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| WARWICK DISTRICT COUNCIL | **Executive**<br>**14th September 2011** | **Agenda Item No.**<br>6 |

| | |
|---|---|
| **Title:** | Proposal to install photovoltaic systems to suitable WDC housing and corporate properties. |
| **For further information about this report please contact** | Jameel Malik, Head of Housing and Property Services |
| **Service Area** | Housing and Property Services |
| **Wards of the District directly affected** | All. |
| **Is the report private and confidential and not for publication by virtue of a paragraph of schedule 12A of the Local Government Act 1972, following the Local Government (Access to Information) (Variation) Order 2006** | No |
| **Date and meeting when issue was last considered and relevant minute number** | None |
| **Background Papers** | *"HRA Self Financing"* –Executive – 8th June 2010<br>*"A feasibility study into the applicability of PV installations and to identify, implement of delivery vehicle to facilitate a programme of installation on Council homes and corporate properties within the district."* – Tender document return – February 2011<br>*"Feasibility Study"* - PlaceFirst – April 2011<br>"Financial Analysis – PV Installation programme" – PlaceFirst – June 2011<br>*"Corporate property, eligibility for PV installation"*- PlaceFirst – July 2011 |

| | |
|---|---|
| **Contrary to the policy framework:** | No |
| **Contrary to the budgetary framework:** | No |
| **Key Decision?** | Yes |
| **Included within the Forward Plan? (If yes include reference number)** | 12A |
| **Equality & Sustainability Impact Assessment Undertaken** | Yes |

| **Officer/Councillor Approval** | | |
|---|---|---|
| **Officer Approval** | **Date** | **Name** |
| Chief Executive | | Chris Elliot |
| Deputy Chief Executive | | Bill Hunt |
| Head of Service | | Jameel Malik |
| Section 151 Officer | | Mike Snow |
| Monitoring Officer | | Andrew Jones |
| Finance | | Sandra Jones |
| Portfolio Holder(s) | | Councillor Norman Vincentt |
| **Consultation Undertaken** | | |

| | |
|---|---|
| The Tenants Panel were consulted about the PV project at the Tenant Consultation meeting on the 16th August 2011.<br>Tenants directly affected/benefitting from the photovoltaic systems will be consulted and approvals sought in advance of the installation. | |
| **Final Decision?** | Yes |
| **Suggested next steps (if not final decision please set out below)** | |

## 1 SUMMARY

1.1 This report seeks Executive approval to deliver a district-wide programme to install up to 517 photovoltaic systems (PVs) on Housing Revenue Account (HRA) assets and corporate properties by 31st March 2012.

## 2 RECOMMENDATION

2.1 That Executive approve the direct procurement by the council of a programme ('option 3' detailed in section 3), to procure and install up to 517 PV systems, on up to 511 HRA assets and 6 corporate properties by 31st March 2012. The actual number installed will depend upon structural surveys on proposed properties, tenant agreement, and the volume that can be completed by 31st March 2012.

2.2 The Executive agree to include up to £3,380,000 in the Housing Investment Programme for the installation of PV systems on Housing Revenue Account properties, reduced in proportion to the number of installations by 31 March 2012.

2.3 The Executive agree to include up to £375,000 in the Other Capital Programme for the installation of PV systems on corporate properties, reduced in proportion for any installations not completed by 31 March 2012.

2.4 The Executive note that the financing of this project will be funded throughout its life from internal resources and/or prudential borrowing as appropriate as part of the councils overall treasury management/funding strategy; however for the HRA the 'Self Financing' debt take on in March 2012 means it is prudent to view the HRA element of this project as effectively debt funded from that point onwards. The precise funding to be determined when the Capital Programme funding is next reviewed

2.5 Executive notes the benefits to the council of the FiT as contained in section 4 & 5 of this report.

2.6 Executive notes a future report will be presented providing a post completion review and to explain the following change to FiT post in April 2012.

## 3 REASONS FOR THE RECOMMENDATION

3.1 On 1st April 2010 the Government introduced the Feed-In Tariffs (FiT) to encourage new investment in low carbon green technologies. Local authorities have been eligible to receive FiT payments since late 2010 when the restriction against local authorities selling renewable energy was lifted.

3.2 The FiT payments are based on the electricity generated by a renewable energy system which is used in the property. There is also an additional bonus for any energy produced which is exported to the electricity grid.

3.3 The FiT gives three separate benefits:

- An index linked generation tariff payment, which is based on total electricity generated (the generation tariff).
- An index linked export tariff payment, which is for any energy exports when generating more than what is being used (the export tariff).
- Lower bills from the energy supplier to the occupier of the building, due to the reduction in electricity imported from them.

3.4 The level of the generation tariff is dependent on the technology and the system size. The generation tariff is paid for every kilowatt-hour (kWh) of electricity produced. The owner of the PV systems can receive up to 41.3p for every kWh, depending on the size of the PV system.

3.5 In addition to main generation tariff, the owner of the system also receives an export tariff payment for electricity exported to the grid. A 'floor price' has been set in legislation. For the year from 1st April 2011 this is 3.1p kWh.

3.6 Once the system starts at a given tariff rate, this rate is guaranteed for a full 25 years, index linked to the retail price index.

3.7 FiT rates are expected to reduce from 1st April 2012, to reflect the reducing cost of panels. The aim of this being to achieve 'grid parity', where the point at which the production of renewable energy is cheaper or equal to the cost of traditional mean of energy production.

3.8 Therefore installations completed and registered by 31st March 2012 will benefit from the prevailing tariff which will be fixed for the 25 year duration.

3.9 Although the council has identified circa 1,200 dwellings and 12 corporate properties that are suitable for PV installation, the change in FiT rates from April 2012 onwards means that the recommendation in this report and the business case is limited to the number of assets which can have PVs installed and registered by 31st March 2012.

3.10 The proposed recommendation seeks Executive approval to install PV systems onto up to 517 properties, covering potentially all wards. This includes 304 council houses, 207 blocks of council flats, including sheltered schemes, and 6 corporate buildings. The 511 dwellings were prioritised due to the longevity of their structures and age of roofs, installed since 2004. The short list of corporate buildings was decided based on certainty as to their future for the next 25 years. Detailed structural surveys will be carried out following Executive approval.

3.11 The old Kenilworth Police Station recently bought by WDC will also be considered for a PV system install. This property has not been taken into account at this late stage, but will be if approval is granted.

3.12 This project is the first phase in the Council commitment to use renewable technologies to reduce carbon emissions and improve health and economic outcomes of its citizens. Following this phase the council will produce a comprehensive green energy programme which will identify how such renewable energy benefits can be delivered to a wider group of tenants and residents living in the District

3.13 Installing PV panels on up to 517 properties by 31st March 2012 is a very ambitious programme and a best case scenario. A realistic installation programme could deliver 25% of this upper limit. This reduction has little impact on the financial case for installing PVs as the majority of the costs are variable; it simply results in a pro rata reduction in the cashable benefits whilst maintaining the overall return of capital. At present it is not possible to estimate the precise number of installations as this would amongst other things be dependent upon the capabilities of the provider and installer and securing tenant consent. Thus the more ambitious upper limit requested means further approvals will not be required, which could delay the programme.

3.14 Any future investment post April 2012 will need to be re-evaluated in light of the proposed changes in FiT rates, and an additional approval sought.

3.15 Within the post April 2012 report reviewing the changes to the FiT rates, a section will be added to the report which will review what was actually achieved this financial year in exploiting the current FiT.

3.16 PlaceFirst and Grant Thornton have modelled the financial and non-financial benefits and risks of different delivery options for installing PV systems.

3.17 <u>The Preferred Option:</u> **<u>Option 3</u> – WDC Directly Procure Installation:**

3.18 This preferred option is for the council to directly procure the installation of PV systems onto suitable assets up to 31st March 2012. The Council will be responsible for construction, operation, funding, insurance and project management costs, and in return own the PV systems installed.

3.19 For prudence the financial projections have been modelled assuming the capital investment is funded by prudential borrowing at an interest rate of 6%, repaid over the 10 years. In reality some or all of the installation programme could be funded from internal resources at a lower effective cost; however for the HRA the 'Self Financing' debt take on in March 2012 means it is prudent to view the HRA element of this project as effectively debt funded from that point onwards.

3.20 The funding balance between internal resources and external borrowing will be managed as part of the council's overall treasury management strategy throughout the life of the project.

3.21 WDC will be responsible for monitoring and maintaining the PV systems, and administration of the FiT.

3.22 WDC will receive all FiT income for both generation of electricity (generation tariff) and exporting surplus electricity to the grid (export tariff) for the next 25 years.

3.23 The tenants of houses where PV systems are installed will benefit directly from using electricity generated and so reduce their electricity costs. For blocks of flats the electricity will be used in communal areas and so benefit all tenants by reducing the cost to the HRA.

3.24 The Tenants Panel was consulted about the PV project at the Tenant Consultation meeting on the 16th August 2011.

3.25 Affected tenants will be directly consulted and a marketing campaign will be introduced to encourage installation of PV systems. At present it is envisaged this will be managed by the appointed contractor.

3.26 The capital expenditure to deliver the proposed PV systems on HRA properties (Houses and Blocks of Flats) is estimated at £3.4m. The scheme would generate in cash terms a surplus of £8.1m over 25 years, repaying the investment after 11 years. This surplus equates to a Net Present Value of £2.8m at today's prices.

3.27 The capital expenditure to deliver PV panels on corporate properties under the General Fund is estimated at £375,000. The scheme would generate in cash terms a return of £428,000 over 25 years, repaying the investment in year 15. This equates to a Net Present Value of £75,000 at today's prices. This surplus is purely from the FiT income, there will be additionally savings on electricity costs from using the electricity generated in buildings owned and operated by WDC.

3.28 The financial projections are summarised in **section 5** Budgetary Framework for the recommended option, and the projections for alternative options considered are included in **section 7**. Details on the assumptions and financial models are contained in **Appendix 3**.

## 4 POLICY FRAMEWORK

4.1 At the end of June 2011 the district had in total 192 dwellings registered on the FiT register for PV systems. If approval is given for the proposed recommendations then this would significantly increase the number of FiT registered assets in the district.

