ARKHITEKTON
ENERGY
The Arkhitekts of Global Change

GREEN HYDROGEN · 5 MW TO 20 MW ELECTROLYSIS

Arkhitekton Energy Green Hydrogen

Electrolytic hydrogen made with renewable power – for industrial fuel switching, transport, storage and hydrogen-blend turbines. Fully funded, built next to the user, in a joint venture with the host site.



5–20 MW
electrolyser capacity

~1,000 t
hydrogen a year from 10 MW

85%
of build funded by the EPC partner

£0
capital from the host

THE TECHNOLOGY

What a hydrogen scheme looks like

The technology we fund, build and operate – and how a typical Arkhitekton Energy scheme is laid out on site.



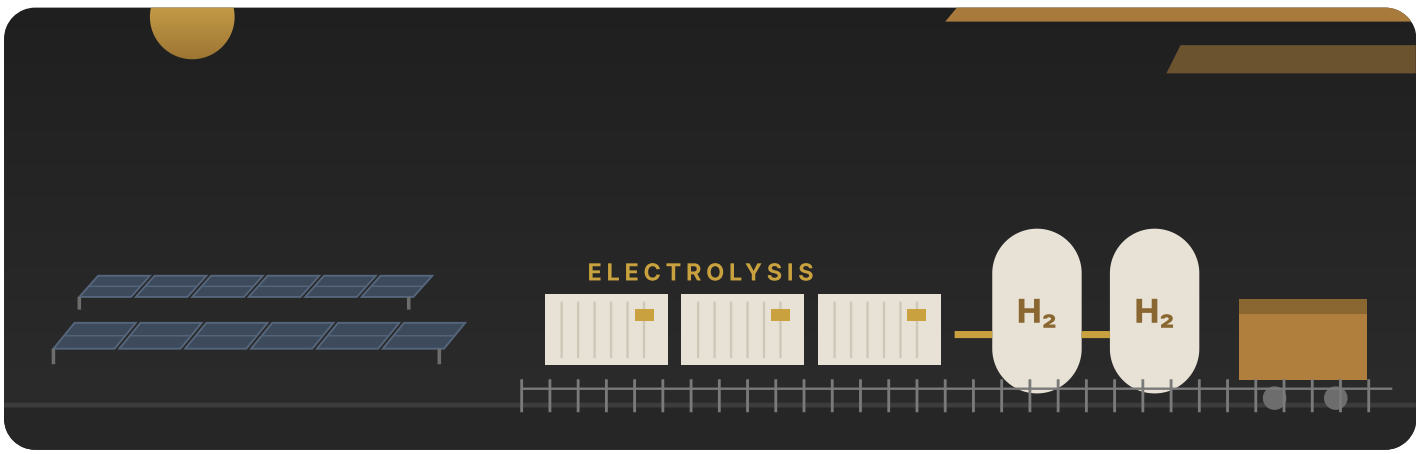
Industrial hub with gas storage and wind generation



Stainless process pipework and valves



Compression and balance-of-plant pipework



Typical hydrogen scheme layout – Arkhitekton Energy illustration

WHY HYDROGEN, WHY NOW

Clean fuel for the industries electricity can't reach

Some heat, transport and industrial processes are hard to electrify. The UK has an ambition of up to 10 GW of low carbon hydrogen production by 2030, at least half of it electrolytic, backed by long-term contracts that pay producers the gap to the price of natural gas.

10 GW
UK low carbon hydrogen ambition for 2030

11
projects, 125 MW, in the first allocation round

27
projects, ~875 MW, shortlisted for round two

~58
kWh of power per kg of hydrogen

What makes the Arkhitekton approach different

- **Fully funded** – our EPC partner finances 85% of the build; the 15% balance is guaranteed
- **Joint venture with the landowner** – a 50/50 project company, land secured at Heads of Terms
- **Fixed-price turnkey EPC** with a UK Tier 1 civils partner and a full bond package
- **Power and hydrogen together** – electrolysers sized against our own solar, wind and hydro

Who it is for

- **Industrial users** switching away from natural gas
- **Transport hubs** – buses, HGVs, ports and rail
- **Industrial clusters** and hydrogen hubs
- **Power users** blending hydrogen in UE Series turbines

THE ARKHITEKTON FUNDING MODEL

85%
of the build financed by our EPC partner

15%
from a UK funding partner, guaranteed in full

50/50
joint venture with the landowner

£0
capital or borrowing for the landowner

For the landowner

Long-term, index-linked rent and half the profit – with no capital, no borrowing and no development risk.

