



Municipal Energy – Opportunities for local authorities in deploying solar PV on their own estate

**Mark Bramah, Director of APSE
Energy**



1. BACKGROUND TO APSE ENERGY

Our Vision



“The vision is to form an effective collaboration of a large number of local authorities to enable and facilitate the local municipalisation of energy services. ***By this we mean the public and community, as well as private, ownership and managerial control of local energy generation, distribution networks and delivery of energy efficiency works.*** Local authorities working together in this way would have great influence and would be able to deliver economies of scale in green energy to promote economic growth and combat fuel poverty.”

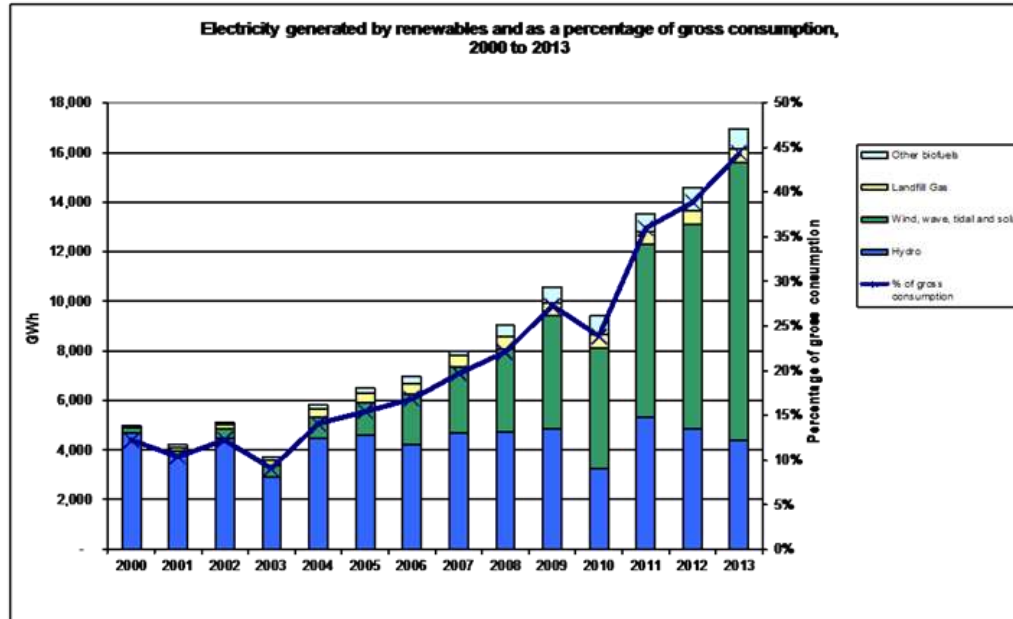
Members of APSE Energy



1. Aberdeen City Council
2. Basingstoke and Deane Council
3. Barnsley Metropolitan Borough Council
4. Bradford City Council
5. Bridgend County Borough Council
6. Buckinghamshire County Council
7. Cardiff City Council
8. City of Edinburgh Council
9. Cheshire East Council
10. Cumbria County Council
11. Darlington Borough Council
12. Doncaster Metropolitan Borough Council
13. Derbyshire County Council
14. Dudley Metropolitan Borough Council
15. East Dunbartonshire Council
16. East Riding Council
17. Falkirk Council
18. Fife Council
19. Flintshire County Council
20. Gedling Borough Council
21. Glasgow City Council
22. Gloucestershire County Council
23. Guildford Borough Council
24. Knowsley MB Council
25. Lancaster City Council
26. London Borough of Havering
27. Maidstone Council
28. Middlesbrough Council
29. Midlothian Council
30. Monmouthshire Council
31. Newcastle City Council
32. Nottingham City Council
33. Nottinghamshire County Council
34. North Ayrshire Council
35. North Yorkshire County Council
36. Northumberland County Council
37. Oxford City Council
38. Peterborough City Council
39. Portsmouth City Council
40. Preston City Council
- 41.. Reading Borough Council
42. Sefton MB Council
43. Selby District Council
44. Stevenage Borough Council
45. Stirling Council
46. Southampton City Council
47. South Lanarkshire Council
48. Stockton-On-Tees Borough Council
49. Swansea City and County Council
50. Wakefield Metropolitan District Council
51. Warwickshire County Council
52. Wrexham County Borough Council
53. Wolverhampton City Council
54. York City Council

2. ENERGY TRENDS

Electricity generated from renewables in Scotland



“The Scottish Government has set a National Indicator for the amount of electricity generated annually through renewable sources as a percentage of gross annual consumption to increase to 100% by 2020. The interim target of 31% by 2011 has now been met and a new interim target of 50% by 2015 has been set.”

