

**Name of meeting:** Cabinet  
**Date:** 5 April 2016

**Title of report:** Solar PV Programme 2014-17

<b>Is it likely to result in spending or saving £250k or more, or to have a significant effect on two or more electoral wards?</b>	Yes
<b>Is it in the <a href="#">Council's Forward Plan</a>?</b>	Yes
<b>Is it eligible for "call in" by <a href="#">Scrutiny</a>?</b>	Yes
<b>Date signed off by <u>Director</u> &amp; name</b>	Jacqui Gedman - 23.03.16
<b>Is it signed off by the Director of Resources?</b>	David Smith - 21.03.16
<b>Is it signed off by the Assistant Director - Legal, Governance and Monitoring</b>	Julie Muscroft - 23.03.16
<b>Cabinet member <a href="#">portfolio</a></b>	Councillor Cathy Scott - Housing and the Relief of Poverty

**Electoral [wards](#) affected:** Kirklees Wide  
**Ward councillors consulted:** None

**Public or private:** Public

## 1. Purpose of report

- To provide an update on progress made against the original target of 2,000 solar photo voltaic (PV) systems on Council houses across Kirklees Council.
- To give information on recent changes published by the Department of Energy and Climate Change (DECC) regarding a 60% reduction in the Feed in Tariff (FIT) rate for all solar PV systems registered after 15 January 2016;
- To highlight the impact the changes will have on the project; and
- To consider whether to continue or end the project.

## 2. Key points

### 2.1 Project Update

- 2.1.1 In September 2014 Cabinet approved £9.2m capital programme of investment in the solar PV programme on up to 2,000 Council homes funded by the Housing Revenue Account. The project targeted households at risk of fuel poverty and contributes towards the Council's carbon reduction strategy. The FIT income would be utilised to cover the capital cost of the installations, revenue cost of claims management and future maintenance of the equipment. It was assumed that in the

medium to long term that the project would generate surplus income, and that Members would decide on the best way to utilise the additional income.

- 2.1.2 The project aimed to contribute towards the Council's key strategic priorities in the Joint Health and Wellbeing Strategy and the Economic Strategy by improving the health and wellbeing of residents, reducing fuel poverty, impacting positively on the cost of living and providing economic benefits and opportunities to local businesses.
- 2.1.3 A total of 574 systems have been installed and registered with the Office of Gas and Electricity Markets (OFGEM) since the start of the project in January 2015. The cost of each installation is significantly lower than originally estimated, primarily due to a successful procurement exercise for materials, but also because the size of some installations was restricted by the grid operators or available roof space.
- 2.1.4 FIT rates have been reduced gradually each quarter since the programme was agreed at Cabinet, but until the most recent change these didn't have a significant impact on the viability of the project.
- 2.1.5 The contract for collecting the data and submitting the claims to OFGEM has been procured at a lower rate than estimated, leading to reduced revenue costs. Initially this contract has been awarded for one year only, but the intention is to procure a longer term contract which should drive down costs further.
- 2.1.6 The revised expenditure and income projections shown in Section 3.4 below take into account the reduction in costs and the reduced income resulting from smaller systems being installed (typically 1.8kWh rather than the 2.0kWh in the original cost model).

### **3. Implications for the Council**

#### **3.1 Reputational Risk**

Reducing the size of the programme may present a reputational risk to the Council, as there has been a well published public commitment to the project. There has however been a great deal of publicity recently about the reduction in the FIT rate, and other Councils and housing providers have scaled back their proposals in response to the different economic context.

#### **3.2 Local Employment**

One aim of the project as originally conceived, was to provide work and training opportunities for local Small/Medium size Enterprises (SMEs). This will not be possible if the project is brought to an end. It should be noted however that the primary aim in including SMEs was to enhance skills and knowledge in a developing market, but changes to the FIT rates has effectively, at least in the short term, resulted in a much smaller market and fewer opportunities.

