REPORT TO: **POLICY & RESOURCES COMMITTEE - 22 AUGUST 2011**

REPORT ON: **PROPOSED PHOTOVOLTAIC PROJECT FOR COUNCIL BUILDINGS**

REPORT BY: **DIRECTOR OF CITY DEVELOPMENT**

REPORT NO: **398-2011**

1 PURPOSE OF REPORT

1.1 To seek authority to issue a tender for the supply, installation and operation of photovoltaic (PV) equipment on Council buildings.

2 RECOMMENDATION

2.1 It is recommended that the Committee agree that the Council seek to implement a Photovoltaic Project for Council Buildings and that a tender be issued as proposed in paragraphs 4.11 and 4.12.

2.2 A future report will be brought back to Committee in due course, recommending acceptance of the most advantageous offer which will identify the revenue savings and the economic benefits to be delivered through this project.

3 FINANCIAL IMPLICATIONS

3.1 Subject to the details of the tenders received, it is anticipated that the Council could benefit from a significant reduction in its energy costs and potential income as a result of this proposed project.

3.2 In addition, the use of PVs to generate electricity will result in less electricity being taken from the electricity grid and this will thus lead to much lower carbon emissions associated with Council assets. This will be a major consideration in terms of the Council's Carbon Tax expenditure.

3.3 If should be noted that the cost of electricity is expected to rise considerably in the near future with some commentators predicting a 100% increase within the next seven years.

4 BACKGROUND

4.1 The Energy Act 2008 and Climate Change (Scotland) Act 2009 have paved the way for the Government to introduce Clean Energy Cash-back schemes including FITs (Feed-In Tariffs) and RHIs (Renewable Heat Incentives). Their introduction is being staggered. FITs came into being on 1 April 2010, and RHIs are being planned for introduction in 2012. Both schemes reward the householder (or building owner) for on-site generation of energy – FITs for electricity, RHIs for heat. Technologies which can benefit from FITs are solar PVs (photovoltaics), micro-hydro and micro-wind. Solar PV is currently the most appropriate technology for an urban setting like Dundee.

4.2 Solar PV panels are similar in appearance to solar thermal panels but, instead of using sunlight to heat water, they capture daylight and convert it into electricity which can be used to run household appliances and lighting. PV does not need bright light to work - electricity can still be generated on a cloudy day, although in reduced quantities. PV panels are fixed to south-facing roofs and connected devices called invertors, which are usually located inside the building. The invertor converts the direct current produced by the PV panels into alternating current, which is the form needed for use in the home and for exporting to the national grid.

4.3 The financial reward from the installation of PVs is threefold:-

4.3.1 The electricity generated attracts a GENERATION TARIFF.

4.3.2 The electricity generated can be used in the building FOR FREE.

4.3.3 Any electricity generated, but not used in the building is transferred to the grid and attracts an EXPORT TARIFF.

4.4 Installations completed before March 2012 attract the maximum generation tariff of 43.3p per kWh and this is guaranteed for 25 years. The tariffs beyond this point are currently under review by central Government. The feeling is that tariff levels will be reduced over subsequent years as capital costs fall, but the extent of this is not yet known and thus it is very difficult to model revenue levels beyond the current year. Electricity bought from the grid is approximately 13p per kWh (so using free electricity means that the occupier saves 13p a unit). Export tariff is currently 3.1p a unit. For all of these, the more electricity generated by the PV panels, the more of each can be obtained.

4.5 Several commercial organisations have approached the Council offering to install PV panels on our buildings at no cost to the Council. The companies themselves would keep the generation and export tariffs (to secure a return on their investment of around 8%). The Council would benefit by saving on our annual electricity bill. This is called the Rent a Roof model and it is considered to be advantageous to the Council in that it requires no additional borrowing and all risks are borne by the panel owners.

4.6 In order to take advantage of the current financial support for sustainable energy projects, it is considered important that the Council moves quickly to procure a commercial partner to carry out surveys, supply, install, test, complete, monitor and maintain a number of roof mounted PV Systems on a variety of Council buildings within the City. The successful company will supply the PV Systems and retain the ownership of them and will then be entitled to recuperate their costs by claiming back the Feed In Tariff on the installation.

4.7 The Council (or its tenants) will utilise the electricity generated by the PV Systems as a supplementary source of electricity in the relevant buildings. The generation of electricity as a result of the installation of PV Systems on the buildings shall be either free or at a substantially lesser rate than would otherwise be paid if the electricity generated was being purchased through the national grid. If the electricity generated is unable to be fully utilised, then the surplus power will be sold to the National Grid and the Council will be paid an appropriate sum for it.