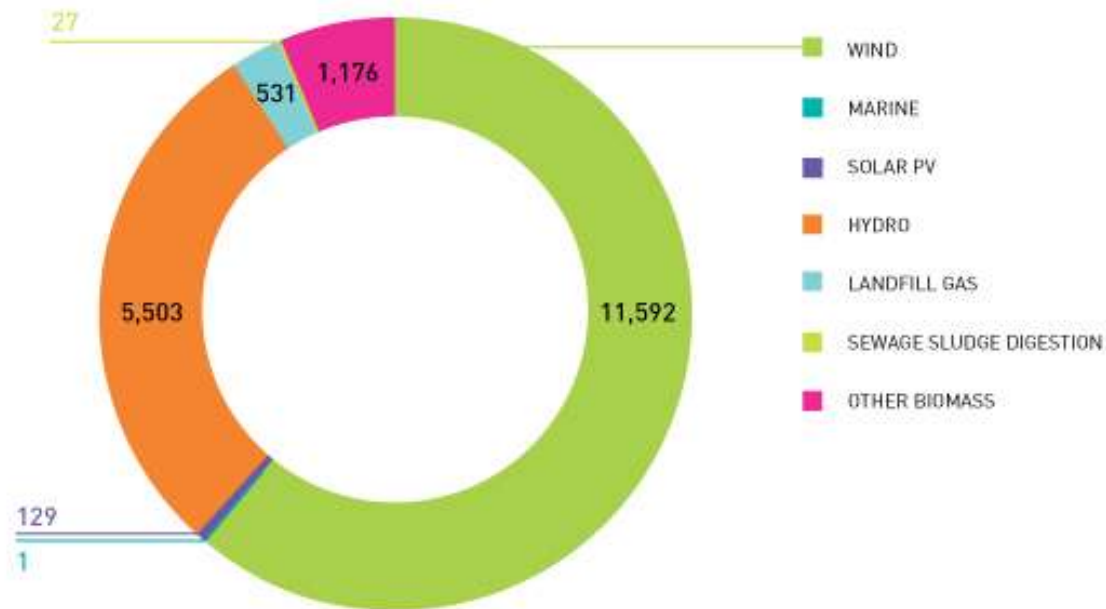
Source: Department of Energy and Climate Change (DECC)

Scottish renewables output



2014 ELECTRICITY OUTPUT BY TECHNOLOGY (GWh)

TOTAL = 18,959 GWh

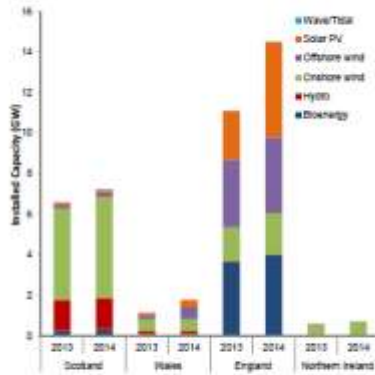


Source: DECC Energy Trends

DECC Energy Trends report March 2015

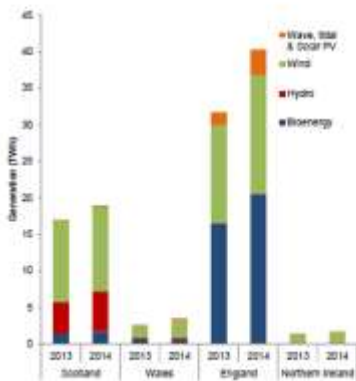


Chart 6.7 Renewable electricity capacity, by UK country



- At the end of 2014 Scotland's renewable electricity capacity was 7.2 GW, an increase of 10 per cent (0.6 GW), the majority of which was due to increased on shore wind capacity.
- Generation in Scotland was 19.0 TWh, an increase of 11 per cent (1.9 TWh); wind increased by over one third and hydro also increased by 26 per cent.

