ARKHITEKTON
ENERGY
The Arkhitekts of Global Change

FLOATING SOLAR · 2 MW TO 20 MW

Arkhitekton Energy Floating Solar

Solar arrays on reservoirs, quarry lakes and treatment basins – turning idle water into clean power, often next door to a large energy user. No land used, fully funded, in a joint venture with the water owner.



0 ac
of farmland used

2–20 MW
typical capacity range

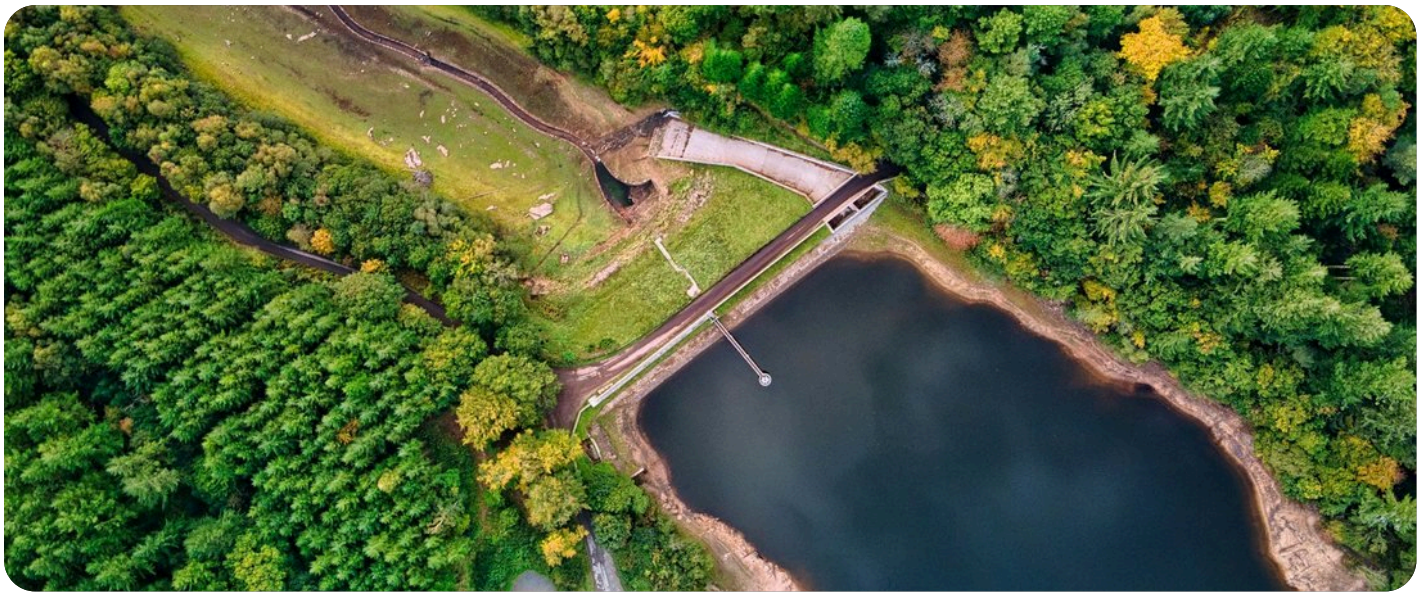
85%
of build funded by the EPC partner

£0
capital from the water owner

THE TECHNOLOGY

What a floating solar scheme looks like

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



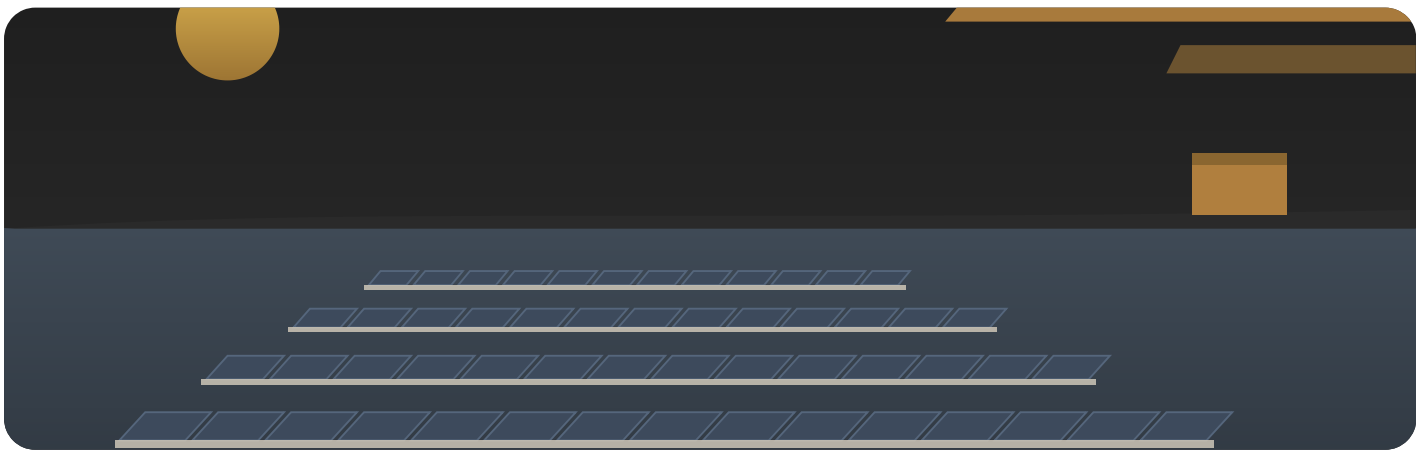
Inland reservoir and treatment works



High-efficiency PV modules



Large inland water body



Typical floating solar scheme layout – Arkhitekton Energy illustration

WHY FLOATING SOLAR, WHY NOW

Clean power without taking land

Water owners – utilities, quarries, farms and industry – often use a lot of power right next to a water surface that earns nothing. Floating solar puts that surface to work, with power supplied directly to the owner's own site at a price below the grid.

