Developing a solar farm – *inception to completion, and beyond...*

APSE Renewables and Climate Change Advisory Group 15th May 2018

Steve Cains Head of Power Solutions PPS



Powering the Future



Why develop a solar farm?

- Manage your energy costs
- Provide protection from fluctuating electricity prices
- Create income streams
- Retain your asset
- Reduce your carbon footprint, mitigate climate change impacts
- Provide opportunities for community investment
- A platform for future innovation





CHAPEL FARM SOLAR PARK

5MW solar park constructed on a former landfill site. Accredited as a 1.2 ROC scheme.

The **first** community solar project to be funded directly through an Innovative Finance ISA with council solar bonds allowing the community to invest in the project from as little as £5.

The project is now supplying enough electricity to power the equivalent of 1200 typical homes.

The site is being managed as a biodiversity hotspot and retained in agricultural use with sheep grazing for part of the year.



Winner of the Association for Public Service Excellence award, 'Best Renewable Energy or Energy Efficiency Initiative' for Chapel Farm Solar Park, September 2017

Subsidy free – key ingredients?



Public sector well placed to take advantage:

- good range of land/building assets.
- levels of energy consumed/longevity (robust PPA counterparty).
- strategy role in community.
- access to low cost capital.



Development process





Potential assets...

- Land and buildings near a suitable energy load or good grid connection
- Car parks (surface and multi storey)

- Unused land
- Closed landfills
- Low grade farmland





Feasibility considerations

- GRID: Is there good access to the grid in the area (this can be the most expensive element) Landownership of adjoining land
- **PLANNING**: Are there planning restrictions (e.g. is the asset in an AONB, subject to)
- LAND: Are they any restrictions in place? tenancies on the assets? Future development plans?
- **FUNDING**: How will the project be funded? (council investment, commercial investment, community investment)
- **COMMUNITY**: Engagement with the local community is essential in successfully developing a project. How will you involve the community?
- **PROCUREMENT**: How will the services and goods will be procured?
- **CONSTRUCTION**: Are there any issues relating to the construction process? Access? Bridges
- **INTEGRATION**: Phasing and impact of wider projects.





Waterside, Swindon.

2014 – the UK's first Solid Recovered Fuel (SRF) plant for municipal waste (25 year life).





2018: 2.5MW solar PV with 1.5MW battery



2018: Deployment of EVs (Council fleet)



Outputs: SRF – widely used in cement production, <u>cost</u> <u>saving</u>







The new world?

Spending power erosion



Source: Camdor Global Advisors

LAs have £24b in cash inflating away....



Increase in non-commodity costs of electricity....



Summary

Public sector very well placed as a catalyst for zero subsidy solar

Strategy – what do you want to achieve?

3

Community focus. Opportunity to engage and share the benefits.

4

Post construction – Don't underestimate the value of good asset management. Optimise!

Questions

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ECO Funding

It's easier when you know how...

15 May 2018





Who are YES?

- We are a growing CIC business
- Our values are: Green, Great and Gracious
- Our mission is simple: sustainably reduce FP across the UK and reduce the impacts of climate change
- As a CIC we have no shareholders to pay dividends to. We reinvest any surplus in doing more great 'stuff' in the communities where we work across GB.
- We are growing able to help more people who find themselves in the dilemma of 'heat or eat'.





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- 1. What is ECO?
- 2. How is ECO funding distributed?
- 3. How much funding do you get?
- 4. Typical funding allocations
- 5. The next phase of ECO



What is ECO?



The Energy Company Obligation (ECO) programme is a Government initiative which requires major Energy Companies to fund energy saving home improvements.

The funding comes from customers energy bills

The main aim is to cut CO2 and reduce fuel poverty.

Announced in CGS extended to 2028



Funding Streams



ECO is split into two funding streams - HHCRO and CERO.