Chart 6.8 Renewable electricity generation, by UK country



3. CURRENT ENVIRONMENT

Financial austerity



- Accounts Scotland reports that Scottish council finances are under severe pressure and face “increasingly difficult challenges” in coming years, after a real-terms cut in government funding of 8.5% in the past three years.
- Scottish Council’s debts are now over £15bn after borrowing to survive budget cuts.
- Council Tax freeze since 2007 – 80p in every £1 of spending comes directly from the Scottish Government.
- Reported that some of Scotland’s largest councils will have to cut £150m between them in 2015/16.
- Where is the money coming from???



Politics



Westminster v Holyrood



Smith Commission recommendations



*“Within these overarching improvements to the devolution settlement, the Parliament will also assume a range of new, important, individual powers in policy areas such as taxation, welfare, employability, transport, **energy efficiency, fuel poverty, and onshore oil and gas extraction.**”*

National Energy Infrastructure

34. The Scottish and UK Governments will draw up and agree a Memorandum of Understanding to ensure that such devolution is not detrimental to UK-wide critical national infrastructure in relation to matters such as defence & security, oil & gas and energy, thereby safeguarding the defence and security importance of the Crown Estate’s foreshore and seabed assets to the UK as a whole.

Energy market regulation and renewables

41. There will be a formal consultative role for the Scottish Government and the Scottish Parliament in designing renewables incentives and the strategic priorities set out in the Energy Strategy and Policy Statement to which OFGEM must have due regard. OFGEM will also lay its annual report and accounts before the Scottish Parliament and submit reports to, and appear before, committees of the Scottish Parliament.

Scotland Bill 2015 – Renewable Energy Incentive schemes



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Renewable electricity incentive schemes: consultation

In the Scotland Act 1998 after section 90B (inserted by section 31) insert—

“Renewable electricity incentive schemes

90C Renewable electricity incentive schemes: consultation

- (1) The Secretary of State must consult the Scottish Ministers before—
 - (a) establishing a renewable electricity incentive scheme that applies in Scotland, or
 - (b) amending such a scheme as it relates to Scotland.
- (2) Subsection (1) does not apply to amendments that appear to the Secretary of State to be minor or made only for technical or administrative reasons; and the Secretary of State is not to be taken to establish or amend a scheme by exercising a power under a scheme, other than a power that is exercisable subject to any parliamentary procedure.
- (3) Subsection (1) does not require the Secretary of State to consult the Scottish Ministers about any levy in connection with a renewable electricity incentive scheme.
- (4) In this section a “renewable electricity incentive scheme” means any scheme, whether statutory or otherwise, that provides an incentive to generate, or facilitate the generation of, electricity from sources of energy other than fossil fuel or nuclear fuel.

This includes provision made by or under the following so far as they relate to the generation of electricity from sources of energy other than fossil fuel or nuclear fuel—

 - (a) sections 6 to 26 of the Energy Act 2013 (contracts for difference);
 - (b) sections 41 to 43 of the Energy Act 2008 (feed-in tariffs for small-scale generation of electricity);
 - (c) sections 32 to 32Z2 of the Electricity Act 1989 (renewables obligations or certificate purchase obligations).
- (5) Where, before the commencement of this section, the Secretary of State has consulted, or is consulting, the Scottish Ministers regarding a renewable electricity incentive scheme, that consultation is to be treated as fulfilling the obligation in subsection (1).”

Financial mechanisms



- **The Renewables Obligation** - the Government's chief mechanism for incentivising renewable electricity generation in the UK. It is also an important part of the Government's programme for securing reductions in carbon dioxide emissions, working in support of other policy measures such as the EU Emissions Trading System.
- **The Feed in Tariffs (FIT's)** - introduced from April 2010 the FIT is divided into the 'generation tariff', which as the name suggests is payable for generating power, and the 'export tariff' which is payable on top of that to any party that exports electricity generated from renewable sources to the grid.
- **Power Purchase Agreement (PPA)** – An agreement for the sale of electricity through a licensed supplier.
- **Contracts for Difference (CfD)** – Introduced as part of Electricity Market Reform from 2014. A CfD is a bilateral contract between two parties. The counter party is a limited company owned by the Government and funded by a levy on licensed suppliers. Annual auction process of 15 years duration.
- **Capacity Market** - As part of EMR the Capacity Market will ensure security of electricity supply by providing a payment for reliable sources of capacity, alongside their electricity revenues, to ensure they deliver energy when needed.