4.8 Reduced cost to the Council is one of the fundamental motives for the progression of this procurement process; the other main motives are the benefits to the community from the employment and economic activity which the work will generate within Dundee City, the contribution to the Council's target for the reduction in carbon emissions and to help address fuel poverty issues within the City. As indicated above, a primary driver will be the level of savings which the Council can achieve as a result of taking forward this procurement process. Dundee City Council is also committed to developing a partnership with the successful tenderer in order to secure community benefit in the form of employment and training opportunities for local people in relation to:-

- the provision of sub-contract and supply opportunities for local businesses
- an agreed level of local labour on site, and
- activity which secures vacancy sharing and training opportunities for local people from unemployed and priority groups.

For Housing an additional consideration will be the contribution to the HRA directly or indirectly received or any additional financial "added value" share element tenderers may offer.

4.9 The Council has a duty to reduce Fuel Poverty and its carbon footprint. An Option Appraisal has been prepared on the alternatives for delivering the objectives associated with the installation of solar PV and the Feed in Tariff to determine the most beneficial way of delivering for building users and tenanted properties which can have solar PV. The options within the Housing lot are for the Council to own and install the PV systems or to utilise the rent a roof model. Within the non housing stock the Council could also consider similar options for delivery.

4.10 Ownership and Installation - modelling has been carried out to help predict the possible revenues to the Council of adopting the self-financing approach to PV installation. The main variables on the cost side are capital costs, the cost of borrowing and maintenance costs. The revenue side is determined by the panels' yield and the level of Feed in Tariff using a median capital cost of £7,000 for a 2.2kwp array, a 4.8% interest rate, £55 per panel per year maintenance and 35p generation tariff.

Study models have shown that a yield of more than 750 kwh/kwp is required to break even for the above cost of calculation. A yield of 850 kwh/kwp will result in a margin for contingencies and an estimated profit of around £100 per unit per year. The Energy Saving Trust currently predicts a yield figure for the Dundee area of 833 kwh/kwp. However, this figure is based on optimal orientation and roof pitch and the panels still operating at 100% efficiency after 25 years. Adjusting this figure to a more realistic level gives a yield of 715 kwh/kwp. This yield is close to the break even point and demonstrates the fact that, at this time and in the absence of any local installations producing actual yields, the going it alone option is very high risk. Whilst the prudential borrowing model represents an opportunity to generate the highest revenue, this also comes with the highest risk to the Council.

4.11 Rent a Roof - commercial organisations can install PV panels on tenants' roofs at no cost to the Council. The companies themselves would keep the generation and export tariffs to secure a return on their investment. Tenants would benefit by saving on their annual electricity bill. This is the so called Rent a Roof model. Although this is advantageous to the Council in that it requires no additional borrowing and all risks are borne by the panel owners, the downside is that the Council does not share in the generation or export tariffs. There are now companies emerging within this rapidly moving market place which could offer the sort of package which includes installing and maintaining panels free to the Council as well as providing some revenue obtained from the generation tariff to a Social Enterprise (or similar) for other energy saving measures, there may also be the possibility of some revenue contribution to the Council and/or HRA. Such models provide the best balance of benefit to tenants and the HRA with least risk. Rent a Roof would therefore be the preferred approach.

It is proposed that the Tender process would provide to the tendering companies the opportunity for them to demonstrate what "added value" selling point their submission may carry to meet or address this preferred route.

4.12 The Council intends to seek tenders for two separate but related lots; firstly, for its commercial and operational buildings and, secondly, for its tenanted housing stock. In Principle, all of the Council's buildings are available to be included within any tenderer's proposals; it is for them to assess the suitability for any particular building. When assessing this suitability, they will take account of (1) the likely technical performance of the building for roof mounted PV Systems, (2) the likely disruption to any tenants due to installation, operation and/or maintenance of the PV Systems and (3) any necessary consents which would be required for their installation.

5 POLICY IMPLICATIONS

5.1 This report has been screened for any policy implications in respect of Sustainability, Strategic Environmental Assessment, Anti-Poverty, Equality impact Assessment and Risk Management. There are no adverse implications and there are clear positive implications in terms of Sustainability and Anti-Poverty

6 CONSULTATIONS

6.1 The Chief Executive, Depute Chief Executive (Support Services) and Director of Finance have been consulted and are in agreement with the contents of this report.

7 BACKGROUND PAPERS

7.1 None.

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Director of City Development

Date: 18 August 2011