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Making Feed-in Tariffs work for you

A toolkit for Local Authorities and Housing Associations





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1 Introduction

The introduction of Feed-in Tariffs (FITs), also known as Clean Energy Cashback, represents a real opportunity for public bodies to create environmental benefit, coupled with a range of economic benefits. In addition to carbon emissions reduction, the installation of renewable energy can create local jobs, reduce fuel poverty and contribute to the local economy.

This guide has been created by the Energy Saving Trust to help make it easier to take advantage of FITs by providing information on the tariffs, as well as finance, ownership issues, a step-by-step guide, and some real life case studies. Whilst there are a number of technologies which are eligible to receive FITs, **this document focuses primarily on solar electricity (PV)**. This technology is well suited to a large scale roll out by local authorities and housing associations for a number of reasons:

1. They have access to a large housing stock.
2. They are likely to be able to benefit from the tariff for its full 25 year life (unlike most homeowners who will move during this time).
3. They are trusted by tenants who are more likely to allow them to install a system on their roofs than if approached by a commercial organisation.
4. They have access to low cost finance.
5. Solar energy is less dependent on location than wind for example which requires very specific conditions. It does however require roofs of suitable orientation and pitch (see section 2.1).

Whilst outside the scope of this guidance, the benefits of wind, hydro and anaerobic digestion should not be overlooked and merit more detailed analysis, particularly by local authorities¹.

Before embarking on a scheme to install energy generating technologies you should first look to ensure that energy efficiency has been adequately addressed. This is still the most cost-effective way of reducing carbon emissions and fuel bills. You can find lots of information about this on our [website](#).

¹ At the time of writing Friends of the Earth had commissioned Arup to undertake case study work looking at how different installations would fare under the FITs. These were presented at several of the events held by the Energy Saving Trust.



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2 What are solar photovoltaic panels?

Solar electricity systems capture the sun's energy using photovoltaic (PV) cells. The cells convert the sunlight into electricity, which can be used to run household appliances and lighting.



A typical 2kWp solar PV system on a detached house

[See how solar electricity systems work in practice](#)

PV cells don't need direct sunlight to work - you can still generate electricity on a cloudy day, although in reduced quantities. Watch our video on using solar PV to generate energy for your home by clicking [here](#). This film focuses on two electricity generating technologies for the home: wind turbine and solar electricity.

2.1 How do photovoltaic (PV) cells work?

PV cells are panels you can attach to your roof or walls. Each cell is made from one or two layers of semi-conducting material, usually silicon. When light shines on the cell it creates an electric field across the layers. The stronger the sunshine, the more electricity is produced.

PV cells come in a variety of shapes and colours, from grey "solar tiles" that look like roof tiles to panels and transparent cells that you can use on conservatories and glass. The strength of a PV cell is measured in kilowatt peak (kWp). That's the amount of energy the cell generates in full sunlight.

2.2 What do you need to install a solar PV system

In order to install a solar PV system you need:

1. A sunny place to put it. You'll need a roof or wall that faces within 90 degrees of south, and isn't overshadowed by trees or buildings. If the surface is in shadow for parts of the day, the system will generate less energy. Ideally the roof will tilt 20-30 degrees from horizontal or it will be a flat roof on

which A-frames can be mounted to hold the panels at the optimum angle. The output from a solar PV system will change based on the angle of tilt and the number of degrees from south that the panels face. The table below shows how these factors affect output.

TILT FROM FLAT	SOUTH (Degrees from south)																			
	WEST	90	80	70	60	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60	-70	-80	-90
0	87	88	90	91	92	92	93	93	93	93	93	93	93	92	92	91	90	89	87	86
10	84	87	90	92	94	95	95	96	96	97	97	96	95	94	93	91	89	87	84	
20	82	85	90	93	94	96	97	98	99	99	98	97	96	95	93	91	88	84	81	
30	78	83	87	91	93	96	97	98	99	100	98	97	96	95	93	89	85	81	78	
40	75	79	84	87	92	94	95	96	96	96	96	95	94	92	90	86	82	77	72	
50	70	74	79	83	87	90	91	93	94	94	94	93	91	88	83	80	76	73	70	
60	65	69	73	77	80	83	86	87	87	87	88	87	85	82	78	74	71	67	63	
70	59	63	76	70	72	75	78	79	79	79	79	79	78	75	72	68	64	61	56	
80	50	56	60	64	76	68	69	70	71	72	72	71	70	67	66	60	57	54	50	
90	41	49	44	58	80	61	60	61	63	65	65	63	62	59	60	52	50	47	44	

2. A roof that is strong enough. Solar panels are not light and the roof must be strong enough to take their weight, especially if the panel is placed on top of existing tiles. If in doubt, ask a construction expert or an installer.

3 What are Feed-in Tariffs?

Feed-in Tariffs (FITs) became available in Great Britain from of 1st April 2010. Under this scheme, energy suppliers make regular payments to householders and communities who generate their own electricity from renewable or low carbon sources such as solar electricity (PV) panels or wind turbines.

The scheme guarantees a minimum payment for all electricity generated by the system, as well as a separate payment for the electricity exported to grid. These payments are in addition to the fuel bill savings made by using the electricity generated on-site.

3.1 About the Scheme

The scheme covers the following electricity-generating technologies, up to an installation size of 5 Mega Watts:

- Solar electricity (PV) (roof mounted or stand alone)
- Wind turbine (building mounted or free standing)
- Hydroelectricity
- Anaerobic digestion
- Micro combined heat and power (mCHP) (limited to a pilot at this stage)

The tariffs available and the process for receiving them vary, depending on when the technology was installed, and whether the system and the installer were certificated under the Microgeneration Certification Scheme (MCS)².

3.2 How the scheme works

If you are eligible to receive the FIT then you will benefit in 3 ways:

1. **Generation tariff** – a set rate paid by the energy supplier for each unit (or kWh) of electricity you generate. This rate will change each year for new entrants to the scheme (except for the first 2 years), but once you join you will continue on the same tariff for 20 years, or 25 years in the case of solar electricity (PV).

2. **Export tariff** - you will receive a further 3p/kWh from your energy supplier for each unit you export back to the electricity grid, i.e. when it is not used on site. The export rate is the same for all technologies.

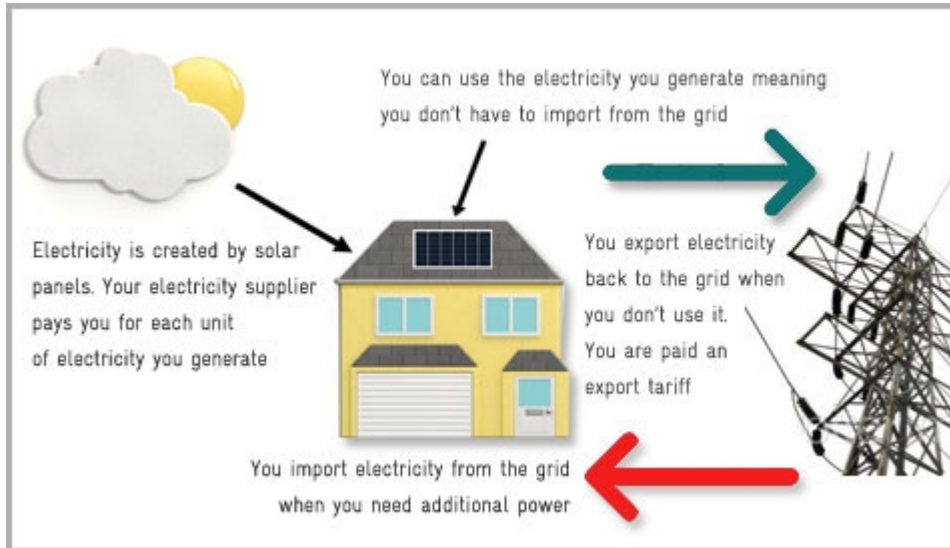
3. **Energy bill savings** – tenants/residents will be making savings on their electricity bills because generating electricity to power their appliances means they don't have to buy as much electricity from their energy supplier. The amount saved will vary depending how much of the electricity is used on-site.

3.2.1 Deemed export

Domestic FIT installations are likely to have their export deemed (estimated) at 50% in most cases until smart meters are rolled out.

