



Solar power and energy storage as part of the UK's energy mix

A guide for landowners considering adding large scale solar PV and battery energy storage to their landholding



Why add solar PV and energy storage to your land?

UK wind speed at 45
above ground level

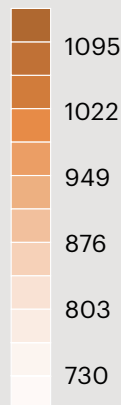
Owning land in the UK requires a balance of a business minded approach, a long-term outlook and the sympathies of a trusted caretaker. Adding solar PV and battery energy storage to grass-land or poorer grade arable could deliver a long term, inflation linked, stable income stream via land lease rental payments.

As a part of a diverse mix of revenue streams, solar and storage rental income lays a dependable foundation for your wider business activities, relieving a little of the annual pressures of unpredictability.

Future generations gain not only financially but by long term protection of land parcels, ready to be returned once the solar is removed. Volumes of agrochemical fertilizer/pesticides to artificially force crop growth will lessen and, as with any set-aside land, insect, bird-life and flora has opportunity to recover – there will be more birdsong! Generationally, large scale solar leaves a legacy of a positive contribution to creating the low-cost, clean electricity needed to power Britain’s homes, businesses and growth.



Sunshine hours kWh/m²/year



Source data:
Energy guide UK,
World Bank Group



What does a solar and storage farm consist of and how could landowners benefit?



Solar PV installed across 75 to 2,000+ acres (30 to 800 Ha) comprises solar panels, galvanized steel legs post knocked into the ground, trenched cabling, shipping container sized inverter/transformers and a control room, all surrounded by deer fencing with wooden posts roughly 2m high. Preferably battery energy storage systems (BESS) will be co-located nearby to store variable electricity as the sun shines and released as demanded by the wider electricity network. Solar panels produce direct current (DC) that is converted to alternating current (AC) in inverters, then transformed into a higher voltage (HV) for export to the National Grid. After the life of the park has been depleted, all equipment is straightforwardly removed and land can be restored to its original condition.

A well-designed solar farm has minimal impact on your land.


Its electricity production is a quiet neighbour, requires very little maintenance and is monitored via remote systems. Throughout the development period, the site’s natural environment and visual landscape is studied deeply. Obligations of the planning process are that we design the project in sympathy to its natural surroundings, often planting new hedgerows or trees, bringing net biodiversity gains as compared with the previous arable or grassland use.



Mid sized solar installation

| | |
|-----------------|----------------------|
| Installed power | 25 MW AC |
| Total area | Approx 75 Ac (30 Ha) |


 8,620* homes

 4,825 ton** CO₂/yr saved

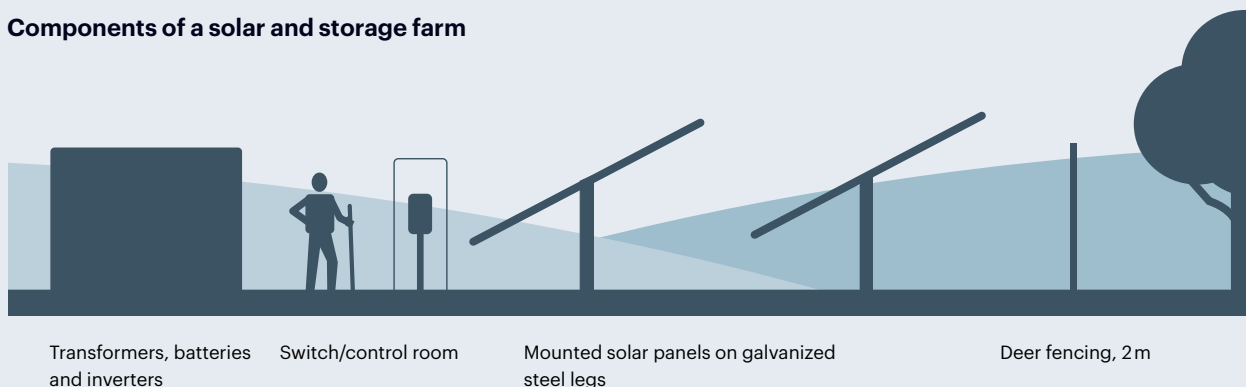
Large scale solar installation

| | |
|-----------------|--------------------------|
| Installed power | 480 MW AC |
| Total area | Approx 1,500 Ac (600 Ha) |

 165,000* homes

 92,640 ton** CO₂/yr saved

Components of a solar and storage farm



* OFGEM, Typical UK Home consumption 2,900 kWh/year ** UK Govt 2022 Greenhouse Gas emissions for the energy sector 193g CO₂/kWh

How solar energy farming is planned

Once contact has been made with a landowner, the early stages of project development are typically confidential between us. In our initial discussions Arise will diligently consider the existing and use, landscapes and wildlife. A landowner's objectives may include low-intensity agriculture such as grazing sheep for instance, hence we would design the heights of the panels and distances to fences or ponds appropriately. The connection to the electricity distribution network (at 33kV) or national grid (up to 400kV) will be routed carefully. Hedgerow and tree plantations protecting views will be discussed. Once an initial agreement has been struck, Arise will commence the wider development of the solar farm which typically consists of four stages.



