



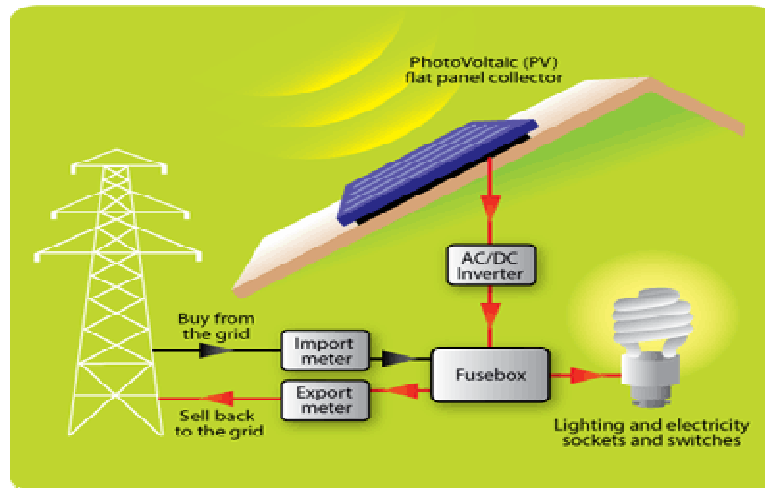
Solar Photovoltaic Panels Project

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The Tenants' Forum, Melton Borough Council officers and councillors have been researching the installation of Solar Photovoltaic (PV) Panels, electricity supply, onto the roofs of a selection of MBC housing stock, which will help tackle fuel poverty for tenants, reduce carbon emissions and provide an income stream for MBC.

The Climate Change Act 2008 makes the UK the first country in the world to have a legally binding long-term framework to cut carbon emissions. The UK has committed to reduce carbon by 34% by 2020 and at least 80% by 2050 from a 1990 baseline.

Solar PV panels are usually fitted to the roof and work at their optimum when facing south. The panels convert direct sunlight (and haze daylight to a lesser extent) into electrical current, similar to that found on most desk calculators. The inverter which converts sunlight to electricity is usually installed into the roof space. This technology has seen a rise in use recently with the introduction of the governments 25 year 'Feed-In Tariff' (FiT) plan, which came into effect on 1st April 2010.



For PV systems the financial return is made up of three components:

- Generation tariff – a set rate paid by the energy supplier for each unit (or kWh) of electricity generated. For installation commissioned by March 2012 this is currently set at 43.3p per kWh based on a PV panel productivity capacity no more than 4KWp (the FiT reduces on 4KW+ PV panels)
- Export tariff - a further 3.14p per kWh from energy suppliers for each unit exported back to the electricity grid (when it isn't used on site)
- Energy bill savings – savings on electricity bills for tenants. As electricity is generated to power appliances it means not as much electricity needs to be bought from energy suppliers. The amount saved will vary depending how much of the electricity is used on site. On average tenants can expect to save between £100 - £200 per year.

The project will be at zero cost to the authority, the costs for the installation of the panels, the connection to the electricity grid and ongoing panel maintenance will be borne by the installer through investors based in London. Currently investors see a

better return for their investment (10-12%) through a FiT rather than a high interest bank account.

The installer of the PV panels will pay MBC a roof renting fee per property over the 25 years time period. The amount of rent paid will be based on the efficiency of the roof e.g. optimum output from a south facing roof. The renting figure reduces as the efficiency of the roof declines. It is widely thought the FiT will reduce considerably from 1st April 2012 resulting in investors not funding projects or installers reducing payment to landlords for roof space.

The Government guarantees the incentive payments for 25 years at set rates (per kilowatt hour) that are tax free and index linked with inflation. A typical house installation of a PV system would generate around £800 in income from the FiT and an electricity bill saving of about £100 to £200 per annum for the customer, providing the installation is done prior to 31 March 2012.

