



Solar powered recovery

Outlook for large scale solar in UK – 2020 & beyond

20 May 2020



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Chief Executive

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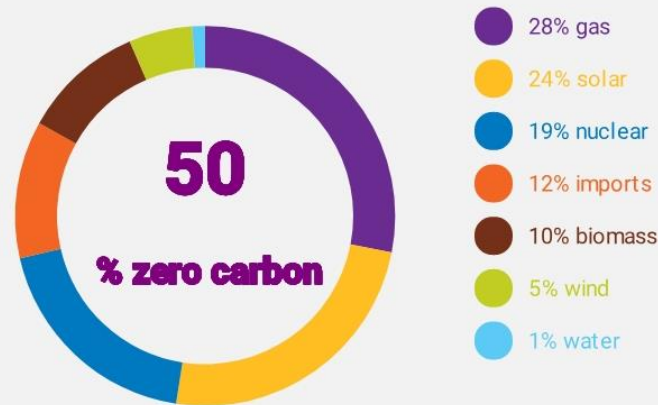
UK Solar in the time of Covid



nationalgridESO

- All assets remain operational
- O&M staff had no problems accessing sites
- Construction & installation has been paused, but now returning
- Record solar outputs – 10% of all UK power coming from solar in April/May
- Large scale pipeline is still in tact