1 Feasibility studies

- Dialogue with landowners
- Identification of suitable areas
- Agree exclusivity to proceed
- Analysis of production, economic, environmental and local impact
- Agree heads of terms for option to lease and land lease agreement

2 Planning processes

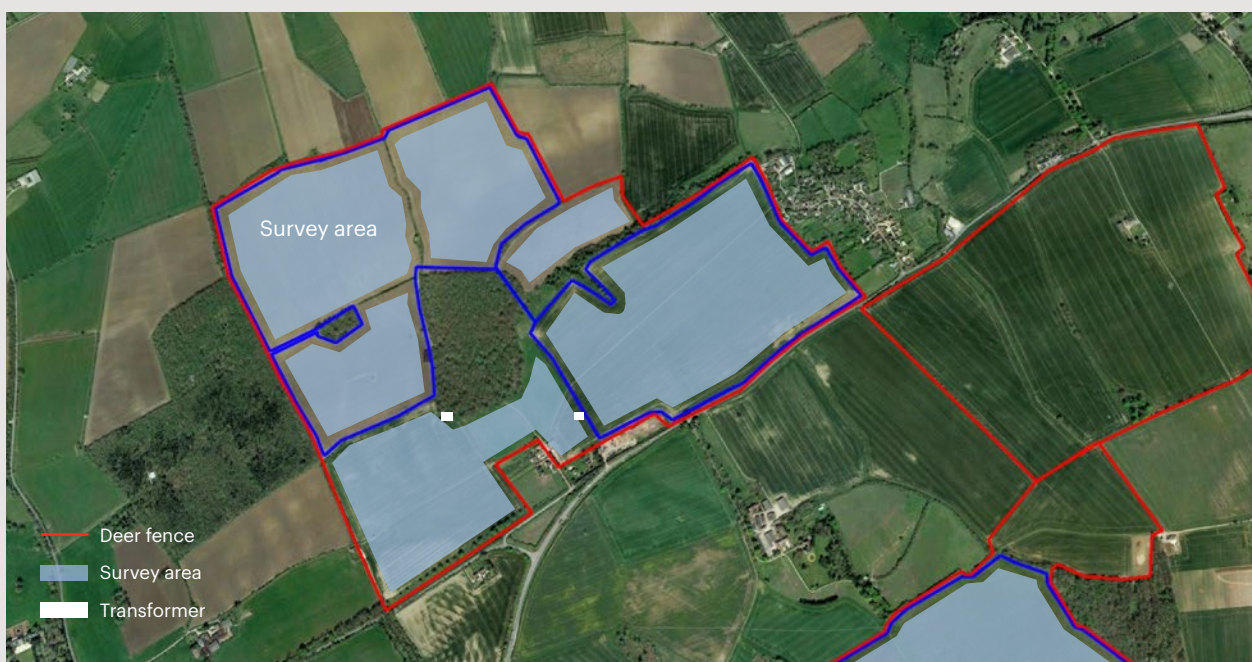
- Review local planning policies/assess the impact of the solar farm on the area
- Detailed planning and optimization of the layout considering environmental requirements
- Public consultations and incorporating feedback
- Planning awarded
- Construction permits are applied for

3 Procurement and construction

- Component and contractor procurement
- Construction rent begins being paid
- Earthworks, cabling, grid connection, piling, assembly work and fencing
- Installation of measuring equipment and remote systems
- Planting and landscaping

4 Commissioning and management

- Energization takes place, production begins
- Lease rental payments become due
- Maintenance according to the technical plan and environmental directives
- Production is continuously monitored from the operations centre via remote connection
- At the end of the farm's useful life, the land is restored to its original condition





Benefits for landowners

Long-term, stable, healthy, index-linked land lease rental income as a part of the mix of your revenue streams.

Long-term protection of land parcels, ready to be returned once the solar and storage is removed with no lasting impact on landscapes and nature.

Leaves a generational legacy of a positive contribution to creating the low-cost, clean electricity needed to power Britain's homes, businesses and growth.

... and benefits for the wider communities that host solar and storage, can include financial support for village halls, recreational facilities or equipment for local schools. The solar and storage facility can offer an educational experience for local school children.

A dependable foundation for your wider business activities, relieving a little of the annual pressures of markets and unpredictability.

Reduced agrochemical fertilizer/pesticides to force crop growth and insect, bird-life and flora has opportunity to recover – Biodiversity will gain and there will be more birdsong!

Solar is a quiet neighbour requiring very little maintenance and is monitored via remote systems.



Why partner with Arise?

Arise is a trusted renewable energy developer with a track record in developing, constructing, owning and operating renewable electricity generation in the UK, Finland, Norway and our home market of Sweden. With 2,000 MW under operational management, a further 7,000 MW in development and 380 MW in construction, we're a strong partner for any renewable project.

Our teams are experienced, knowledgeable and operate with the measured integrity you'd anticipate from one of the Nordic's leading independent players in renewable energy. We manage the entire value chain – from project origination, electricity network connection and planning processes to financing, construction and long-term management of renewable electricity production.

Give us a call and include us in your consideration of development partners, we believe that you'll be glad that you did.



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A selection of the companies that trust in Arise to deliver

Allianz Capital Partners | Allianz Global Investors | BlackRock | InfraRed
CapMan Group | Equitix | Foresight Group LLP | GE | KumBro Vind AB | re:cap global investors
Red Rock Power Limited | Senvion | Threadneedle Asset Management | TRIG
Siemens | Nordex | Vestas





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