#### **3.3 Impact of the Reduction in FIT**

Appendix 1 shows the assumed income generated by a 1.8kWh system at the FIT rates applicable in December 2015 using the standard industry model. This indicates that the capital outlay will be covered by FIT income in 14 years.

Appendix 2 shows the impact of the FIT reduction on income. After the full 20 years covered by the FIT agreement, only 75% of the initial capital outlay would be covered by the income generated.

The data from the pilot project at Eastway, which has been in operation for 2 full years, gives some confidence that the FIT income generated will be broadly in line with the projection, but it won't be until the receipt of the 2<sup>nd</sup> quarter claim of 2016 in early July that it will be possible to provide greater certainty.

### 3.4 Revised Expenditure and Income Projections

The primary risk in going ahead with the project would be the impact on the Housing Revenue Account at a time when it is under unprecedented pressure from the reduction in Council rents and benefit changes linked to Welfare Reform. The project as first outlined was designed to be self-financing in the medium term, but the reduction in the FIT rate will mean that there will be no return on the capital outlay.

The table below shows the expenditure and income projections included in the original report to Cabinet and revised projections based on the 574 installations to date. The final column provides an estimate of how much it would cost to complete the full programme of 2000 properties, but with 1426 properties getting the lower rate of FIT.

<b>Summary Table</b>	<b>Cabinet Report - (2000 Installations)</b>	<b>Installations to date (574)</b>	<b>Revised Estimate (2000)</b>
Capital Expenditure	£9,200,000	£1,973,818	£6,878,000
Revenue Expenditure	£2,200,000	£522,000	£1,720,000
Total Expenditure	£11,400,000	£2,495,818	£8,598,000
Estimated Income (FIT)	£14,000,000	£2,952,277	£6,615,443
<b>Estimated Surplus</b>	<b>+£2,600,000</b>	<b>+£456,459</b>	<b>-£1,982,557</b>

Overall this suggests that the capital outlay to date will be covered in full by the FIT income generated, with a modest surplus generated.

## 4. Consultees and their opinions

- 4.1 Cabinet Portfolio Lead Members have been briefed and have requested, that a detailed report on the changes to the FIT and the implications, are set out, to enable Cabinet to take a decision on whether or not to continue with the programme.

## 5. Next steps

- 5.1 To communicate to Members and public, the Cabinet decision.

## **6. Officer recommendations and reasons**

- 6.1 Cabinet note progress made against the original target of 2,000 solar photo voltaic (PV) systems on 574 Council houses across Kirklees Council.
- 6.2 Cabinet note the information on recent changes published by the Department of Energy and Climate Change which is a 60% reduction in the FIT rate for all systems registered after 15 January 2016 and the impact the changes have on the project finances.
- 6.3 Cabinet agree that the Council should withdraw from the programme of works, provided that panels are provided for those homes where promises to complete and/or works have already started.
- 6.4 Based on revised FIT and revised project expenditure and income projections and bearing in mind the pressures on the HRA that the project be ended.

## **7. Cabinet portfolio holder recommendation**

- 7.1 The portfolio holder, Councillor Cathy Scott, asks that Cabinet note progress made against the original target of 2,000 solar photo voltaic (PV) systems on 574 Council houses across Kirklees Council and the information on recent changes published by the Department of Energy and Climate Change as detailed in 6.2 above.
- 7.2 In addition, the portfolio holder, Councillor Cathy Scott, recommends, that based on revised FIT, revised project expenditure and income projections and bearing in mind the pressures on the HRA, that the project be ended. However, Cabinet agree, that where a commitment has been given to householders and where work has already commenced, this is completed.

## **8. Contact officer and relevant papers**

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## **9. Assistant Director responsible**

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### Appendix 1 - December 2015 Solar PV Cost / Benefit Analysis

Below is a calculation of the energy that your panels would produce and the economic value of that. It is based upon the orientation and pitch of your roof and the location of your property.