0
acres of farmland needed

~3%
yield gain from cooler panels on water

10–40%
of a water body typically covered

25 yrs
project term

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
- **Behind-the-meter supply** – power sold to the water owner's own site below grid price

Who it is for

- **Water utilities** with reservoirs and treatment works
- **Quarry operators** with flooded workings
- **Farms** with irrigation reservoirs
- **Industrial sites** with process or cooling ponds

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

Power supplied by private wire to the water owner's own pumps and plant, below the price of grid electricity.

Coverage ratio and yield gain are indicative and depend on the water body and design.

THE RANGE

Where floating solar fits

Each array is designed for the water depth, wind exposure, level changes and how the owner uses the water.

Water body	Typical owner	Capacity	Use of power	Key checks
Drinking-water reservoirs	**Water utilities**	**5–20 MW**	**Pumping and treatment**	**Water quality, access**
Quarry and gravel lakes	Aggregates operators	2–20 MW	Site plant or export	Depth, anchoring, after-use
Treatment and process basins	Industry, utilities	2–10 MW	Behind the meter	Chemistry, maintenance
Irrigation reservoirs	Farms and estates	2–5 MW	Farm load and export	Drawdown range, grid

Inside every project

FLOATS

- UV-stable HDPE floats
- Walkways for maintenance
- Designed for wind and waves

MOORING

- Bank or bottom anchors
- Allows for level changes
- Engineered for each site

ELECTRICAL

- Floating or bank-side inverters
- Marine-grade cabling
- Private-wire connection

ENVIRONMENT

- Agreed coverage ratio
- Water quality monitoring
- Fully removable at end of term

From water survey to power on site

1. **Survey** — Bathymetry, wind, water levels and use.
2. **Design** — Array layout, mooring and cable route.
3. **Consent** — Planning, regulator and owner approvals.
4. **Build** — Floats assembled on the bank and towed out.
5. **Operate** — Monitoring, cleaning and inspection by boat.

SITING AND THE LANDOWNER

An idle surface becomes an income

The water owner keeps full control of how the water is used. The array is designed around operations, access and ecology, and is removed completely at the end of the term.

Reservoirs

Raw-water and treated-water reservoirs with pumping loads next door.

Quarry lakes

Flooded workings where floating solar is a productive after-use.

Process ponds

Industrial and treatment basins with on-site power demand.

What we look for

Criterion	What works	Why it matters
Water area	3 ha+ for 2 MW upward	Roughly 1–1.5 ha per MW of panels
Depth and levels	Stable or predictable drawdown	Mooring design and cost
Power demand	Large on-site user nearby	Behind-the-meter supply earns the most
Use of water	Compatible with operations	Boating, abstraction and maintenance
Grid	Spare export capacity	For any surplus generation

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
- **Water-surface rent**, index-linked, from the start of construction
- **Power below grid price** supplied to the owner's own site

Planning and consents

- Planning permission where required
- Water regulator and reservoir safety engineer approvals
- Ecology and water quality assessments
- Network operator agreement for export
- Removal plan agreed at the outset

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, 25 yrs
2 MW	£2.0m	£1.7m	£0.3m	£8k	£1.7m
5 MW	£4.8m	£4.0m	£0.7m	£31k	£4.5m
10 MW	**£9.0m**	**£7.6m**	**£1.3m**	**£85k**	**£9.4m**
20 MW	£17.0m	£14.4m	£2.5m	£0.21m	£19.4m

10 MW – first full year of operation

£1.19m
revenue

£0.92m
EBITDA after operating costs and rent

£0.79m
EPC finance debt service

£0.13m
net cash, split 50/50

~20%
equity IRR, payback ~8 years

What the landowner receives

- **50%** of net distributable cash every quarter, open-book
- **£20k a year** water-surface rent, index-linked
- Cash share rises to about **£0.64m a year** on a 10 MW once the EPC loan is repaid
- **Discounted power** – about 85% of output used on the owner's own site below grid price
- 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: 1,030 MWh a year per MW, 85% used on site at £125/MWh and 15% exported at £60/MWh, 0.4% annual degradation, 25-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 floats, moorings, modules, inverters and the private-wire connection. Arrays are assembled on the bank and towed into place, keeping work on the water to a minimum.

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 monitors the array 24/7, with boat-based inspection, cleaning and mooring checks scheduled around the owner's operations.

How a site is delivered

1. **Survey** – Water, levels, demand and ecology screen.
2. **Contract** – Heads of Terms, JV and fixed-price EPC.
3. **Build** – Assemble, tow and moor – about 4–8 months.
4. **Connect** – Private wire and export connection live.
5. **Operate** – Power on site from day one; income shared.

Performance guaranteed

- Output and availability guaranteed by the EPC partner
- Float and mooring design warranted for site conditions
- Module and inverter manufacturer warranties
- 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

9–15 months to first power

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

NEXT STEPS

Put your water to work

Send us the water body's location, size and current use, and your site's power demand. We will come back with a site screen and an indicative saving.

1

Site screen

Land, grid headroom, planning status and water depth, levels and on-site demand.

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

- Water utilities with reservoirs and treatment works
- Quarry and aggregates operators
- Farms and estates with irrigation reservoirs
- Industrial sites with ponds and high power 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.