ARKHITEKTON
ENERGY
The Arkhitekts of Global Change

GRID-SCALE BATTERY STORAGE · 20 MW TO 100 MW

Arkhitekton Energy Battery Storage

Grid-scale battery energy storage systems that keep the grid balanced and earn from a stack of flexibility, capacity and trading revenues. Fully funded and run in a joint venture with the landowner.



20–100 MW
power, 2-hour duration

1–5 ac
site footprint

85%
of build funded by the EPC partner

£0
capital from the landowner

THE TECHNOLOGY

What a battery storage scheme looks like

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



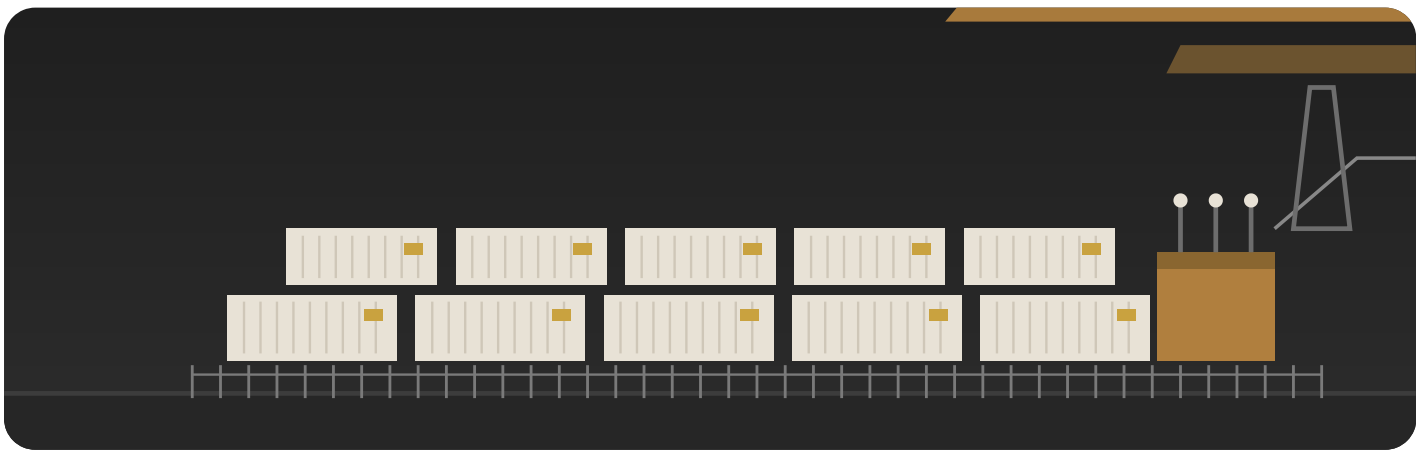
Factory-built containers lifted into place



Battery and power-conversion racks



Connection to the high-voltage grid



Typical battery storage scheme layout – Arkhitekton Energy illustration

WHY STORAGE, WHY NOW

Clean power needs five times more batteries

Wind and solar need storage to move power from when it is made to when it is needed. The Clean Power 2030 Action Plan expects 23–27 GW of battery storage in Great Britain by 2030, against about 4.5 GW when it was published.

23–27 GW
battery storage needed in GB by 2030

~4.5 GW
installed when the plan was published

<1 sec
response time to grid instructions

20 yrs
typical project term with augmentation

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
- **Merchant optimiser** trades across markets to keep the battery earning all day

Who it is for

- **Landowners** near a 33 kV or 132 kV substation
- **Solar and wind owners** with a connection to share
- **Industrial sites** with high peak charges
- **Data Centres** that need backup and grid services

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

Flexible capacity for the grid operator, and backup and peak-shaving services for sites behind the meter.

Sources: DESNZ Clean Power 2030 Action Plan (Dec 2024); Carbon Brief; ESS News.

THE RANGE

Storage for every kind of site

Batteries are built from standard containerised blocks, so a site can be sized to its grid connection and extended later.

Configuration	Power	Energy	Footprint	Revenue focus	Best for
Behind the meter	0.5–5 MW	1–10 MWh	Plant yard	Peak shaving, backup	Industrial users
Co-located	5–50 MW	10–100 MWh	+1–3 acres	Shifting solar or wind	Shared grid connection
Standalone grid-scale	**20–100 MW**	**40–200 MWh**	**2–5 acres**	**Balancing and trading**	**Near substations**
Data Centre UPS + BESS	1–10 MW	2–20 MWh	In compound	Backup and grid services	UD Series sites

Inside every project

BATTERIES

- LFP lithium iron phosphate cells
- Containerised, factory-tested blocks
- Capacity warranty and augmentation

POWER

- Bi-directional inverters (PCS)
- Step-up transformers and switchgear
- Substation to 33 or 132 kV

SAFETY

- Gas and smoke detection
- Fire suppression and spacing
- Fire service engagement plan

CONTROL

- Energy management system
- 24/7 remote optimisation
- Live revenue reporting

How a battery earns

1. **Balancing**
   Instructions from the system operator in real time.
2. **Response**
   Fast frequency services that keep the grid stable.
3. **Capacity**
   Capacity Market payments for being available.
4. **Trading**
   Charge when power is cheap, export when it is dear.
5. **Co-location**
   Store solar or wind output behind one connection.