4.2 WDC currently have 29 PV systems installed across our council stock (28 on council homes and installed on a block of flats). The table below shows the total electric generated on each of the 8 bungalows in Rowington where PV panels were installed in March 2009. These systems cost per property on average £7210.44.

| Property no. (St Laurence Close) | PV System Size (KWp) | Roof Orientation | Electric Generated between March 2009-March 2010 (KWh) |
|---|---|---|---|
| 33 | 1.36 | South East | 1246 |
| 34 | 1.36 | South East | 1259 |
| 35 | 1.36 | South East | 1276 |
| 36 | 1.36 | South East | 1266 |
| 37 | 1.36 | South East | 1257 |
| 38 | 1.36 | South East | 1268 |
| 39 | 1.36 | South East | 1215 |
| 40 | 1.36 | South East | 1257 |

If these PV systems were installed as part of the proposed scheme in this report it would on average generate a FiT income for the above properties of £541.09 a year. This shows an average payback period is 13 years (excluding maintenance and insurance costs).

The proposed project in this report would prima facie result in PV systems generating more electric due to their orientation being south as opposed to south east. Hence a shorter payback period, consistent with that identified in the financial appraisal.

4.3 The proposed recommendations to install PV panels on council dwellings and corporate properties will assist in delivering the council's purpose. It will build sustainable, stronger and healthier communities and enable the district to become a great place to live.

4.4 The programme will directly contribute to the Sustainable Community Strategy's thematic and cross cutting priorities relating to housing and embedding sustainability.

4.5 The programme is designed to capitalise on government incentives on green energy and maximise benefits for tenants and the Council from energy savings. It will assist in:

- Benefitting tenants of suitable houses from lower fuel bills and thus alleviating fuel poverty,
- Improving health outcomes,
- Reducing energy bills for the council in suitable corporate properties and blocks of flats,
- Reducing the district's carbon footprint,
- Creating local employment and training opportunities,
- Generating additional revenue from the Feed in Tariff (FiT) payments, and
- Positioning the council as a leader in the development and delivery of green technologies.

4.6 A typical PV system could save over one tonne of $CO_2$ per year, that's 130,000 tonnes over the lifetime of the proposed scheme (source: Energy Saving Trust).

4.7 An average a three bedroom house uses 3,300 kWh of electricity per year. A PV system can produce around 50% of the electricity a household uses in a year. This could potentially result in halving the annual cost of electricity a household uses (source: Energy Saving Trust).

4.8 The Carbon Reduction Commitment (CRC) Energy Efficiency Scheme is a carbon tax which the Council will need to pay for all energy used at a rate of £12 per tonne. The installation of PV's on Council corporate buildings will reduce the cost of this as renewable energy has a lower carbon weighting than other fuels. The exact reduction impact cannot be calculated as clarity of the size of the Council corporate building scheme is still being assessed.

## 5 BUDGETARY FRAMEWORK

5.1 The Council competitively procured PlaceFirst and Grant Thornton at a fee of £26,000 to provide independent feasibility advice and detailed financial models for HRA Houses, HRA Blocks of Flats and Corporate Properties, showing projected costs and income over 25 years. As these models cover a long period of time the Net Present Value (NPV) of the cash flows has been calculated to give the equivalent value to receiving the cash today, using a prudent NPV rate of 6%.

5.2 The key costs and assumptions used in these models are summarised at Appendix 3.

5.3 For the recommended option (WDC Directly Procure Installation), the projected up-front expenditure and net surplus over 25 years is as follows (assuming debt funded, with a pessimistic 6% interest rate):

| | Capital Expend. £ '000 | 25 year Net Cash Surplus £ '000 | Net Present Value 'NPV' of Surplus £ '000 | Payback Period |
|---|---|---|---|---|
| HRA Houses (304) | 1,894 | 4,793 | 1,679 | 10 years |
| HRA Flats communal areas (207) | 1,486 | 3,264 | 1,081 | 11 years |
| **HRA Total** | **3,380** | **8,057** | **2,760** | |
| GF Corporate Properties (6) | 375 | 428 | 75 | 15 years |
| **General Fund Total** | **375** | **428** | **75** | |

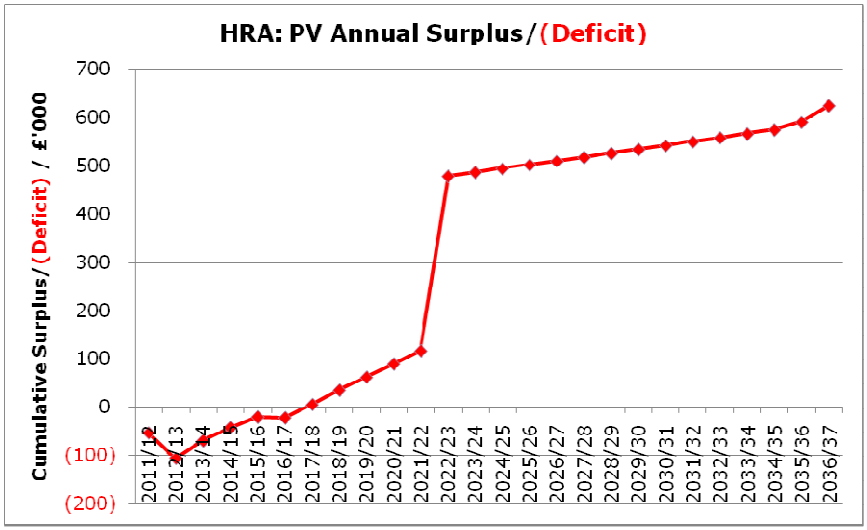
5.4 The above is based upon the estimated most likely completion of 304 HRA Houses, 207 HRA Blocks of Flats (for communal areas) and 6 Corporate Properties.

5.5 The average unit cost and income for HRA Houses and Blocks of Flats is:

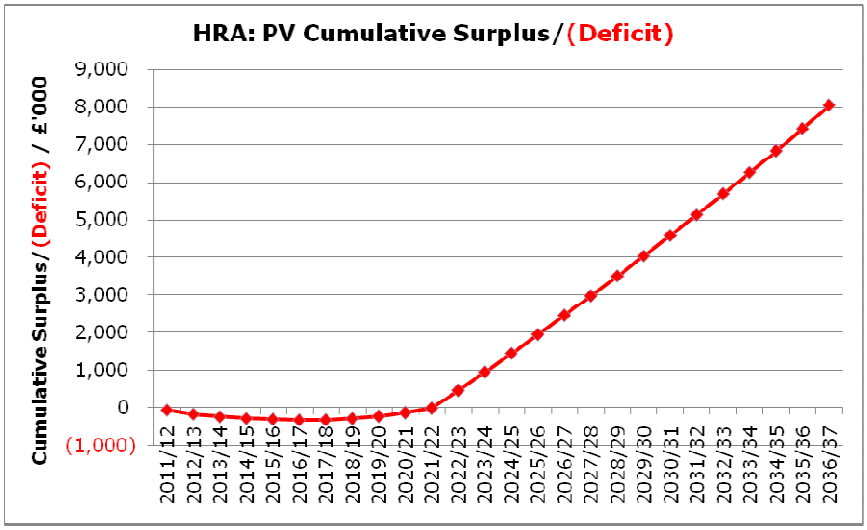
| | Capital Expend. £ '000 | 25 year Net Cash Surplus £ '000 | Net Present Value 'NPV' of Surplus £ '000 |
|---|---|---|---|
| HRA Houses | 6.2 | 15.8 | 5.5 |
| HRA Blocks of Flats (communal areas) | 7.2 | 15.8 | 5.2 |

5.6 The likely savings on electricity bills are not included above as for HRA houses the tenants will benefit directly from the electricity generated. For HRA blocks of flats, the electricity will be used in communal areas and so benefit all tenants by reducing the cost to the HRA.

5.7 The projected HRA annual and cumulative surplus / (deficit) is shown in Appendix 4a, and summarised in the following graphs:




Graph 1




Graph 2

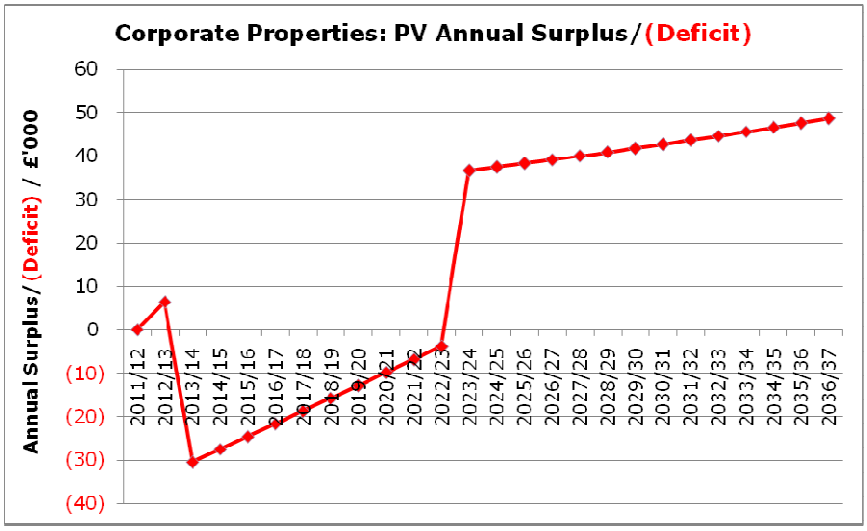
5.8 The modelled cost and income for each Corporate Property is:

| Property | Capital Expend. £ '000 | 25 year Net Cash Surplus £ '000 | Net Present Value 'NPV' of Surplus £ '000 |
|---|---|---|---|
| Abbey Fields Swimming Pool | 35 | 47 | 9 |
| Warwick Gates Community Centre | 66 | 61 | 7 |
| St. Nicholas Park Sports Hall | 10 | 14 | 3 |
| Royal Spa Centre | 173 | 213 | 42 |
| Victoria Bowls Complex | 83 | 84 | 12 |
| North Lodge, Brunswick Street Cemetery | 8 | 9 | 2 |
| **TOTAL CORPORATE PROPERTIES** | **375** | **428** | **75** |

