

I strongly object to the '800MW' Springwell Solar Farm development on the following grounds:

Location Suitability for Solar Power Generation

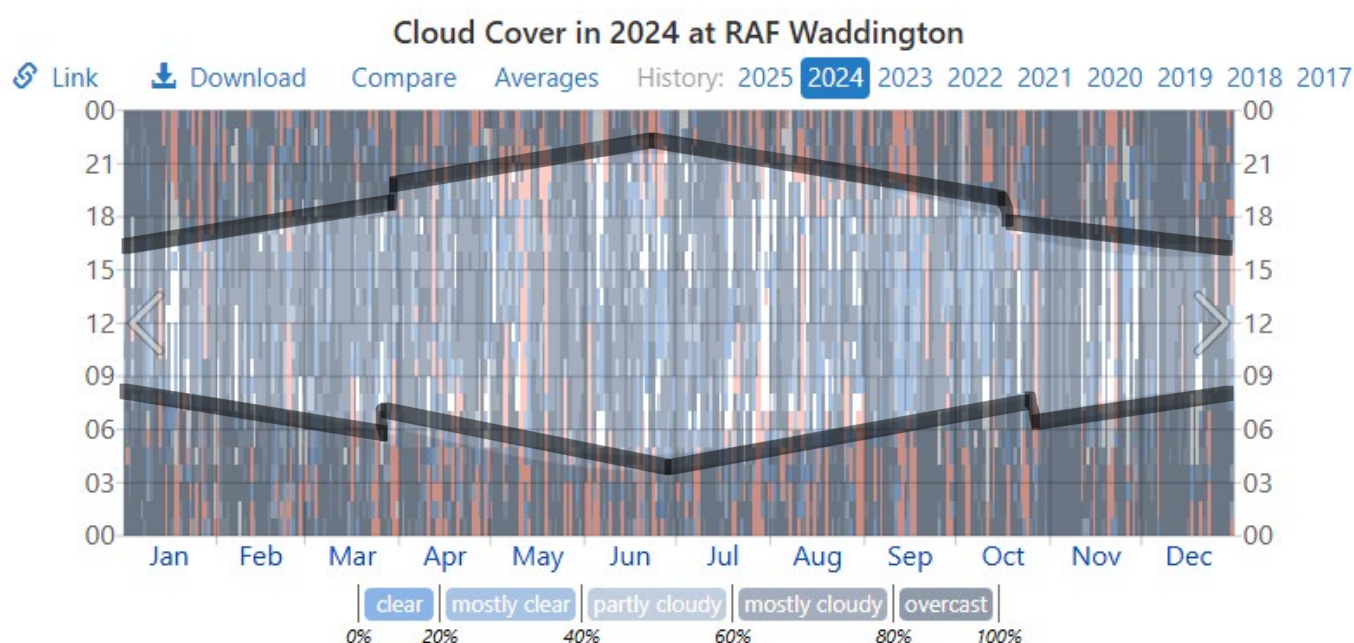
Is the area of North Kesteven or even the East Midlands the is not the most suitable place for Solar Power generation and does it make the most of the tax-payers pound. There is an average of 1,400 hours of sunshine throughout the year in LN4, this out of a maximum of 8,760 hours per year. This means that maximum power can only be generated a maximum of 16% of the time throughout the year. Having quizzed Springwell about this, they disagreed with my analysis as too optimistic and it is likely that decent power generation is more around 12% of the time.

Using the Met Office weather stations data in Waddington the following analysis has been performed on weather patterns. Power generation is jagged and is generated at the wrong time of the day to benefit the British energy grid, of course if the power generated is being exported and purchased by other countries then we, as a country are not benefitting at all and the loss of land is at the expense of private sector profit.