MBC have the opportunity to fund a Solar PV project themselves by taking out a 25 year loan to cover the costs of installation and maintenance. All revenue generated from the Solar PV panels would become MBC's to service the initial loan and also reinvest profit into MBC housing stock.

When selecting roofs for a project there are certain barriers which will mean some properties will not be eligible for PV panels being installed, including:

- Roof too small
- Significant shading
- Obstructions
- Payment meters (due to loss of electricity powering the inverter)

The installers are able to combat the payment meter barrier by claiming the loss of electricity produced from the income for the roof renting payment.

Income for Melton Borough Council (Pre roof survey figures)

NSA Solar

- Roof rent - £1000 per roof over 25 years for top 80% efficient roof spaces
- Roof rent - £600 per roof over 25 years for other eligible roof spaces

Ice Energy

- Roof rent per roof is approximately £420 per roof. This is a lump sum payment e.g. 100 roofs all south facing at £420 each totals £42,000
- Alternatively an annual payment for 25 years at £40 per roof per year e.g. 100 roofs all south facing at £40 each totals £4,000 per year, £100,000 over 25 years

Risks for Melton Borough Council

- The companies have not completed a similar project for a Local Government or Housing Association, so we are unable to visit and research.
- Timescales – the feed in tariff is largely thought to be reduced on 1st April 2012, which will potentially mean funding will not be available from investors –

to receive the full benefit of the current feed in tariff projects need to be installed and commissioned by the end of March 2012.

- Investors may pull out of the scheme once installed and commissioned which will mean MBC will have to take over the maintenance costs of the solar panels – however MBC will receive the feed in tariff.

Unsuitable Properties

As stated previously in this document, not all properties will be suitable for solar panels to be installed onto the roof space, which will mean some tenants will not benefit from a project of this nature. This throws a question of fairness to those tenants living in these properties as they will not be able to receive the benefit of reduced electricity bills.

A project of this nature needs to be targeted to tenants who have the highest energy costs. This does not mean the tenants who use the most energy but the tenants who's energy is the most expensive to buy e.g. oil. There are a number of ways to combat the issue of fairness for tenants who cannot have a solar panel installed. One is to educate these tenants in energy efficiency to ensure their homes are as efficient as possible and reduce their energy bills.

Another way is to pool the money received from the roof rent and spread this out to improve energy efficiency to the properties which cannot have a solar panel installed.

Nottingham City Homes, who have recently embarked on a similar project and have solar PV panels installed, do not have a plan in place to deal with the properties and tenants who cannot have solar PV panels installed. They are handling these tenants on an individual basis if they call up and query why they have not had a solar PV panel installed. Nottingham City Homes went ahead with the project without consideration of the properties unable to benefit from a solar PV panel.