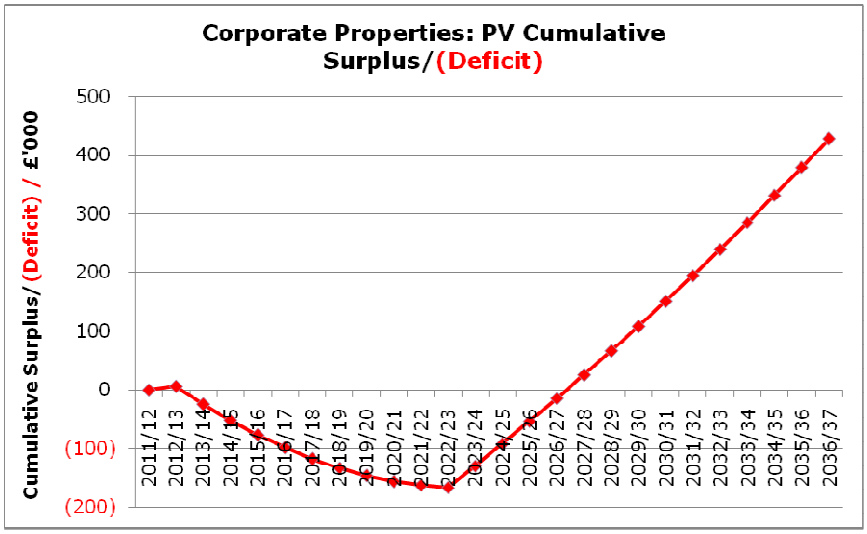
5.9 The above figures only consider income from the FiT, receivable for both generation of electricity used in the property and export of unused electricity to the national grid. In addition to this the electricity saving for corporate

properties operated by WDC will directly benefit the General Fund and so the council tax payers of the district. The model is forecasting to make a surplus even without factoring in the savings

5.10 The projected General Fund annual and cumulative surplus / (deficit) for Corporate Properties is shown in Appendix 4b, and summarised in the following graphs:




Graph 3




Graph 4

5.11 The above graph shows that the net additional cost for Corporate Properties PV systems is £30,000 in the first full year. This will reduce in subsequent years as the upfront capital costs are repaid, as depicted above and detailed in Appendix 4a. After the tenth year, there will be no additional cost to the General Fund. These figures are believed to be a worst case scenario in that they have not allowed for any reductions in electricity costs as the power generated is used by the sites. However, this is only estimated to be worth around £1,000 per annum. In addition, the interest figures in the above are based on 6% cost of capital. If internal reserves are used to finance the

panels, the rate of interest is likely to be around half of this, so reducing the annual costs by up to £10,000 per annum.

5.12 Sensitivity analysis has been carried out to determine the likely financial effect of variances in the key financial assumptions for installations on 304 HRA houses.

5.13 For the variances examined, most cases would still pay back the capital costs and make a surplus. However if the FiT scheme was cancelled in less than 15 years time or the rates significantly reduced the capital cost would not be recouped. The current Government has guaranteed FiT payments at the current rate for 25 years from installation, so this would only happen if a future Government chose not to honour this guarantee.

5.14 This is demonstrated in the following table:

| **Variance from Base Case (option 3) For 304 HRA Houses** Excluding Blocks of Flats & Corporate Properties | **25 year Net Present Value 'NPV' of Surplus £ '000** | **% Change in NPV** |
|---|---|---|
| ***Base Case*** | ***1,679*** | 0% |
| Installation slipped by 1 year (lower FiT) | 1,400 | -17% |
| 20% decrease in electricity generated | 876 | -48% |
| 75% of electricity used (25% feed-in) | 1,611 | -5% |
| All electricity used (no feed-in) | 1,543 | -9% |
| 5% increase in Equipment & Install Costs | 1,478 | -13% |
| 10% increase in Installation Costs | 1,626 | -4% |
| FiT scheme cancelled after 10 years | **(188)** | -111% |
| FiT scheme cancelled after 15 years | 577 | -66% |
| FiT reduced to lowest tariff (19p) | **(474)** | -128% |
| Higher District Network Operator costs | 1,676 | -1% |

**+ve** = surplus **(-ve)** = deficit

5.15 The percentage effect of these variances on HRA Blocks of Flats and Corporate Properties would be similar.

5.16 The project will be procured through a framework which will meet council Code of Procurement Practice requirements. All necessary procurement and legal advice will be sought to ensure that the appropriate commercial and legal probity requirements are fulfilled. The contacts will be awarded to deliver value for money, and efficiency in terms of time, cost, quality and impact on the local economy.

5.17 The council proposes to appoint an undertaking(s) to supply and install from an OJEU compliant Framework Agreement to maximise value for money.

5.18 The Council has a choice around the surplus electricity generated. It could sell back to the National Grid or alternatively sell it to tenants. The second option

would, however, require the council to become a fully regulated electricity supplier, regulated by OFGEM. This option has been discounted given the cost and complexity it would add to the project.

5.19 None of the models are risk free for the Council. In summary the more risk the public sector takes, the more income it can generate in addition to the wider environmental and tenant benefits realised by the project. However the Council needs to ensure that it is alert to the risks and that the risks are manageable. The main risks of all the options are summarised in Appendix 2.

5.20 Members are reminded that the Council still needs to secure over £2.6m savings by 2016/17 on a net budget of £18m so as to be able to continue to set a balanced budget and not be dependent upon the use of its reserves. By investing in the PV panels on the corporate properties, this will increase the amount to be found in the early years by around £30,000 as referred to in paragraph 5.11.

## 6 LEGAL COMMENTS

6.1 All properties proposed for the installation are within the ownership of Warwick District Council and installation is therefore at the discretion of the Council. Unless the properties are within a conservation area, it is unlikely that any of the properties identified will require planning permission for the installation of the panels. As mentioned elsewhere in the report the Council has power to sell electricity.

6.2 All Tenants will be required to sign an installation agreement. This will set out arrangements for allowing access to the Council for the purposes of maintenance, repair and inspection of panels, and equipment where necessary, and arrangements for protecting the Councils investment in the event that the tenant exercises the 'right to buy' or where the "secession rules" apply following the death of the tenant.

## 7 ALTERNATIVE OPTIONS CONSIDERED

7.1 On appointing PlaceFirst and Grant Thornton a number of PV delivery options were evaluated, as follows.

7.2 **Do Nothing Option**

7.2.1 Whilst this option removes all of the associated financial risk to the Council, the do nothing approach would:

- Fail to meet the Council's purpose and objectives of the sustainable Community Strategy

- Reduce the District's capacity to meet carbon reduction targets and the potential job creation opportunities.

- Remove the potential to bring much needed income into the Housing Revenue Account and General Fund.

- Increase risk of tenants experiencing fuel poverty.

7.3 **<u>Option 1</u> – 'Rent a Roof' Lease Model**

7.3.1 In this option WDC effectively leases its roof space to a third party for 25 years. The third party is responsible for the construction, operation, funding and insurance costs, taking on the bulk of the project risks, but in return they receive all FiT income.

7.3.2 In return WDC would receive some form of rental income. The exact nature of this return would be dependent on the project risks, economics and would vary depending upon the private sector partner selected.

7.3.3 The capital expenditure, projected 25 year cash surplus, and the net present value (NPV) of that surplus for Option 1 are summarised below for Houses and Blocks of Flats:

| Delivery Option 1 Roof Rent | Capital Expend. £ | 25 year Net Cash Surplus £ '000 | Net Present Value 'NPV' of Surplus £ '000 | Payback Period |
|---|---|---|---|---|
| Blocks (207) | 0 | 219 | 102 | Immediate |
| Houses (304) | 0 | 318 | 150 | Immediate |
| **TOTAL Option 1** | **0** | **537** | **252** | **Immediate** |

7.3.4 In summary this option requires no capital investment and moves a lot of the project risks to the third party. However the financial rewards are less than 10% of those projected for the preferred option.

7.3.5 It is important to realise that this option is not risk free, the key risks for this and the other possible delivery options are considered in Appendix 2.

7.3.6 Corporate Properties have not been modelled as typical rent a roof schemes are primarily aimed as dwellings. Furthermore granting 25 year roof leases would risk reducing the Council's strategic freedom to develop these assets.

7.4 **<u>Option 2a & b</u> – Establish an external investment Joint Venture (JV):**

7.4.1 In these options a Joint Venture (JV) would be set up and the Council would hold an equity stake in the JV.

7.4.2 Option 2a is based upon WDC owing a 50% share of the JV for the full 25 year term, receiving 50% of the surpluses generated.

7.4.3 In Option 2b, the JV is sold in 2013, after all the installations have been completed and the JV has had a full year of trading, with WDC receiving 50% of the sale proceeds.

7.4.4 It is important to note that in both options the JV will have significant working capital requirements which would fall on the partners.

7.4.5 The capital expenditure, projected 25 year cash surplus, and the net present value (NPV) of that surplus for Options 2a and 2b are summarised below, based on WDC owning 50% of the JV:

| Delivery Option 2a JV 25 years | Capital Expend. £ | 25 year Net Cash Surplus £ '000 | Net Present Value 'NPV' of Surplus £ '000 | Payback Period |
|---|---|---|---|---|
| Blocks (207) | 782 | 947 | 227 | 14 years |
| Houses (304) | 995 | 1,406 | 392 | 13 years |
| **TOTAL Option 2a** | **1,777** | **2,353** | **619** | **14 years** |

| Delivery Option 2b JV sold after 2 years | Capital Expend. £ | 25 year Net Cash Surplus £ '000 | Net Present Value 'NPV' of Surplus £ '000 | Payback Period |
|---|---|---|---|---|
| Blocks (207) | 782 | 264 | 233 | 2 years |
| Houses (304) | 995 | 335 | 295 | 2 years |
| **TOTAL Option 2b** | **1,777** | **599** | **528** | **2 years** |

7.4.6 This model was discounted on the basis that the Council would be unable to procure it within a reasonable timescale given the scale required and necessity to observe EU procurement rules. Furthermore discussions with funders suggest that to attract external investment in this model a project larger than the roofs available to the Council would be required.

7.4.7 Corporate Properties have not been modelled as a separate JV for just 6 properties as it would not be financially viable. The Council could add Corporate Properties to a larger Joint Venture with the Houses and Blocks, but effectively granting a 25 year roof lease to a JV would risk reducing our strategic freedom to develop these assets.