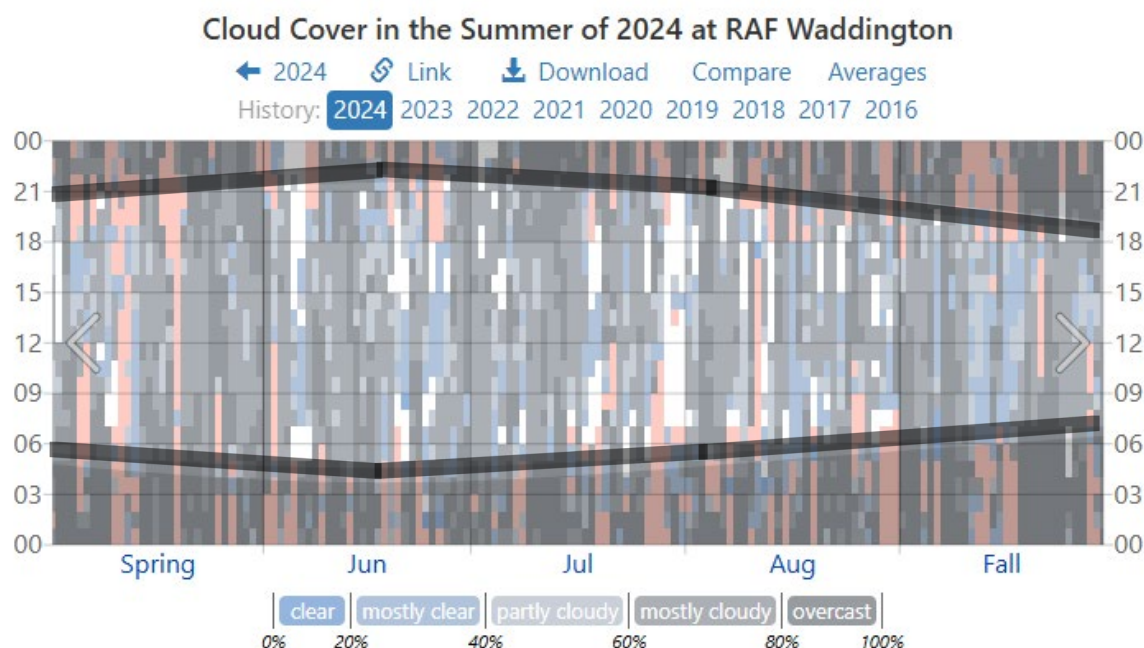
The graphs below which has been generated using the data from the Waddington weather station shows cloud cover by the hour across the year. Above and below the thick black lines constitutes nighttime where no power will be generated at all.

Power generation is likely to be jagged throughout the year due to cloudy skies, overcast skies, low sun, night-time, snow cover and any other inclement weather event that solar generation doesn't work well with. Clear blue skies and long periods (days) of full sunshine is incredibly rare in the LN4 area as evidenced by these graphs.