² The Microgeneration Certification Scheme (MCS) is an independent scheme that certifies microgeneration products under 50kW and installers in accordance with consistent standards. Any commercial or larger scale systems, over 50kW, and all anaerobic digestion installations must apply directly through the Renewables Obligation Order feed-in tariff process for larger installations (ROO-FIT) process as they are not covered by the MCS

3.3 Example of how the Feed-in Tariff works



As an example, a typical domestic solar electricity system, with an installation size of 2 kWp could earn around:

- £700 per year from the Generation Tariff
- £25 per year from the Export Tariff
- £110 per year reduction in current electricity bills.

This gives a total saving of around £830 per year.

This assumes 50% of the electricity generated is exported. The savings figure will vary depending on how much is exported.

3.4 Tariff levels

3.4.1 Generation tariff

The table below shows the generation tariff levels for the full range of technologies and apply to installations completed from 15th July 2009 to 31st March 2012 for the lifetime of the tariff.



Generation tariffs 1 April 2010 – 31 March 2013

Technology	Scale	Tariff level for new installations in period (p/kWh) [NB tariffs will be inflated annually]			Tariff lifetime (years)
		Year 1: 1/4/10 – 31/3/11	Year 2: 1/4/11 – 31/3/12	Year 3: 1/4/12 – 31/3/13	
Anaerobic digestion	≤500kW	11.5	11.5	11.5	20
Anaerobic digestion	>500kW	9.0	9.0	9.0	20
Hydro	≤15 kW	19.9	19.9	19.9	20
Hydro	>15-100 kW	17.8	17.8	17.8	20
Hydro	>100 kW-2 MW	11.0	11.0	11.0	20
Hydro	>2 MW – 5 MW	4.5	4.5	4.5	20
MicroCHP pilot*	≤2 kW*	10*	10*	10*	10
PV	≤4 kW (new build**)	36.1	36.1	33.0	25
PV	≤4 kW (retrofit**)	41.3	41.3	37.8	25
PV	>4-10 kW	36.1	36.1	33.0	25
PV	>10-100 kW	31.4	31.4	28.7	25
PV	>100kW-5MW	29.3	29.3	26.8	25
PV	Stand alone system**	29.3	29.3	26.8	25
Wind	≤1.5kW	34.5	34.5	32.6	20
Wind	>1.5-15kW	26.7	26.7	25.5	20
Wind	>15-100kW	24.1	24.1	23.0	20
Wind	>100-500kW	18.8	18.8	18.8	20
Wind	>500kW-1.5MW	9.4	9.4	9.4	20
Wind	>1.5MW-5MW	4.5	4.5	4.5	20
Existing microgenerators transferred from the RO		9.0	9.0	9.0	to 2027

* Note the microCHP pilot will support up to 30,000 installations with a review to start when the 12,000th installation has occurred

After this date, the rates decrease (or degresses) each year for new entrants into the scheme in order to help drive down the costs of the technologies. **Degression** means that each year, new entrants to the scheme will receive a lower generation tariff. This will begin in April 2012. It is designed to reflect the expected reduction in capital cost over time, as well as encouraging people not to wait before installing a technology. This does not affect those who have already installed a technology.

The table below shows the tariff levels for PV from 2010 to 2021. However, it is important to note that these levels are subject to review every three years.

Years 1+2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
1Apr10 to 31Mar12	1Apr12 to 31Mar13	1Apr13 to 31Mar14	1Apr14 to 31Mar15	1Apr15 to 31Mar16	1Apr16 to 31Mar17	1Apr17 to 31Mar18	1Apr18 to 31Mar19	1Apr19 to 31Mar20	1Apr20 to 31Mar21
41.3p	37.8p	34.6p	31.6p	28.8p	26.2p	23.8p	21.7p	19.7p	18.0p

The rights to generation payment may be assigned to other parties by the householder (the householder does not need to own the equipment installed).

Payments will normally be received on a quarterly basis from the energy supplier. Householders will not be tied into contracting a specific supplier in order to reclaim the payment. All generation and export tariffs will be **linked to the Retail Price Index (RPI)** which ensures that each year they follow the rate of inflation.

3.4.2 Export payment

Until smart metering is installed (expected to fitted in all households by 2020), it will be assumed that half the electricity generated will be exported to the Grid. Payment for exported energy will be on the basis of 3p per unit (kWh).

At the time of writing, current legislation (Local Government (Miscellaneous Provisions) Act of 1976 in England and Local Government (Scotland) Act of 1973 in Scotland) states that local authorities are not allowed to sell electricity unless linked to the provision of heat (as in energy from waste plants). Amendments to this legislation are currently open to consultation until the 2nd June, 2010. A formal response is expected by 2nd September, 2010. As the legislation currently stands, local authorities would not be able to collect the export payment although other organisations or the householder could. However, at the 2010 Annual LGA conference Chris Huhne announced that he expected this law to be repealed by the end of 2010³. A negative statutory instrument enacting this power has been laid and will come into force on 18 August.

3.5 Applying for FITs

To apply for the FIT scheme, installations must receive accreditation for their installation by going through one of two routes:

1. Installations installed by [MCS accredited installers](#) and are eligible for the scheme will need to apply for accreditation by contacting a FIT supplier with their MCS installation details.
2. For installations that are between 50kW and 5MW (or anaerobic digestion at 5MW or less), generators will need to apply for accreditation through the ROO-FIT process via Ofgem's [Renewable and CHP Register](#).

Further guidance on the ROO-FIT process is available in the [RO: Guidance for Generators](#). Upon completion of this process, generators will then be required to contact a FIT Supplier with their ROO-FIT details.

³ <http://www.decc.gov.uk/en/content/cms/news/LGASpeech/LGASpeech.aspx>

3.6 Taxation

Although these issues have not been fully clarified, guidance from Treasury provides the following information:

1. Income Tax

The tax treatment of tariffs received will be in accordance with normal tax rules. However, additionally, section 782A of the Income Tax (Trading and Other Income) Act 2005 provides an exemption from income tax for an individual's income from the sale of electricity generated by a microgeneration system where:

- (a) the system is installed at or near premises occupied by the individual, wholly or mainly, as a separate private dwelling, and
- (b) the individual intends that the amount of electricity generated by the micro-generation system will not significantly exceed the amount of electricity consumed in those premises.

As local authorities and housing associations are not *individuals* the exemption will not apply and the FITs will be taxable under normal rules.

2. Corporation Tax

If FIT income is liable for corporation tax, housing associations (and local authorities) should evaluate the most appropriate part of their business (charitable/non-charitable) and use a non-charitable SPV for FIT installations.

3. VAT (this section refers specifically to housing associations but may also apply to local authorities)

- (i) If the HA charges the tenant for the electricity generated, VAT would be charged at a reduced rate.
- (ii) If the HA is selling back to the grid VAT would be charged at a standard rate
- (iii) If the HA uses the electricity for their own purposes (e.g. in a communal area in a block of flats) there would be no supply and no VAT payable.
- (iv) If the HA 'gifts' the electricity to tenants, i.e. (makes no charge), this would be non-business use of the electricity. This might have implications on the extent to which the HA was able to recover VAT on related expenditure.

3.7 FITs and grants/state aid

DECC notified the Feed In Tariffs scheme to the European Commission who ruled that it was state aid and that 'investment aid' in conjunction with the scheme would therefore not be compatible. DECC are still to publish their guidance on FITs following the Commission ruling but conversations suggest that their view is that grants (ERDF, CESP etc.) and FITs are not compatible.

3.7.1 Temporary Moratorium on ERDF spend called by Treasury on single-pot funded projects

Treasury gave notice to the Regional Development Agencies (RDAs) of a temporary moratorium on ERDF for projects funded through their single pot (own RDA's resources). Projects affected are those where match-funding come from single pot funding (RDAs' own resources).

3.8 Further information on tariffs

[View the full consultation response from the Government](#)

[View the OFGEM guidance for licensed electricity suppliers](#)

[For more information on which technologies are suitable for a home use the Home Energy Generation Selector](#)



To find out how much you may be able to earn from an installation, use the [Cashback Calculator](#), pictured below.

Cashback Calculator

The Cashback Calculator will help you find out how much you could earn and save through installing solar electricity or a wind turbine, using the Clean Energy Cashback (Feed-in Tariff) scheme.