ECO Stream	Saving measurement	Improvement yype	Eligibility criteria
HHCRO	Life Time Savings (LTS)	- Heating	Available to vulnerable residents
(Home Heating Cost		- Insulation	claiming certain state benefits, or
Reduction Obligation)			those that meet a Council's Flexible
			Eligibility criteria.
CERO	Carbon Tonnes (CO2te)	- Insulation	Available to anyone that needs an
(Carbon Emissions			insulation improvement.
Reduction Obligation)			

HHCRO Eligibility Criteria

Benefit eligibility:

- Pension Guarantee Credit
- Income Based Job Seekers Allowance
- Income Support
- Income Related Employment & Support Allowance

energy

- Working Tax Credit or Child Tax Credit*
- Universal Credit*

*Income thresholds apply depending on how many children are in the property

HHCRO Eligibility Criteria



Flexible eligibility:

Living in fuel poverty or has a low income and is vulnerable to the effects of living in a cold home.

The criteria is defined by the Local Authority via a Statement of Intent (SoI).



Creating a Statement of Intent (Sol)



- Government guidance on writing a Sol https://bit.ly/2Hb0G31
- The website has a list of all the Local Authorities who are taking part (Excel spreadsheet available)
- Many Local Authorities are using the NICE guidance to help determine their Flexible Eligibility criteria
- Boiler Plus 6 April <u>https://bit.ly/2GQNddj</u>

Please note - Flexible Eligibility is just another way to help vulnerable people access HHCRO funding. **It is not new funding.**

Keep your Statement of Intent clear and simple.

How is ECO funding distributed?



- Retail energy companies are set legally binding HHCRO and CERO targets.
- To achieve their targets they work with partners to allocate ECO funding directly or through Managing Agents (such as YES Energy Solutions).
- The Managing Agent funds installations and documents the before and after, providing evidence of the resultant savings (LTS or CO₂) back to the energy companies.



How much funding do you get?



Funding rate

When a Managing Agent receives an ECO funding delivery contract, they will be assigned a funding rate.

They can then multiply this funding rate by the Deemed Score of the property to work out what funding allocation is available for work on the property.



How much funding do you get?



Deemed scores

Every property is assigned a deemed score by Ofgem based on the following:

- Property type
- Wall type
- Number of bedrooms
- Current heating system
- Measure being installed



Calculating Funding



Funding rate x Deemed score = Total funding available

If the cost of fitting the measure is more than the funding allocation, a customer contribution will be required

In some cases the customer may get a contribution from another scheme or grant.



Typical funding allocations



HHCRO

Gas Central Heating – From Electric Storage Heaters

Property Type	Deemed Score	Funding	Funding	Typical Install	Customer
		Rate	Allocation	Cost	Contribution
3 bed semi with cavity walls	6,283	£0.14	£879.62	£5,000	£4,120.38
& existing ESH					
3 bed semi with solid walls	10,895	£0.14	£1,525.30	£5,000	£3,474.70
& existing ESH					
2 bed terrace with cavity	4,001	£0.14	£560.14	£4,500	£3,939.86
walls & existing ESH					
2 bed terrace with cavity	6,094	£0.14	£853.16	£4,500	£3,646.84
walls & existing ESH					

Typical funding allocations



HHCRO

LPG Boiler Upgrade in a Park Home (with pre existing heating controls)

Property Type	Deemed	Funding	Funding	Typical Install	Customer
	Score*	Rate	Allocation	Cost	Contribution
2 bed detached Park Home with solid walls	14,062	£0.14	£1,968.68	£2,000	£31.32
3 bed detached Park Home with solid walls	18,607	£0.14	£2,604.98	£2,000	£0

*The deemed scores for a boiler replacement and new heating controls have been added together.

Typical funding allocations



CERO

Cavity Wall Insulation (mineral wool – thermal conductivity 0.04)

Property Type	Deemed Score	Funding	Funding	Typical Install	Customer
		Rate	Allocation	Cost	Contribution
3 bed semi with gas central heating	24.392	£20	£487.84	£720	£232.16
2 bed mid terrace with gas central heating	11.293	£20	£225.86	£600	£374.14
3 bed semi with ESH	60.831	£20	£1,216.62	£720	£O
2 bed mid terrace with ESH	27.806	£20	£556.12	£600	£43.88

Why do some properties get more funding than others?



ECO funding is designed to support the most inefficient homes.

So Deemed Scores are higher for properties that are likely to have a large carbon footprint.