GB Generation Mix

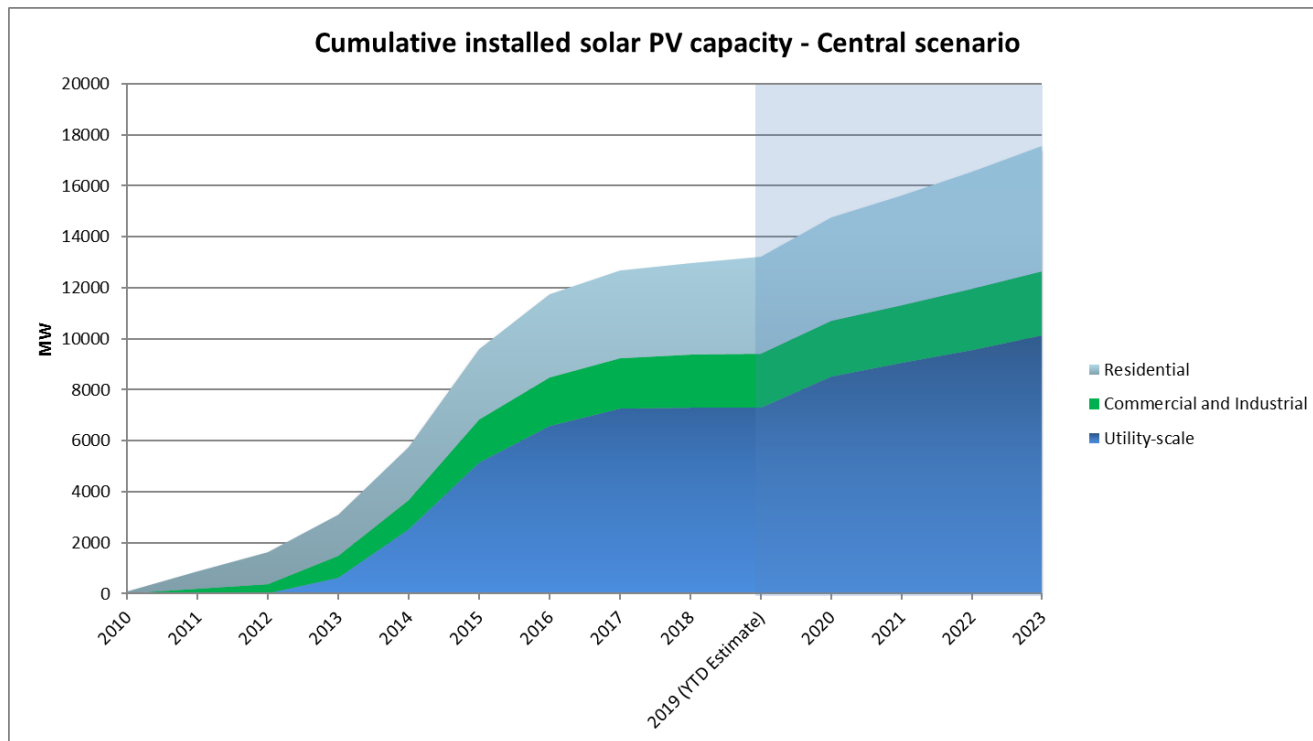


STA Covid-19 Activities



- Weekly call with other energy trade associations
- Weekly call with STA and BEIS officials
- Weekly STA Bulletin & webinars for members
- All working groups being held online
- Direct communication with DNOs and National Grid
- Established an resource sharing pool for O&M companies
- Working on green recovery advocacy with policymakers

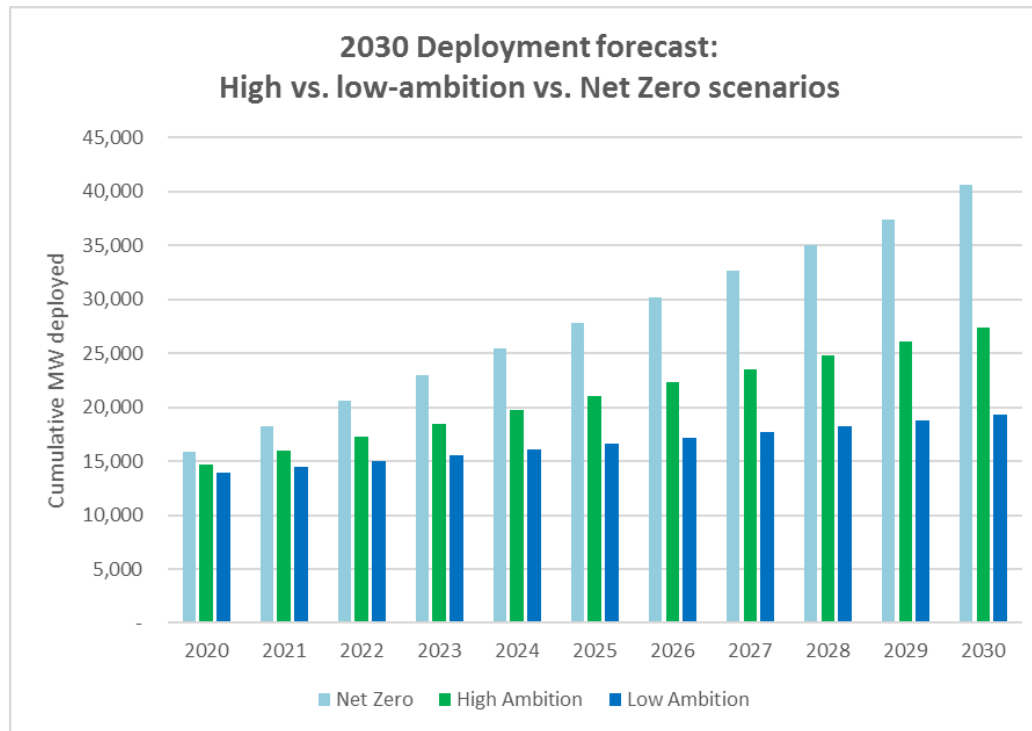
STA UK Deployment Forecast (2019)