For funders

Fixed-price EPC, URDG 758 guarantees, insurance and step-in rights – structured for institutional due diligence.

For offtakers

Low carbon hydrogen at a long-term contracted price, delivered at or near the user's own site.

Sources: DESNZ Hydrogen Production Delivery Roadmap (Dec 2023); HAR2 shortlist coverage (SCI, H2 View, Apr 2025).

THE RANGE

Hydrogen made two ways

Electrolysis is the core route. Where a biomass or waste site is available, CFH gasification can make hydrogen too, and the two can be combined to raise output.

Plant	Electrolyser	Hydrogen a year	Power supply	Typical offtake
Pilot / transport hub	5 MW	~500 t	Private-wire solar or wind plus grid	Buses, HGVs, depots
Industrial	**10 MW**	**~1,000 t**	**Co-located renewables and grid**	**Process heat, chemicals**
Cluster	20 MW	~2,100 t	Dedicated renewables and grid	Industrial clusters, blending
CFH gasification	n/a	Up to 8,000 t	Biomass or waste feedstock	Large users, e-fuels

Inside every project

ELECTROLYSIS

- PEM or alkaline stacks
- Water treatment
- Stack replacement planned

STORAGE

- Compression
- Tube trailers or buffer tanks
- Dispensing where needed

POWER

- Private-wire renewables
- Grid backup
- Smart scheduling to cheap hours

SAFETY

- Hazardous area design
- Gas detection and venting
- COMAH screening

From renewable power to delivered hydrogen

1. **Power** — Solar, wind or hydro by private wire, plus grid.
2. **Water** — Purified water feed to the stacks.
3. **Electrolysis** — Water split into hydrogen and oxygen.
4. **Compression** — Hydrogen compressed and stored.
5. **Delivery** — Pipeline, trailer or direct to the user.

SITING AND THE LANDOWNER

Built next to the user

Hydrogen is costly to move, so plants are best built at or near the user – on an industrial site, at a depot or port, or alongside one of our renewable assets.

Industrial sites

Factories with gas-fired process heat that want to switch fuel.

Next to renewables

Sites beside solar, wind or hydro that can supply private-wire power.

Transport hubs

Bus and HGV depots, ports and logistics parks.

What we look for

Criterion	What works	Why it matters
Offtaker	Committed user on or near site	Long-term contract underpins funding
Power	Renewables plus grid capacity	Power is the largest running cost
Water	Mains or abstracted supply	About 10–15 litres per kg of hydrogen
Area	0.5–2 ha	Electrolysers, storage and safety distances
Safety	Industrial land use	Hazardous substance consents

The joint venture with the landowner

- **Heads of Terms early** – land secured by lease or purchase before the project is funded
- **50/50 project company** – the landowner and Arkhitekton Energy share net cash after costs, debt and tax
- **Site rent**, index-linked, from the start of construction
- **Hydrogen at an agreed price** for the host's own use

Planning and consents

- Planning permission
- Hazardous substances consent where thresholds are met
- COMAH screening
- Environmental permit and water abstraction where needed
- Low Carbon Hydrogen Standard certification

FUNDING AND RETURNS

85% EPC finance, 15% equity, 50/50 with the landowner

The same funding model as every Arkhitekton Energy programme. Our EPC partner finances 85% of the project cost, repaid from project revenue. The remaining 15% is provided by a UK funding partner and covered in full by an advance payment guarantee.