Solar subsidy cuts – Renewables Obligation



- Closing the RO early in Great Britain to new solar PV projects of 5MW and below, and to additional capacity added to existing accredited stations up to a total of 5MW total installed capacity, from 1 April 2016;
- Grace periods for developers who either (1) have obtained preliminary accreditation on or before 22 July 2015, or (2) have made significant financial commitments to projects on or before 22 July 2015, or (3) experience grid connection delays that are outside their control. The grace periods would allow projects to enter the RO on or before 31 March 2017;
- Removing grandfathering for new solar PV projects on 5MW and below, and additional capacity up to a total of 5MW total installed capacity, that are not accredited under the RO as of 22 July 2015. We also propose an exception to the removal of grandfathering for projects that satisfy the criteria for the significant financial commitment grace period;
- Subject to the consultation, to publish proposed bandings for new solar PV projects of 5MW and below for further consultation.

FIT Review 27 August 2015



The Department of Energy and Climate Change (DECC) is proposing to cut the feed-in tariff rates for solar PV installations by as much as 87%. The government is proposing deep cuts to all bands from 1 January 2016.

Capacity	Feed-in tariff rate (p/kWh)
0-10kW	1.63
10-50kW	3.69
50-250kW	2.64
250-1000kW	2.28
>1MW	1.03
Stand alone	1.03

In addition to the cuts to the FIT, DECC is also looking to enforce default degeneration each quarter which would see FiT support for some scales of solar end on 1 January 2019. DECC will still implement a contingent degeneration mechanism that could degenerate tariff rates by a further 10% depending on deployment.

Scottish Energy Minister, Fergus Ewing MSP on FIT consultation



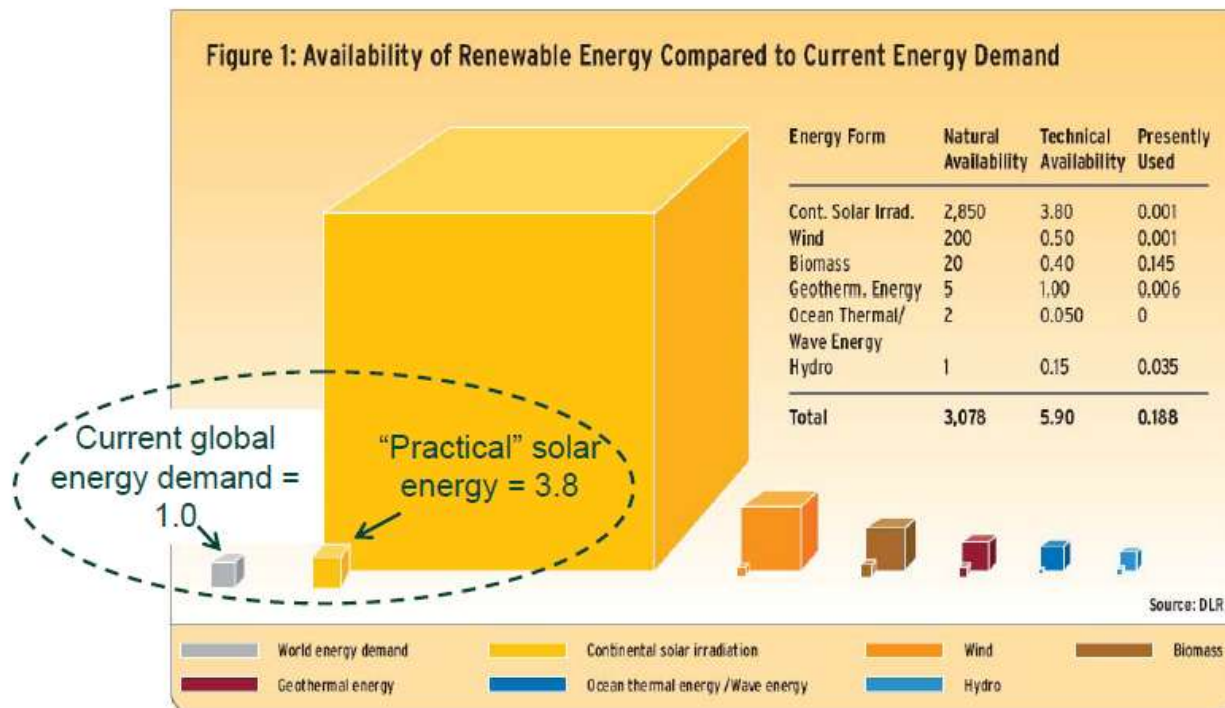
"The consultation published today on a review of the feed-in tariff scheme by the UK government is another attack on renewables and green energy - an attack that is particularly concerning coming just a few months before the crucial Climate Change talks taking place in Paris. It is hugely disappointing that the UK Government did not seek to engage in any meaningful way with the Scottish Government prior to publication today. It is particularly disappointing that the document lacks anything definitive for community projects when we raised this directly with the UK Government.