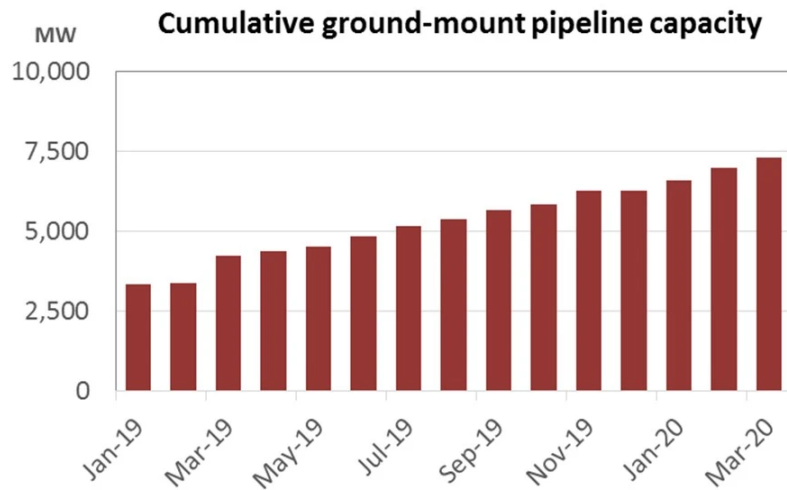
Net Zero and the 2030 outlook



The latest Committee on Climate Change analysis of pathways to achieving the UK's legally-binding 2050 Net Zero target suggests that **54 GW of solar capacity could be needed by 2035** to accommodate rapid uptake of electric vehicles and hybrid heat pumps. This is equivalent to more than **2.5 GW in net additional PV capacity deployed each year**, or more than **40 GW by 2030**. This cannot be achieved without significant policy intervention.

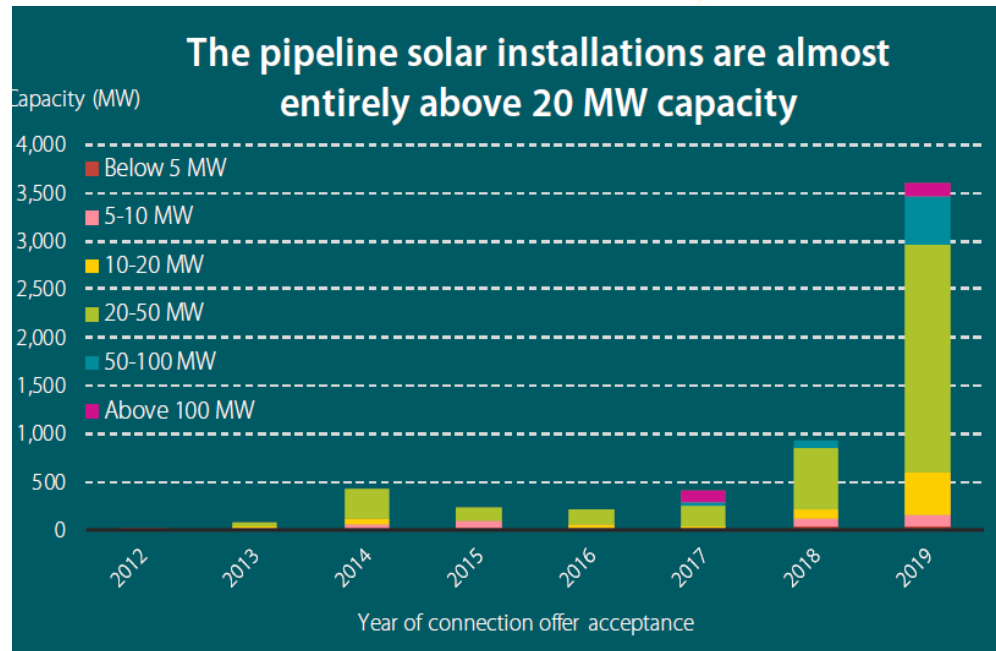


Growing UK Pipeline



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Source: UK Large-Scale Solar Farms: The Post-Subsidy Prospect List, April 2020.