Government Prediction Pay Back Figures

4KW F.i.T @43.3 + Export @ 3.1p Govt SAP

Year	FIT Payment 3% YOY Increase	Accrued FIT Payments	Export Tariff @ 3.1p @ 3%inflation	Accrued Export Tariff	Accrued FIT Returns + Export at 50% x 3.1p
1	£1,486.75	£1,486.75	£53.22	£53.22	£1,539.97
2	£1,531.35	£3,018.10	£54.82	£108.04	£3,126.14
3	£1,577.29	£4,595.40	£56.46	£164.50	£4,759.89
4	£1,624.61	£6,220.01	£58.15	£222.65	£6,442.66
5	£1,673.35	£7,893.36	£59.90	£282.55	£8,175.91
6	£1,723.55	£9,616.91	£61.70	£344.25	£9,961.16
7	£1,775.26	£11,392.17	£63.55	£407.80	£11,799.96
8	£1,828.51	£13,220.68	£65.45	£473.25	£13,693.93
9	£1,883.37	£15,104.05	£67.42	£540.67	£15,644.72
10	£1,939.87	£17,043.92	£69.44	£610.11	£17,654.03
11	£1,998.07	£19,041.99	£71.52	£681.63	£19,723.62
12	£2,058.01	£21,100.00	£73.67	£755.30	£21,855.30
13	£2,119.75	£23,219.75	£75.88	£831.18	£24,050.93
14	£2,183.34	£25,403.09	£78.16	£909.33	£26,312.43
15	£2,248.84	£27,651.94	£80.50	£989.83	£28,641.77
16	£2,316.31	£29,968.24	£82.92	£1,072.75	£31,040.99
17	£2,385.80	£32,354.04	£85.40	£1,158.15	£33,512.19
18	£2,457.37	£34,811.41	£87.96	£1,246.12	£36,057.53
19	£2,531.09	£37,342.50	£90.60	£1,336.72	£38,679.22
20	£2,607.03	£39,949.53	£93.32	£1,430.04	£41,379.57
21	£2,685.24	£42,634.77	£96.12	£1,526.16	£44,160.93
22	£2,765.79	£45,400.56	£99.00	£1,625.17	£47,025.73
23	£2,848.77	£48,249.32	£101.98	£1,727.14	£49,976.47
24	£2,934.23	£51,183.55	£105.03	£1,832.18	£53,015.73
25	£3,022.26	£54,205.81	£108.19	£1,940.36	£56,146.17
	Install Cost x 1	£10,000.00			

Realistic Prediction Pay Back Figures

4KW F.i.T @43.3p + Export @3.1p Realistic

Year	FIT Payment 3% YOY Increase	Accrued FIT Payments	Export Tariff @ 3.1p @ 3% inflation	Accrued Export Tariff	Accrued FIT Returns + Export at 50% x 3.1p
1	£1,946.85	£1,946.85	£79.83	£79.83	£2,026.68
2	£2,005.26	£3,952.11	£82.22	£162.05	£4,114.16
3	£2,065.41	£6,017.52	£84.69	£246.75	£6,264.27
4	£2,127.38	£8,144.89	£87.23	£333.98	£8,478.87
5	<u>£2,191.20</u>	<u>£10,336.09</u>	<u>£89.85</u>	<u>£423.83</u>	<u>£10,759.92</u>
6	£2,256.93	£12,593.02	£92.54	£516.37	£13,109.40
7	£2,324.64	£14,917.66	£95.32	£611.69	£15,529.36
8	£2,394.38	£17,312.04	£98.18	£709.88	£18,021.92
9	£2,466.21	£19,778.26	£101.13	£811.00	£20,589.26
10	£2,540.20	£22,318.45	£104.16	£915.16	£23,233.61
11	£2,616.40	£24,934.86	£107.28	£1,022.45	£25,957.30
12	£2,694.90	£27,629.75	£110.50	£1,132.95	£28,762.70
13	£2,775.74	£30,405.50	£113.82	£1,246.77	£31,652.26
14	£2,859.01	£33,264.51	£117.23	£1,364.00	£34,628.51
15	£2,944.79	£36,209.30	£120.75	£1,484.75	£37,694.05
16	£3,033.13	£39,242.42	£124.37	£1,609.12	£40,851.55
17	£3,124.12	£42,366.55	£128.10	£1,737.23	£44,103.77
18	£3,217.85	£45,584.39	£131.95	£1,869.17	£47,453.57
19	£3,314.38	£48,898.78	£135.91	£2,005.08	£50,903.85
20	£3,413.81	£52,312.59	£139.98	£2,145.06	£54,457.65
21	£3,516.23	£55,828.82	£144.18	£2,289.24	£58,118.06
22	£3,621.71	£59,450.53	£148.51	£2,437.75	£61,888.28
23	£3,730.37	£63,180.90	£152.96	£2,590.71	£65,771.61
24	£3,842.28	£67,023.17	£157.55	£2,748.27	£69,771.44
25	£3,957.55	£70,980.72	£162.28	£2,910.54	£73,891.26
	Install Cost	£10,000.00			