Size	Project cost	EPC finance (85%)	Equity (15%)	Value to landowner a year	Landowner share, 20 yrs
5 MW	£20.0m	£17.0m	£3.0m	£0.11m	£12.0m
10 MW	**£38.0m**	**£32.3m**	**£5.7m**	**£0.34m**	**£26.2m**
20 MW	£70.0m	£59.5m	£10.5m	£1.06m	£59.5m

10 MW – first full year of operation

£9.83m
revenue

£3.81m
EBITDA after power, water and operating costs

£3.33m
EPC finance debt service

£0.48m
net cash, split 50/50

~19%
equity IRR, payback ~8 years

What the landowner receives

- **50%** of net distributable cash every quarter, open-book
- **£100k a year** site rent, index-linked
- Cash share rises to about **£2.90m a year** on a 10 MW once the EPC loan is repaid
- **Fuel switching** – hydrogen supplied to the host under a long-term contract
- No capital, no borrowing, no development risk for the landowner

Protections

- Fixed-price turnkey EPC with a UK Tier 1 civils partner
- **URDG 758** advance payment guarantee covering the 15% in full, plus performance (10%) and warranty (5%) guarantees
- Contractors' all-risks and third-party liability during the build
- Funders' step-in rights and a decommissioning reserve from year 10
- Option for the landowner to buy the plant at market value at the end of the term

Indicative base case: 6,000 hours a year, 58 kWh/kg, contracted price £9.50/kg, renewable power £65/MWh, 20-year term. EPC finance 6% over 15 years; costs and revenue indexed at 2.5% a year. Subject to survey, planning, grid and offtake contracts.

EPC AND DELIVERY

Built turnkey, run by a UK operator

One fixed-price contract covers electrolysers, balance of plant, compression, storage and connections. Each plant is designed to the UK Low Carbon Hydrogen Standard.

EPC partner

China Haisum Engineering, part of China Poly Group and our primary EPC partner, designs, procures, builds and commissions the plant on a fixed-price turnkey contract – and provides 85% of the project finance.

UK Tier 1 civils partner

Groundworks, foundations, access, drainage, HV works and grid connection, built to UK standards inside the EPC contract price.

UK operator

A UK operator runs the plant with remote monitoring, scheduled stack maintenance and on-call engineers trained for hydrogen systems.

How a site is delivered

1. **Survey** – Offtaker, power, water and safety screen.
2. **Contract** – Heads of Terms, JV, offtake and fixed-price EPC.
3. **Consent** – Planning, hazardous substances and permits.
4. **Build** – Modules, compression and storage – about 12–18 months.
5. **Operate** – Hydrogen delivered; income shared quarterly.

Performance guaranteed

- Electrolyser efficiency and availability guaranteed
- Stack performance warranty with planned replacement
- Long-term service agreement with the manufacturer
- Low Carbon Hydrogen Standard compliance monitored

Reporting

- Live dashboards for the landowner, funders and offtakers
- Quarterly open-book management accounts for the project company
- Annual independent performance and ESG audit
- Lender-pack reporting to institutional standards

TYPICAL PROGRAMME

2–3 years to first hydrogen

From signed Heads of Terms. Grid connection dates are set by the network operator and can extend the programme.

NEXT STEPS

Switch your site to green hydrogen

Send us your site's location, current gas or diesel use and any renewable power nearby. We will come back with a hydrogen screen and an indicative price.

1

Site screen

Land, grid headroom, planning status and offtake, power and water supply.

2

Heads of Terms

Lease or purchase agreed and the joint venture with the landowner signed.

3

Pre-app and grid

Planning pre-application, permits and network operator connection offer.

4

Sign and close

EPC contract, funding and guarantees in place; build starts.

Who we are looking to hear from

- Industrial users with gas-fired heat
- Bus, HGV, port and logistics operators
- Industrial clusters and hydrogen hubs
- Owners of renewable assets looking for a second revenue

Also from Arkhitekton Energy

- **UD Series** modular Data Centres, 250 kW to 2 MW
- **UE Series** gas turbine generators, 2 MW to 112 MW
- **Waste to energy** – CFH green methanol, plastic recycling and EfW
- Solar, battery storage, wind, floating solar, hydro, hydrogen, bioethanol and biomass

Talk to Arkhitekton Energy

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All figures are indicative and do not form an offer or a financial promotion. Projects are subject to survey, planning, grid connection, funder approval, contract and financial close.