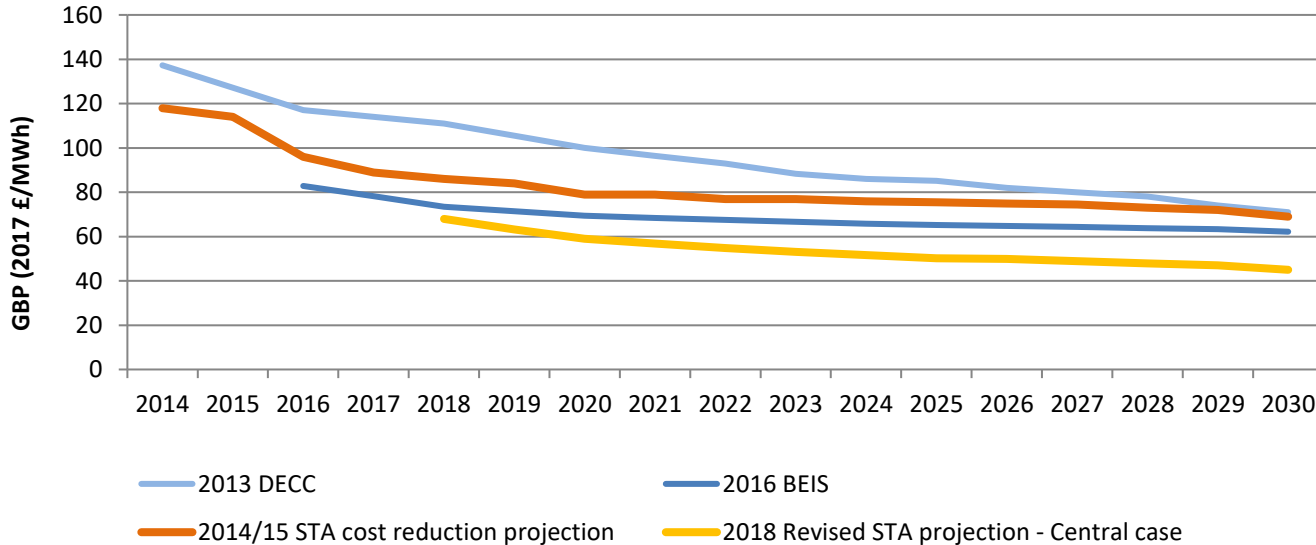
[Source: Regen](#)

Key factors driving large scale



- Falling costs and technology innovations
- Multiple routes to market
- Shovel ready for a green recovery
- Smart grid integration
- Natural capital and biodiversity

