

WIRRAL COUNCIL

CABINET

1 SEPTEMBER 2011

SUBJECT:	SOLAR PHOTOVOLTAIC PROJECT
WARD/S AFFECTED:	ALL
REPORT OF:	DIRECTOR OF LAW, H.R. & ASSET MANAGEMENT
RESPONSIBLE PORTFOLIO HOLDER:	COUNCILLOR BRIAN KENNY
KEY DECISION	YES

1.0 EXECUTIVE SUMMARY

- 1.1 On 1 March 2011 Council approved investing £2.8 million in a Photovoltaic (PV) Installation Project provided that "...the proposed investment will yield savings in energy costs in excess of the capital financing costs..." The project will utilise the Feed in Tariff (FiT) scheme introduced by the Government in 2010 to provide a financial incentive to Consumers to install renewable technologies that would generate electricity over a maximum of 25 years.
- 1.2 This report provides details of the anticipated benefits that could be obtained from the implementation of this project. The Government is to review FiT scheme funding in 2012 and there are benefits from reduced energy costs but based upon the latest information the capital financing costs for the project can be matched by savings. In future years reductions in energy use would realise further energy savings and the index-linked subsidy (FiT payments) would increase.
- 1.3 This report does not contain exempt information.

2.0 RECOMMENDATIONS

- 2.1 Cabinet are requested to
- (i) approve the implementation of the Solar PV Project capital scheme.
 - (ii) Agree to the construction phase of the project commencing in April 2012.
 - (iii) request regular performance reports to be produced following the implementation of the scheme.

3.0 REASONS FOR RECOMMENDATIONS

- 3.1 To enable the Solar PV Project to commence.

4.0 BACKGROUND AND KEY ISSUES

- 4.1 Council on 18 October 2010 (minute 45 refers) resolved "to expand its renewable energy generation". A Desktop Study was carried out to assess the

initial feasibility of the resolution and following the publication of the study the project was rationalised from 71 to 30 possible sites, listed in Appendix A. The list of sites provided is not final and is subject to revision following a thorough assessment of suitability as part of the project planning, design and contract specification process. A list of reserve sites is available so that substitutions can be made which will maintain the viability of the project.

- 4.2 On 1 March 2011 Council approved a policy option detailed by Cabinet on the 21 February 2011 (minute 331 refers) to aid the implementation of a future Photovoltaic Installation project and an allocation of £2.8 million within the capital programme on the basis that the investment will yield benefits in excess of the capital financing costs.
- 4.3 The Feed in Tariff (FiT) scheme was introduced by the Government in 2010 to provide an incentive to consumers to install renewable technologies that would generate electricity over a maximum of 25 years. The FiT pays a fixed sum per kilowatt hour of renewable electricity generated and is paid irrespective of how the electricity is used. The FiT rates applied to individual installations depend upon the size and type of technology used and when it is installed. The rate paid is fixed for the duration of the scheme i.e. systems installed in 2012/13 will be at a set rate for the duration of the project and systems installed in 2013/14 will be at a lower rate but again fixed for the duration of that particular project. The FiT scheme is expected to be maintained long term, as it is not financed by Government funding but by a levy paid by electricity suppliers, who obtain the levy by passing through the charges directly to electricity consumers.
- 4.4 Although the FiT scheme is due to run for a period of up to 25 years the expected life of Microgeneration Certification Scheme (MCS) approved PV panels is currently 25 to 30 years and therefore should provide benefits after the scheme has ended. Solar PV panels have a predicted total lifespan of 25-40 years.
- 4.5 Grid connected Solar PV systems require very little maintenance, generally limited to ensuring that the panels are kept relatively clean and that shade from trees has not become a problem. The wiring and components of the system should however be checked regularly by a qualified technician and this can be incorporated into the PPM programme. The maintenance process can therefore be incorporated into the Council's buildings PPM programme. Manufacturers' recommendations suggest that cleaning should be carried out at least once a year. Commercial window cleaners can carry out this operation. No further significant maintenance interventions are envisaged to be required to the panels during the 25 year life of the FiT scheme.
- 4.6 By generating our own electricity this reduces the amount of electricity bought from the supplier by the amount generated on site which in turn reduces utility costs. It is beneficial to use the Solar PV electricity generated on site, saving up to 12p per unit rather than export it at 3p per unit so wherever possible the generated load is to be utilised on site to optimise financial returns from FITs/reduced grid electricity use.
- 4.7 There is also the potential to export excess electricity into the National Grid (at the pre-set level of 3p per unit). Export facilities will be considered for out of hours and weekend use where an individual building's Solar PV output is greater than their baseload but at this stage has not been included in any calculations (due to technical restrictions).

