UK’s Solar Strategy: Window of Opportunity
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Agenda
– Where are we heading?
– Where can the industry find new opportunities?
– What part will Solar play in meeting energy shortages?
– Predictions and next steps?

Ray Noble – Co-Chair of DECC Solar Strategy
- Associate of BRE NSC
- REA Advisor on Solar PV
- REA Advisor on Storage and EV’s
- Special Advisor to Rated Solar Installer
- Solar Advisor to the Cabinet Office
Reminder - The purpose of Solar subsidies

- 25 years ago we had a dream that Solar could play a significant role in generating clean electricity for the World
- We lobbied Governments around the World as we needed financial support to develop a Solar Industry of scale
- We knew we needed to go from manufacturing kW scale to multi GW to drive down the prices, making money to re-invest in growth
- A few Countries started programs of support (eg. Germany, Japan)
- Many more Countries joined in over the past 10 years (UK from 2010)
- The Global market is now growing rapidly with many talking of 50% of the World’s electricity from Solar this century
- Today we are on the verge of achieving our dream even in the UK – Parity with Grid Electricity
Where is the UK heading? - Subsidies

We expect Grid Parity during the next term of Parliament (by 2020)

- Solar subsidies
- FIT (1) set out to 2015 with a capacity digression mechanism
- FIT (2) will be announced in 2015 and run to 2020
- ROC’s for Solar known but now limited to 5MW and ends on 31 March 2017
- CfD – first annual round starting now – Let’s wait and see!
- Community Solar – details awaited
- Government continued concern on the “budget”!!
- Grid Parity moves us away from subsidies – the sooner the better
Where is the UK heading? – Government preferred!!

- Solar on Roofs – Domestic and Commercial
- Solar on “previously used land”
- Solar with Community involvement
- Solar on Government Estate

**Government assistance**

- Planning changes – Commercial roofs – to be deemed up to 1MW
- Solar system transferability under Consultation!
- DNO 8 year grid upgrade program approved by Ofgem
- Other “barriers” being addressed
- Minister Round Table with Commercial customers
Opportunities – UK deployment & markets

- UK Solar market is continuing to grow
- Split to date – 33% Domestic, Ground 46% & 21% Commercial / Others
- Market constantly adapting to suit changing subsidies
- Module prices slowly reducing, constrained by EU
- Inverter prices moving downwards
- Market growing for new build – Zero Carbon regulation on horizon
- Lower overall installed prices are nothing to do with cutting quality or ignoring Health & Safety – Anyone who thinks that leave now!
- Solar started in the sunniest areas and installations are now across the UK
Where are we heading? - Solar Strategy – My view!

- DECC expect 12GW of Solar by 2020
- DECC know that Solar always exceeds their predictions
- DECC recently announced UK has 4.2GW deployed (processes cannot keep up with Solar)
- In fact we have around 5.5GW deployed and heading towards 8GW by 31st March 2015.
- With a further 3GW of projects planned before 31st March 2016 – so 11GW in total
- My view is that industry will exceed 20GW by 2020 helped by the introduction of storage which will overcome some of the grid issues
Where is the UK heading? – short term

- Election – 5th May 2015
- No further changes expected before the election
- Statutory processes takes a further 9 months
- Industry has a “window of opportunity” to at least April 2016
- EU MIP may (should) end in December 2015 – move to World pricing (present £0.42 to £0.33p/Wp)
- New Government will need to tackle shortage of electricity generation (Gas powered power stations must be built!)
- Electricity prices likely to increase further than presently predicted (Hinkley Nuclear – now guaranteed 9p/kWh)
- Solar can only benefit
Opportunities – UK kWh/kWp generation

– Solar is outperforming predictions (+ 15%)
– NSC working with the Met Office to re map the UK
Opportunities - Large Commercial Building Roofs

– Government encouraging Solar deployment
– Roof construction, layouts, access, equipment, rooflights, profiles, load capacity, all vary and must be fully understood
– NSC developing a Good Practice Guide to assist the industry
Opportunities - Small Building with Pitched Roofs

- Government have always supported this market
- Pitched roofs are visible and aesthetics need to be addressed
- Some roofs may need integrated product particularly new build (BIPV)
- NSC producing a Good Practice Guide to assist the industry
Opportunities - Ground Mounted Solar

- Previously used land preferred by Government
- However it is Local Planners that hold the decision
- Site management is key to maintaining a good reputation—O&M for 25 years (Grazing or Biodiversity), continue to work with the community
- NSC Good Practice Guides on Planning, Biodiversity and Agriculture are there to help and educate all involved
Opportunities – Trackers

– With UK Solar system performance being better than predicted, it may be that trackers could be appropriate on some of the sunniest sites
– These dual axis trackers are in Northumberland!
– All I am saying is think out of the box at times, watch for new products
Opportunities - Solar Car Park Canopies

- Car Park area very often larger than the Building Roof
- Avoids roof issues - shading, rooflights, equipment, weather tightness, warranties, etc
- Still suitable for PPA’s
Opportunities - Solar Car Park Canopies

– Solar Canopies can be installed directly onto existing surface car parks without affecting the numbers of car park spaces.