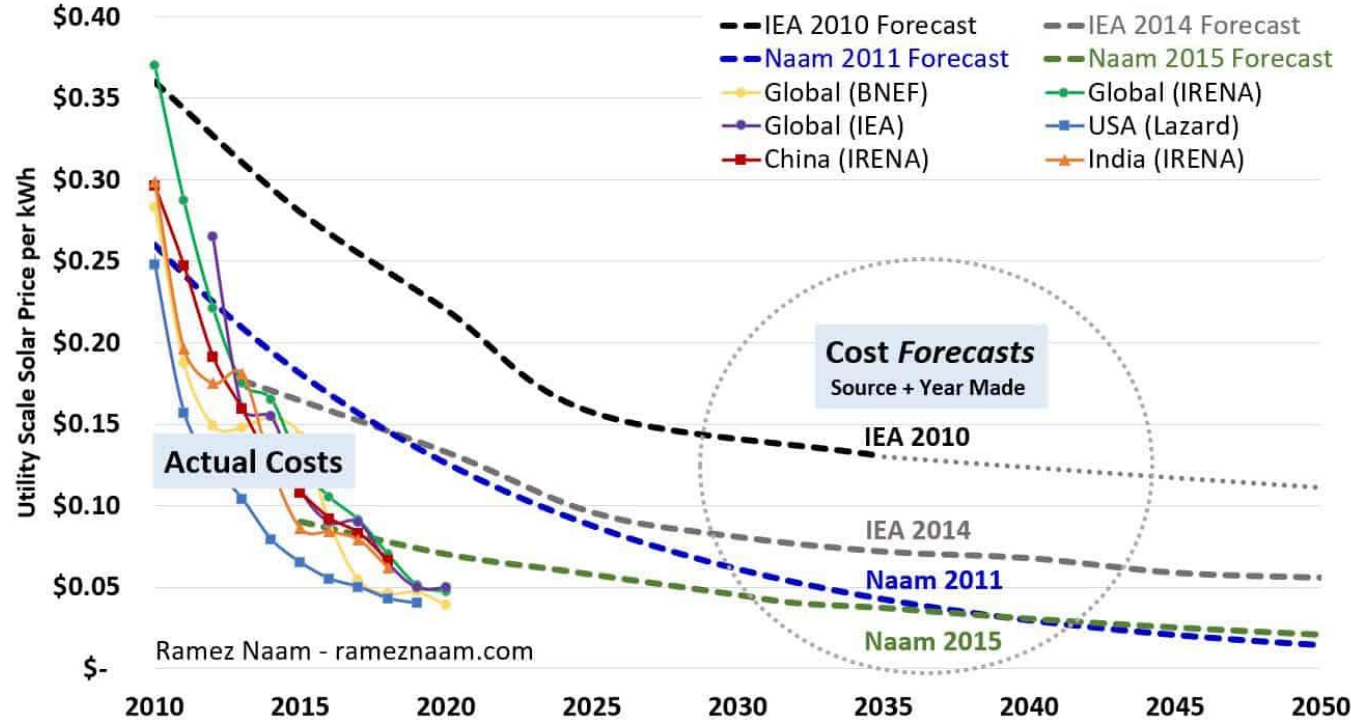
Solar cost in UK still declining



Survey of STA members (Dec 2018) suggests that the median LCOE for large-scale ground mount PV will be 35% lower by 2030 than we had predicted in 2014.

Anecdotally this might have fallen again since then

Solar Costs Are Decades Ahead of Forecasts



Technology drivers

- Bi-facials
- Larger panels, increased efficiency (up to 500W)
- Trackers
- More sophisticated monitoring and performance management
- Co-location with storage
- Realtime data enabling flexibility and trading
- Transmission connected projects possible

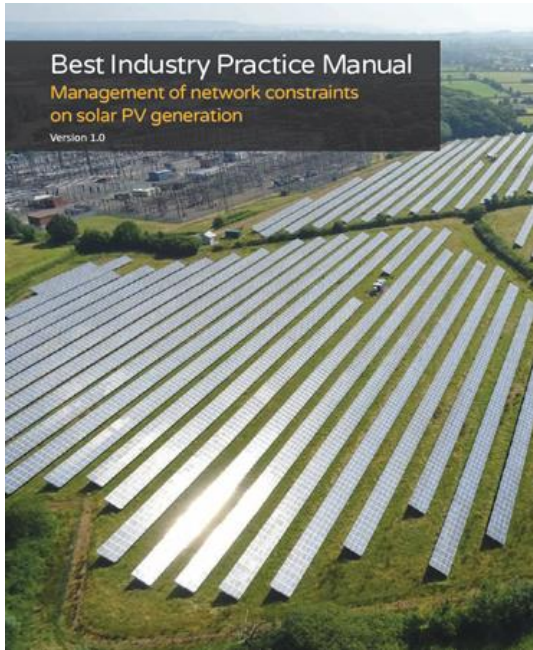
Routes to market – merchant risk



- Proof of concept – Next Energy Capital 50MW solar park in 2019
- Advantages – upside revenue, greater control over construction timescales, future opportunities in flexibility markets
- Disadvantages – revenue uncertainty, higher cost of capital, price cannibalisation risks
- Barriers – grid constraints, in-house energy trading capability

Appeals to established solar investors, who understand the risks and want to get on with deploying some available capital. Good fit with mixed portfolios of subsidised renewables (solar and wind), energy storage

Address grid constraints



- STA works directly with DNOs to develop industry wide best practice for embedded generation
- National Grid and DNOs regularly present to STA working groups on market opportunities for solar & storage in flexibility markets
- Discussing potential for collaboration between networks and generators to invest in grid infrastructure

Routes to market - PPAs



- Proof of concept – 2019 Gridserve 60MW – Warrington PPA
- Advantages – revenue certainty, growing appetite for corporate renewables sourcing, lowers cost of capital
- Disadvantages – can be long to negotiate, buyer price expectations low
- Barriers – grid constraints, PPA market might be limited

Appeals to lower risk investors looking for steady returns, developers with a business model to build then re-finance



RE-SourceUK 2020 & 2021

Events, materials and networking to bring together corporate and public sector energy buyers with the renewable industry