- 4.8 Due to Carbon Reduction Commitment “supply rules” emissions from on-site generated electricity where a FiT subsidy is claimed is not exempt from Carbon Reduction Commitment (CRC) allowances.
- 4.9 The Summary of Solar PV Desktop Review (undertaken following the Council Resolution) in Appendix B provides details of how the investment will be recovered.
- 4.10 The project requires the installation of suitable PV systems over the next 12-18 months on as many of the sites listed, as practicable, based on the following:
- Sites are structurally able to accept the proposed Solar PV installations;
 - The building(s) or part thereof, have a significant southerly aspect;
 - No risk of pollution or undue affects on performance from build up of dirt debris or grease on surfaces;
 - There is no significant risk of vandalism;
 - That all installations will be MCS approved to allow FiTs to be claimed;
- 4.11 Due to the expected value of the contract to install PV installations, it will be subject to the OJEU procurement process.
- 4.12 Council agreed to the scheme proceeding provided the revenue generated by the scheme covers the capital financing costs and the revenue would be:
- Funding from the Governments FiT scheme as described in section 4.3. FiT is also index linked for inflation.
 - Financial savings obtained from reduced grid electricity use.
- 4.13 Due to a recent Government review (in part) of Solar PV arrays larger than 50kWp tariffs for arrays larger than this threshold have significantly reduced. As this affects five of the sites (shaded in appendix B) this would make the original project unsustainable. The five sites originally had proposed arrays larger than 50kWp and these have now been revised down to the 50kWp threshold. Whilst this adjustment has resulted in the annual benefits being reduced it has reduced the amount of capital investment required to £2.3 million with the savings still meeting the financing costs.

5.0 RELEVANT RISKS

- 5.1 The FIT Scheme was included in the Governments Spending Review 2010 and could be subject to change:-
- 5.1.1 The Department of Energy and Climate Change (DECC) stated: “Feed-in Tariffs will be refocused on the most cost-effective technologies saving £40 million in 2014/15. The changes will be implemented at the first scheduled review of tariffs [in 2012, for implementation in 2013] unless higher than expected deployment requires an early review”. In other words, the feed-in tariff scheme and current rates paid to owners of solar panels essentially remain the same. But there are two new elements here:
- 5.1.2 Firstly, in the 2012 review, changes will be made to the tariff that will reduce overall funding by £40 million or 10%, in 2014 and 2015. Those changes won't be announced until 2012, but could take the form of both a ‘trigger point’

where rates paid fall automatically if a certain number of solar panels and other forms of 'microgeneration' are installed, and a potential cut in rates paid to one or more of the four technologies covered by the scheme.

5.1.3 Second, the Government is now saying it reserves the right to bring forward that 2012 review if there is a rush of individuals and companies installing microgeneration between now and then.

5.2 If the construction phase of the scheme took place during the Autumn/Winter 2011/12 period inclement weather could delay completion and potentially increase costs. Therefore it is recommended that the construction phase should commence in April 2012.

5.3 Manufacturer's information suggests that performance of Solar PV panels does reduce with time and after twenty years the efficiency of the panels will decrease and may deliver up to 20% less than the original minimum output quoted (pMin). In real terms, this means that a solar array developing 10 kWp of electricity will develop 8 kW of power after twenty years. Such performance reductions will have a marginal effect on the financial benefits assumed and there are other factors such as increased savings from reduced energy (should prices increase more than predicted) which may offset these performance reductions.

6.0 OTHER OPTIONS CONSIDERED

6.1 Due to the specific nature of the project resulting from Cabinet (Minute 331 refers) on 21 February 2011, no other option has been considered. Under the circumstances the only other option would have been to install large-scale wind generators, which in this instance would not be financially viable.