Start by entering the details of your technology and then use the Investment section to see how the cash your installation earns can repay a loan you may take out to cover the upfront costs, and even potentially make you a profit! Don't forget to make sure your home is as energy efficient as possible to make the most of your investment.

Technology Details	Fuel Bill Savings (per year) £	113
	Total Saving (per year) £	856

[Collapse](#)

Generating technology

Solar electricity

Size category of installation

<4kW (existing build)

When did you, or when do you plan to install the technology?

15th July 2009 - March 20

Select region



Click on the area of the country you live in on the map above and enter your system size in the box below.

Size - enter system size

2 kWp

Summary of outputs

Total generation	1737 kWh
Income from generation tariff	£ 717
Income from export	£ 26
Fuel bill savings	£ 113
Total income and savings	856

This figure does not include any maintenance costs

[Click here for assumptions for the cashback calculator](#)

Do you have data to show how much the system generates in a year?

Yes No

Estimated export: I will...

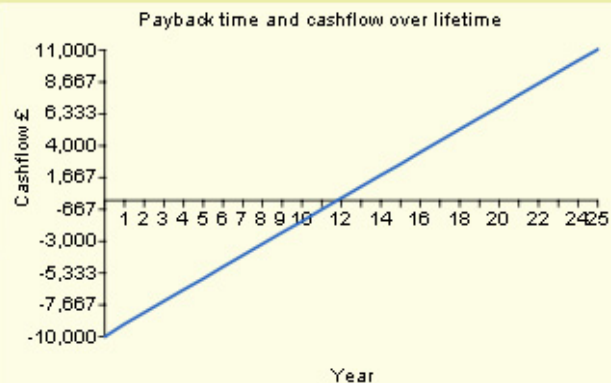
be out of the house most of the time (50% exported)

Calculate

Calculation Dashboard

[Share this tool](#)

Total benefit (£/year)	856
Payback time (years)	12
Lifetime benefit (£)	21,397



4 The Benefits of a PV rollout

Investing in renewable energy has a number of benefits including carbon emissions reduction, increased energy security and less exposure to future fuel price rises. The introduction of Feed-in Tariffs also brings improved financial benefits. All these benefits are dependent on the type and size of the technologies, as well as location. However, **for this section we will take the example of 1,000 2 kWp PV systems** (the size of a typical household system). The following calculations are based on using the following assumptions:

1. An un-shaded, south facing roof of suitable pitch (30° to the horizontal) and subsequent generation of 850kWh per kWp.
2. All systems are installed before the first degression drop

4.1 Energy and carbon savings

The following energy and carbon savings could be expected:

Energy generated / year	1,700 MWh
Carbon saved / year	966 tonnes ⁴

4.2 Financial Benefits

Using the same example of 10,000 PV systems the following financial benefits could be expected:

Income from the generation tariffs	£702,100
Income from the export tariff	£25,500
Total income	£727,600
Money saved by householders (assuming 50% used)	£110,000 ⁵

4.2.1 Investment and Return on Investment (ROI)

The Energy Saving Trust has developed an excel tool which you can use to help you calculate your return on a solar PV roll out. This is pictured below.

⁴ This amount will decrease as the grid decarbonises

⁵ £110 per household

Solar PV Financial Analysis

Initial cost of each system	£ 10,000	Amount of energy exported	50 %
Estimated annual yield per system	1,700 kWh	Retail price index	3 %
Year of installation (before April)	2010	Cost of borrowing	4 %
Include RPI?	y Y or N	Export payment tariff	3 p/kWh
Include cost of investment?	y Y or N	Price of energy	13 p/kWh
Number of installations	1000	Discount rate	3.5 %
Cost of invertors	£ 1,000		

Carbon savings / year		
CO2 factor	0.543	kgCO2/kWh
CO2 savings	923	kgCO2
Total CO2 saved	923,000	kgCO2

FIT generation payment (p)		
Year to March		
2010	41.3	1
2011	41.3	2
2012	41.3	3
2013	37.8	4
2014	34.6	5
2015	31.6	6
2016	28.8	7
2017	26.2	8
2018	23.8	9
2019	21.7	10
2020	19.7	11
2021	18	12
2022		13
2023		14
2024		15
2025		16
2026		17
2027		18
2028		19
2029		20
2030		21
2031		22
2032		23
2033		24
2034		25
2035		26
2036		29

INCOME per unit				
Year	Generation payment	Generation payment (RPI adjusted)	Export payment	Total
	£	£	£	£
1	702	702	26	728
2	702	723	26	749
3	702	745	26	770
4	702	767	26	793
5	702	790	26	816
6	702	814	26	839
7	702	838	26	864
8	702	863	26	889
9	702	889	26	915
10	702	916	26	942
11	702	944	26	969
12	702	972	26	997
13	702	1,001	26	1,027
14	702	1,031	26	1,057
15	702	1,062	26	1,087
16	702	1,094	26	1,119
17	702	1,127	26	1,152
18	702	1,160	26	1,186
19	702	1,195	26	1,221
20	702	1,231	26	1,257
21	702	1,268	26	1,294
22	702	1,306	26	1,332
23	702	1,345	26	1,371
24	702	1,386	26	1,411
25	702	1,427	26	1,453
Total	17,553	25,598	638	26,236

OUTGOINGS per unit				
Initial investment	Remaining investment	Cost of loan	Value if invested	Cost of lost ROI
£	£	£	£	£
-10,000	-8,272	-371	-10,350	-350
	-8,524	-341	-10,712	-362
	-7,753	-310	-11,087	-375
	-6,961	-278	-11,475	-388
	-6,145	-246	-11,877	-402
	-5,306	-212	-12,293	-416
	-4,442	-178	-12,723	-430
	-3,553	-142	-13,168	-445
	-2,638	-106	-13,629	-461
	-1,696	-68	-14,106	-477
	-727	-29	-14,600	-494
	0	0	-15,111	-511
	0	0	-15,640	-529
	0	0	-16,187	-547
	0	0	-16,753	-567
	0	0	-17,340	-586
	0	0	-17,947	-607
	0	0	-18,575	-628
	0	0	-19,225	-650
	0	0	-19,898	-673
	0	0	-20,594	-696
	0	0	-21,315	-721
	0	0	-22,061	-746
	0	0	-22,833	-772
	0	0	-23,632	-799

Click [here](#) to access the spreadsheet⁶.

4.3 Fuel Poverty Impacts

Investing in renewables may help reduce levels of fuel poverty (generally defined as energy spend at 10% or more of household income; normally applied in terms of ability to heat the home) and help to cushion low-income households from the inevitable fluctuations in electricity prices.

The example of a domestic PV system

The electricity consumption for an average house in the UK is around 4,000kWh⁷. The estimated level of contribution from a 2kWp solar PV system would represent over 40% of the annual electricity demand in households benefiting. However, it is important to note that the savings made by a tenant would very much depend on the amount of electricity they used at the time of generation. This would depend on their lifestyle (i.e. whether they are in during the day) as well as their ability to shift the timing of discretionary loads (such as dishwashers and washing machines).

⁶ This calculator is intended to provide an estimate of what could potentially be earned and saved through the Clean Energy Cashback (Feed-In Tariff) scheme. Actual savings and earnings will vary, depending on system efficiencies, location and other factors. The figures in the calculator are subject to change. The results are dependent on the information provided by the customer. The Investment section is intended only to be an indicative loan calculator only used only to help calculate payback times. This calculator does not constitute provision of financial advice.

