

CABINET

CLIMATE CHANGE INVEST TO SAVE PROJECTS

15 February 2011

Report of the Heads of Property Services and Community Engagement

PURPOSE OF REPORT			
To seek Cabinet's recommendations in respect of the four potential projects identified in the report			
Key Decision	X	Non-Key Decision	Referral from Cabinet Member
Date Included in Forward Plan	01 February 2011		
This report is public			

RECOMMENDATIONS OF THE HEADS OF PROPERTY SERVICES AND COMMUNITY ENGAGEMENT

- (1) That subject to receiving further information, the most energy efficient scheme for replacement of the boilers be accepted for inclusion within the draft Capital Programme for consideration as part of the budget, together with the most appropriate means of funding.
- (2) That the other three projects be taken forward for further appraisal with reports brought back to Cabinet as necessary.

1.0 INTRODUCTION

- 1.1 The Government has signed up to international, EU and national targets relating to Greenhouse gas emissions. Under the Kyoto agreement the UK agreed to cut greenhouse gas emissions by 80%; it is subject to the EU renewable energy directive, whereby 15% of our energy needs to come from renewable sources and has passed the Climate Change Act 2008 to put much of this into domestic law.
- 1.2 It has developed a detailed policy agenda including the Low Carbon Transition Plan (on how the UK will meet these emissions targets) and the Renewable Energy Strategy (on how it will introduce renewable energy to meet those targets)
- 1.3 More recently further announcements have been made – the Green Deal, the Green Investment Bank, Feed in Tariffs and the Warm Homes Initiative.

1.4 More recently Cabinet have redefined their priority around climate change: "Prioritising reducing the council's energy costs and increasing income" should be the focus of Lancaster City Council's objective to "Tackle the challenges of climate change". Cabinet Min No. 67 9/11/2010 refers).

2.0 REPORT

2.1 Here are two main incentives for local government that bring with them substantial advantages that engaging in renewable energy can bring to a local economy and its supply chains - Feed in Tariffs (the FIT) and the Renewable Heat Incentive (RHI) which is due to be introduced in 2011.

2.2 Feed in Tariffs give three financial benefits:

- A payment for all the electricity an organisation produces (from renewables), even if the organisation uses it themselves
- Additional bonus payments for electricity exported into the grid
- A reduction on the standard electricity bill, from using renewable energy

2.3 This system has been composed by the government on the basis of the cost of each different type of technology and the financial returns available from each.

2.4 The Renewable Heat Incentive is a UK Government scheme that offers consumers and businesses financial incentives to switch to renewable forms of heating such as biomass, heat pumps or solar power. The UK Government has committed itself to increasing the heat produced from renewable energy to 12% (currently 1%) by 2020. The government intends to meet this commitment by offering homeowners and businesses generous financial incentives to switch to renewable heating systems. The Government has put aside £860m to fund the Renewable Heat Incentive, over the next 5 years.

2.5 In addition to these national targets and government incentives the Council also recognises that in terms of efficiency and value for money it needs to do more to reduce its energy consumption. With this in mind, four potential invest-to-save projects have been identified initially to help achieve this goal. These are set out in Appendices A-D.

2.6 There are still a number of considerable opportunities for the authority to develop further projects in this area.

- The authority owns a number of buildings (including its council housing stock) and parcels of land
- There are opportunities for renewable energy development in the rural areas (biomass, anaerobic digestion and hydro)
- The Council strategic planning policies and plans could provide opportunities for renewable regeneration.

2.7 Potentially investment in renewables can not only pay for itself over a period of time but it can create a 'revolving fund' to reinvest in energy saving measures.

2.8 Local authorities have everything they need to develop schemes: land and buildings to convert, workforces to undertake the work potentially boosting the local economy and the capacity to borrow money to fund these schemes.

3.0 OPTIONS

There are four options presented:

4.0 OFFICER PREFERRED OPTION

Option A is recommended to proceed on the basis outlined, with the three other options still retained and subject to further appraisal.

5.0 DETAILS OF CONSULTATION

It is thought too early to begin any formal consultation

6.0 SUMMARY

The new financial incentives for renewable energy generation can provide income streams over the long term and offer significant opportunities.

Much of the technology is tried and tested, cost effective and productive.

In addition to the obvious benefits (free energy, cost savings and income generation) there are potentially wider benefits for our local communities, greater energy security, CO2 emissions reductions and a potential boost to the local economy)

RELATIONSHIP TO POLICY FRAMEWORK

CORPORATE PLAN Supports Economic priority in respect of 'Energy Coast' and Climate Change

CONCLUSION OF IMPACT ASSESSMENT

Reducing emissions will provide a positive impact to the local environment.

FINANCIAL IMPLICATIONS

The initial financial implications of three of the four proposals are presented in the appendices. Additional information for Appendix A and preliminary estimates for Appendix B are still being sought. All of the proposals are still at a very early stage so any costings must be treated as provisional.