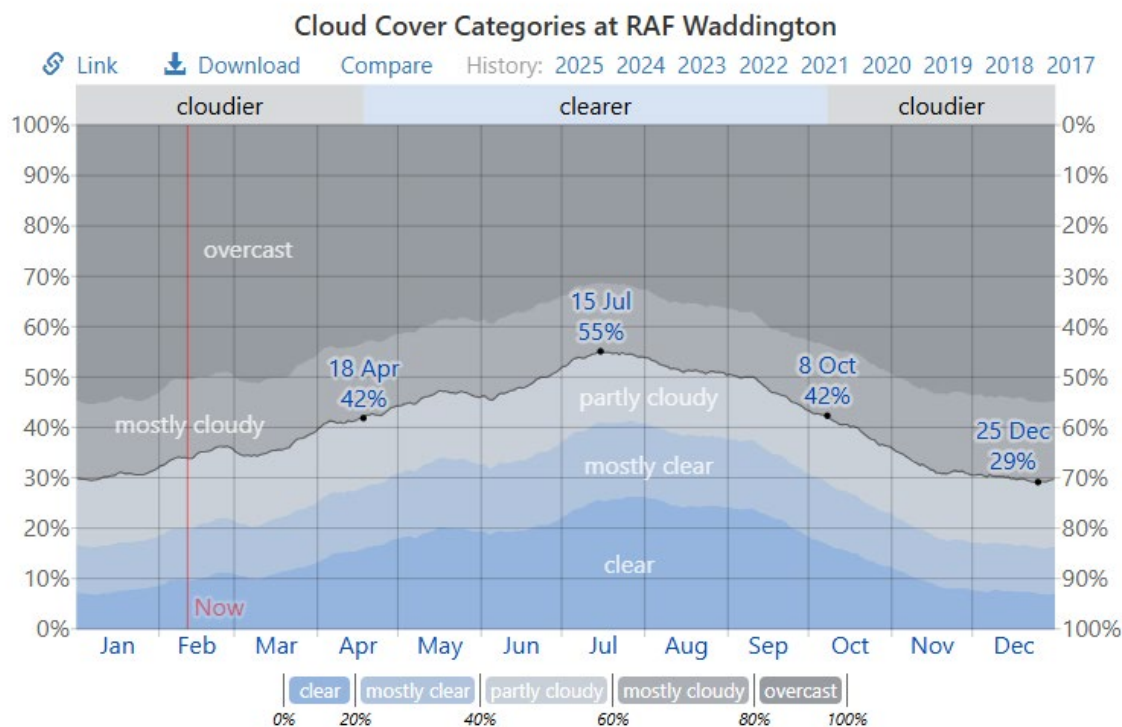
I have not seen a feasibility study on solar power generation in LN4. To generate the power needed would require an excessive amount of land compared with sunnier countries that would require much less space to generate the same amount of power. Using vast swathes of farmland to generate relatively small amounts of jagged power is the worst option possible. If we are to believe the Labour Government's mantra, "Cheap renewable energy for the masses!" then they will have to think a lot harder than covering tens of thousands of acres of prime agricultural land in a company's product.



The graph below shows a magnified view of Spring to Fall when expectedly the most power would be generated however as you can see significant cloud cover from June to August is still prominent.



The chart below furthermore evidences the poor-quality weather in our area showing our skies are overcast or mostly cloudy. Clear skies are only experienced from 5% to 25% of the time through the year with an average of clear skies 12% of the time, this matches that the sun only shine 12% of the time.



<https://globalsolaratlas.info/global-pv-potential-study>

The World Bank has published the study *Global Photovoltaic Power Potential by Country*, which provides an aggregated and harmonized view on solar resource and the potential for development of utility-scale photovoltaic (PV) power plants from the perspective of countries and regions. Using on consistent, high-resolution, and trusted data and replicable methodology, this study presents:

- Comparison and ranking of countries and regions according to their PV power potential
- Simplified Levelized Cost of Electricity (LCOE) relevant to current PV projects
- Cross-correlation with the socio-economic indicators, relevant to PV development
- Country factsheets with analytical data, showing their position in the context of global PV potential

The study aims to address needs of policymakers, project developers, financial and academic sectors, as well as professionals and individuals interested in solar energy.

Please read the full report which can be download from the link below:

<http://documents.worldbank.org/curated/en/466331592817725242/pdf/Global-Photovoltaic-Power-Potential-by-Country.pdf>