⁷ 3-bed semi

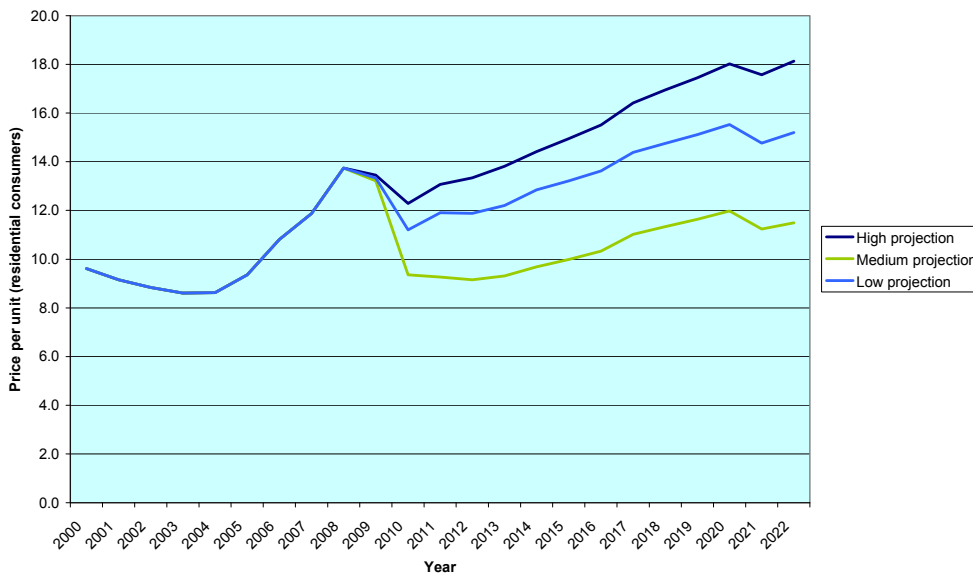


4.4 Reduced exposure to future fuel price rises

One further consideration is the long term impact of price changes in the cost of electricity supplied to householders. Unit costs have risen sharply since 2005, being linked in part to the cost of oil and gas, peaking in 2007. Prices fell back in 2008 (compared to the RPI) but have since peaked again in 2009. Prices are currently showing a slight fall but these fluctuations with an underlying upward trend are expected to continue.

The long terms predictions are that by 2020 unit costs will have risen to 15.5p (average projection), with an increased energy saving benefit of £127 per year. The worst case suggests a price rise to 18p per unit, with a corresponding saving of nearly £150 per year.

Price projections for the cost of UK electricity, domestic consumers
(actual data to 2008; modelled to 2022)



Source: DECC energy statistics, based on International Energy Association data, updated 2008

5 Finance

With the introduction of Feed-in Tariffs (FIT), there are an ever increasing number of organisations looking to make the most of the associated commercial opportunities and carbon savings. As a local authority (LA), housing association (HA), or other public body, there are a number of finance options available to you. These vary in the amount of money you are required to invest, the amount of debt and risk you take on, the degree of control you take over the project and ultimately, how much money you could make.

It is likely that private companies, backed by private sector finance, will market packages of technology and finance to house owners. However, the companies will have two concerns: can they get to scale quickly enough to bring down costs; and will private house owners want to enter into 25-year relationships. In addition, private sector finance interest rates will make the packages less financially attractive than self-funded investment.

Some commercial organisations are looking at social housing providers or local authorities as a good source of potential properties and roofs to invest their own money in. Two of the main reasons for this is that these organisations can provide scale in terms of roof space, and have an existing relationship with residents. Commercial organisations are offering to install solar panels on HA or LA-owned roofs at no cost to the tenant or the social landlord or local authority, in return for the tenants assigning them the FIT income (with the tenant receiving free or cheap electricity). Whether or not you choose to go down this route will ultimately depend on available funds or willingness to take on debt in order to gain what are potentially very significant returns.

However, it is worth bearing in mind that the cost of FITs is spread across all electricity consumers. This has led to accusations of the FITs incentivising those who are wealthier and have access to capital, to install solar panels at the expense of everyone else. LAs and HAs have the opportunity to mitigate this situation with potentially positive impacts for low-income residents through the cheap or free electricity they receive in addition to using the profits from the scheme to invest in other beneficial services and measures (e.g. energy efficiency improvements) and achieving carbon savings.

5.1 Finance models

There are a number of options for financing a solar PV rollout. Here are three of the most likely:

1. **Self financing by the housing association or local authority.** The LA or HA decides to finance and oversees the installation of all the solar panels themselves i.e. you borrow £10m to deliver a programme worth £10m

Pros:

- You receive all the FIT income which is likely to provide a surplus depending on the rate you can borrow – typically LA's and HA's can access lower cost capital
- You are directly responsible for the carbon savings
- You are in control of the programme
- You own the assets
- Residents/tenants receive cheap or free electricity generated by the panels

Cons:

- Potentially limited in size, depending on your willingness to take on debt.
- Any increase in scale results in an increase in your overall debt. The amount of borrowing required at scale is likely to be out of proportion with the other borrowing priorities of LA's.
- You take on the risks e.g. system performance and operation
- You are potentially responsible for ongoing maintenance and operation of the panels.
- You take on the risk of defaults

2. **Fund financing by a HA or LA with additional capital from a bank into a fund.** You use the money you borrow to set up a fund that can leverage in additional commercial finance. The commercial finance will require a higher rate of return, however you get a larger pool of capital to work with. This higher cost of capital from the commercial finance will erode the additional returns that could otherwise have been made but you deliver a much larger programme than simply borrowing all the money yourself i.e. you take the same £10m to leverage in an additional £20m and then you can deliver a programme worth £30m with the same amount of debt and risk as before

Pros:

- Limits the call on public debt as the LA borrowing is maximized through leveraging additional private sector funds
- Potential for larger scale of rollout. By developing schemes in conjunction with the private sector you can build in the ability to refinance once schemes have a proven track record. Refinancing will effectively buy the existing debt off a LA or HA which will free up borrowing capacity to fund the next wave of activity.
- This leads to greater carbon savings, and more residents/tenants receiving free electricity

Cons:

- Commercial finance is likely to be at a higher rate which means initially a greater proportion of the FIT will be used to repay the finance. Recycling of funding comes through refinancing rather than using any excess from the FIT income.
- You are potentially responsible for ongoing maintenance and operation of the panels (although this could be contracted out).
- The commercial finance provider is likely to require other funds to take the first losses on any defaults

3. **Financing and ownership by another organisation.** Another organisation installs the panels at no cost to the LA or HA, or the tenant. The deals vary but broadly they take on most of the risk but receive almost all the reward apart from some reduction of electricity bills to tenants. In this case it would be worth tendering out roof space to obtain the best deal.

Pros:

- No LA or HA funds required therefore no need to take on debt
- No need to worry about the ongoing maintenance and operation of the panels provided you are satisfied with the credentials and longevity of the organisation managing the installations
- Residents / tenants may benefit from roof rental or free electricity (although a commercial body may instead decide to sell it back to them at a reduced rate, in which case the resident / tenant benefits through savings from a lower energy bill).

Cons:

- You receive none of the FIT income
- You have less control of the programme
- Money from the FIT scheme may not be reinvested into the community or priorities you identify
- Other organisations are likely to cherry pick the most commercially viable opportunities rather than enabling additional investment in other priorities such as energy efficiency

Other points:

- LAs and HAs might be well advised to offer only some of either roofs for any of the options to test the concept
- To decide which option is best, LAs and HAs need to have a view of the size of the extra return on investment and carbon savings they would need to obtain to take options 1 or 2.