Your Property		FIT & Export rate inflation (RPI)	3.0% per annum
Roof Orientation	South	Energy Price Inflation	6.0% per annum
Roof Pitch	30°	Drop in system performance	1.0% per annum
Overshadowing	None or very little <20%	<b>System Size</b>	<b>1.8 kWp</b>
Retrofit or Newbuild	Retrofit	<b>FIT rate</b>	<b>11.22 Pence/kWh</b>
Your System		Imported electricity cost	13 pence / kWh
Number of Panels	6	Percentage of self consumption	50%
Size of Panels	300 Watts	<b>Productivity</b>	<b>1,556 kWh / Year *</b>
		Electricity export rate	4.85 pence / kWh
		Percentage of export	50%

	Production kWh	FIT Rate pence / kWh	FIT revenue £	Cost of Electricity pence / kWh	Electricity Saving £	Export Rate pence / kWh	Export revenue £	Annual benefit £	Cumulative Benefit £
Year 1	1556	11.2	£174.58	0.0	£0.00	4.9	£37.73	£212.32	£212.32
Year 2	1540	11.6	£178.02	0.0	£0.00	5.0	£38.48	£216.50	£428.82
Year 3	1525	11.9	£181.53	0.0	£0.00	5.1	£39.23	£220.76	£649.58
Year 4	1510	12.3	£185.11	0.0	£0.00	5.3	£40.01	£225.11	£874.69
Year 5	1495	12.6	£188.75	0.0	£0.00	5.5	£40.80	£229.55	£1,104.24
Year 6	1480	13.0	£192.47	0.0	£0.00	5.6	£41.60	£234.07	£1,338.31
Year 7	1465	13.4	£196.26	0.0	£0.00	5.8	£42.42	£238.68	£1,576.99
Year 8	1450	13.8	£200.13	0.0	£0.00	6.0	£43.25	£243.38	£1,820.37
Year 9	1436	14.2	£204.07	0.0	£0.00	6.1	£44.11	£248.18	£2,068.55
Year 10	1421	14.6	£208.09	0.0	£0.00	6.3	£44.98	£253.07	£2,321.62
Year 11	1407	15.1	£212.19	0.0	£0.00	6.5	£45.86	£258.05	£2,579.67
Year 12	1393	15.5	£216.37	0.0	£0.00	6.7	£46.76	£263.14	£2,842.80
Year 13	1379	16.0	£220.63	0.0	£0.00	6.9	£47.69	£268.32	£3,111.12
Year 14	1365	16.5	£224.98	0.0	£0.00	7.1	£48.63	£273.61	£3,384.73
Year 15	1352	17.0	£229.41	0.0	£0.00	7.3	£49.58	£279.00	£3,663.73
Year 16	1338	17.5	£233.93	0.0	£0.00	7.6	£50.56	£284.49	£3,948.22
Year 17	1325	18.0	£238.54	0.0	£0.00	7.8	£51.56	£290.10	£4,238.31
Year 18	1312	18.5	£243.24	0.0	£0.00	8.0	£52.57	£295.81	£4,534.12
Year 19	1299	19.1	£248.03	0.0	£0.00	8.3	£53.61	£301.64	£4,835.76
Year 20	1286	19.7	£252.92	0.0	£0.00	8.5	£54.66	£307.58	£5,143.34
<b>TOTAL Benefit over 20 years</b>								<b>£5,143.34</b>	
<b>Return on investment</b>	<b>150% equivalent to</b>		<b>6.0% pa</b>		<b>Cost of installation including VAT @ 5%</b>			<b>£3,439.00</b>	

\* The performance of solar PV systems is impossible to predict with certainty due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year. This estimate is based upon the Solar PV Guide procedure for energy rating of buildings and is given as guidance only. It should not be considered as a guarantee of performance.

## Appendix 2 - January 2016 Solar PV Cost / Benefit Analysis

Below is a calculation of the energy that your panels would produce and the economic value of that. It is based upon the orientation and pitch of your roof and the location of your property.

