



**British Solar
Renewables**

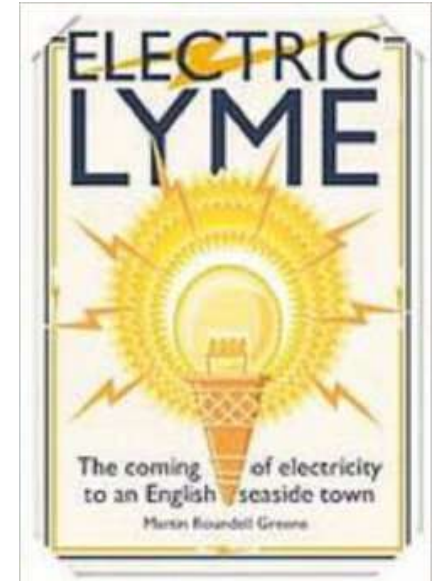


***Developing large scale solar PV projects for local authorities
Renewable & Energy Efficiency Advisory Group***

Presented by Marcus Dixon

Back to The Future

- Solar Power – Disruptive Technology
- Falling Cost of Solar Power
- Clean, home grown, energy
- Energy Storage, Smart grids, Electric cars



British Solar Renewables

- BSR generates clean energy
- Integrated Service - We finance, design, build connect & operate large scale solar parks, commercial and agricultural roof mounted arrays
- We've connected 330MWp since 2010
- JV with Siem Industries Inc. a €9bN global diversified industrial group
- Joint venture with national recycling management firm Sita UK to turn their landfill sites into solar power stations



Scotland's Solar Energy Production

Whilst more than 40% of electricity used in Scotland currently comes from renewable sources, solar production currently accounts for less than 2 per cent of renewable production.

In last eight months eight commercial projects varying in size between 1.8MW and 19MW have been granted planning permission in Aberdeenshire, Angus, Perth & Kinross and Dumfries & Galloway.

In total there are now over 100MW of large-scale solar projects in the planning stages or waiting construction to add to the 153MW of existing solar capacity from more than 31,000 installations mostly on peoples home.



The Solar Power for Local Government

- Climate Change & Renewable Energy Strategy
- Developing a business and financial case
- Delivery Options



Financing Options

- There are a number of different ways that a project can be financed
- There is no one size fits all
- It depends on each authority, its appetite for risk and experience of commercial arrangements.
- A key point will be its attitude to borrowing money to finance environmental projects.
- It can be funded by reserves, borrowing, joint ventures, institutional investors or the public
- Care needs to be taken to choose the route that is right for the authority



The Choice of Development

Pros

- If the council has the land it can be used effectively
- If the council has the land, there is no cost
- Large energy generation in one go
- Local authorities capable of large commercial projects
- Land based projects do not rely on buildings, roof strength, stability or orientation

Cons

- It is a large project to deliver
- It requires substantial capital funding
- It is less linked to the climate change strategy than building based schemes
- There is more commercial risk
- There is more complexity eg Power Purchase Agreements
- Grid connection can be an issue, given the size of these projects



What Makes A Successful Project

- Land over 25 acres that is not in an Area Of Natural Beauty
- Grid connection
- Irradiation levels
- Good access
- Commercial Agreement for Landowner & Developer
- Minimal visual impact and easy to improve screening
- South facing location
- Community Support
- Planning Permission



Delivery of Solar PV Project

- Each project will go through a number of defined stages and the better these are planned in advance, the more smoothly the project will proceed
- A Gant type chart will be essential with a clear timeline to avoid project drift
- A thorough risk analysis will underpin this work
- The appointment of joint venture partners and contractors needs careful consideration
- The construction and commissioning phase will include all necessary registrations under the financial incentives and will need appropriate time in the timeline



Large Scale Solar Project – 8 Phases

- Concept Phase (3 months)
- Project Planning Phase (3 months)
- Planning Consent Phase (3 months)
- Procurement Phase (3 Months)
- Construction Phase (6 months)
- Commissioning Phase (one month)
- Operation & Maintenance (O&M for 25 years from commissioning)
- Decommissioning (after 25 years)



Community Energy

- Community energy likely to be one of the big growth areas in renewable energy over next decade
- Community engagement
- Community benefit
- Community ownership



The Future

- New jobs and skills and expertise to take advantage of rapidly developing global market
- New revenue streams for local authorities to safeguard essential services
- Clean, sustainable energy
- Greater energy security
- Community regeneration and distributed power





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