



Report to:

Northwards Housing Board

10th March 2009

Item No:

12e

Title:	Photovoltaic (PV) Installation Works		
Date:	11 th February 2009		
Author:	Larry Patrick	Tel No:	
E mail:	l.patrick@northwardshousing.co.uk		
Confidential:	No		
For: (Please tick action required)	NOTING	DISCUSSION	APPROVAL ✓

PURPOSE OF REPORT

To update the Board on the installation of Photovoltaic (PV) panels to Sankey Grove (a maisonette block in Riverdale) and seek approval to install PV panels to Harry Piggot Court (a retirement accommodation block in the Plant Hill area of Higher Blackley) and Hillingdon Drive in Charlestown.

RECOMMENDATION

Asset Management Sub-Committee recommends to the Board the installation of the larger PV systems on Sankey Grove, and recommends to the Board the installation of the largest PV panels to Harry Piggot Court, and the reusable PV panels to Hillingdon Drive. These works will be undertaken in conjunction with the home improvement works programmed for 2009/10.

IMPLICATIONS

Equality & Diversity:	All customer care requirements will be undertaken with full regard to Northwards Housing's equality and diversity policy.
Financial:	There are financial implications contained within this report a full explanation of which is contained within.
Staffing:	There are no staffing implications associated with this report.
Decency Target:	Although the re-roofing works contribute to decency targets, the addition of PV panels does not.
Governance:	There are no direct governance implications associated with this report.
Risk Assessment:	No implications to the health and safety of our residents.

Equality Impact Assessment	Not applicable
Function being assessed	
Section	
Date of assessment	
Person Responsible for assessment	
Is this a new or existing policy?	

If there are significant implications in terms of equality please append a summary report.	
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Consultation/Consideration:

	Yes, No or N/A:	Name:	Date:
Sub-Committee:	Yes	Asset Management	25 th February 2009
Area Panel:			
Task Groups:			
Ward Councillors:			

1.0 Purpose of Report

- 1.1 To update the Board about the proposed installation of PV panels to Sankey Grove and seek approval for the installation of PV panels to Harry Piggot Court (Higher Blackley) and Hillingdon Drive (Charlestown).

2.0 Background

- 2.1 As part of Northward Housing's support of Manchester City Council's drive to become the greenest City in the country, we have set up an Energy Initiatives Task Group. This Task Group investigates ways to best utilise the current £200,000 budget that was approved by this Sub-Committee in December 2007 for energy efficiency measures. Some of these monies have already been approved for solar panel works on the retirements homes blocks (total approx £50,000), and PV panels to Sankey Grove maisonettes (£37,500).

It should be noted that 50% grant funding is available from the Government's Low Carbon Buildings Programme for installation of solar PV and solar thermal hot water panels.

- 2.2 The Task Group discussed several schemes where re-roofing is to be undertaken and where renewable energy sources could be utilised. A feasibility study was undertaken to each potential scheme by Energi Holdings plc (a specialist PV designer and installer). A number of these schemes were discounted on the grounds of either structural issues or shading issues that would affect the output. These schemes included the walk up flats at French Barn Lane, the flats at Acre Top Road and the maisonette blocks on Kingsbridge Road.

The remaining schemes were for the installation of PV panels to flat numbers 2-24 Hillingdon Drive and Harry Piggot Court.

- 2.3 During the discussions in the Task Group it was noted that, during the recent multi's PV installation scheme, the PV units to Bradford court could not be installed due to structural and weatherproofing issues. It was therefore decided that the contractor for these works (Solar Century) would be consulted and costs obtained for the installation of these units (already delivered and paid for) onto the flats at Hillingdon Drive – these discussions are still in progress, but the additional cost to Northwards to install the panels is not anticipated to exceed £10,000.

