agreed price.
- The FCSM1 purchase price will cover 24 hour 365 day a year support from GeoPura whilst the system is in active use.
- GeoPura will provide a 24 hour support number guaranteed to be answered on first call. Triage will determine severity against 4 levels.

Incident Severity	Expected Response Time	Coverage	Maximum Response Time
1	5 Minutes	24 hour	15 Minutes
2	5 Minutes	24 hour	30 Minutes
3	1 Hour	24 hour	4 Hours
4	4 hours	Office Hours	24 hours

GeoPura in action

Spring 2019 - The Mark 0.1 Fuel Cell System

To avoid catastrophic climate change we must decarbonise. Part of the solution will be to electrify our heating and transportation, whilst switching energy generation away from fossil fuels to renewable sources.

In 2019 GeoPura launched our revolutionary Fuel Cell System, delivering 100% renewable off grid energy and demonstrating that there is another way to provide vast amounts of energy in an environmentally conscious way.

- 2 x 20ft shipping containers
- 100kW constant power
- 150kW peak power (20 minutes)
- Off-grid



Goodwood Festival of Speed - July

GeoPura showcased our world-first Hydrogen Fuel cell technology at the Goodwood Festival of Speed. We supported the festival's Technology Partner Siemens to deliver a 'clean' hydrogen fuel cell system to charge a section of the festival including the Electric Vehicles in the First Glance Paddock.

- First Glance Paddock' & EV charging powered by green hydrogen not diesel
- Off-grid
- Zero emission
- Renewable power
- 4-day event
- First ever renewably powered Goodwood hill climbs
- Hill climb record broken by Volkswagen BEV
- Featured on Fully Charged and Sky News

Polestar 1 European Test Drive Event - Nov 2019

We were delighted to reunite the Polestar 1 and our green hydrogen fuel cell system at Polestar's European test drive at Villa Cora, Florence. The beautiful venue, with its architectural importance and unrivalled location overlooking the city of Florence, has one thing in common with many hotels around the globe; it doesn't have the spare electrical network capacity required to power a bank of rapid EV chargers.

- Off-grid EV charging at Villa Cora, Florence
- Renewable power (Green Hydrogen)
- Zero emission
- 150kW peak
- 10-day event
- x18 (34kWh) car charges per day
- Read more on polestar.com



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GeoPura in action

National Grid's UK Viking Link construction site – Mark 1 Combined Heat & Power

GeoPura supported Siemens Energy, lead contractor for the construction of National Grid's Viking Link interconnector project in Lincolnshire, to install a zero-emission hydrogen fuel cell system to provide off grid power to the project's construction site in August 2020.

Off grid power was required as this site would not have a grid connection for at least six to eight months, and the fuel cell system is providing heat and power for the construction village during this time, removing the need for diesel generators.



- Single 20ft shipping container
- 250kVA of standard three phase
- 400V electrical power
- Up to 80kW of heating
- 300m reusable piping
- 216kWh of battery storage



Choosing a Fuel Cell System over a traditional diesel generator

- **More Efficient:** Fuel cells convert hydrogen fuel directly into electrical energy. Traditional combustion engines convert fuel into heat and then mechanical work.
- **No Harmful Emissions:** Fuel cells emit water and a little heat. Internal combustion engines emit CO₂ and pollutants such as NO_x and particulates
- **Reliability:** Fuel cells have no moving parts and require less maintenance
- **Clean Fuel:** Green hydrogen is produced with renewable energy and doesn't harm the environment. Oil extraction and refinement can have a devastating impact on natural habitats.



Energy Minister
Kwasi Kwarteng

“Hydrogen has a key role to play in the UK's journey to net zero carbon emissions and I am delighted to see this innovative off-grid power source being installed at Viking Link.

It is steps such as this which will be vital in enabling a hydrogen economy to flourish in the UK as we build back better with new low carbon jobs.”