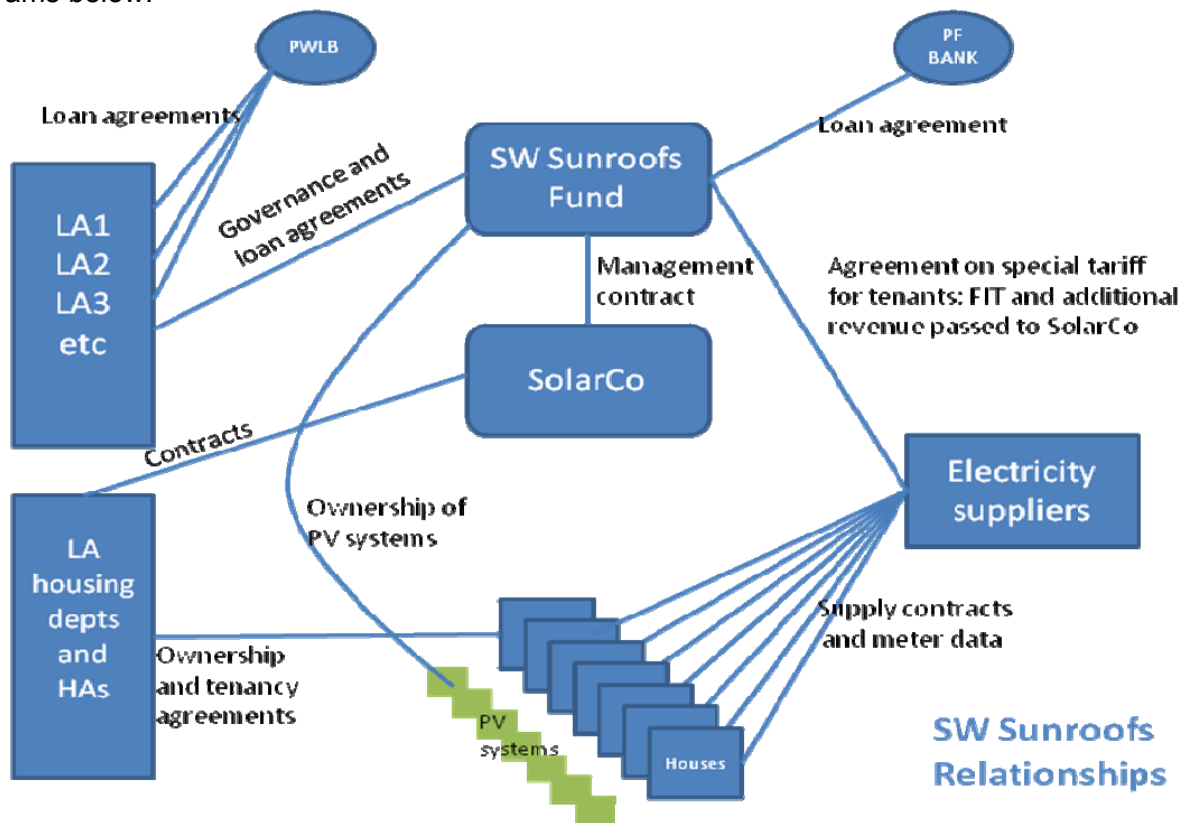


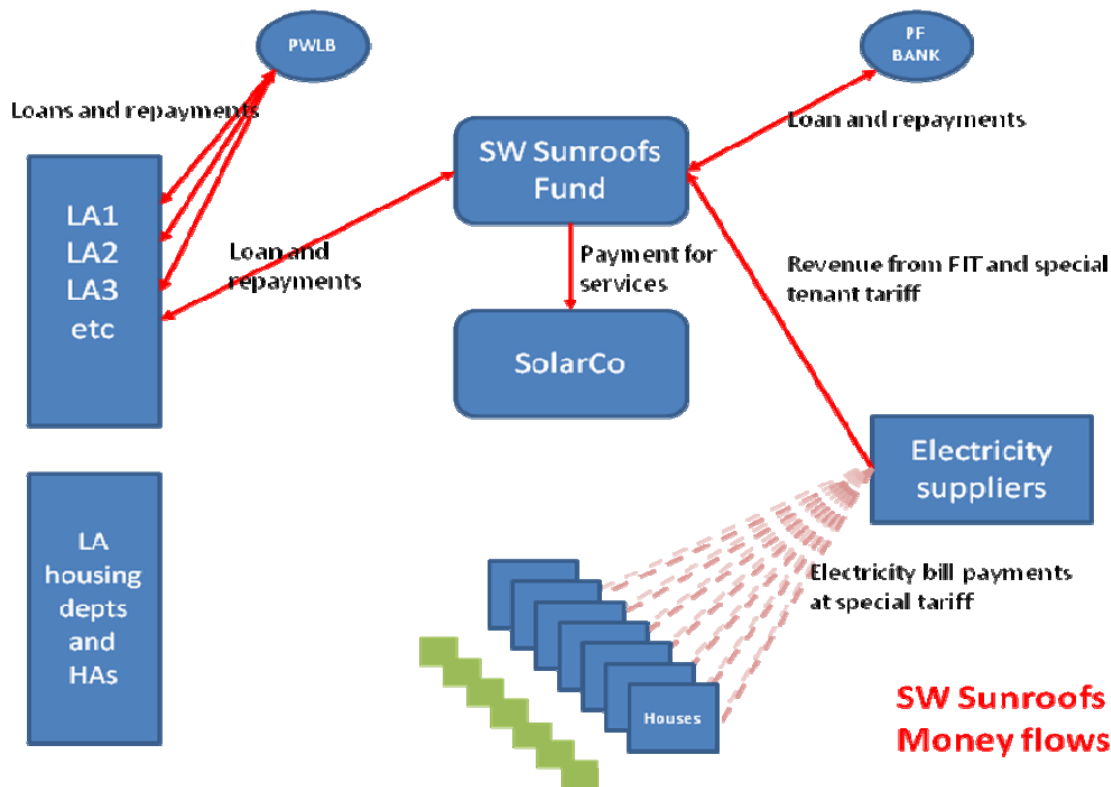
5.2 Case study of finance option 2: proposed model for South West Sunroofs developed by Regen SW

This case study provides an example of how the second finance option could pan out. It is important to note that at the time of writing this project was still being developed. It should therefore be used as a potential template but not as an example of a successful project.

5.2.1 Overview

In the SW Sunroofs model a group of LAs and HAs will create the required scale by bringing their own social housing properties to the market, and they will reduce the cost of finance by borrowing part of the capital required from the Public Works Loan Board. Two new entities will have to be set up by the local authorities, a fund and an energy services company. The fund (SolarFund) holds the funds, provides capital for investment, and receives revenue. The energy services company (SolarCo) procures and installs the PV systems, and keeps them maintained and repaired. The model is shown in the two diagrams below:





5.2.2 Main features of the model

To start operations the SW Sunroofs project team needs to get commitment from several LAs and HAs that they participate in the first round and either have funds they can use or are willing to borrow from the Public Works Loan Board. Then the model can unfold with the following features:

- SolarFund is set up by the local authorities who borrow from the Public Works Loan Board for a 25 year period and lend it to SolarFund. SolarFund would probably be a not-for-profit company owned and controlled by the local authorities. (Housing associations could participate on a similar basis but it is not clear to the project team at present if they can borrow at low rates for this purpose.)
- A bank or banks are selected through the usual local authority procurement procedures to provide project finance and SolarFund arranges the project finance required. A 30:70 ratio is expected, with around 30% of the SolarFund funding from the local authorities' PWLB borrowings and 70% as finance from banks.
- SolarCo would manage the procurement and installation process and day to day operations. SolarCo would also be a not-for-profit company and could either be small in size with all activities outsourced to the private sector, or staffed to manage and undertake the whole range of activities.
- SolarFund will provide the investment and manage the cash flows, and it would manage and pay SolarCo for its operations through a management contract.
- A roof rental model will be used as ownership of the PV systems will remain with SolarFund. As owner, SolarFund will receive the FIT revenue.
- Once sufficient and stable cash flows are flowing into SolarFund, say after 2-3 years, then SolarFund arranges for a bank to securitise them as an investment product for the capital



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markets. Securitisation takes the debt off local authority books by amalgamating the cash flows from the installed solar PV systems to offer them to fixed-income investors such as pension funds. The money raised can then either pay back the loan, or to finance another round of PV installations.

5.3 International example - the "Burgersolaranlage"

In Germany the FIT has existed for nearly 10 years and all local authorities have developed energy strategies based around this and other energy regulations. One of the most innovative and practical ideas is the "Burgersolaranlage". As many roofs of residential property are not suitable for photovoltaic systems some local authorities have offered the roofs of public buildings for installation of PV systems. The "Bürger" (citizens) invest in a fund which then finances the installation and maintenance of the systems. The revenue generated by the FIT is then shared out among the investors in proportion to their investment - which can range from €500 to €10,000. The local authority also benefits from the reduced energy costs in their buildings and the reduction in carbon emissions but has no capital cost to achieve this.

6 Step by step Guide

This section provides step-by-step guidance on what your organisation will need to do to undertake a project of this kind.

1. Identification of suitable homes

A desk-based study would need to be used to survey suitable properties. There is an opportunity to develop survey skills, in conjunction with trainers and installation companies, and to build the database beyond the 1,000 initial properties for future needs.

Data from the Energy Saving Trust's [Home Energy Efficiency Database](#) (HEED) could be used alongside other records you may have. Areas could be targeted, based on fuel poverty or low SAP rating or alternatively on the basis of an advertising campaign to residents.

The optimal criteria for installation would be:

- a. A south-facing pitch roof (although east to west through south is acceptable)
- b. A flat or pitched roof at an angle of 30-40°
- c. Roof spaces should ideally be clear of shading throughout the day. Whilst 'right to sunlight' issues are yet to be clarified, dwellings near likely developments to the south side of the property should also be avoided.
- d. A roof that is structurally capable of the load (around 18 kg per panel, including the frame; system size 10-12 panels).