7.5 Summary

The key financial projections for all considered options for a programme of 207 Blocks of Flats and 304 Houses is summarised below:

| | Delivery Option (Houses & Blocks) | Capital Expend. £ | 25 year Net Cash Surplus £ '000 | Net Present Value 'NPV' of Surplus £ '000 | Payback Period | |
|---|---|---|---|---|---|---|
| **1** | Roof Rent | 0 | 537 | 252 | Immediate | |
| **2a** | JV 25 years | 1,777 | 2,353 | 619 | 14 years | |
| **2b** | JV sold 2 years | 1,777 | 599 | 528 | 2 years | |
| **3** | WDC Install | 3,381 | 8,058 | 2,760 | 11 years | recommended |

7.5.1 Sensitivity analysis has been carried out to determine the likely financial effect of variances in the key financial assumptions for installations on 304 HRA houses:

| NPV for Option<br>Variance from Base Case<br>Modelled for 304 Houses<br>(Flats & Corporate excluded) | 1<br>Rent a Roof<br>£'000 | 2a<br>JV<br>25 yr<br>£'000 | 2b<br>JV<br>Sold<br>£'000 | 3<br>WDC<br>Install<br>£'000 |
|---|---|---|---|---|
| ***Base Case*** | ***150*** | ***392*** | ***295*** | ***1,679*** |
| Installation slipped by 1 year (lower FiT) | 150 | 284 | 106 | 1,400 |
| 20% decrease in electricity generated | 150 | 78 | 59 | 876 |
| 75% of electricity used (25% feed-in) | 150 | 300 | 275 | 1,611 |
| All electricity used (no feed-in) | 150 | 340 | 256 | 1,543 |
| 5% increase in Equipment & Install Costs | 150 | 305 | 209 | 1,478 |
| 10% increase in Installation Costs | 150 | 369 | 278 | 1,626 |
| FiT scheme cancelled after 10 years | 76 | **(359)** | 295 | **(188)** |
| FiT scheme cancelled after 15 years | 105 | **(29)** | 295 | 577 |
| FiT reduced to lowest tariff (19p) | 150 | **(494)** | **(371)** | **(474)** |
| Higher District Network Operator costs | 150 | 391 | 294 | 1,676 |

7.6 The current Government have guaranteed the Fit scheme but should the Government change in the future the new Government may withdraw this funding.

7.7 An overall value for money assessment has been completed for the housing properties taking into account both qualitative and quantitative outputs.

7.7.1 Under the qualitative assessment each option was scored against 5 high level evaluation criteria, each with their own weighting. These were;

- WDC's Risk Exposure after Mitigating Factors taken into account (40%)
- Use of WDC's cash resources (25%)
- Potential to develop internal 'green' skill sets (12.5%)
- Potential to realised upside financing gain - refinancing, system over-performance etc. (12.5%)
- Use of WDC's staffing resources (10%)

7.7.2 The qualitative outputs are shown in the table below;

| Options | Option 1 Rent a Roof | | Options 2a, 2b Joint Venture | | Options 3 WDC Install | |
|---|---|---|---|---|---|---|
| **Evaluation Criteria** | **Score** | **Weighted score** | **Score** | **Weighted score** | **Score** | **Weighted score** |
| WDC's Risk Exposure | 3 | 40% | 2 | 27% | 1 | 13% |
| Use of WDC's cash resources | 3 | 25% | 2 | 17% | 1 | 8% |
| Potential to develop internal 'green' skill sets | 1 | 4% | 2 | 8% | 3 | 13% |
| Potential to realised upside financing gain | 1 | 4% | 2 | 8% | 3 | 13% |
| Use of WDC's staffing resources | 3 | 10% | 2 | 7% | 1 | 3% |
| **Total** | **11** | **83%** | **10** | **67%** | **9** | **50%** |

The evaluation of these qualitative criteria indicates that option 1 is the most beneficial, followed by option 2a & b and then option 3.

7.7.3 The qualitative assessment was then combined with the NPV for each option, which shows the financial benefit. The table below shows that overall option 3 has the greatest value for money benefit followed by options 2a, 2b and then option 1.

| | Option 1 Rent a Roof | Option 2a JV for 25 years | Option 2b JV sold after 2 yrs | Option 3 WDC Install |
|---|---|---|---|---|
| NPV (£'000) | 252 | 619 | 528 | 2,776 |
| Qualitative % score | 83% | 67% | 67% | 50% |
| **Combined (£'000)** | **209** | **415** | **354** | **1388** |

7.8 As PV systems can only be installed on certain types of properties this would in the future create an inequality between the tenants living in houses with PV installations and those who live in houses unsuitable for PV. This unavoidable inequality can be overcome to some extent by using returns on investment from the scheme to balance the Housing Revenue Account (thus benefiting all tenants), alongside funding energy saving advice and alternative insulation measures to untreated properties. This response will be developed as part of the Council's HRA and Corporate Asset Management Strategies which will be updated over the next 24 months.

7.9 This PV project therefore needs to be seen as part of the ongoing programme of improvements the Council has made and will continue to make to its stock as opportunities arise.

7.10 An impact assessment can be found in appendix 5.

**Appendix 1**
**Glossary and Abbreviations**

| Terms & abbreviations | Definition |
|---|---|
| CRC | The CRC is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large public and private sector organisations. |
| DECC | Department of Energy and Climate Change |
| Export Tariff | the rate paid for each kWh of electricity generated by the PV that is not used by the Tenant but is exported to the grid. |
| FiT scheme | Establishment in April 2010, the FiT scheme was intended to encourage deployment of additional small scale low carbon electricity generation, particularly by individuals, householders, organisations, businesses and communities who have not traditionally participated in the electricity market. |
| Generation Tariff | The rate paid for each kWh of electricity generated by the PV |
| HRA | The Housing Revenue Account |
| JV | Joint Venture – a self standing company set up to exploit the FIT. This could be part owned by the Council (we would need to invest equity) but the majority ownership would be a private sector investor. |
| kWh | A kilowatt hour – a measure of electricity generated / used. |
| NPV | Net Present Value – the value of the income less expenditure over the project life expressed in today's money. |
| PV | Means the photovoltaic panels(s) and equipment which connects the photovoltaic panel to the existing domestic electrical installation in each property and makes the photovoltaic panel functional |
| MCS | Microgeneration Certification Scheme is an internationally recognised quality assurance scheme which demonstrates rigorous and tested standards. Installer certification entails assessing the supply, design, installation, set-to-work and commissioning of renewable microgeneration technologies. |
| OFGEM | The Office of Gas & Electricity Markets – the regulator of the electricity and gas markets in Great Britain. |
| Renewable | Tool for generating electricity that has the ability to produce power without polluting the environment or depleting non-renewable resources – examples are hydro electric dams, wind turbines, tidal power installations and photovoltaic panels. |

# **Appendix 2** - Potential Risks and Mitigating Factors

**Introduction:**
This section provides a more detailed overview of the key potential risks and mitigants associated with each of the contractual options currently being considered by the Council.
The matrix below provides an overview summary of all identified risks when mapped against the three contractual options. Codes represent the potential magnitude of each risk to WDC (refer to key below for definitions).
In overview the 'Rent-a-Roof' contractual option is relatively low risk compared to full-self delivery at the other end of the spectrum which poses greater risks.

**Key:**
**H =** Material Risk. Without Resolution do not progress
**M =** Medium Risk but can be managed through effective mitigation
**L =** No material risk

| **Potential Risk** | **Option 1: Rent-a-Roof Mitigating Factor** | **Option 2a & 2b: Joint Venture (JV) Mitigating Factor** | **RECOMMENDED OPTION Option 3: WDC Self-delivery Mitigating Factor** |
|---|---|---|---|
| 'PV for Free' provider may discontinue its operations or become insolvent | **M =** WDC should consider for example agreeing to have the first right of refusal to purchase the panels (from the administrator) in the event that the provider undergoes financial difficulties. The provision of this ongoing service will ensure that the panels continue to be eligible for FITs and are maintained and to enable the ongoing collection of income streams Inclusion of penalty clause for underperformance and product warranties should remain attached to the product. | **L=** N/A - operations are managed by the JV and hence the FiT scheme is not reliant on any one organisation. | **L=** N/A - operations are managed by WDC and hence the FiT scheme is not reliant on any one organisation. |

| Potential Risk | Option 1: Rent-a-Roof Mitigating Factor | Option 2a & 2b: Joint Venture (JV) Mitigating Factor | Option 3: WDC Self-delivery Mitigating Factor |
|---|---|---|---|
| The panels need to be removed | **M=** Any damage to the roof will be covered by the buildings insurance and arrangements may be required to cover the cost of re-installing the panels.<br><br>WDC may have a duty of care to notify their insurance company regarding 'PV for Free' partner interest in the system. | **M=** JV will need to ensure that any damage to the roof is covered by buildings insurance<br>The agreement in place between JV and the tenant should provide that the panel cannot be removed without the consent of both parties. However, JV should consider the possibility of the tenant buying out of the agreement. Under the terms of the installation agreement, JV will have a duty of care to notify their insurance company regarding the JV's interest in the system. | **M=** WDC will need to ensure that any damage to the roof is covered by buildings insurance<br>The agreement in place between WDC and the tenant should provide that the panel cannot be removed without the consent of both parties. However, WDC should consider the possibility of the tenant buying out of the agreement. Under the terms of the installation agreement, the will have a duty of care to notify their insurance company regarding WDC's interest in the system |
| Planning Permission | **M=** There may be a requirement to get Planning Permission - WDC should be responsible for confirming if this is the case and should be responsible for complying with the planning regulations. | **M=** There may be a requirement to get Planning Permission – The JV should be responsible for confirming if this is the case and should be responsible for complying with the planning regulations. | **M=** There may be a requirement to get Planning Permission - WDC should be responsible for confirming if this is the case and should be responsible for complying with the planning regulations. |
| Installation disruption which annoys the tenants | **M=** A detailed installation plan could be agreed including penalties paid by a 'PV for Free' provider if they cause disruption. Effective tenant consultation will be key it should be established how and when the provider can assist with both tenant consultation and wider scheme marketing. | **M=** A detailed installation plan could be agreed including penalties paid by the installer if they cause disruption | **M=** A detailed installation plan could be agreed including penalties paid by the installer if they cause disruption |
| Tenant dissatisfaction with the energy saving | **M=** A Tenant Communication Programme should be developed to ensure tenants understand that the production of free energy varies with sunshine and the performance of the units. | **M=** A Tenant Communication Programme to ensure tenants understand that the production of free energy varies with sunshine and the performance of the units.<br><br>WDC's JV partner may have experience of developing Communication strategies on other similar engagements. | **M=** A Tenant Communication Programme to ensure tenants understand that the production of free energy varies with sunshine and the performance of the units |