However, the methodology isn't perfect, especially when supporting people in fuel poverty.



Why do some properties get more funding than others?



Example:

Electric storage heaters to gas central heating

5 bedroom detached house with solid walls: **Deemed Score** – 27,751 **Allocated Funding** (based on £0.14p) – £3,885.14

3 bedroom mid terrace with cavity walls: **Deemed Score** – 4,987 **Allocated Funding** (based on £0.14p) – £698.18

Match Funding



In many cases ECO will not cover the full cost of installing an energy saving measure. To truly help people in Fuel Poverty, match funding is required:

- Council capital funds
- External funding (Warm Homes Fund / FPNES... etc.)
- Credit union loans
- GNO Funds



The Next Phase of ECO



The current phase of ECO (titled ECO2T) ends in September 2018.

It will be replaced with a new ECO phase which has yet to be determined

There will be new targets and new criteria for the industry to follow.

ECO3 consultation now closed!

The final programme will take the responses of the consultation into consideration – make your views heard.



Thank You Any questions?

YES Energy Solutions T: 01422 880100 W: www.yesenergysolutions.co.uk





www.oxford.gov.uk

Going for Zero

An overview of Oxford's Air Quality work

Jo Colwell Environmental Sustainability Service Manager







www.oxford.gov.uk





Petrol and diesel vehicles will be banned from the centre of Oxford under plans to create Britain's first "zero-emission zone".

Starting from 2020 only electric vehicles will be permitted on a steadily growing number of streets in the city. he plans contrast with London, where

to enter the centre if they pay a fee.

The proposals from Oxford city council and Oxfordshire council will almost halve nitroge ide pollution by 2020 on some city's most polluted roads.

The authorities are the first duce comprehensive plans for ing air quality since the gove

COUNTDOV

cities would need to address illegal levels of pollution. All will have to prothe neonosals by the end of

are expected to remain on the roads for decades.

Under Oxford's plans, the zero-emis-

recognition cameras and fined, with the penalty expected to start at £60. HGVs will be exempt until 2035 to

Oxford to be a zero-emission city OXFORD is to become the first place in

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(NO₂) to near-background levels, with

as much as a 74 per cent reduction in one street. John Tanner, Oxford city council's environment chief, said the move is "urgently needed".

The scheme will cost bus operators,

taxi firms, haulage companies and councils an estimated £14 million. Even council bin lorries and gritting vehicles

The local authority will spend starts £7 million on administration and a new leme CCTV system with automatic number plate recognition to enforce the ban.

NON-ELECTRIC vehicles are set to be banned from Oxford city centre by 2035 in what is believed to be the world's first Zero Emissions Zone.



AN END TO ALL THES Warranter Island is on the zero emission zone kit, with petrol and datal vehicles in first in

The new some will see all per from 2020. That area will then troppen double (NO2) down and diesel taxis, cars and he expanded in 2005 and 2000 to to mear-background levels.

Aldato's and most of High Street. Finally, in 2005, HGVs. will be barined from the Automa hitted

The scheme is ME 10 cut levels of harmful nias the entire city sen with as much as a 74 per cent CONTINUED ON PAGE 2

ZFRO



"...to start a city centre zeroemission zone for all vehicles by 2020, with the zone being gradually expanded over time as the required infrastructure and technology develops..."





Monitoring site	203	2020	
	Monitored	Modelled	BAU
BP City Motors	44	4 5	35
Beaumont St	44	43	38 🔵
George Street/ Magdalen Street	52	42	34
Worcester St	50	4 4	38
High Street	54	51	35
George St	61	47	38
Royal Oxford Hotel	4 0	<u> </u>	32
Park End Street	48	41	33
50 High St	6 45	43	4 5
New Road	6 44	4 5	34
Botley Rd / Hill View Rd	4 0	37	32
St Aldate's	9 49	42	33
Castle Street	47	48	38 🔵
St Clements	67	67	56
Speedwell Street / St Aldate's	51	41	33
Speedwell Street / Littlegate	4 0	42	34
Folly Bridge	4 0	35	30
Weirs Lane/Abingdon Road Lamp Post 1	42	38	33

Estimated traffic levels in city centre (vkm/day)



Estimated NOx emission in each zone boundary (kg/year)









How important is it to tackle poor air quality in Central Oxford?