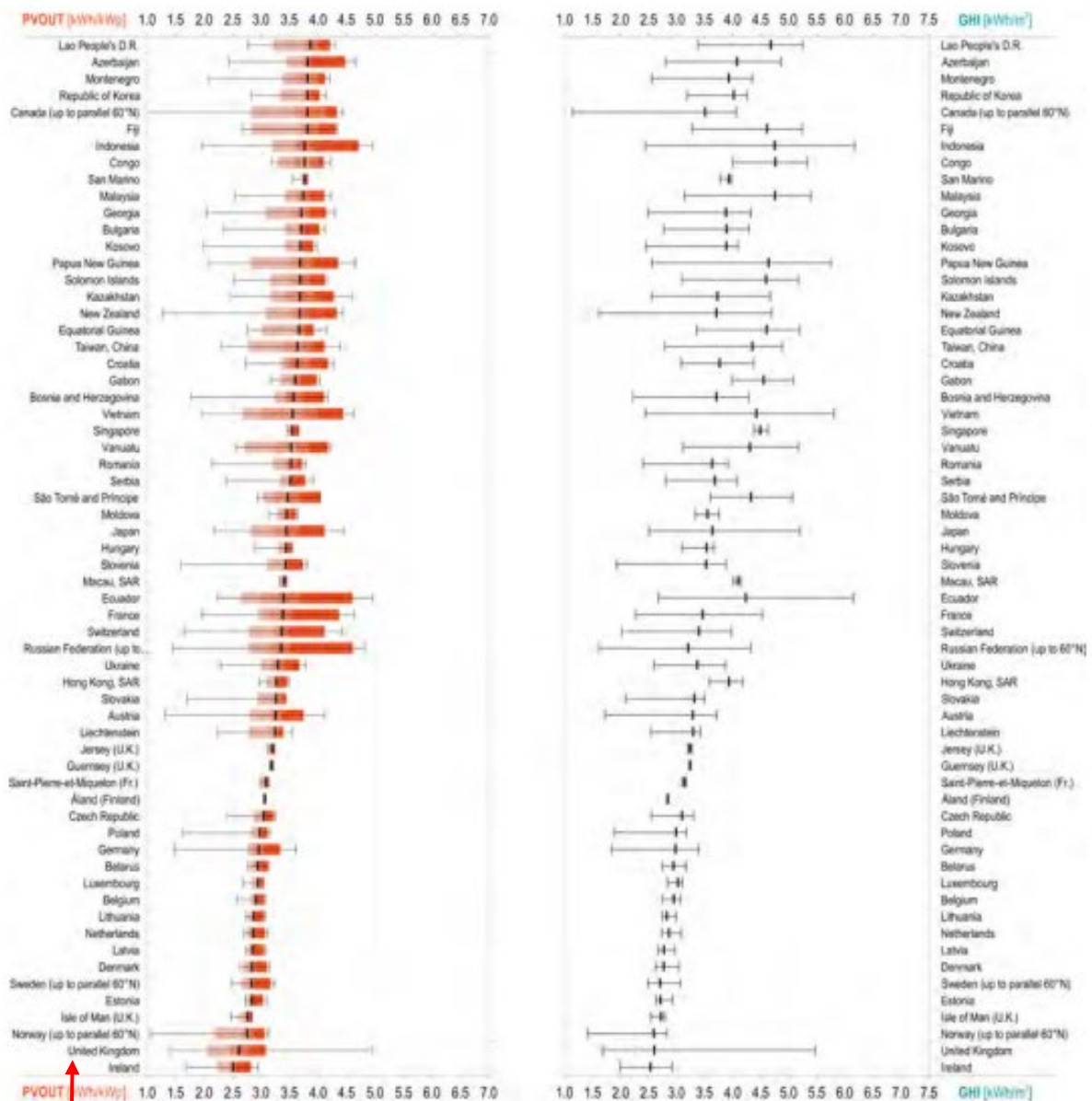
Please see on the next page an excerpt from this reporting showing how the UK is at the bottom of the list when it comes to an economic view on solar power generation.

Government Solar Incentives

Historically the government have heavily subsidized and encouraged the use of solar generation for the domestic market (panels on roofs). It is a fact that it is only the government subsidy and 'green talk' that made domestic solar economically viable and popular, domestic solar does not generate the electricity required to run a home. Without the feed-in tariff domestic properties would not use solar as it generates power at the wrong time of the day and not when the homeowners need to use it. Of course, now that the incentive for domestic solar has all but disappeared and the energy generated is at the wrong time of the day there is now the need for expensive battery storage to assure the domestic market that solar is still viable. So, this all comes down to payback period on your domestic solar investment which is still around the same as it was back in 2010 when the feed-in tariffs started.