– Prefabricated and quick to install
Inverters and Grid Connection

- Central or String Inverters – where should each be used
- Connections to grid can be external, at a substation or in a building
- DNO’s talk about Faults, Thermal issues, Voltage problems??
- NSC Grid Guidance underway
Opportunities - Government Estate – Phase 1 - 500MWp

- Requirement, no problems / issues – (no bad news for the Press)
- Quality systems (Products and Installation)
- No accidents (Full compliance with HSE)
- Compliance with all regulatory requirements
- Best generation output
- Best price (but still maintaining quality)
- Fully warranted products
- Full monitoring system linked to O&M
Opportunities - Government Estate

- Phase 1 - 250MW on Buildings and 250MW on Brownfields
- Projects vary in size and will be spread nationwide with jobs for local installers in every region
- Standards being written to raise the bar in terms of quality (no cowboys)
- All installers must go through a training course (being developed) and will be issued with a certificate (annual updates)
- All products specified to be assessed in terms of quality and warranty
- Quality inspections to be undertaken on all projects
- O&M requirements based on 25 years
- Cabinet Office project legacy will be to encourage Public Sector to apply similar standards and processes
A test bed for New Technologies, Smart Grids, Monitoring

- Government Estate will provide a test bed for near to commercial new technology
- Eg. Perovskite Cells at 17% could potentially replace crystalline in the future
- Other technologies, smart systems, energy efficiency techniques can be trialed
- With Storage already happening, various techniques will be trialed
Opportunities that Storage will provide:

- Storage provides a shift of timing from when energy is generated to when it is required – it is not long term storage
- Storage allows Solar to “keep the lights on”
- Price reductions could well replicate those of Solar
- Multi GW manufacturing capacity is underway
Rated Solar Installer

– MCS was developed for a slow steady growth market – by now 500MW
– Had we known the rocket growth of Solar, MCS would be different
– However it is the process we must use to comply with the FIT (up to 50kWp)
– RSI is trying to allow the customer to provide feedback which should allow the good installers to come to the top
– RSI provides the customer with insurance and therefore the products used must comply with the insurers requirements – Good quality only
– RSI is at early days and I am trying to ensure that it will benefit the UK industry moving forward and overcome some of the issues we have had in the past.
NSC Solar Guides and the new Solar Code of Practice

– NSC have a number of Good Practice guides and more are underway. They are designed to educate and encourage good practice. They are free so keep watching [www.bre.co.uk/nsc](http://www.bre.co.uk/nsc)

– The new Solar Code of Practice is in draft consultation stage at present and will be launched early in the new year and this covers all sizes and types of Solar installations from 1kWp to 50MW - See the Events program
NSC – a big thank you to our industry partners

The NSC is funded by ERDF with contributions from Founding Partners
NSC is based at the Eden Centre in Cornwall
The way forward

– Take advantage of the April 2016 “window of opportunity”
– Recognize electricity is going to an issue before / after election
– Customers, Domestic, Commercial & Public Sector, need to be made aware of what Solar has to offer – better education
– Help Communities to get involved and they can spread the word
– Industry and Government must work together as Solar is not only good for electricity generation it is good for UK plc
– Numerous experts are speaking at this event, listen and learn, and then apply to your own business

– Nothing will stop Solar now
Designed correctly, installed once, Solar provides electricity free everyday for 40 years+

Thank You
Fire issues

- DC arcs can happen if connections / products are not manufactured / installed correctly
- If there is daylight on a Solar module it will generate electricity, therefore if an arc does occur it will continue until it burns out or causes a fire! You cannot switch off Solar!
- On AC side of system all is fine (standard electrics) and if a problem occurs will trip the system / blow a fuse.
- With micro inverters / power optimisers installed with each module, risks of a DC arc can be smaller
- Quality products linked to fully trained installers is the way forward
- NSC keeping a record of any fires associated with Solar
We do not want this!