| Potential Risk | Option 1: Rent-a-Roof Mitigating Factor | Option 2a & 2b: Joint Venture (JV) Mitigating Factor | Option 3: WDC Self-delivery Mitigating Factor |
|---|---|---|---|
| The system is not reliable - Under the 'PV for free' proposal this impacts not only on the amount of free electricity available to tenants but also potentially on WDC's profit/revenue share income. | **M=** WDC should insist that the components used within the system and the installation (including siting) and maintenance are of a high specification in order to achieve the assumed generation level.<br><br>The elements need to be sourced from reputable panel supplier and come with solid 25 year performance guarantee backed up by penalties.<br><br>WDC should ensure that the provider is using a MCS certified provider. | **M=** The JV should ensure that the components used within the system and the installation (including siting) and maintenance are of a high specification in order to achieve the assumed generation level.<br><br>The installer should provide solid long-term performance guarantees backed up by financial penalties.<br><br>Selection of a suitably qualified JV partner with knowledge of system reliability should minimize this risk | **H=** WDC should ensure that the components used within the system and the installation (including siting) and maintenance are of a high specification in order to achieve the assumed generation level.<br><br>The installer should provide solid long-term performance guarantees backed up by financial penalties. |
| The panel's performance is impaired, reducing the production of free electricity<br><br>Impairment may be due to failure by the provider to maintain the panels or to replace components which fail. | **M=** WDC should carry out due diligence to confirm:<br><br>the quality of the panels and the installation<br>the maintenance and replacement plans and contractors.<br><br>In addition, the contract with the provider should provide adequate financial penalties and other remedies if the Provider fail to meet its commitments. | **M=** JV should carry out due diligence to confirm the quality of the panels and the installation<br><br>Ongoing performance to be monitored through installation of appropriate remote monitoring and alert systems.<br><br>Selection of a JV partner with detailed knowledge of panel quality and performance metrics can reduce this risk to WDC | **M=** WDC should carry out due diligence to confirm the quality of the panels and the installation<br><br>Ongoing performance to be monitored through installation of appropriate remote monitoring and alert systems. |
| Delay in installation and accreditation timetable | **M=** WDC should understand when and what remedies if any, it has if the provider is late in securing accreditation (if it is required) and the installation receives a lower tariff due to tariff degression. Specifically WDC should gain contractual certainty that any increase in upfront costs or reduction of tariff revenues will be borne by the provider and WDC is ring-fenced from any risk. | **M=** JV will be responsible for ensuring MCS accreditation is achieved. WDC should seek a JV partner with familiarity with the accreditation process and understand commercial implications if accreditation is not achieved – sensitivity modelling can help inform this understanding | **H=** WDC will be responsible for ensuring MCS accreditation is achieved, and hence will need to familiarise itself with the accreditation process and factor this requirement carefully into its project timetable. |

| Potential Risk | Option 1: Rent-a-Roof Mitigating Factor | Option 2a & 2b: Joint Venture (JV) Mitigating Factor | Option 3: WDC Self-delivery Mitigating Factor |
|---|---|---|---|
| Changes to the FiT scheme -<br>The Government materially changes or withdraws the FiT scheme | L= DECC's current FiT position states that for installations completed and registered the prevailing generation tariff will be fixed for the full lifetime of the installation. Only the export tariff levels may be adjusted.<br><br>Under a PV4F arrangement WDC should gain contractual certainty that any adverse commercial implications linked to future cutes in FiT tariff rates are retained by PV4F provider. | **M=** The DECC's current FiT position states that for installations completed and registered the prevailing generation tariff will be fixed for the full lifetime of the installation. Only the export tariff levels may be adjusted<br><br>Recent DECC announcements which left tariff rates for schemes below 50mW unaffected grounds for cautious optimism<br><br>WDC can better understand the potential impact of reduced FiT revenues through sensitivity modelling<br><br>Exposure to reduction in tariffs after 31 Mar 12 can be reduced by ensuring realistic programme of installations to this point | **M=** The DECC's current FiT position states that for installations completed and registered the prevailing generation tariff will be fixed for the full lifetime of the installation. Only the export tariff levels may be adjusted<br><br>Recent DECC announcements which left tariff rates for schemes below 50mW unaffected grounds for cautious optimism<br><br>WDC can better understand the potential impact of reduced FiT revenues through sensitivity modelling<br><br>Exposure to reduction in tariffs after 31 Mar 12 can be reduced by ensuring realistic programme of installations to this point |
| Lower than expected solar radiation<br>Revenue will be reduced if the level of radiation is less than expected, or the panels are shaded more than expected, over a sustained period | **L/M=** The level of radiation underlying a 'PV for Free Provider's' business plan should be prudent. | **M=** The level of radiation underlying the business plan should be prudent. JV can better understand the potential impact of reduced FiT revenues as a result of lower than expected solar radiation through sensitivity modelling | **M=** The level of radiation underlying the business plan should be prudent. WDC can better understand the potential impact of reduced FiT revenues as a result of lower than expected solar radiation through sensitivity modelling |
| The panels and other components have an economic life of less than 25 years. | **L/M=** While this risk is passed through to the provider this scenario would potentially impact on WDC profit / revenue share if incorporated in a contractual agreement. | **M=** The equipment to be sourced from reputable, MCS accredited suppliers and come with long-term performance guarantee backed up by financial penalties.<br><br>Selection of a suitably qualified JV patner can assist in mitigating this risk | **M=** The equipment to be sourced from reputable, MCS accredited suppliers and come with long-term performance guarantee backed up by financial penalties. |
| Export revenue is less than expected<br>Tenants may consumer more of the energy than expected, leaving less for export | **L=** N/A. This risk is passed through to the provider. | **M=** Prudent modelling of the level of electricity generation and tenant consumption so that projections of power exported are conservative. JV can better understand the potential impact of reduced FiT revenues through sensitivity modelling | **M=** Prudent modelling of the level of electricity generation and tenant consumption so that projections of power exported are conservative. WDC can better understand the potential impact of reduced FiT revenues through sensitivity modelling |

| Potential Risk | Option 1: Rent-a-Roof Mitigating Factor | Option 2a & 2b: Joint Venture (JV) Mitigating Factor | Option 3: WDC Self-delivery Mitigating Factor |
|---|---|---|---|
| Time/Cost overruns in installation programme | **L=** N/A. No capital costs as these are incurred by the 'PV for Free' provider. | **M=** Ensure realistic installation programme which does not unrealistically overstate units to be delivered by 31 Mar 2012<br><br>Consider paying premium to suppliers to pass this risk through<br><br>Tight legal contracts with supplier including appropriate performance penalties cap capital costs - fixed price contract.<br><br>Selection of JV partner with good working knowledge of PV supply chain can help reduce this risk | **H=** Ensure realistic installation programme which does not unrealistically overstate units to be delivered by 31 Mar 2012<br><br>Consider paying premium to suppliers to pass this risk through<br><br>Tight legal contracts with the supplier including appropriate performance penalties cap capital costs - fixed price contract |
| Maintenance costs are higher than expected<br><br>Maintenance is not expected to be a major expense or technically challenging but there will be a requirement over a 25 year period | **L=** N/A. No maintenance costs as these are incurred by 'PV for Free' provider. | **M=** The JV may decide to out-source maintenance to a reputable contractor. Any out-sourcing contract to cap costs and include appropriate performance penalties.<br><br>If the maintenance is done in-house within the JV it should ensure that it has staff with the appropriate skills and follows the required procedures.<br><br>WDC can help mitigate this risk by choice of JV partner with good working knowledge of PV supply chain | **M=** WDC may decide to out-source maintenance to a reputable contractor. Any out-sourcing contract to cap costs and include appropriate performance penalties.<br><br>If WDC performs the maintenance in-house it should ensure that it has staff with the appropriate skills and follows the required procedures. |
| Replacement costs are higher than expected<br><br>Certain components (specifically inverters) will need to be replaced over a 25 year period | **L=** N/A. No replacement costs as these are incurred by 'PV for Free' provider. | **M=** The JV work with experience engineers to estimate a prudent allowance for replacement costs.<br><br>The JV may decide to out-source component replacement to a reputable contractor. Any out-sourcing contract to cap costs and include appropriate performance penalties. An alternative risk management tool is insurance.<br><br>WDC can help mitigate this risk by choice of JV partner with good working knowledge of PV supply chain | **M=** WDC work with experience engineers to estimate a prudent allowance for replacement costs.<br><br>WDC may decide to out-source component replacement to a reputable contractor. Any out-sourcing contract to cap costs and include appropriate performance penalties. An alternative risk management tool is insurance. |

| Potential Risk | Option 1: Rent-a-Roof Mitigating Factor | Option 2a & 2b: Joint Venture (JV) Mitigating Factor | Option 3: WDC Self-delivery Mitigating Factor |
|---|---|---|---|
| Failure of Supply Chain/Counterparties<br><br>Under the self-delivery and JV option, WDC's net cash flow will depend upon a number of counterparties including the supplier, maintenance contractors, etc. | N/A. | **M=** The JV carry out due diligence on key counterparties to confirm that their ability to meet their obligations and to pay penalties if they fail.<br><br>The JV to develop contingency plans for a failure by a key supplier e.g. a contractor to whom maintenance has been out-sourced | **H=** WDC carry out due diligence on key counterparties to confirm that their ability to meet their obligations and to pay penalties if they fail.<br><br>WDC to develop contingency plans for a failure by a key supplier e.g. a contractor to whom maintenance has been out-sourced |
| Vandalism and Theft<br>Solar panels are vulnerable to theft which has been an issue in Spain and Germany and insurance cover may be expensive | **L=** N/A. This risk is passed through to the 'PV for Free' provider. | **L/M=** Investigate panel access and measures to prevent vandalism and theft | **L/M=** Investigate panel access and measures to prevent vandalism and theft |
| Failure to adhere to FiT licensing conditions delays project implementation and receipt of revenues to WDC | **L=** N/A - Risk borne by the 'PV for Free' Provider | **M=** The JV should review the FiT Licensee Standard Terms and Conditions and take legal advice if required | **H=** WDC should review the FiT Licensee Standard Terms and Conditions and take legal advice if required |
| Failure to adhere to procurement rules delays project implementation | WDC should seek relevant legal advice to attain clarify as to requirements under relevant procurement rules, and, specifically, the need to OJEU | **M=** In relation to selection of JV partner, WDC should seek relevant legal advice to attain clarify as to requirements under relevant procurement rules, and, specifically, the need to OJEU | **M=** WDC should seek relevant legal advice to attain clarify as to requirements under relevant procurement rules, and, specifically, the need to OJEU |
| System design incorrect | **L=** N/A. This risk is passed through to 'PV for Free' Provider. | **M=** WDC will be responsible for ensuring that main elements of the system are all matched correctly. | **M=** WDC will be responsible for ensuring that main elements of the system are all matched correctly. |
| Poor / Defective System installation | **L=** N/A. This risk is passed through to 'PV for Free' Provider. | **M=** The JV will need to ensure that the different elements of the system are installed properly.<br><br>JV should also ensure a robust procurement of installer exploiting JV partners' industry knowledge. Warranties should be exploited when relevant.<br><br>The JV will need to understand how shading at certain times of year & time of day will impact on the efficiency of the panels and consider this factor in the design of its installation. | **M=** WDC will need to ensure that the different elements of the system are installed properly.<br><br>WDC should ensure a robust procurement process to appoint installers.<br><br>Warranties should be exploited when relevant<br><br>WDC will need to understand how shading at certain times of year & time of day will impact on the efficiency of the panels and consider this factor in the design of its installation. |