Very Important	70% (485
Important	20% (139
Neither Important or unimportant	6% (44)
Unimportant	2% (14)
Very unimportant	1% (9)
Don't know	0% (0)

Are the proposed ZEZ zones appropriate?



How will my plumber get to my house in an emergency?

How will I receive my deliveries?

I drive a hybrid car –will I be allowed in ZEZ?

Where can we charge our vehicles?

I can't afford an electric car –what do I do?

> How will the zone be enforced?

Challenges

Covered Market Disabled access Resident access Buses

Next Steps

and T

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Innovation: On Street EV charging





www.oxford.gov.uk



Innovation: EV Taxi Charging







Quick Bits

- Anti Idling Campaign joint with Oxford Friends of the Earth – themed around caring for Oxford's air
- Schools Tackling Oxford's air Pollution (STOP) launched the Schools Toolkit this week
- Further work to develop car canopies to deliver PV to EV
- Date: Oxford Green Week 16-24 June 2018



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Thank you

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APSE Oxford Southern Region 15th May 2017 Cheshire East Council's white label energy offering





What are the big issues in establishing a white label energy supplier?

- Volatility of the energy market
- New entrants and ethics
- Can you cover your costs with domestic gas and energy alone?
- What is Fairerpower?
- Fairerpower's latest procurement for new services



Volatility in the energy market.



New entrants and ethics

Number of new suppliers since 2015



Why are they entering the market?

Pricing in the energy supply industry

Can they all survive?

Sticky customers

Is it ethical?



- Sub cost pricing
- No ECO taxes
- No requirement to fund Warmer Homes Discount
- Low levels of customer service

Can you cover your costs with domestic gas and energy alone?



What is Fairerpower?

A partnership between the Skills & Growth Co. (A wholly owned company of CEC) and OVO Energy. A local alternative to the 'Big Six', to tackle fuel poverty and help residents struggling to pay fuel bills With competitive rates Fairerpower offers affordable energy and drives prices down locally

Offers **pay monthly** (fixed or variable) or **pre-pay** (PAYG) deals Surplus income goes to the Local Authority – money saved from the tariff can be **re-invested in the local community** Partnering with OVO lets us create a customer base with **industry expertise**, sharing the risk and reward Tariffs are pegged to OVO, with annual open book assessment by Council-retained advisors



A Fairer deal for residents

All sections of the community and businesses benefit from Fairerpower



Why provide your own energy?

97%

of domestic energy customers are still with one of the Big Six 60%

of all customers have NEVER switched

Fuel poverty

Something for everyone

That's where Fairerpower can help you... and your residents

Benefits for Local Authorities joining Fairerpower

- This would also create a modest revenue stream for the participating local authorities.
- No cost in OJEU procurement
- Customer base developed in readiness for the district heating aspirations.
- Assisting local residents, particularly the fuel poor
- Excellent offer for the most vulnerable suffering health issues
- One of the best rates for prepayment meters
- Own tenants will benefit significantly
- Marketing support including strategy and design
- Quick to market once contract signed one month including mobilisation plan



Case study of Preston and Lancashire

- A number of Lancashire authorities had been considering a white label
- Preston and Lancashire authorities work on a number of energy efficiency schemes as a collective
- Economies of scale
- Preston started the process as lead authority
- The Lancashire authorities were keen to participate too
- Valued the concept of being fair to all customers
- Worked together to develop Fairerpower Redrose
- Easy route to market
- Proven and well established
- Tool kit for marketing and communications
- Own local spin to attract local residents



Examples of Marketing Materials





Success in Cheshire and Lancashire

In its two years, Fairerpower has been very successful



9,000

customers signed up

5%

of residents joined

£2.5m

savings for residents

60%

of customers are 'sticky'

SMART meters installed as standard for PAYG Strong resident engagement 5 strategic partner acquired Consistently cheaper than big 6 tariffs

Cheapest PAYG tariff nationally



How to join Fairerpower



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