2. Put together a proposal

Based on some of the information in this document you should be able to put together a basic proposal for a FIT programme. You need to decide if this is going to be a FIT PV programme only or if you want to link this to other energy efficiency measures. For example you could use the FIT payments to help subsidise whole house retrofits or other measures to improve energy efficiency (loft, cavity, solid wall insulation; lighting; boiler replacement; smart metering; additional services – smoke alarms; benefits advice, etc).

3. Legal, financial and project arrangements

A legal overview of the detail of the scheme in terms of ownership of the assets, tenant rights, maintenance, generation and export payments, etc would be needed. The capital investment and cash flow requirements should be understood. An executive board and operations team would be required for the programme (including all stakeholders) with terms of reference and a project initiation document drafted and approved.

4. Outline design of package

A detailed specification would be required for the solar PV packages, offering a range of sizes. It may be a good idea to link this to other energy improvements. The specific content of a full-house service pack would also need to be detailed and the criteria for defining the content of the pack determined.

5. Engagement of suppliers

If your programme is large enough, it may be necessary to engage suppliers via the European Union's OJEU process or through an existing framework / bulk purchase agreement. (see section on Procurement).



6. Marketing to tenants (if applicable)

Whether or not the selection of homes is achieved via a campaign, an explanatory process will be required. This would involve a briefing on the installation and impacts. Some form of consultation on the programme would benefit engagement. A simple reference booklet for each property (whether eligible or not), backed by extensive information, could usefully raise awareness of energy efficiency and renewable energy in general. Marketing of the scheme is also a good opportunity to capture any interest in having a potential installation or other measures, which could be followed up.

7. Detailed design of package

With specific installations determined, the sizing of systems can be determined, both in terms of panel area and the capacity of the inverter⁸. This will depend on the type, manufacturer and model of the final panels; an indication of the likely panel supply can be gathered from tender submissions if suppliers have not yet been procured. To be eligible, suppliers and products will have to be recognised by the MCS accreditation. A system capacity from 2 kWp upwards, with a maximum practical limit for a domestic property is of about 3.75 kWp due to grid constraints would be ideal (upper limit for maximum feed in tariff benefit), although roof space may limit systems to less (systems sizes of less than 1.8 kWp should be avoided if at all possible as the return on investment diminishes).

8. Contracting suppliers

Suppliers may be selected for a framework agreement for call off of a programme of installations or specific suppliers may have been selected for parcels of work. At this stage the technical details of the package can be confirmed and the specific products at each selected address determined. The detail of the contract, including the programme schedule, costs and payment terms can be determined and the contracts awarded.

If a whole-house approach is taken, several suppliers may be involved at each address.

As part of the contract, there are many opportunities to train and up-skill local people in surveying, programme management, logistics, installation and commissioning. Time has therefore to be given to recruitment, initial training and ongoing education.

9. Installation

Suppliers would be responsible for installation and commissioning to the agreed schedules. This stage of the programme requires overall management of the suppliers, general troubleshooting and ensuring tenant satisfaction with the equipment and service provided. Aligning installation schedules across multiple suppliers will also be needed if a whole-house package is to be installed and if aligned to a smart meter roll out.

10. Pre and post energy use / behaviour assessment

To enhance the programme and to obtain useful data for a more extensive roll out of the programme, some feedback on the solar PV system performance would be useful. Data from the programme would help verify existing demand and yield models. Some measure of behaviour change in the selected homes would also be useful.

Installing smart metering should allow remote data collection – ideally before and after installation of the solar panels and any additional measures. Each installation will be given an annual predicted yield. Even month by month or day to day variations on the underlying model would help to confirm

⁸ An inverter is an electrical device that converts direct current (DC) to alternating current (AC)



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confidence levels that could impact on a wider programme. The necessary consents for data sharing would be needed (and included from the outset in consultation with tenants).

11. Review

As the programme moves forward, review of the installations completed will provide feedback for necessary troubleshooting and adjustment of future phases. Issues such as the solar yield, the change in energy use within the households through measures installed and behaviour change, success of the supply chain and the installation process, etc. can be captured. All actors involved with the programme need an opportunity to feedback at stages within the programme and on completion. The lessons learned will be highly valuable for future programmes and to local authorities and housing associations involved in similar schemes.

12. Future roll out opportunities

The funding from the FIT incentive could be ring-fenced in whole or part to encourage further investment within the social housing stock. Alternatively, the funds could be used for a Pay As You Save loan scheme for the private sector (N.B. if a Council procurement process is used to provide cost reduction for private householders, this is currently deemed state aid and the installation will be ineligible for generation payments although this issue is currently being examined by Government in relation to EU guidelines). The income derived could be channelled via an Energy Services Company (ESCo).



7 Maintenance + warranties

7.1 Maintenance

Solar PV panels are virtually maintenance free. Rainfall generally clears any deposits or debris on panels fitted to pitched roofs. Occasionally cleaning panels with a spray of water (ideally collected rain water, using a hose or similar) will help to keep panels free from dust. Overshading by plant growth is a bigger issue. Performance of the solar panel may decline over time, with estimates of 90% yield from 15-20 years and 80% of yield from 20-25 years being claimed.⁹

If smart meters are fitted, it will be possible to monitor yields and identify panels that are not performing well in comparison to the area average or neighbouring installations. If data are not available directly, tenants may need to report low outputs compared to expected average yields. Quarterly checks on yield via the generation payments should identify any significant short fall in output for individual installations.

Regular reviews of panel performance and checks on installations should be built into regular maintenance schedules.

Inverters are likely to be the weakest part of the system, requiring replacement approximately every 15 years. Many inverters are guaranteed for 5-10 years and this should feature in the systems specification and procurement process. Use of micro-inverters (one per panel) are said to be a cost-effective option that lasts longer than a single unit per system although these are generally not available yet for the UK market. Inverter costs are currently around £1,100 for a 2kW unit although development of the market and technologies are likely to show reductions by 2020.

7.2 Warranties

Typical warranties provide:

- 5 year guarantee on workmanship relating to the installation
- 5-10 year guarantee on inverters
- 25 years guarantee on solar panel performance

⁹ <http://www.r-eco.co.uk/FAQ>

8 Risks

This section outlines some of the risks association with a large scale roll out of solar PV.

8.1 Solar yield

The annual solar yield will vary from year to year and from site to site. There is a risk that in years of heavy cloud cover throughout the summer, the electrical energy generated will be lower than the estimates. However, long term climate change projections (UKCP09) predict a lower rainfall in the summer and cloud cover is expected to reduce. This could enhance the annual solar yield.

Selecting sites that are unlikely to be over-shaded by new development in future years and careful planning when siting new buildings, street lighting or telecommunication masts will help to mitigate the risks. Careful site selection and attention to local plant growth as part of the annual maintenance cycle will help to ensure yields are maximised.

8.2 Changes in FITs, investment and borrowing rates

The FIT generation payment is fixed for smaller (sub 4kW) solar PV panels for 25 years. The rate will degress over time but only for new entrants. Changes in rates for existing FITs beneficiaries is likely to require new primary legislation. The FIT scheme is defined in the Statutory Instrument 2010, No.678 'The Feed-In-Tariff (Specified maximum capacity and functions) Order 2010' which came into force on the 1st April, 2010. The instrument relates to the Energy Act 2008. The generation payment will be made at a fixed tariff (adjusted by the RPI) for 25 years unless this legislation is changed. This would require a review by parliament.

8.3 Shortage in supply chain

Shortages of inverters for solar PV installations have been reported in Europe in 2010. Germany has used a similar financial mechanism as the FIT incentive for several years. The German FIT is expected to reduce in July, 2010 which has caused a sudden upsurge in demand. This is expected to fall back post-July, easing issues of European availability of inverters. Manufacturing capacity has also been ramped up. Discussions on availability and lead times should form part of the tender process and contract negotiations. Inverters can be fitted after the rest of the system installation is complete but this would slow the programme and delay commissioning and registering the systems for FITs.

Shortages of solar panels were reported towards the end of 2009. This was in part due to a worldwide shortage of silicon and due to the general impact of the economic recession. However, manufacturing output has now increased to meet demand. Several suppliers are holding stocks to facilitate lead times of 3-4 weeks. The German market continues to impact on availability as does the initial constraint imposed by the need to gain MCS accreditation for products as well as installers. However the risk of panel shortages is thought to be relatively low.