Your Property		FIT & Export rate inflation (RPI)	3.0% per annum
Roof Orientation	South	Energy Price Inflation	6.0% per annum
Roof Pitch	30°	Drop in system performance	1.0% per annum
Overshadowing	None or very little <20%		
Retrofit or Newbuild	Retrofit	<b>System Size</b>	<b>1.8 kWp</b>
		<b>FIT rate</b>	<b>4.39 Pence/kWh</b>
Your System		Imported electricity cost	13 pence / kWh
Number of Panels	6	Percentage of self consumption	50%
Size of Panels	300 Watts	<b>Productivity</b>	<b>1,556 kWh / Year *</b>
		Electricity export rate	4.85 pence / kWh
		Percentage of export	50%

	Production kWh	FIT Rate pence / kWh	FIT revenue £	Cost of Electricity pence / kWh	Electricity Saving £	Export Rate pence / kWh	Export revenue £	Annual benefit £	Cumulative Benefit £
Year 1	1556	4.4	£68.31	0.0	£0.00	4.9	£37.73	<b>£106.04</b>	<b>£106.04</b>
Year 2	1540	4.5	£69.65	0.0	£0.00	5.0	£38.48	<b>£108.13</b>	<b>£214.17</b>
Year 3	1525	4.7	£71.03	0.0	£0.00	5.1	£39.23	<b>£110.26</b>	<b>£324.43</b>
Year 4	1510	4.8	£72.43	0.0	£0.00	5.3	£40.01	<b>£112.43</b>	<b>£436.87</b>
Year 5	1495	4.9	£73.85	0.0	£0.00	5.5	£40.80	<b>£114.65</b>	<b>£551.51</b>
Year 6	1480	5.1	£75.31	0.0	£0.00	5.6	£41.60	<b>£116.91</b>	<b>£668.42</b>
Year 7	1465	5.2	£76.79	0.0	£0.00	5.8	£42.42	<b>£119.21</b>	<b>£787.63</b>
Year 8	1450	5.4	£78.30	0.0	£0.00	6.0	£43.25	<b>£121.56</b>	<b>£909.19</b>
Year 9	1436	5.6	£79.85	0.0	£0.00	6.1	£44.11	<b>£123.95</b>	<b>£1,033.14</b>
Year 10	1421	5.7	£81.42	0.0	£0.00	6.3	£44.98	<b>£126.39</b>	<b>£1,159.53</b>
Year 11	1407	5.9	£83.02	0.0	£0.00	6.5	£45.86	<b>£128.88</b>	<b>£1,288.42</b>
Year 12	1393	6.1	£84.66	0.0	£0.00	6.7	£46.76	<b>£131.42</b>	<b>£1,419.84</b>
Year 13	1379	6.3	£86.33	0.0	£0.00	6.9	£47.69	<b>£134.01</b>	<b>£1,553.85</b>
Year 14	1365	6.4	£88.03	0.0	£0.00	7.1	£48.63	<b>£136.65</b>	<b>£1,690.50</b>
Year 15	1352	6.6	£89.76	0.0	£0.00	7.3	£49.58	<b>£139.34</b>	<b>£1,829.85</b>
Year 16	1338	6.8	£91.53	0.0	£0.00	7.6	£50.56	<b>£142.09</b>	<b>£1,971.94</b>
Year 17	1325	7.0	£93.33	0.0	£0.00	7.8	£51.56	<b>£144.89</b>	<b>£2,116.83</b>
Year 18	1312	7.3	£95.17	0.0	£0.00	8.0	£52.57	<b>£147.74</b>	<b>£2,264.57</b>
Year 19	1299	7.5	£97.05	0.0	£0.00	8.3	£53.61	<b>£150.65</b>	<b>£2,415.22</b>
Year 20	1286	7.7	£98.96	0.0	£0.00	8.5	£54.66	<b>£153.62</b>	<b>£2,568.84</b>
<b>TOTAL Benefit over 20 years</b>								<b>£2,568.84</b>	
<b>Return on investment</b>	<b>75% equivalent to</b>		<b>3.0% pa</b>		<b>Cost of installation including VAT @ 5%</b>				<b>£3,439.00</b>

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