| Potential Risk | Option 1: Rent-a-Roof Mitigating Factor | Option 2a & 2b: Joint Venture (JV) Mitigating Factor | Option 3: WDC Self-delivery Mitigating Factor |
|---|---|---|---|
| Inability to access sufficient funding for panel purchase and installation | **L=** N/A Risk passed through to 'PV for Free' Provider. WDC should, however, seek comfort as to PV4F providers ability to access funding as part of procurement process. | **M=** For external funding requirement JV will need to ensure a robust Business Plan in order to attract and convince potential funders.<br><br>WDC should carry out suitable financial vetting procedures to convince itself of its JV partner's ability to tap into equity funding | **H=** WDC to gain comfort that suitable internal funding is available – or that this can be accessed through Prudential Borrowing regime. |
| Increase in cost of debt impairs scheme returns | | **H=** Robust funding completion and ensure an efficient bank due diligence process to ensure funder confidence in ability to deliver.<br>Sensitivity Modelling to better understand impact of potential increase.<br>Model using a pessimistic rate of interest to ensure model robust. | **M=** If Prudential Borrowing exploited ensure clarity around assumed interest rate to use and model.<br>Sensitivity modelling to better understand impact of potential increase in Pru Borrowing rates.<br>Model using a pessimistic rate of interest to ensure model robust. |
| The sterling cost of the panels increase due to exchange rate fluctuations<br>If WDC imports components from China and or the Euro zone there is an inherent foreign exchange risk | **L=** N/A. This risk is passed through to 'PV for Free' Provider. | **M=** A forex (foreign exchange) hedge could be taken out to protect against forex fluctuations.<br>Spot buy all of the panels. | **M=** A forex (foreign exchange) hedge could be taken out to protect against forex fluctuations.<br>Spot buy all of the panels. |

Regardless of contractual model selected all risks and related mitigating actions should be closely monitored and updated over the procurement phase and through operation

## Appendix 3 - Key Assumptions for Financial Models
## General Assumptions for all Models:

| Assumption Type | Assumption Made |
|---|---|
| **Number of Installations** | 304 installations on Houses, with the following system sizes:<br>69 3.0 kWp systems<br>10 2.8 kWp systems<br>45 2.4 kWp systems<br>180 2.0 kWp systems<br>207 installations on Blocks of Flats, with the following system sizes:<br>3 3.0 kWp systems<br>173 2.4 kWp systems<br>31 2.0 kWp systems<br>6 installations on Corporate Buildings, with the following system sizes:<br>Abbey Fields Swimming Pool 10.0 kWp<br>Warwick Gates Community Centre 19.2 kWp<br>St. Nicholas Park Sports Hall 2.8 kWp<br>Royal Spa Centre 50.0 kWp<br>Victoria Bowls Complex 24.0 kWp<br>North Lodge, Brunswick Street Cemetery 2.2 kWp |
| **Phasing of Installations** | All installations take place between October 2011 and March 2012, and so benefit from the higher FiT rates payable before April 2012. |
| **Performance of panel** | Performance of the panels are based upon the SAP calculation.<br>Yield = Efficiency x kWp x S x ZPV<br>Efficiency – performance of the panel<br>kWp – PV system size<br>S - Angle<br>ZPV – Shading factor |
| **Equipment & Installation** | **Houses & Blocks of Flats:**<br>The cost PV system installation varies depending on the system size of. The costs below are inclusive of the PV panels and meter.<br>§ 3.0 kWp systems - £4,650<br>§ 2.8 kWp systems - £4,340<br>§ 2.4 kWp systems - £3,720<br>§ 2.0 kWp systems - £3,100<br>All installations require an inverter to convert direct current to alternating current. The cost of an inverter for each installation is £989.<br>We have assumed the cost of the works associated with installing the panels and kit will be £1,800 per installation for houses, and £1,980 per block of flats due to the greater complexity of the buildings and roof structure.<br>**Corporate Properties:**<br>For Large system sizes, the equipment and installation costs have been estimated based on £3,465 per kWp. This price includes panels, meters inverters, roof support to provide the optimum angle of inclination, installation and fees. |

| | |
|---|---|
| **Degradation of Panels** | The performance of the panel will reduce over the 25 year lifetime. We have assumed a degradation rate of 20% over 25 years consistent with experience developed on other schemes. |
| **Feed in Tariff (FiT) Rates** | **Houses & Blocks of Flats:**<br>Generation Tariff (electricity generated and used):<br>Units installed 2011/12 = 43.3p per kWh,<br>Units installed 2012/13 = 39.6p per kWh.<br>Export Tariff (electricity generated and fed back into the grid):<br>Units installed 2011/12 = 46.3p per kWh,<br>Units installed 2012/13 = 42.6p per kWh.<br>**Corporate Properties:** (Units installed 2011/12)<br>not exceeding 4kWp = 43.3p per kWh,<br>not exceeding 10kWp = 37.8p per kWh,<br>not exceeding 50kWp = 32.9p per kWh,<br>over 50kWp = 19.0p per kWh. |
| **Maintenance of systems** | Maintenance - Irrecoverable warranty insurance & additional call out beyond warranty period is £92.98 per call out (based on 2 hour call out). It is assumed that this is applicable to 20% of installations per annum.<br>Insurance – premium is calculated at 0.145% of capital cost per unit per annum. Excess of £500 applicable to 0.4% of all units per annum.<br>Meter reading - £30 per unit per annum |
| **Equipment Replacement** | Inverter replacement – it is assumed the inverter will need to be replaced once in the lifetime of each installation. |
| **VAT** | VAT on procure and installation costs – 5% fully recoverable<br>VAT on operational costs – 20% fully recoverable<br>VAT levied on generation and export tariffs @ 20% and then fully repaid. |
| **RPI (Inflation)** | 2.5% per annum |
| **Project Lifespan and NPV** | Our financial modelling identifies costs and revenues for an installation programme beginning in October 2011 and completing in March 2012. The models then take into account the cashflows associated with 25 years after the programme of installations are complete i.e. up to the end of March 2037. To arrive at a Net Present Value (NPV), the cashflows are discounted back at 6%. |

**Specific Assumptions for Each Model:**

**Option 1 - Roof Rent:**

| | |
|---|---|
| **Option 1 Description** | Under this option a contractor will fund, install and maintain the solar PV panels on relevant properties. This represents a fully outsourced package delivering a free solar solution to WDC and its tenants.<br>The proposal would involve a roof access agreement on the identified properties, whereby roof access would be granted for the 25 year term of the project enabling the contractor to procure and install the PV panels on the roofs. |
| **Income** | The contractor receives all Feed In Tariff (FiT) income for both generation and export to the grid, but pays a roof rent to WDC of £30 per annum per PV installation for the life of the FiT scheme. |

**Option 2 – Joint Venture (JV):**

- **Option 2a – Joint Venture for full 25 year term**
- **Option 2b – Joint Venture 'Secondary Finance' – Sold on after 2 years**

| | |
|---|---|
| **Option 2 General Description** | Option 2 involves the creation of a Joint Venture (JV) to deliver the installation programmes.<br>The private sector partner brings debt finance to fund the installation and equipment costs. The JV has a working capital requirement necessary to enable the delivery of the programme. It is assumed that this working capital will be provided up front from a combination of the Council and the private sector partner. |
| **Option 2a Specific Description** | In Option 2a WDC retain 50% control of the Joint Venture for the full 25 life of the project.<br>The Council and the Private Sector partner have a 50:50 share in the JV, As such WDC's return is a share (50%) of the cash generated over the full term (25 years) of the programme - the end of March 2037. |
| **Option 2b Specific Description** | In option 2b the JV is sold in July 2013, after all the installations have been completed and the JV has had a full year of trading.<br>WDC's return is a share (50%) of the secondary sale value occurring in 2013. The purchase consideration is calculated using the following assumptions:<br>§ The value of the net cashflows of the JV for a 25 year period commencing in Aug 2013 (post sale) discounted at a rate of 9.5% to a NPV.<br>§ Minus the cost of repaying the debt (we have assumed no early repayment penalty).<br>§ Plus any cash in the JV at the time of sale |
| **Debt Structure** | The private sector partner brings borrowing to the JV under the following terms:<br>§ Debt is drawn down to cover the purchase and installation of the PV units and associated kit.<br>§ The debt repayment term is 10 years<br>§ The interest rate is 6% |
| **Tax** | § VAT on costs fully recoverable<br>§ Corporation tax @26% with a Capital Allowance of 8% |
| **Overheads** | As the programme of installations is delivered directly by a new legal entity in the form of a Joint Venture there will inevitably be substantial overhead costs. We have made the following assumptions for the |

| | |
|---|---|
| | combined Houses & Blocks programme (60% of costs against Houses, 40% against Blocks in their individual models):<br>**Staff costs**<br>§ Chairman - £6k per annum for 25 year lifetime of JV<br>§ Contract Manager - £18k per annum for the lifetime of the JV<br>§ Financial Controller - £23k per annum for the first two years and £6k per annum thereafter for the life of the JV<br>§ Client relationship - £24k for the first year and £12k per annum for the next two years<br>§ Project Manager – 5k per month during the 6 month installation programme<br>§ Employers National Insurance at 13.8% over above costs<br>§ Recruitment costs – total of £20k to recruit key positions<br>**Other Overheads**<br>§ Accounts / audit fees<br>§ Due diligence fees<br>§ Tax & legal advise<br>§ Bank charges and project contingency |