It is also possible that through undertaking a combination of proposals, such as A & B together and/or C & D that greater ongoing savings can be realised, albeit this will also require greater initial investment. This will need to be explored further subject to which proposals Cabinet recommend are taken forward, however.

In terms of revenue budget provision, around £21,000 is included for Climate Change implementation in years 2011/12 and 2012/13 only; this is in line with the growth originally considered by Cabinet in November 2009. In addition, a further £7,000 is included every year for Sustainable Initiatives (previously linked to Agenda 21) and a separate £9,000 per year is provided for Energy Conservation. These are spread between Community Engagement and Property Services.

Regarding the Capital Programme generally, this is currently being reviewed in light of recent budget proposals. Whilst previously there were comparatively minor allocations for energy efficiency included within the draft Capital Programme, there is also the potential for well over £1M of surplus balances to be available for invest to save schemes, following January Cabinet. A view will need to be taken on how best to consolidate and manage available resources; this will be covered in the budget report to be included elsewhere on the agenda.

SECTION 151 OFFICER'S COMMENTS

Robust financial appraisal of proposals will need to be completed to ensure that any invest to save proposals meet any required criteria; this will be covered in the budget report elsewhere on the agenda.

There is the need to clarify and streamline budget and financial management responsibilities between services. Financial Services will take this forward in conjunction with the other services involved.

LEGAL IMPLICATIONS

There are no legal implications arising as a result of this report

MONITORING OFFICER'S COMMENTS

The Monitoring Officer has been consulted and has no further comments.

BACKGROUND PAPERS

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APPENDIX A

Replacing the boilers at Lancaster Town Hall

The existing gas fired boilers and ancillary plant-room pipe-work, pumps; controls etc which provide heating and hot water to Lancaster Town Hall are now approaching the end of their economical life. Due to the age and condition of the existing boiler room plant it was recommended in the 2006 condition survey that they be urgently replaced with new energy efficient technology and, if possible, a renewable energy source.

Property Services commissioned Capita Symonds to examine various options for the replacement of the boiler room heating plant. Their report identifies renewable options that may be incorporated as part of the replacement works in order to reduce the building energy consumption.

The heating / renewable options reviewed in Capita Symonds report are noted below:

- Gas fired condensing boiler plant with solar thermal installation to provide domestic hot water.
- Biomass boiler with secondary gas fired condensing boiler plant.
- Combined heat and power (CHP) with gas fired condensing boiler plant.
- Ground Source Heat pumps with gas fired condensing boiler plant.
- Air Source Heat pumps with gas fired condensing boiler plant.

Capita Symonds concluded that the preferred heating replacement option which could be considered viable for Lancaster Town Hall was:

Gas fired condensing boiler plant with solar thermal installation

- This option would involve replacing gas fired boilers including gas train, controls, flue, plant-room pipe-work, valves, insulation, pumps and pressurisation unit. Installing solar thermal panels on the flat roof area above Ashton Hall. Replacing existing calorifiers with a solar pre heat cylinder and indirect calorifier.
- Budget cost: £150,000 to £200,000

Potential savings

Current annual gas usage:	646,950 kWh
Current annual gas bill:	£17,808.82

Potential annual saving from solar thermal installation: (11,091) kWh

Potential annual saving from new boiler Installation: (32,348) kWh

Total annual kWh saving:	(43,439) kWh
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Estimated revised annual usage:	603,511 kWh
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Estimated annual gas bill:	£16,613.06
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Estimated annual financial saving: **£1,195.76 pa**

Capita Symonds further recommend that the following works are also considered although at this stage there is no estimation of cost. Indeed some of the items are

being included as part of the works currently being undertaken to the roof of the Town Hall

- Reduce air permeability through the building façade.
- Increase the building insulation.
- New control system / incorporate weather compensation and building heating zones.
- Replace existing pumps with new variable speed units.
- Install thermostatic radiator valves (TRV's).

As an invest to save project, the savings in terms of financial and KWh's appear to be low for a large capital investment. However, as the boilers are coming to the end of their life and could fail at any time leaving the building without heating, a further report has been commissioned from Norfolk Property Services (NPS) to clarify the most appropriate energy efficient option for boiler replacement. Details of this report will be provided to members prior to, or at, the cabinet meeting, including whole life costing information.. It is therefore recommended that, subject to the information contained in the NPS report, the most energy efficient scheme for replacement of the boilers is accepted for inclusion within the draft Capital Programme together with the most appropriate means of funding (such as through any Invest to Save Reserve, if appropriate, or alternatively through other general capital resources).

At as January, only around £33,000 is included in the Capital Programme for replacement boilers, under Municipal Building Works. Clearly this will need to be increased.

