

Submission to Citizens' Assembly on Climate Change

This submission was requested by Evo Active and is made on behalf of Sun Works (C.I.) Ltd - Jersey's only dedicated Solar Photovoltaic installer. We have been operating since 2013 and been involved in around 200 diverse solar projects in Jersey.

"The earth gets more Solar energy in 1 hour than the entire world uses in a year."

Key points

- The Island plan should set an ambitious target for locally generated renewable energy, this would mobilise business efforts to achieve this goal
- Jersey has abundant natural renewable resources for on- island energy generation.
- Increased demand for 'Electrification' in Jersey (vehicles, heating, etc.) should be ambitiously met by on-island energy sources.
- Government needs to balance JE's need for a Stand-by charge imposed on commercial embedded generation, against any wider ambitions to increase local renewable energy.
- Jersey wants to be a centre for sustainable finance, but there is a need to 'walk the talk' and in renewable energy terms, Jersey does not bear comparison with the rest of NW Europe.
- We don't believe any office buildings occupied by Jersey's finance industry feature solar power.

What are the 2 distinct types of Solar Power?



Solar Thermal has been installed by plumbers and heating engineers for many years and uses the heat from the sun to heat water which is passed through extruded tubes on a roof and connects into a property's water system.

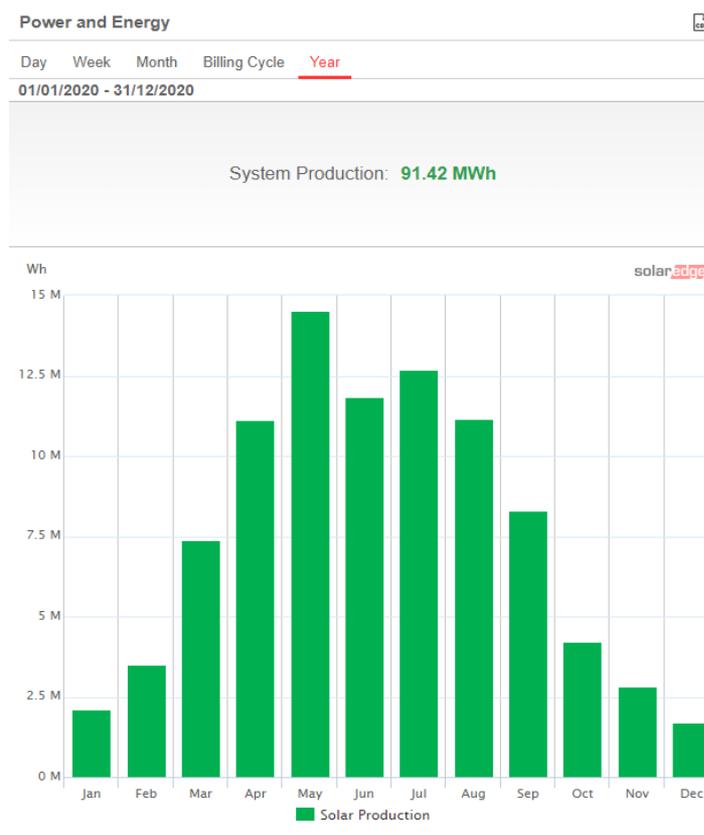
Our speciality however is Solar Photovoltaic (PV) which is quite different and accounts for the remainder of this submission.



Solar PV uses irradiance from sunlight to create an electric charge in a solar cell. Solar panels are typically collections of 60 of these cells and when connected to other solar panels form a solar array. Electricity produced is fed into a property's electrical distribution board forming a supplementary source of electricity and thereby reduces the amount of electricity that has to be purchased from JE.

A few Solar PV facts:

- The most power is produced with direct sunlight, but it works in lower light conditions too. Nothing is produced if it is dark.
- Temperature is not a factor in Jersey (extreme heat can decrease efficiency).
- It works all year round without human intervention, but the longest days give the best results, so the most power is typically produced in the April-September window.
- We know the amount of solar energy produced by our systems and each year it is amazingly consistent. So, if there is a miserably wet June, it will always be recovered in other months. Below is a typical month by month Jersey solar profile:



- The electricity produced first satisfies the immediate electrical demand of the property and any surplus is automatically exported to the grid. A buyback meter monitors this export, and you receive a credit on your JE bill.
- Automation can be introduced to automatically heat water and charge an Electric Vehicle from solar power.
- You can also install a battery which allows solar energy to be stored for those times when there is no light and the system is not producing.
- Each system is a mini power station and as it is part of the 'internet of things' (IOT), it is ready to be part of the smarter grid of the future
- Roof mounted solar does not typically require Planning Permission. If ground mounted, Planning permission generally is required.

- Panels are built to resist 140mph hurricane force winds and 1inch hailstones.
- Panels are guaranteed to carry on producing power for 15-25 years, depending on manufacturer and budget.

What makes energy “renewable”?

- Renewable energy is energy derived from natural resources that replenish themselves over a period of time without depleting the Earth’s resources.
- Hydro, Energy from Waste, Geo-thermal, Wind, Biomass and Solar are examples.

If we already get ‘low carbon’ energy from France, why is local renewable energy important?

- An element of our French electricity derives from Nuclear. It is ‘low carbon’ compared with fossil fuels, but it is not ‘renewable’, in part because of the radioactive by-product.
- Climate Change is a global problem and we are connected to the European grid. Every unit of renewable energy manufactured here avoids the import of a unit from France and makes that same unit available to someone else in Europe who may otherwise get their electricity from fossil fuel.
- The global demand for renewable electricity will only increase, but that demand needs to be met.
- As ‘the sunniest place in the British Isles’ with a natural north south incline, it could be said we have a duty to use our natural advantages for the common good. Moreover, Jersey has other abundant renewable natural resources waiting to be utilised.