**Option 3 – Warwick DC Self Delivery:**

| | |
|---|---|
| **Option 3 General Description** | In this option WDC would directly buy the panels, arrange installation and maintain the solar panels. In return WDC receive all of the Feed in Tariff (FiT) income. |
| **Assumed Funding Costs** | For prudence, the installation programme has been modelled as being financed by WDC using prudential borrowing to draw down debt under the following terms:<br>§ Debt is drawn down to cover the purchase and installation of the PV units and associated kit.<br>§ The debt is repaid evenly over 10 years<br>§ The interest rate is 6%<br>In reality this project will be funded throughout its life from internal resources and/or prudential borrowing as appropriate as part of the councils overall treasury management/funding strategy; however modelling this debt at a pessimistic 6% interest rate demonstrates the viability of the project. |
| **Tax** | § VAT on costs fully recoverable<br>§ No Corporation tax or capital allowance |
| **Overheads** | As the programme of installations is delivered directly by the council using existing resources and expertise we have assumed only minimal levels of overheads. These include:<br>§ £10k for Tenant Liaison (for Houses only)<br>§ Accounts / audit fees<br>§ Tax & legal advice<br>§ Bank charges and project contingency |

# Appendix 4: Annual Income & Expenditure Projections

## 4a) HRA: 307 Houses & 204 Blocks of Flats

| Year | Capital Expend. £'000 | Maintenance & Other Costs £'000 | FiT Tariff Income £'000 | Loan/ Repay £'000 | Loan Interest £'000 | Annual Cash Surplus/ (Deficit) £'000 |
|---|---|---|---|---|---|---|
| **2011/12** | (3,380.8) | (36.6) | 16.0 | 3,376.3 | (28.3) | **(53.4)** |
| **2012/13** | 0.0 | (33.5) | 461.9 | (337.6) | (197.0) | **(106.2)** |
| **2013/14** | 0.0 | (34.6) | 482.3 | (337.6) | (179.8) | **(69.7)** |
| **2014/15** | 0.0 | (35.3) | 490.3 | (337.6) | (159.5) | **(42.2)** |
| **2015/16** | 0.0 | (41.9) | 498.3 | (337.6) | (139.3) | **(20.5)** |
| **2016/17** | 0.0 | (71.9) | 506.3 | (337.6) | (119.0) | **(22.2)** |
| **2017/18** | 0.0 | (72.8) | 514.5 | (337.6) | (98.7) | **5.4** |
| **2018/19** | 0.0 | (73.7) | 522.8 | (337.6) | (76.4) | **35.1** |
| **2019/20** | 0.0 | (74.6) | 531.2 | (337.6) | (56.7) | **62.2** |
| **2020/21** | 0.0 | (75.6) | 539.6 | (337.6) | (37.0) | **89.4** |
| **2021/22** | 0.0 | (76.6) | 548.2 | (337.6) | (17.2) | **116.7** |
| **2022/23** | 0.0 | (77.6) | 556.8 | 0.0 | (0.3) | **479.0** |
| **2023/24** | 0.0 | (78.6) | 565.6 | 0.0 | 0.0 | **486.9** |
| **2024/25** | 0.0 | (79.7) | 574.4 | 0.0 | 0.0 | **494.7** |
| **2025/26** | 0.0 | (80.8) | 583.3 | 0.0 | 0.0 | **502.5** |
| **2026/27** | 0.0 | (81.9) | 592.3 | 0.0 | 0.0 | **510.4** |
| **2027/28** | 0.0 | (83.0) | 601.4 | 0.0 | 0.0 | **518.3** |
| **2028/29** | 0.0 | (84.2) | 610.5 | 0.0 | 0.0 | **526.3** |
| **2029/30** | 0.0 | (85.4) | 619.8 | 0.0 | 0.0 | **534.4** |
| **2030/31** | 0.0 | (86.6) | 629.1 | 0.0 | 0.0 | **542.4** |
| **2031/32** | 0.0 | (87.9) | 638.5 | 0.0 | 0.0 | **550.6** |
| **2032/33** | 0.0 | (89.2) | 648.0 | 0.0 | 0.0 | **558.8** |
| **2033/34** | 0.0 | (90.5) | 657.5 | 0.0 | 0.0 | **567.0** |
| **2034/35** | 0.0 | (91.9) | 667.2 | 0.0 | 0.0 | **575.3** |
| **2035/36** | 0.0 | (94.3) | 685.4 | 0.0 | 0.0 | **591.1** |
| **2036/37** | 0.0 | (59.2) | 684.4 | 0.0 | 0.0 | **625.3** |
| **TOTAL** | **(3,380.8)** | **(1,878.1)** | **14,425.5** | **0.0** | **(1,109.1)** | **8,057.5** |

**4b) General Fund: 6 Corporate Properties**

| Year | Capital Expend. £'000 | Maintenance & Other Costs £'000 | FiT Tariff Income £'000 | Loan/ Repay £'000 | Loan Interest £'000 | Annual Cash Surplus/ (Deficit) £'000 |
|---|---|---|---|---|---|---|
| **2011/12** | (374.9) | 0.0 | 0.0 | 374.9 | 0.0 | **0.0** |
| **2012/13** | 0.0 | (4.8) | 33.6 | 0.0 | (22.5) | **6.4** |
| **2013/14** | 0.0 | (4.9) | 34.4 | (37.5) | (22.5) | **(30.5)** |
| **2014/15** | 0.0 | (5.0) | 35.2 | (37.5) | (20.2) | **(27.6)** |
| **2015/16** | 0.0 | (5.1) | 36.0 | (37.5) | (18.0) | **(24.7)** |
| **2016/17** | 0.0 | (5.3) | 36.8 | (37.5) | (15.7) | **(21.7)** |
| **2017/18** | 0.0 | (5.4) | 37.6 | (37.5) | (13.5) | **(18.8)** |
| **2018/19** | 0.0 | (5.5) | 38.4 | (37.5) | (11.2) | **(15.8)** |
| **2019/20** | 0.0 | (5.7) | 39.3 | (37.5) | (9.0) | **(12.9)** |
| **2020/21** | 0.0 | (5.8) | 40.2 | (37.5) | (6.7) | **(9.9)** |
| **2021/22** | 0.0 | (5.9) | 41.1 | (37.5) | (4.5) | **(6.9)** |
| **2022/23** | 0.0 | (6.1) | 42.0 | (37.5) | (2.2) | **(3.8)** |
| **2023/24** | 0.0 | (6.2) | 42.9 | 0.0 | 0.0 | **36.7** |
| **2024/25** | 0.0 | (6.4) | 43.9 | 0.0 | 0.0 | **37.5** |
| **2025/26** | 0.0 | (6.6) | 44.9 | 0.0 | 0.0 | **38.3** |
| **2026/27** | 0.0 | (6.7) | 45.9 | 0.0 | 0.0 | **39.2** |
| **2027/28** | 0.0 | (6.9) | 46.9 | 0.0 | 0.0 | **40.0** |
| **2028/29** | 0.0 | (7.1) | 48.0 | 0.0 | 0.0 | **40.9** |
| **2029/30** | 0.0 | (7.2) | 49.1 | 0.0 | 0.0 | **41.8** |
| **2030/31** | 0.0 | (7.4) | 50.2 | 0.0 | 0.0 | **42.7** |
| **2031/32** | 0.0 | (7.6) | 51.3 | 0.0 | 0.0 | **43.7** |
| **2032/33** | 0.0 | (7.8) | 52.4 | 0.0 | 0.0 | **44.6** |
| **2033/34** | 0.0 | (8.0) | 53.6 | 0.0 | 0.0 | **45.6** |
| **2034/35** | 0.0 | (8.2) | 54.8 | 0.0 | 0.0 | **46.6** |
| **2035/36** | 0.0 | (8.4) | 56.0 | 0.0 | 0.0 | **47.6** |
| **2036/37** | 0.0 | (8.6) | 57.3 | 0.0 | 0.0 | **48.7** |
| **TOTAL** | **(374.9)** | **(162.5)** | **1,111.6** | **0.0** | **(146.2)** | **427.9** |

# Appendix 5 - Equality Impact Assessment

| | |
|---|---|
| **Service Area** | **Housing and Property Services** |
| **Policy/Service being assessed** | **Proposal to install photovoltaic systems to suitable WDC housing and corporate properties.** |
| Is this is a new or existing policy/service?<br><br>If existing policy/service please state date of last assessment | New |
| **EIA Review team – List of members** | CMT |
| **Date of this assessment** | August 2011 |
| Signature of completing officer (to be signed after the EIA has been completed) | |
| Name and signature of Head of Service (to be signed after the EIA has been completed) | |

A copy of this Equality Impact Assessment Report including relevant data and information should be saved in the Equality and Diversity Folder on the shared drive.