APPENDIX B

Installing secondary glazing at Lancaster Town Hall

Secondary glazing units are tailor-made to fit inside the existing windows, unobtrusive on the inside and practically invisible on the outside, preserving the quality of the existing windows while allowing the benefits of a warmer, quieter and more secure environment. Secondary double glazing windows can combat noise pollution and also improve energy efficiency as air is trapped between the existing window and the new secondary window, insulating against the cold outside and preventing draughts.

Following discussions with Lancaster City Council's Conservation Officer he can see no reason why the installation of secondary double glazing can not be installed at Lancaster Town Hall, although there would still be a need for a listed building consent application.

At this stage a specialist secondary glazing company have been asked to produce a matrix of window costs to allow a budget to be formulated. The cost matrix should be available with the next three weeks.

It is envisaged that these works would fall as capital. There is no specific budgetary provision at present and therefore funding from any Invest to Save reserve would need to be considered in due course.

APPENDIX C

Laying a heat exchange pipeline between Salt Ayre Landfill Site and Salt Ayre Sports Centre

Viridis Energy operate a landfill gas generation facility at Salt Ayre in Lancaster, under contract to SITA UK Limited. SITA Power and Lancaster City Council have discussed the possibility of supplying low carbon heat recovered from the landfill gas generators to council-owned premises in the vicinity of the landfill site. In particular we have asked SITA to assess the feasibility of supplying Salt Ayre Sports Centre.

A feasibility study, conducted by Parsons Brinckerhoff, could be delivered at the costs detailed below. Such a study will identify the options available to Lancaster City Council for pursuing the development of a low carbon heat exchange pipeline between Salt Ayre landfill site and Salt Ayre Sports Centre. It will determine the advantages, disadvantages, costs and risks relating to the options available.

If the pipeline is progressed, this would result in financial and carbon savings for Salt Ayre Sports Centre as their energy use will be reduced. The exact savings expected will be determined as part of the feasibility study.

The feasibility study comprises:

- Stage 1: Commission a Heat Demand Assessment at a cost of £3,250
- Stage 2: Commission a Viability Assessment at a cost of £3,370 (a 50% contribution with SITA paying 50%), covering:
 - A district heating pipework
 - An economic assessment

To enable the feasibility study to take place, the Council is required to allocate staff time to gather the data for the Heat Demand Assessment, staff time to liaise with the consultants and the financial contributions given above. The funds could potentially be taken from the Climate Change Implementation budget of £20,000 in 2010/11, if the same is agreed.

If agreed, it is anticipated that the pipeline project could be completed in 2012/13.

APPENDIX D

Installing solar photovoltaic cells at Salt Ayre Sports Centre (also generates income from FITs)

A local company has carried out a basic site assessment of Salt Ayre Sports Centre to determine the suitability of installing solar photovoltaic (PV) cells on the roof.

Such an installation will provide free, renewable energy to Salt Ayre, therefore reducing energy costs and the carbon footprint of the building, and will also generate income from the new Feed in Tariffs (FITs). FITs require energy suppliers to make regular payments to local authorities that generate their own electricity from renewable or low carbon sources.

They have advised that one of the following installations would be suitable for Salt Ayre, dependent on the initial investment:

Capacity of Array (kW)	Size of Array (m ²)	FIT Rate (p/kWh)	Additional Payment for Energy Export (£)	Estimated Installation Cost (£)	Accumulative annual income over 25 year lifespan* (£)	Payback (years) See note 1 below
3.76 <i>(domestic size)</i>	28.4	41.3	0.03	17,484	56,780	10
9.4	71.0	36.1	0.03	37,600	125,098	10
11.75	88.8	31.4	0.03	45,825	137,334	10
29.61 <i>(bespoke frame)</i>	223.7	31.4	0.03	121,401	346,081	11

Note 1 The reduction in energy costs is additional to this figure and has not yet been calculated. It is anticipated therefore that the payback period will reduce.

It is anticipated that the various revenue budgets can be used to contribute towards this project, with potential additional funds held over from 2010/11 if the same is agreed. Further funds would need to be secured to ensure the larger installations; this could include use of the proposed Invest to Save Reserve, referred to elsewhere on the agenda.

It is recommended that alternative technologies are only installed once a building has already made efforts to reduce its energy use. The staff at Salt Ayre have been successfully reducing energy use at the centre for the past 2 years through a £29,000 investment in technologies, such as a pool cover, and through raising staff awareness. Electricity use decreased by 33% and gas by 25% in 2009/10, resulting in substantial financial savings. These savings have continued to increase throughout 2010/11, making Salt Ayre a prime site to explore the use of renewable technologies and FITs.

The next step to carry out this project is to conduct a full site assessment and liaise with local Planning.

If agreed, it is anticipated that the solar PV installation could be completed by winter 2011.