4. MEDIUM-TERM OPPORTUNITIES

Availability of Solar Energy

Solar is the most abundant of all renewable energy sources



Rear cubes: The natural availability of renewable energy is extraordinarily large. Front cubes: The technically available energy in the form of electricity, heat and chemical energy carriers exceeds the present-day energy demand (grey cube, left) by a factor of six.

Solar energy can supply almost 4 times total current global energy demand (including only solar energy that is practical to harness)

Prospects for solar PV still good



Subsidy cuts will not affect UK trend for distributed generation, says National Grid CEO

By Liam Blake | 11 September 2015, 12:48 Updated: 11 September 2015, 15:26



National Grid chief executive Steve Holliday has said that government cuts to renewable energy subsidies will not disrupt the UK's shift away from centralised power towards distributed generation.

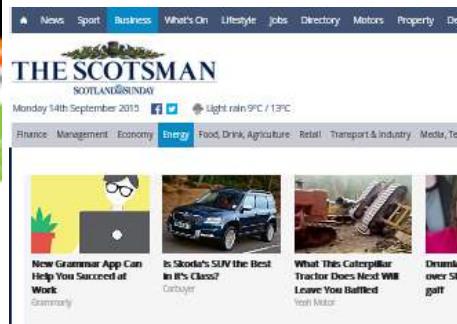
In an interview with *World Energy Focus*, Holliday said the energy industry was undergoing a "transformative transformation" towards distributed generation, adding that the traditional concept of large centralised power plants generating baseload power was "outdated".

Holliday added that there was no longer a "one size fits all" market consumer who "wants to interact with energy in many different ways", arguing that microgrids and distributed generation networks were the future.

Swamping cuts to renewable energy subsidies under the feed-in tariff (FIT) proposed by the government earlier this month, also include caps on the amount of FIT supported solar that can be installed in the UK. But while the solar industry has said the cuts threaten to undermine the future of the UK solar industry, Holliday voiced his belief that



Holliday said consumers can benefit by "interacting with energy in many different ways".
Image: Holliday/PA



Sunny outlook for solar power in Scotland



John Forster says the number of people directly employed in the solar power industry in Scotland could grow from around 400 currently to up to 5,000.

National Grid chief executive Steve Holliday has said that government cuts to renewable energy subsidies will not disrupt the UK's shift away from centralised power towards distributed generation.

"Solar can play an important role in helping meet Holyrood's ambitious 2020 targets on renewable energy but also in alleviating fuel poverty which is a major issue for Scotland,"

John Forster STA, Scotland
16 May 2015

Forster says the economic spin-offs of solar investment are also significant and believes numbers directly employed in the industry in Scotland could grow from around 400 currently to up to 5,000 in a relatively short period of time as more householders and businesses look to cut energy bills.

KPMG report on solar July 2015 – Key points



PV is the most popular renewable energy in the UK and its deployment is rising rapidly PV deployment reached 8.1GW installed capacity at the end of March and installations continue since then, projected to reach 11GW in 2016.

PV is becoming the most competitive new build renewable technology PV is already one of the cheaper sources of renewable energy. The UK PV industry has achieved impressive cost reductions of nearly 70% in the past five years. This trend in cost reduction is likely to continue, with another projected 35% decrease in levelised costs by 2020.

The 20 GW deployment scenario in 2020 offers lower cost per additional MWh (under current subsidies) We have modelled 14GW and 20GW capacity scenarios for 2020/21. Under current subsidies 14GW would cost £130 million p.a., and 20GW would require £340 million p.a.

Phasing out subsidies for PV requires a transition plan to avoid a “cliff edge” The UK Government needs to consider a managed transition away from subsidies over a 5 year period and beyond, rather than the immediate cessation of support that will result in job losses and industry consolidation.



Where to next?



- Don't panic.....
- Don't pull the plug on potential projects.
- Lobby effectively.
- Have a clear strategy and develop a programme.
- Revisit the commercial case for solar in the light of economic factors.
- Work collectively to deliver programmes.
- APSE Energy medium-term strategy for Solar PV.



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