6.2 Whether investment in alternative schemes would provide a better return on the investment was considered. Based on the information available, investing in existing energy efficiency technologies would provide an improved environmental return i.e. a greater saving in CO₂ but this type of scheme would not generate the financial saving offered by FiTs.

7.0 CONSULTATION

7.1 Where required, Development Control measures will include consultation with Local Residents.

8.0 IMPLICATIONS FOR VOLUNTARY, COMMUNITY AND FAITH GROUPS

8.1 The implementation of the Solar PV Project has no direct implications for voluntary, community and faith groups.

9.0 RESOURCE IMPLICATIONS: FINANCIAL; IT; STAFFING; AND ASSETS

9.1 The information shown in the table is derived from the data contained within Appendix B – "Summary of the Solar PV Desktop Review" and together with the assumptions made in section's 4.10 and 4.12. This shows the scheme can meet the capital financing costs from revenue savings subject to the identified risks in section 5. Additional benefits would accrue, as the FiT payments are Index Linked and energy use would reduce in future years.

Period (initial years)	FiT Refund (+3% p.a.) £000	Energy Budget Savings £000	Total Benefit £000	Costs of financing £000
2012/13	186	71	257	230
2013/14	192	71	263	230
2014/15	198	71	269	230

9.2 Cleaning costs are a revenue implication with estimated annual average costs of £350 for a typical 20KW roof array.

9.3 The following additional ICT implications will be considered:

9.3.1 Installation monitoring is a revenue cost implication and will be a priced option in the tender documents. ICT may be requested to provide, for example data outlets adjacent to a solar inverter or to a display panel (similar to that already installed in Cheshire Lines Reception area) typically costing approximately £60 to £90 per outlet.

9.3.2 Meters and panels may be monitored over the IT network at some key sites, usually where there is an existing building energy management system (BEMS).

10.0 LEGAL IMPLICATIONS

10.1 There are no direct legal implications arising from this report.

11.0 EQUALITIES IMPLICATIONS

11.1 There are no equality implications arising from this report. An equality impact assessment has not been undertaken.

12.0 CARBON REDUCTION IMPLICATIONS

12.1 The introduction of renewable energy technologies into Council buildings reduces our dependence on fossil fuels and improves our overall environmental performance. This will have a positive effect on energy use and help reduce our carbon emissions.

12.2 Based on the Desk Top Study and the revised list of sites, the scheme is expected to reduce CO₂ emissions by approximately 400 tonnes per year. These reductions will improve Carbon Budgets for individual sites. It will also positively assist in meeting the Council's Corporate objectives.

13.0 PLANNING AND COMMUNITY SAFETY IMPLICATIONS

13.1 Planning permission may be required where proposals are developed for individual site-specific PV arrays.

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APPENDICES

Appendix A - Revised List of Sites

Appendix B - Summary of the Solar PV Desktop Review

REFERENCE MATERIAL

The UK Renewable Energy Strategy (DECC, 2009).

“FIT – Modifications to the Standard Conditions of Electricity Supply Licences” 9 June 2011.

SUBJECT HISTORY (last 3 years)

Council Meeting	Date
Council (Notice of Motion)	18 October 2010
Cabinet – Green Specification and Renewable Energy	25 November 2010
Generation by the Council	21 February 2011
Budget Cabinet – interim Carbon Budget 2011/12	1 March 2011
Cabinet – Final Carbon Budget 2011/12	14 April 2011

Revised List of Sites

Bebington Civic Centre
Concourse Leisure Centre, West Kirby
Europa Pools, Birkenhead
Floral Pavilion Theatre & Conference Centre, New Brighton
Guinea Gap Leisure Complex, Wallasey
Leasowe Leisure Complex
Oval Sports Centre, Bebington
Wirral Tennis Centre, Birkenhead
Wallasey Central Library
Conway Centre, Birkenhead
Wallasey Town Hall
Wallasey Town Hall North Annexe
Wallasey Town Hall South Annexe
Rock Ferry One Stop Shop
Royden Park, Frankby
Star Design, Birkenhead
Greasby Library
Heswall Library
Higher Bebington Library
Irby Library
Landican Cemetery
Pensby Library
Upton Library
Girtrell Court, Saughall Massie
Heswall Day Centre
Pensby Wood Day Centre
Arrowe Park (2 buildings)
Green Lane Sports Ground, Bromborough
Rosclare House, Noctorum
Williamson Art Gallery, Birkenhead