The same can be said for these commercial NSIP proposals, it is only the financial incentive (strike rate to be agreed with the generator) that enables the private sector to stay connected to the government teat. Remove the £40 billion incentive from the government for renewables and the energy generators would walk away from solar because they know that it is not a consistent, long-term and independently profitable venture. Therefore, for these NSIP projects to work for the country horrendously expensive and dangerous BESS lithium battery storage facilities are required only to be able to store the energy for a couple of hours and then drip feed it back to the highest bidder. This all doesn't sound very green or very renewable. It sounds like covering the agricultural countryside with a company's product for enormous financial gain.

FIGURE 3.8 (PART 3 OF 3): RANKING OF SELECTED COUNTRIES, BASED ON ZONAL STATISTICS OF PRACTICAL PV POWER POTENTIAL



Explanation to Figure 3.8:



Countries' statistics of the practical PV power potential
 $P0_{MIN}$ = Level 0: Minimum value
 $P1_{MIN}$ = Level 1: Percentile 0.5 value
 $P1_{P25}$ = Level 1: Percentile 25 value
 $P1_{MED}$ = Level 1: Percentile 50 (median) value
 $P1_{MEAN}$ = Level 1: Mean value; countries/regions are sorted based on this value
 $P1_{P75}$ = Level 1: Percentile 75 value
 $P1_{MAX}$ = Level 1: Percentile 99.5 value
 $P0_{MAX}$ = Level 0: Maximum value



Countries' statistics of the theoretical solar resource (GHI):
 T_{MIN} = Minimum value
 T_{MEAN} = Mean value
 T_{MAX} = Maximum value

The United Kingdom is at the bottom of the list when comes to practical photo voltaic power potential.

Springwell's Claim of an 800mw Peak Output

At the start of these proposals back at the beginning of 2023 Springwell's claim was to generate 800mw renewable energy which could power up to 180,000 homes in Lincolnshire. The 800mw figure reported is a peak output figure, this means that on the longest sunniest days of the year Springwell could generate a peak output of 800mw.

"Springwell Solar Farm is a proposed new solar farm with battery storage that would provide enough clean, secure energy to power over 180,000* homes each year – the equivalent of half the homes in Lincolnshire."

Initial Proposal

Initially Springwell had proposed around 2,500 acres of solar panels to generate their reported 800mw

Second Review after Consultation

After the first public consultation the panel area had been scaled down to around 1,800 acres however their generation output was still reported to be 800mw

Third Review after Consultation

After the third consultation the panel area had been scaled down to around 1,500 acres however the 800mw generation output remained the same.

Longevity and Efficiency of Solar and Panel Generations Used

The longevity of solar panels are at a maximum of 25 years and from day one of installation their 20% maximum efficiency will start to degrade.

According to the National Renewable Energy Laboratory (NREL), solar panel efficiency typically degrades at a rate of around 0.5% per year, meaning a solar panel will produce roughly 90% of its initial electricity output after 20 years of operation.

Key points about solar panel degradation:

- **Average degradation rate:**

0.5% per year

- **Factors affecting degradation:**

Weather conditions, exposure to UV rays, high temperatures, humidity, and panel quality

- **Impact of degradation:**

Over time, the solar panel will produce slightly less electricity each year

- **Mitigation strategies:**

Choosing high-quality panels, proper installation, and regular maintenance can help minimize degradation

This means that after 40 years the panels which were initially only 20% efficient would have degraded by another 20%.

Springwell have admitted that there will be no plans to replace and upgrade any of the solar panels throughout the life cycle of Springwell to support optimum power generation, this means that panels that have a 25 year life span will remain for another 15 years pretending to generate power for our country.

The proposed panels to be used in Springwell will be second, third or even fourth generation panels, it is unlikely that the Springwell will be using very expensive first generation panels and their decision will be a purely commercial one to benefit the shareholders.