8.4 Resistance by tenants

There is a small risk that tenants will not welcome the wide-scale installations and the disruption that it may cause. Changes to the building fabric and intrusion may cause an unwanted nuisance. PV installations are likely to take a maximum of 2 days. Scaffolding will be required for roof access and this would be mounted and dismantled before and after installation. Depending on scheduling of the scaffolding, and installation of smart meters, the panels and invertors, disruption could last for more than one week. Most of the work will be external although access to lofts and meter cupboards will be required. Loss of power for around 1-2 hours will be necessary to connected meters and invertors.



The risk can be mitigated by consulting with tenants before, during and after the installation programme and using feedback to modify the process as it is rolled out. Community events should be scheduled in the affected areas and individuals should be contacted in advance of the programme roll out. Tenants should be made aware of the financial benefits in terms of energy savings and potential export payments. The final commissioning should include tenant advice, training and an information pack.

The Energy Saving Trust have a wide range of materials on solar PV on its [website](#) as printed materials and can provide presentations for a variety of audiences.

8.5 Ownership

If your organisation adopts offers for free panels it is highly likely that ownership will rest with the third party and not the tenant. Some offers include gifting of one in 100 panels to the landlord to provide a community income. Variations of the offer could be negotiated – such as the right to buy.

Alternatively, given investment by the Council, ownership will lie with them. Tenants however have a right to buy. Clauses within the sale agreement should allow the Council to maintain ownership of the panel and to ensure payment of the FIT export payment to the Council by the tenant after sale of the property and by future owners of the property over the remaining period of the FIT scheme. The Council may like to consider allowing tenants the right to buy the residual value of the panels.

8.6 Vandalism, theft, damage

Solar PV panel are designed to withstand weather impacts including large hailstones. Risks relating to damage from natural causes during the lifetime of the panels is considered low. Damage through vandalism could occur and there have only been a few isolated incidents to solar installations.

Theft of panels is another possibility. With a developing market for solar PV, theft is likely to become an increasing risk. A number of security measures can be adopted, including security fixing bolts, alarms, identifiers and tags (such as SmartWater). All panels have individual serial numbers which are recorded by installers for warranty purposes.

Damage to properties (such as wiring problems, roof damage, rain ingress, etc) is also a potential but relatively low risk. Buildings and liability insurances would be needed to cover such situations. Currently many household insurance policies are sufficient to cover these issues although this situation may change as more systems are installed.

8.7 Summary of risks

Risk	Causes	Impact	Likelihood		Product	Mitigation
Poor solar yield and energy generated	Excessive cloud cover	Reduced solar resource leads to lower energy outputs and FIT payments reducing ROIs	1	2	2 LOW	Estimate of yield has been checked against several models and data sources; estimate of output is already cautious.



Diminished return on investment	Reduction or loss of FITs generation payment	Loss of guaranteed generation and/or export payments. ROI affected.	4	1	New coalition government appears to support FIT initiative; scheme is part of Act of Parliament Borrowing rates at lowest rate for decades Few investments currently delivering high rate of return	4 LOW	Make written request to DECC for confirmation
	Increased cost of borrowing	Rate of borrowing may reduce or exceed ROI	3	3		9 MEDIUM	Establish lowest possible long term borrowing rates
	Increased attractiveness of alternative investments	Investments elsewhere would bring better ROI than solar PV	3	3		9 MEDIUM	Compare against other potential investments
Supply chain shortages	Restricted availability of installers Shortages of inverters Shortages of solar panels	Delay to programme; difficulty in finding installers, panels or inverters; difficulty in procuring at desired terms	2	2	Increasing numbers of MCS accredited installers available (currently 280); panel and inverter supplies short improve post-July once German market settles	4 LOW	Ensure procurement process engages widely on a framework agreement; enter market early and make long term commitment for whole programme
Resistance by tenants	Reluctance to concept Reluctance to accept disruption	Difficulties in carrying out installations; potential problems post-installation	2	1	Tenants involved directly with the board; tenants will benefit directly through cost savings	2 LOW	Involve tenant groups from the start; maintain good communications with individual homes throughout; run community events and media campaign; provide advice line via EST; use ongoing feedback to inform later stages of programme



System failures	Failure of solar panel	Loss of or reduced level of generation and export payments; Additional cost of repair; Potential damage to housing and liability to tenants over damage to property or person	3	1	Solar panels rarely fail;	3 LOW	Smart metering could provide automatic warnings; maintenance schedule required; tenants need to be aware and to report issues; ongoing media campaign to report solar outputs; plan for 10 year replacement of inverters; hold stocks of inverters for increasing failures after 5 years. Trees and plant influence should be recorded at install and used to schedule maintenance. New development and planting should take account of solar panels.
	Failure of electrical equipment (notably inverters)		3	5	Inverters expected to fail after 10 years – some after 5 years	15 HIGH	
	Diminishing yield with age of panel		1	5	Yield expected to drop off as panels over later years (after 15-20 years).	5 LOW	
	Overshading from plants and trees		3	3	Over shading by plants and trees likely but depends on location Panels generally self-clean if installed on tilted roofs through rainfall	9 MEDIUM	
	Yield reduced through dust and debris		3	1		3 LOW	
Ownership issues and loss of right to FIT payments	Issues of ownership for investment by third party Issues over tenant's right to buy Issues over future transfer of ownership	Difficulties in receiving generation and/or export payment; difficulties in ensuring panels and equipment are maintained with impact on export/generation payment	4	2	Tenants have right to buy so ownership will be contention – see mitigation. Issue will not arise if appropriate clauses in sale agreement	8 MEDIUM	Include appropriate clauses for ownership in sale agreement; ensure new owners have information pack; monitor sale of properties and provide information pack to next owners; send annual letter to owners/tenants to review situation
Vandalism	External damage Internal damage	Cost of repair or replacement; loss of generation/export payment; added burden on tenant ; possible increase in anti-social behaviour locally	3	2	Some evidence of vandalism although current panels likely to be more robust	6 MEDIUM	Tenants need mechanism to report potential problems; monitor issue nationally as greater numbers of panels are installed; provide additional security for panels if required



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Theft	Loss of solar PV panels	Cost of replacement/repair of roof, etc; Loss of generation/export payment; added burden on tenant; potential increase in crime locally	3	3	Some evidence of theft and may increase as market for solar PV grows	9 MEDIUM	Tenants need mechanism to report potential problems; register of panel serial numbers; use of anti-theft devices (secure fixtures, identifiers, alarms, etc); media campaign to highlight issues; monitor national picture as increasing numbers of panels installed.
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9 Procurement

The procurement process is a critical phase in terms of timing to achieve the maximum FIT return. It would be advisable to use a restricted process with a framework agreement to allow a number of suppliers to be available on a call-down basis.

9.1 OJEU Restricted process

If the EU's [OJEU](#) process is required, the steps include:

1. Notice dispatched to OJEC for Publication
2. Notice published in OJEC
3. Potential suppliers register an interest
4. Undertake supplier qualification appraisal
5. Invite tenders from qualified suppliers
6. Potential suppliers submit tenders
7. Tenders opened
8. Tenders evaluated
9. Contract Awarded
10. Dispatch Contract Award notice to OJEC for publication.

9.2 Alternative procurement routes

9.2.1 Existing contractors

Your organisation may already have contracts in place with companies supplying related trades, such as scaffolding, roofing or electrical installations. It may be possible to award solar PV contract to these companies via existing agreements.

10 Options for Energy Saving Trust Support

All of the delegate information, presentations and Q&A notes from our recent set of Feed-in-Tariff events can be found [here](#).

10.1 Enquiry service and presentations

The Practical Help team can undertake up to three days dedicated research to answer queries focused on strategic drivers for action on climate change, to support in identifying measures you can implement and help finding the funding to do so. This free service is available to council members, service directors and officers in local authorities across the country and in the past year handled over 4,900 enquiries across the UK.