How could Government increase the number of local Solar power installations?

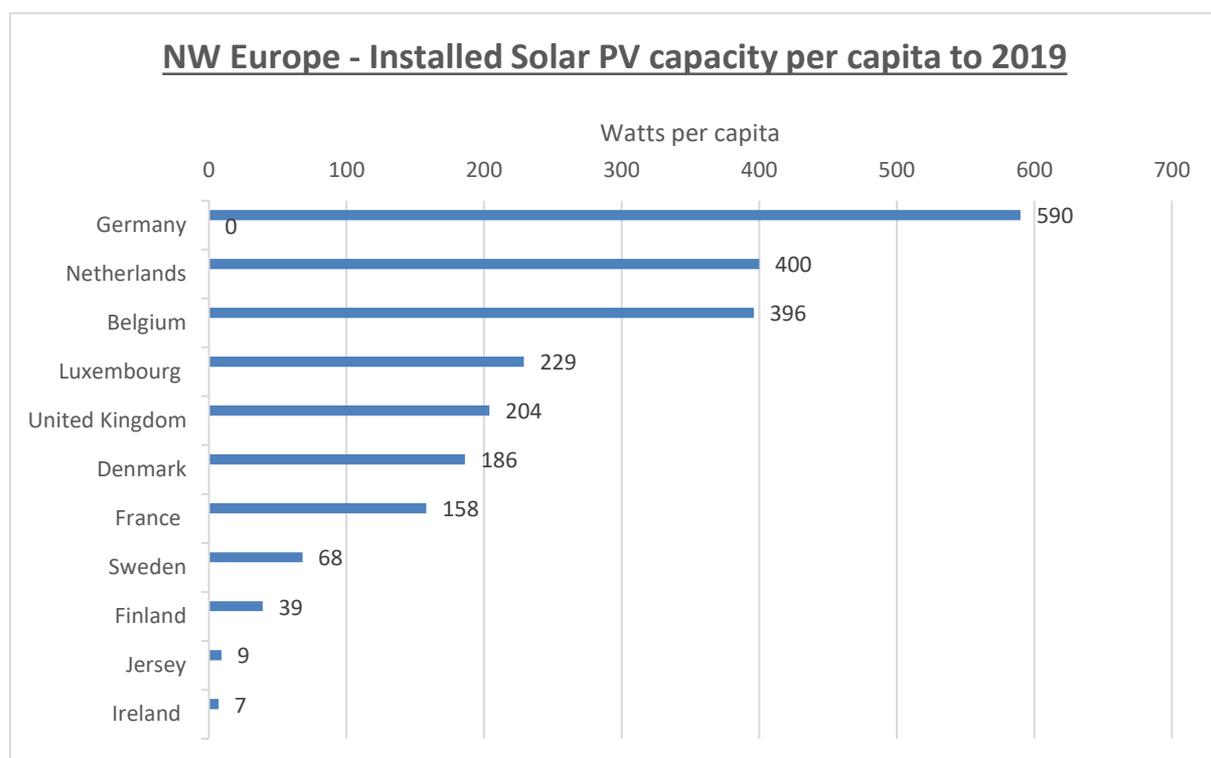
- We do not think any subsidy or GST break is necessary – it would just introduce unnecessary bureaucracy. In any case the technology has improved hugely and prices have fallen quickly in recent years. In our experience it is not cost which tends to be cited as a barrier by those enquirers who do not proceed to install solar.
- The States could ‘walk the talk’ more by ensuring its own buildings featured solar power.
- The most important thing to avoid is the extension of JE’s stand-by charge to residential solar (it already exists for commercial sites). A new solar tax would be a major disincentive to potential customers.

Jersey is a windy place - why are there only a few small wind turbines?

- The bigger and higher that wind turbines are, the better they work, so they are always going to be noticeable.
- Even small ones really need to be at least 6 metres off the ground to avoid air flow interruption and are likely to create objections from both planners and neighbours.
- If there are objections to turbines which are planned out to sea beyond the Minquiers (which there were), it is unlikely onshore ones would ever get passed.

What is happening in the wider world?

- International Energy Agency, *“Solar PV generation increased 22% in 2019 and represented the second-largest absolute generation growth of all renewable technologies, slightly behind wind and ahead of hydropower. Despite decelerating growth due to recent policy changes and uncertainties in China (the largest PV market globally), 2019 was a year of record global growth in PV capacity. As competitiveness continues to improve, solar PV is still on track to reach the levels envisioned in the Sustainable Development Scenario, which will require average annual growth of 15% between 2019 and 2030.”*



This table majors on countries in NW Europe that don't have sunnier climates than us, but it can be seen we don't do well in comparison with our near neighbours. It should be remembered that places like the Denmark and the UK also produce a lot more wind energy and solar is not even their main renewable target.

By 31/12/21 Sun Works expects to have moved the Jersey number from 9 watts per person to 23, but clearly, we have a long way to go after that. As another financial centre on the same latitude as Jersey, **Luxembourg's** level of solar energy would be a good target. To get there we need to have plugged in about **25million watts**, or roughly 10 times the present level. We can do that....

This is what 255,000watts of solar looks like (half of Jersey Dairy's rooftop array)



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