- 2.4 The PV panels will be utilised to feed into the Landlord Services electricity supply. The excess electricity produced would then be sold back in the form of 'ROC' payments -these are explained below on page 4 of this report.
- 2.5 For Sankey Grove and Harry Piggot Court several options for differing outputs and CO2 reductions were supplied within the feasibility study. A decision was required on which system to utilise. As part of this investigation, the payback periods for the smallest and largest systems on each block were compared against the initial outlay on the resources. We also obtained evidence from the Council's Energy Management Unit (located in the Town Hall) on the landlord supply to each block to assist with the payback period calculation. This calculation is shown for each block below:

Sankey Grove

Option	Size	Peak Power (kWh)	Annual Electricity Output (KWh)	Co2 Saved Per year (kg)	Budget System Cost (£)	Grant Availability (£) @ 50%
A (largest)	78 x 180W	14.04	10022	5692	80,624	40,312
D (smallest)	39 x 170W	6.63	4667	2651	37,128	18,564

Option A payback period:

- Year 11 the system will make a profit of £1,738
 Year 25 the system would make an overall profit of £365,576 (solar modules have a 25 year warranty)
 Year 30 the profit would be £951,777

The system would save in excess of 227,000kg of CO2 over a 30 year period.

Option D payback period:

- Year 11 the system will make a profit of £1,005
 Year 25 the system would make an overall profit of £170,300 (solar modules have a 25 year warranty)
 Year 30 the profit would be £399,991

The system would save in excess of 106,000kg of CO2 over a 30 year period.

Harry Piggot Court

Option	Size	Peak Power (KWh)	Annual Electricity Output (KWh)	Co2 Saved Per year (kg)	Budget System Cost (£)	Grant Availability (£) @ 50%
A (largest)	90 x 180W	16.20	11489	6525	90,720	45,360
H (smallest)	42 x 170W	7.14	5004	2842	39,984	19,992

Option A payback period:

Year 11	the system will make a profit of £1,148.
Year 25	the system would make an overall profit of £423,469 (solar modules have a 25 year warranty).
Year 30	the profit would be £1,014,700.

The system would save well in excess of 250,000kg of CO₂ over a 30 year period.

Option H payback period:

Year 11	the system will make a profit of £264.
Year 25	the system would make a profit of £184,205 (solar modules have a 25 year warranty).
Year 30	the profit would be £441,717.

The system would save in excess of 113,000kg of CO₂ over a 30 year period.

- 2.6 All payback periods have been calculated using the prices currently being paid per unit and using the same average yearly increase in price as our data historically shows. The calculations are based upon the lowest figure obtainable for ROC claim hence are worst case scenario. The savings are based on electricity bill reduction and claims for ROC payment.

ROC's are renewable obligation certificates and these are issued for each MWh (MWh = 1,000kWh or units). Each licensed electricity supplier must source a set amount of electricity supplied from eligible renewable sources, such as PV. Companies will purchase ROCS from Northwards if we generate a surplus (£33.24 per MWh in 2006/07 – subject to increase).

With the Government's increased drive to reduce carbon emissions in association with the European Union, payments for renewable energy are subject to review. It is a possibility that the payments in the future could increase and therefore this strategic decision to over produce in this instance, could lead to even greater profits for Northwards.

- 2.7 As can be seen in the tables above, initial payback for all systems occurs in year 11. The profit on the larger systems provides greater long term benefit and increased carbon reduction benefits.

The risks associated with these works are that Planning Permission will be required along with Building Regulations approval. Initially it was envisaged that where solar panels are installed they could be incorporated within the roof detail in lieu of new tiles. After consultation with Energi plc, this was proved unfeasible because the integrated roof system framework is only designed for very small systems of PV array. This therefore subjects the roof structure to extra loadings and a full structural analysis will have to be commissioned as part of the Building Regulations approval package.

Due to the aesthetic impact of the block, the planning department will also be consulted. As part of this and on top of the Northwards customer care commitments, full resident liaison will be undertaken.

These two statutory permissions will have to be obtained prior to any works being undertaken.

There is also a risk that the figures shown could be subject to slight price increases due to the fact that they are for budget purposes. However, due to the amount of consultation already undertaken with Energi plc, we are confident that any extra costs will be kept to a minimum.

- 2.8 Within the report on the 2009/10 programme approved by the Board in January 2009 was a sum of £37,500 for Sankey Grove, so to install the largest panels there will cost an additional £2,812.

The works to Harry Piggot Court will cost Northwards an estimated £45,360 and the works to Hillingdon Drive an estimated £10,000.

This will leave a balance of around £54,000 for future energy efficiency measures from the budget of £200,000.

3.0 Recommendation

Asset Management Sub-Committee recommends to the Board the installation of the larger PV systems on Sankey Grove, and recommends to the Board the installation of the largest PV panels to Harry Piggot Court, and the reusable PV panels to Hillingdon Drive. These works will be undertaken in conjunction with the home improvement works programmed for 2009/10.