To access the service, call our Practical help enquiry line on 0844 84 888 30 or email: practicalhelp@est.org.uk

10.2 One-to-one Support

We will be launching a new one-to-one support programme for local authorities and strategic partners in July 2010. This programme will provide a step-wise approach to area-wide carbon reductions as well as ensuring organisational performance is sufficient for effective delivery. The initial strategic steps (understanding current emissions, developing a clear view of policy options to achieve targets, putting in place a common monitoring process) lead swiftly to action planning and implementation and finally verification of achievements and a refresh of the short term plans. The adoption of this clear process and framework for carbon reduction is an important first stage to unlock a variety of funding mechanisms for large scale programmes.

The programme is supported by a team of Local Authority Support Managers and our network of advice centres. To enquire about this service please contact the relevant Local Authority Support Manager (contact details below):

<u>One to one support team</u>		Contact numbers
North West	Paul Hegarty	07944 568 072
North East, Yorkshire and Humber	Lance Saxby	07943 812 076
Midlands	Melody Stokes	07946 186 634
East of England	Karen Strandoo	07961 272 214
South West	Lewis Morrison	07985 773 997
South East	Ben Frier	07961 271 587
London	Keith Von Tersch	07961 226 950
Wales	Mark Tebboth	029 2046 8349

For advice about support services for local authorities and housing associations in Scotland, contact Zoe Holliday on 0131 555 7871 or zoe.holliday@est.org.uk.

10.3 Homes Energy Efficiency Database and Data Services

The Homes Energy Efficiency Database (HEED) is a unique database gathering information about the sustainable energy characteristics of the UK housing stock. HEED contains information from surveys (for



example main fuel type, build type) and measures installed (e.g. cavity wall insulation), taken from a wide variety of different local and national sources. [HEED](#) currently holds records on around 10million dwellings across the UK.

The information stored in HEED can be accessed using the HEED online reporting tool. This allows users to run one of a number of different pre-prepared 'reports' against the main database. These reports are designed to help users report, target, assess their current stock and – in conjunction with other information sources - assess future potential for energy efficiency measures.

To find out more and to register for use please contact the HEED team by emailing heed@est.org.uk

10.4 Economic Impacts Model

The Energy Saving Trust's Domestic Sustainable Energy Economic Impact Model estimates the direct, net and net additional economic effects of installing a range of different microgeneration technologies and domestic energy efficiency measures. It calculates both Gross Value Added (GVA) and job creation (in the form of Full-Time Equivalency). The model also generates estimates for carbon emissions and energy consumption reductions and financial savings based on the UK housing stock.

To enquire about a model run and results data for your area please contact your local authority support manager.

10.5 Housing Stock Refurbishment Calculator

The Housing Stock Refurbishment Calculator enables local authorities to develop an energy efficiency profile of the housing stock in their area and to analyse options for carbon reduction. The SAP based tool focuses on the physical measures that can be carried out in each house type. The tool is designed to inform four key areas to help local authorities justify and plan a carbon reduction scheme:

- What is the baseline of the local housing stock in terms of CO2 emissions, fuel bills and SAP ratings?
- What are the most effective refurbishment options to implement across the local housing stock?
- How much will the identified carbon reduction scheme cost?
- What are the benefits of the identified scheme in terms of CO2 reduction, fuel bill reduction, improvement in SAP ratings etc.

Although the primary audience for the tool is local authorities running carbon reduction schemes for private sector housing, a number of audiences will find the tool valuable including:

- Social housing stock managers
- Community level schemes
- Energy suppliers
- ERDF and other fund managers

We are aiming to launch the tool in July and to be notified when the updated version is accessible, please contact your relevant Local Authority Support Manager (contact details above).

10.6 Energy Intelligence Services

Insights, information and independent verification partners and customers can trust.

Now more than ever, it is important that environmental claims in advertising and marketing communications are credible and substantiated with reliable evidence. Today's connected consumers can quickly research environmental claims and will reject anything they perceive to be 'greenwash'. By



using the Energy Saving Trust's Energy Intelligence Services, our clients are obtaining a guarantee of independently verified information their customers can trust.

Access a wide range of expert support

The Energy Saving Trust's areas of expertise include domestic energy efficiency, cleaner transport, domestic energy generation, water conservation and waste reduction. This is combined with detailed insight on consumer behaviour and attitudes relating to energy saving and climate change.

Our team of experts can provide a range services to organisations wishing to present their own energy saving messages to their customers including:

- Verification of factual information and energy saving advice for use in consumer collateral or employee engagement materials, for example Top Energy Saving Tips, costs and savings of energy saving measures;
- Development of the latest, tailored financial and carbon savings calculations from different energy saving measures, for example 'If all our customers/staff spent one minute less in the shower, it would save enough energy to heat X homes for a year and pay for X';
- Design and delivery of online tools, such as carbon calculators or action planners;
- Research and analysis to support strategic planning or policy making.

The 'Verified By Energy Saving Trust' brand mark

Organisations using this service are also eligible to use the Verified by Energy Saving Trust brand mark. This mark will reassure their customers that their organisation has invested in independent verification by a trusted consumer-facing body.

Contact us for more information at EnergyIntelligence@est.org.uk

11 Further Information

The Energy Saving Trust hosted a series of workshops for local authorities from May to July 2010. Presentations and Q&As from the event can be found [here](#). Videos from these events can be viewed [here](#).

11.1 Reports

[The future financing of energy efficiency and low carbon retrofit in social housing](#)

This paper assesses the strategic implications of the various policies and initiatives in relation to the social housing sector and sets out options for improving the financing of low carbon retrofit. It has been produced by the Energy Efficiency Partnership for Homes' Social Housing Finance and Strategy Taskgroup and contains the informed views of key social housing organisations from across the sector. It was prepared in close dialogue with officials responsible for setting the framework within which the sector operates from CLG, DECC, and the Homes and Communities Agency.

[Funding and finance: mapping of policies, mechanisms and research](#)

This paper provides an overview of the key finance mechanisms, policy drivers and schemes in relation to the take up of energy efficiency and low carbon technologies in social housing. It sets out the mechanisms, drivers and schemes that were identified at the first meeting of the Social Housing Finance and Strategy Taskgroup on 10 December 2009.

[On the brink of a bright future?](#)

Insights into the UK solar photovoltaic market. A report by PWC.

12 FAQs

1. Do you need a special meter to be able to claim FITs?

Generation must be metered and FITs payments are made to generators on the basis of metered generation. Meters will need to be able to measure generation, usage and import. However, as an interim measure, DECC has announced that at the very small scale, the amount of exports for the payment of export tariffs can be deemed (estimated) at 50%, subject to the following:

- These arrangements will only apply until the finalising of specifications for smart meters;
- These arrangements do not apply if export meters exist already, or are provided at the generator's expense

2. Do I need to use a certified installer and product to benefit from the tariff?

Yes. For microgenerators, the Microgeneration Certification Scheme (MCS) is a requirement for eligibility as of 1 April 2010.

3. I have or plan to install second hand / refurbished equipment. Will I be eligible for FIT?

No. second hand installations will not be eligible.

4. What is the definition of a site for FITs?

A site is defined as a property with its own unique address, for example based on council tax bills and its own unique meter serial number (MPAN number). In situations where there's two properties which share the same address or MPAN number then this will be counted as one site.

5. As FITs are linked to the Retail Price Index (RPI), what happens if the RPI goes into the negative i.e. deflation?

As FITs are linked to the RPI then payments can go up as well as down.

6. When do you start receiving payments for FITs?

The date used as the start date for receiving FIT payments is the date you apply to the energy company for FITs so date of application. Note this is not the same as the date the installation was commissioned.

7. I want to extend my system size. What are the implications for FITs?

So long as the new part of the system is installed by an MCS certified installer using MCS certified products then new system will be eligible for FITs. If the new system was added within 12 months of the old system then new system will get the same rate as old system but applied to the new system size. If new system extension gets installed after 12 months of old system then that part of the system will get a different rate. For example if extending a 2kWp solar PV system to a 3.3kWp system then the 2kWp part gets one tariff and the 1.3kWp gets another tariff rate. The rate which applies to the 1.3kWp extension will be based on the total size of system i.e. 3.3kWp which is under the 4kWp threshold for fits so 41.3p/kWh (assuming retrofit). If adding a different technology e.g. currently have solar PV and adding wind turbine then this will have no implications and wind turbine would just be treated as a new technology and not an extension.



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Further FAQs can be found [here](#)

Question and answer notes from our FIT events can be downloaded from the links below:

[Download the notes from the question and answer session in London.](#)

[Download the notes from the question and answer session in Manchester.](#)



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