Form A1

# INITIAL SCREENING FOR STRATEGIES/POLICIES/FUNCTIONS FOR EQUALITIES RELEVANCE TO ELIMINATE DISCRIMINATION AND PROMOTE EQUALITY

High relevance/priority  edium relevance/priority  r no relevance/ priority

**Note:**
1. Tick coloured boxes appropriately, and depending on degree of relevance to each of the equality strands
2. Summaries of the legislation/guidance should be used to assist this screening process

| DEPARTMENT: | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| State the Function/Policy /Service/Strategy being assessed: | Gender | | | Race | | | Disability | | | Sexual Orientation | | | Religion/Belief | | | Age | | | Priority status For EIA | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | |
| Proposal to install photovoltaic panels to suitable WDC housing and corporate properties. | | | | | | | | | | | | | | | | | | | | | | | | |
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Form A2

## Equality Impact Assessment

| **Stage 1 – Scoping and Defining** | |
|---|---|
| (1) What are the aims and objectives of policy/service? | The Council's aim is to progress the government and EU targets to address the problems of climate change, energy security and fuel poverty. The insulation of renewable solar energy can reduce greenhouse gas emissions and can potentially contribute to security of supply over the long term. It will help reduce fuel poverty for tenants where it exists. It may also create significant employment opportunities in District. |
| (2) How does the policy/service fit with the council's wider objectives? | Please see Policy Framework attached in section 4 |
| (3) What are the expected outcomes of the policy/service?<br><br>Who is intended to benefit from the policy/service and in what way? | o To install Photovoltaic panels (PV's) on Council homes and buildings.<br>o Tenants will benefit from lower fuel bills alleviating the risk of fuel poverty.<br>o The Council will generate revenue via the Feed-in Tariff (FiT) payments which are paid for all electricity generated and Export tariff payments paid for electricity exported back in to the grid. Further savings will be made due to reduced electricity bills on the Council buildings which have PV'S installed.<br>o Carbon reduction targets will be assisted.<br>o Boost to local economy with an increase in job opportunities across a wide range of skills and capabilities.<br><br>Tenants with suitable south facing roofs which have had their roofs renewed since 2004, this will ensure that the roofs will last the duration lifetime of the PV systems and will minimise the structural improvement works which may be required to roofs. |

| (4) Does this policy/service have the potential to directly or indirectly discriminate against any particular group?<br><br>Please identify all groups that are affected and briefly explain why | RACE<br>~~YES~~/NO<br><br>○ During the consultation exercise and in carrying out all engagement members of minority groups will be offered information and advice in a format of their choice<br>○ Installation will be across the District and based purely on the physical attributes of houses regardless of where they are located in the city and regardless of resident characteristics.<br>○ Houses that fit the physical attributes needed for photovoltaic installations | AGE<br>~~YES~~/NO<br><br>○ During the consultation exercise and in carrying out all engagement members of representative age groups will be offered information and advice in a format of their choice<br>○ Installation will be across the District and based purely on the physical attributes of houses regardless of where they are located in the city and regardless of resident characteristics.<br>○ Houses that fit the physical attributes needed for photovoltaic installations. | GENDER<br>~~YES~~/NO<br><br>○ During the consultation exercise and in carrying out all engagement members of gender groups will be offered information and advice in a format of their choice<br>○ Installation will be across the District and based purely on the physical attributes of houses regardless of where they are located in the city and regardless of resident characteristics.<br>○ Houses that fit the physical attributes needed for photovoltaic installations |
|---|---|---|---|
| | RELIGION/BELIEF<br>~~YES~~/NO<br><br>○ During the consultation exercise and in carrying out all engagement members of religion/belief groups will be offered information and advice in a format of their choice<br>○ Installation will be across the District and based purely on the physical attributes of houses regardless of where they are located in the city and regardless of resident characteristics.<br>○ Houses that fit the physical attributes needed for photovoltaic installations | DISABILITY<br>~~YES~~/NO<br><br>○ During the consultation exercise and in carrying out all engagement members of disability groups will be offered information and advice in a format of their choice<br>○ Installation will be across the District and based purely on the physical attributes of houses regardless of where they are located in the city and regardless of resident characteristics.<br>○ Houses that fit the physical attributes needed for photovoltaic installations | SEXUAL ORIENTATION<br>~~YES~~/NO<br><br>○ During the consultation exercise and in carrying out all engagement members of sexual orientation groups will be offered information and advice in a format of their choice<br>○ Installation will be across the District and based purely on the physical attributes of houses regardless of where they are located in the city and regardless of resident characteristics.<br>○ Houses that fit the physical attributes needed for photovoltaic installations |

| | |
|---|---|
| | Other –<br><br>Non south facing roofs & non suitable roofs<br><br>○ During the consultation exercise and in carrying out all engagement members of non south facing roofs & non suitable roofs groups will be offered information and advice in a format of their choice<br>○ Installation will be across the District and based purely on the physical attributes of houses regardless of where they are located in the city and regardless of resident characteristics.<br>○ Houses that fit the physical attributes needed for photovoltaic installations |
| (5) Are there any obvious barriers to accessing the service? | Understanding the benefits of the PV systems and procedure for installations. This will be overcome by deploying an effective communication strategy to comply with the policy. |
| (6) How does the policy/service contribute to promotion of equality? | The project would create an inequality between those who live in properties that can benefit from PV panels and those who live in property types that are unable to benefit from a PV installation. This will be monitored and tenants will be consulted on how alternative energy saving investments can be implemented in the future to benefit all tenants. |
| (7) Does the policy/service have the potential to promote good relations between groups? | N/A |
| **Stage 2 - Information Gathering** | |

| | |
|---|---|
| (1) What type and range of evidence or information have you used to help you make a judgement about the policy or service? | This programme is centred around capitalising on the FiT government subsidy for the following reasons;<br><br>○ The Government has set a target to increase energy generated from renewable sources from 6% in 2009 to 15% by 2020.<br><br>○ Government has introduced a range of new policy and financial mechanisms that are intended to encourage a more widespread adoption of renewable energy among businesses and home owners. One of the most recent – and arguably most important – of these is the “Feed in Tariff” (FiT). FiT is a financial mechanism design to provide an incentive for organisations and individuals to generate their own electricity using renewable sources.<br><br>○ FiTs have been a long running policy feature in many European Countries. Germany for example was an early adopter of FiT and it has helped to make it one of the European Countries most likely to reach “Grid Parity” (i.e. the point at which the production of renewable energy is cheaper or equal to the cost of traditional means of energy production).<br><br>○ Fuel poverty - households are considered by the Government to be in 'fuel poverty' if they would have to spend more than 10% of their household income on fuel to keep their home in a 'satisfactory' condition. It is a measure which compares income with what the fuel costs 'should be' rather than what they actually are. Whether a household is in fuel poverty or not is determined by the interaction of a number of factors, but the three keys issues are:<br>○ The cost of energy<br>○ The energy efficiency of the property (and therefore, the energy required to heat and power the home)<br>○ Household income<br><br>It was recorded in 2008 that around 17.8% of homes in the Warwick District were in fuel poverty, this is only increasing year by year.<br><br>○ Reducing energy bills by 30% would enable residents to budget their fuel bills better and help them move out of fuel poverty.<br><br>○ A number of households will choose to self disconnect if energy prices continue to rise especially those who live in all electric homes. Having PV’s fitted could alleviate this problem.<br><br>The rising cost of energy continues to put a strain on Council financial resources, PV installations on Council buildings could reduce the authorities’ fuel bill enabling the finances saved to be used for a programme of future proofing of council buildings |

| | |
|---|---|
| (2) What consultation/ information has been used?<br>What new consultation, if any, do you need to undertake? | Who does/does not use the service? E.g. Women, men, transgender, younger or older people, disabled people, Lesbian Gay Bisexual, Black and Minority Ethnic, faith or belief.<br>○ The PV will be installed on homes that are of the appropriate size, strength, condition, elevation and direction (need to face southerly direction).<br>○ The programme will install PV panels on houses – a project and risk assessment determined that installation on bungalows may result in theft of panels – this risk will be reviewed at stage 2.<br>○ The residents will not be assessed, only the physical attributes, archetype, construction, elevation of the house will be assessed to determine suitability for installation.<br>○ Residents will be asked to consent to the installation.<br>○ A PV installation is not taken into account when assigning a tenancy |
| **Stage 3 – Making a Judgement** | |
| (1) From your data and consultations is there any adverse or negative impact identified for any particular group?<br><br>Is there any evidence of needs not being met? e.g. language or physical access barriers; lack of appropriate resources or facilities | ○ Consultation will be carried out during Sept/Oct 2011 with all residents whose home is identified as suitable for an installation.<br>○ Consultation will be carried out with residents who request a PV but their home is unsuitable<br>○ During the consultation exercise and in carrying out all engagement members of minority groups will be offered information and advice in a format of their choice<br><br>○ No - the policy discriminates in term of house type/characteristics not people living in the homes. |
| (2) If there is an adverse impact, can this be justified? | ○ Installation will be across the District and based purely on the physical attributes of houses regardless of where they are located in the city and regardless of resident characteristics.<br>○ Houses that fit the physical attributes needed for photovoltaic installations have been mapped. |

| | |
|---|---|
| (3) What actions are going to be taken to reduce or eliminate negative or adverse impact? | This project is the first phase in the Council commitment to use renewable technologies to reduce carbon emissions and improve health and economic outcomes of its citizens. Following this phase the council will produce a comprehensive green energy programme which will identify how such benefits can be delivered to a wider group of tenants and residents living in the District. |
| (4) Is there any positive impact?<br>Does it promote equality of opportunity between different groups and actively address discrimination? | ○ There is no differential impact, however because PV panels can only be installed on certain types of properties this will in the future create an inequality between the tenants living in houses with PV installations and those who live in houses unsuitable for PV installations.<br>○ The suitability of a roof to accommodate PV panels is the fixed parameter, only these tenants/residents can benefit from electricity bill savings. This unavoidable inequality can be overcome to some extent by using returns on investment from the scheme to balance the Housing Revenue Account (thus benefiting all tenants), alongside funding energy saving advice and alternative insulation measures in untreated properties.<br>○ This PV project needs to be seen as part of the ongoing programme of improvements the Council has made and will continue to make to its' stock as opportunities arise. Inequalities have been created by the Decent Homes Project and other housing investments. For example, tenants with cavity walls, by having them insulated, have disproportionately benefited over tenants living in houses with solid walled houses. The difference with the PV inequality is that the tenant can see the PV panels on the roof whilst the un-trained eye cannot see that a wall has been insulated. |
| **Stage 4 – Action Planning, Review & Monitoring** | |

If No Further Action is required then go to – Review & Monitoring

(1)Action Planning – Specify any changes or improvements which can be made to the service or policy to mitigate or eradicate negative or adverse impact on specific groups, including resource implications.

## EIA Action Plan

| Action | Lead Officer | Date for completion | Resource requirements | Comments |
|---|---|---|---|---|
| Strategy improvements plans will be introduced for energy saving appliances to a large scale to benefit more tenants. | Jameel Malik | August 2013 | TBC | none |

(2) Review and Monitoring

State how and when you will monitor policy and EIA Action Plan

**Establish systematic monitoring via an action plan.**

- The action plan and risk assessment is monitored at Project Board and Investment Team meetings and updated regularly by the project manager

**Revise implementation of the service, strategy, policy or function in light of any EIA developments**

- The project would create an inequality between those who live in properties that can benefit from PV panels and those who live in property types that are unable to benefit from a PV installation. This will be monitored and tenants will be consulted on how alternative energy saving investments can be implemented to benefit all tenants.

'An Equality Impact Assessment on this policy was undertaken in July 2011 and will be reviewed in July 2014.