Revised 07/02/2011

Summary of the Solar PV Desktop Review

Name	Estimated Potential PV Area (sq. metres)	Potential Installed Capacity (kWp)	FIT Rate up to 2012/13 (UPDATED) (p/kWh)	Estimated Annual Yield (kWh)	FIT Benefit (£)	Energy Budget Savings (£)	Anticipated Installation Cost (£)	First Year Cost Benefit (£)	Annual Carbon Emissions Reduction (kg)
Williamson Art Gallery	200.0	28.0	30.1	26,600	8,007	3,112	100,800	11,119	14,391
Arrowe Park	10.0	1.4	39.6	1,330	527	156	5,040	682	720
Bebington Civic Centre	90.0	12.6	34.6	11,970	4,142	1,400	45,360	5,542	6,476
Concourse Leisure Centre	567.0	50.0	30.1	47,500	14,298	5,558	180,000	19,855	25,698
Europa Pools	196.5	27.5	30.1	26,135	7,866	3,058	99,036	10,924	14,139
Floral Pavilion Theatre & Conference Centre	486.0	50.0	30.1	47,500	14,298	5,558	180,000	19,855	25,698
Greasby Library	67.2	9.4	34.6	8,938	3,092	1,046	33,869	4,138	4,835
Green Lane Sports Ground	115.5	16.2	30.1	15,362	4,624	1,797	58,212	6,421	8,311
Guinea Gap Leisure Complex	112.0	15.7	30.1	14,896	4,484	1,743	56,448	6,227	8,059
Heswall Library	178.0	24.9	30.1	23,674	7,126	2,770	89,712	9,896	12,808
Higher Bebington Library	10.0	1.4	39.6	1,330	527	156	5,040	682	720
Irby Library	48.0	6.7	34.6	6,384	2,209	747	24,192	2,956	3,454
Landican Cemetery	68.0	9.5	34.6	9,044	3,129	1,058	34,272	4,187	4,893
Leasowe Leisure Complex	616.0	50.0	30.1	47,500	14,298	5,558	180,000	19,855	25,698
Oval Sports Centre	567.0	50.0	30.1	47,500	14,298	5,558	180,000	19,855	25,698
Pensby Library	35.0	4.9	34.6	4,655	1,611	545	17,640	2,155	2,518
Wirral Tennis Centre	300.0	42.0	30.1	39,900	12,010	4,668	151,200	16,678	21,586
Upton Library	120.0	16.8	30.1	15,960	4,804	1,867	60,480	6,671	8,634
Wallasey Central Library	36.0	5.0	34.6	4,788	1,657	560	18,144	2,217	2,590
Royden Park	15.0	2.1	39.6	1,995	790	233	7,560	1,023	1,079
Girtrell Court	313.2	43.8	30.1	41,656	12,538	4,874	157,853	17,412	22,536
Heswall Day Centre	387.0	50.0	30.1	47,500	14,298	5,558	180,000	19,855	25,698
Pensby Wood Day Centre	150.0	21.0	30.1	19,950	6,005	2,334	75,600	8,339	10,793
Rosclare House	20.0	2.8	39.6	2,660	1,053	311	10,080	1,365	1,439
Star Design	172.8	24.2	30.1	22,982	6,918	2,689	87,091	9,607	12,433
Conway Centre	21.0	2.9	39.6	2,793	1,106	327	10,584	1,433	1,511
Wallasey Town Hall	129.6	18.1	30.1	17,237	5,188	2,017	65,318	7,205	9,325
Wallasey Town Hall North Annexe	126.0	17.6	30.1	16,758	5,044	1,961	63,504	7,005	9,066
Wallasey Town Hall South Annexe	140.0	19.6	30.1	18,620	5,605	2,179	70,560	7,783	10,073
Rock Ferry One Stop Shop	127.6	17.9	30.1	16,972	5,109	1,986	64,315	7,094	9,182
TOTAL 30				610,088	186,657	71,380	2,311,911	258,037	330,057

(H:\Energy Team\Shared Area\FITs\PV Scheme\ Report Data 29-06-11.xls)