Organised by:



More info at www.re-sourceuk.com

RE-SourceUK 2019: Highlighted Attendees



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Routes to market - CfD

- Solar will have access to CfD Auction Round 4 – Spring 2021
- STA commissioned modelling and bespoke training for STA members earlier this week – see presentation from Cam Witten at 4pm
- Advantages – revenue certainty, lower cost of capital
- Disadvantages – prices may be lower than achievable with PPAs or merchant

Appeals to lower risk investors and those already familiar with CfD auctions (e.g. utilities, multi-renewable developers)

Shovel ready



- Over 2 GW of pipeline projects already have planning permission
- Another 900MW are currently in planning
- Solar is fast to deploy (construction in less than 6 months)
- EPCs are already working onsite with changed working practices to accommodate social distancing
- STA pressing DNOs to ensure connections can be made as soon as practicable and if any milestones slip due to supply chain or planning delays, this does not impact on connection agreements

Smart energy integration



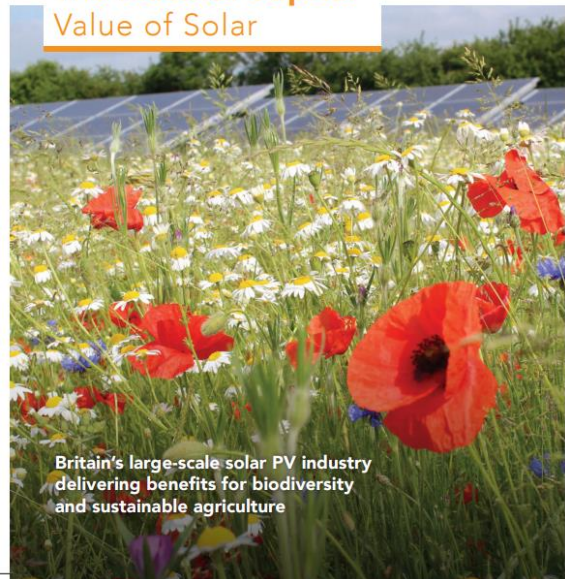
- Solar parks will need to be more flexible
 - Co-location of solar and storage, EV charging, wind
 - Use of trackers or East/West orientation to spread the generation output
 - Play full part in flexibility markets (eg NGESO Optional Downward Flexibility Market)

- Networks & regulators need to accommodate more renewables
 - Facilitate more deployment or storage (batteries and other technologies)
 - Decarbonise the flexibility markets over time
 - Invest in decentralised grid so as solar gets even cheaper, the technology can be deployed nearer to the demand

Biodiversity, community and other local benefits



The **Natural Capital** Value of Solar



Britain's large-scale solar PV industry
delivering benefits for biodiversity
and sustainable agriculture

- Growing evidence of increased biodiversity with well managed solar parks – more pollinators, flood alleviation, protected hedgerows
- Access for community groups and schools
- Local job creation, potential for agri-PV, carbon storage in untilled soils

Industrialisation of the countryside!



COVID-19 Recovery Package – Immediate Priorities



1. Routes to Market

- Contracts for Difference: Robust CfD design to maximise solar deployment
- “GOV100” Public Sector PPAs: UK Government commitment to public sector PPAs, similar to RE100, UK100.

2. Tax Reform

- Except solar and storage from business rates
- Except solar and storage from Climate Change Levy

3. Improve UK property portfolio

- Energy efficiency standards: Strengthen efficiency requirements for new build homes through Future Homes Standard.
- Access to finance: Enable access to green finance for domestic and commercial entities to invest in solar and storage through grants, zero interest loans.



COVID-19 Recovery – Medium and Long-term Priorities

- Clear and strong government commitment to carbon pricing
- Upgrading network infrastructure
 - incorporate strong decarbonisation and flexibility requirements in RIIO-2 framework
 - enable cross-industry collaboration towards sharing grid reinforcement costs
 - implement standardised and transparent network costs (A&D fees)
- A net zero review of national development planning frameworks

200+ STA Members - join us





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