Other consideration as to why Springwell should not go ahead

I strongly object to the Springwell Solar Farm development on the following grounds:

Pollution and Green Credentials : There has not been any investigation or research on this matter, eg supply chain and full lifecycle of solar panels, lithium battery storage etc. Potential for dangerous elements leaching into the soil structures has been ignored and a suitable risk analysis of worst-case scenarios like Lithium Battery Storage fires which have the potential to be explosive causing toxic gases and mass evacuation of the nearby villages/towns/city.

Environmental Hazard and Fire Risk

The fire risk has been all but ignored by the fire brigade with respect to the associated and required lithium battery storage solution, the response by the Fire Brigade is “Let it burn”, as they are not able to quench a lithium battery in thermal runaway with water as it does not require oxygen to burn.

Mental Health

This is a major consideration for me. I moved to this area for its non-industrialised feel and quiet environment. My mental health will suffer because of the proposed development. I do not want to go into detail as my comments will be widely publicised but suffice to say this development will [REDACTED] [REDACTED]. It is not an appropriate concept to industrialise thousands of acres of land for solar generation in part of the world where the sun doesn't shine and only adopts power generation for a maximum of 16% of the time.

Traffic Congestion and Road Suitability

Increased traffic flow and people during construction for a four year period can not be adequately supported by road systems and infrastructure - this is a quiet farming community. I have noticed that the section of the A15 where the solar panels are most prominent happens to be well below the road system. The A15 is a somewhat dangerous, busy single carriageway road which has experienced many accidents over the years, with some resulting in deaths due to the number of junctions leading on to it. As the panels will be lower than the road height and that there is no screening from passing vehicles it is accepted that glare and the spectacular of the panels will obviously divert and distract driver's attention away from the job of driving and staying on what is a narrow main road system.

Springwell East will require that large vehicles carrying upwards of 20 tonnes will be funnelled through Ashby De La Launde and Scopwick village. The Scopwick Junction between Heath Lane and the B1191 is a very small junctions and is unsuitable for large vehicles. These are small village B roads which were not designed to accept constant large vehicular activity next to public footpaths running along the road side. In addition, at the junction on both sides of the road is a bus stop where the school buses pick up and drop off students daily, the road is busy at these times and I have witnessed that children can often wait 5 to 10 minutes before there is a space to cross.

I am aware that are Parish Council and subject matter experts have also produced detail objections on the following items, I have read in detail all of these objections and agree fully with their contents.

Local and Downstream Flooding

Risk Posed by the Battery Energy Storage System [BESS]

Significant Loss of Agricultural Land

Cumulative Impact of Similar Developments

Concerns Over the Origin of Equipment

Wildlife and Biodiversity

In Conclusion:

Geographical Location for Solar Power Generation (Mostly Cloud Cover)

multiplied by

Inclement Weather Conditions and Lack of Sun (Sunny less than 12% of the Time)

multiplied by

Springwell's Inaccurate Power Generation Claim (Disingenuous Marketing Tactics)

multiplied by

Longevity and Efficiency of Solar Panels

multiplied by

Pollution & Green Credentials

multiplied by

Environmental Hazards and BESS Fire Risks and Potential Evacuation

multiplied by

Community Mental Health Considerations

multiplied by

Traffic Congestion, Safety and Road Suitability

multiplied by

Flooding Potential

multiplied by

Significant Loss of Agricultural Land

multiplied by

Cumulative Impact

multiplied by

Wildlife and Bio Diversity

EQUALS

My objection to Springwell Solar Farm and any other Solar Farm that is gobbling thousands of acres of agricultural land to provide an inefficient, unnecessarily expensive and jagged energy mix for the taxpayer. My objection to the underhand and disingenuous marketing tactics of the energy and panel providers promising cheap green renewable energy for the masses and riding the climate change and net zero wagon whilst taking the government subsidies to make it a commercial viable for them.

Small scale solar to feed either a household or businesses directly (not grid connected) is the way to go although it still stands that the financial outlay required and the return it gives is not overly viable in the UK due to its lack of the vital element...sun!