SITING AND THE LANDOWNER

A small footprint with a big income

A 50 MW battery needs only 2–3 acres. What matters most is grid capacity: a site close to a substation with an accepted connection offer is the most valuable thing in storage.

Next to substations

Fields within 1–2 km of a 33 kV or 132 kV substation with connection capacity.

Alongside solar or wind

Existing or planned generation where a battery shares the grid connection.

Industrial land

Brownfield plots and industrial estates with strong local grid.

What we look for

Criterion	What works	Why it matters
Area	1–5 acres	Containers, substation, access and landscaping
Grid	Close to a 33–132 kV substation	Connection cost and capacity drive viability
Flood risk	Outside flood zones 2 and 3	Equipment protection and planning
Neighbours	Away from homes where possible	Noise and fire safety spacing
Access	HGV and fire-appliance access	Construction and emergency response

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
- **Index-linked rent** per MW from the start of construction
- **Small footprint** – the rest of the land stays in use

Planning and consents

- Planning permission (BESS is not an NSIP; local authority decides)
- Network operator connection offer and agreement
- Fire safety strategy agreed with the fire and rescue service
- Noise, landscape, ecology and flood risk assessments
- Decommissioning and reinstatement plan

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
20 MW / 40 MWh	£11.4m	£9.7m	£1.7m	£56k	£6.7m
25 MW / 50 MWh	£14.2m	£12.1m	£2.1m	£70k	£8.4m
50 MW / 100 MWh	**£27.5m**	**£23.4m**	**£4.1m**	**£0.18m**	**£17.4m**
100 MW / 200 MWh	£52.0m	£44.2m	£7.8m	£0.50m	£36.8m

50 MW / 100 MWh – first full year of operation

£3.60m
revenue

£2.62m
EBITDA after optimiser, operating costs and rent

£2.41m
EPC finance debt service

£0.22m
net cash, split 50/50

~17%
equity IRR, payback ~9 years

What the landowner receives

- **50%** of net distributable cash every quarter, open-book
- **£75k a year** land rent (about £1,500 per MW), index-linked
- Cash share rises to about **£2.01m a year** on a 50 MW / 100 MWh once the EPC loan is repaid
- **Shared connection** – a battery can add value to the landowner's own solar or wind
- 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: 2-hour system, stacked revenue of £72k per MW a year, operating costs and augmentation reserve £18k per MW, 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

Batteries are delivered as factory-tested containers and installed once the grid connection is ready. One fixed-price contract covers the batteries, inverters, substation and grid works.

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 and route-to-market optimiser trade the battery 24/7, with local engineers for inspections, maintenance and fault response.

How a site is delivered

1. **Survey** – Grid capacity, land, flood risk and neighbours.
2. **Contract** – Heads of Terms, JV and fixed-price EPC.
3. **Build** – Civils, containers and substation – about 6–9 months.
4. **Connect** – Energisation and grid compliance tests.
5. **Operate** – Optimised trading; income shared quarterly.

Performance guaranteed

- Availability and round-trip efficiency guaranteed by the EPC partner
- Cell capacity warranty with planned augmentation
- Long-term service agreement with the battery supplier
- Defined response times for faults and repairs

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

12–18 months to energisation

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

NEXT STEPS

Put a battery on your land

Send us the location and any grid information you have – a connection offer, nearby substations or existing generation. We will come back with a site screen and an indicative income range.

1

Site screen

Land, grid headroom, planning status and substation proximity and connection capacity.

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

- Landowners near 33 kV or 132 kV substations
- Owners of solar and wind farms with spare connection capacity
- Developers with grid offers looking for funding and an EPC partner
- Industrial energy users with high peak demand

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

Arkhitekton Energy · Arkhitekton Energy Limited · Registered in England and Wales · Company no. 16859110 · Quadrant House, Floor 6, 4 St. Thomas More Square, London E1W 1YW
Chris Baldwin · Major Projects Director · chrisb@arkhitekton-energy.com · 07342 299986
Michael Morrison · Managing Director · michael@arkhitekton-energy.com · 07900 285837
Shane Jessop · Introducer Channel Director · shane.jessop@arkhitekton-construction.com · 07857 478006
www.arkhitekton-energy.com · Follow Arkhitekton Energy on LinkedIn

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.