

# CABINET

## Lancaster City Council Energy Strategy 4<sup>th</sup> Dec 2012

### Report of Head of Environmental Services

PURPOSE OF REPORT				
To establish Cabinet's preferred approach to further delivering the outcomes of the Corporate Plan that relate to energy.				
<b>Key Decision</b>	<input type="checkbox"/>	<b>Non-Key Decision</b>	<input type="checkbox"/>	<b>Referral from Cabinet Member</b>
<b>Date Included in Forthcoming Key Decision Notice</b>				NA
<b>This report is public</b>				

#### RECOMMENDATIONS OF CLLR HAMILTON-COX

(1) To be brought forward at the meeting

##### 1.0 Introduction

- 1.1 'Managing the Council's Resources' and 'Environmental Sustainability' are two of the themes that the Council currently has underpinning the four stated Corporate Priorities.
- 1.2 The Corporate Priority of Clean, Green and Safe Places includes the following relevant outcomes, success measures and actions for 2012-15-

Outcomes	Success Measures	Actions
<ul style="list-style-type: none"> <li>CO2 emissions from council activities are reduced</li> <li>Council's energy usage is reduced</li> <li>Income generated from energy, including solar energy</li> <li>Income generated through climate change mitigation</li> </ul>	<ul style="list-style-type: none"> <li>Annual reduction in carbon emissions from the council's operations of 3.4% towards 34% cut by 2020</li> <li>Reduce energy usage across Lancaster City Council owned buildings</li> <li>Increase average Standard Assessment</li> </ul>	<ul style="list-style-type: none"> <li>Implement energy efficiency measures for council buildings, housing and vehicles</li> <li>Deliver actions to reduce the fuel consumption of council fleet</li> <li>Deliver energy efficiency works at Salt Ayre Sports</li> </ul>

Outcomes	Success Measures	Actions
and adaptation projects for reinvesting into the invest to save fund	Procedure (SAP) rating in Council Housing homes <ul style="list-style-type: none"> <li>• Increase income from energy and recycling projects</li> </ul>	Centre <ul style="list-style-type: none"> <li>• Consider how best to manage the Council's future energy requirements</li> <li>• Deliver opportunities arising from Government 'green deal' scheme, including solar technology</li> <li>• Deliver the energy efficiency measures within the planned and capital programme for council housing</li> </ul>

1.3 The Corporate Priority of Economic Growth includes the following relevant outcomes, success measures and actions for 2012-15-

Outcomes	Success Measures	Actions
<ul style="list-style-type: none"> <li>• Employment opportunities are created by development of energy infrastructures which may include offshore wind, renewables and biomass</li> </ul>	<ul style="list-style-type: none"> <li>• Number of offshore wind; renewables; bio-mass initiatives supported</li> </ul>	<ul style="list-style-type: none"> <li>• Promote offshore wind, renewable energy and biomass opportunities in the district</li> </ul>

1.4 Clearly some of the above are for the Council to do directly and some are for the Council to promote and support. The remainder of this report focuses on those outcomes which the Council can actively deliver and draws a distinction between 'efficiency' outcomes and 'renewables' outcomes.

1.5 'Efficiency' outcomes are those which generate savings for the council through the identification of opportunities to improve the management of the council's energy consumption. The Council has already taken a number of positive actions to improve the efficient use of energy within its buildings and assets and is generating real savings, most notably at Salt Ayre Sports Centre, Lancaster Town Hall, and the Council Housing stock. However, there are a finite number of efficiencies which can be made and, whilst continued activities are planned, their success is dependent on the availability and priority for funding.

1.6 By comparison, 'Renewables' outcomes will involve the creation of the energy

required for necessary functions but from renewable sources and will generate both income and savings. Examples of the key commercially proven renewables include wind, biomass, solar PV / thermal, and hydro. The Council has recently delivered a significant energy project i.e. the installation of solar PV panels on a number of Council owned properties. The success of this project demonstrates the positive impact of successfully delivering renewables outcomes.

- 1.7 There is no doubting the success of meeting the 'efficiency' related outcomes, but as the number of opportunities for improved efficiency declines, a greater focus on the renewables outcomes will be required to maximise the potential gains for the Council.
- 1.8 Furthermore, whilst an action in the Corporate Plan is to consider how best to manage the Council's energy usage in the future, it can be expected that the Council will become increasingly affected by legislative requirements to reduce our carbon emissions. The Climate Change Act 2008 has set a legal precedence for the Government to reduce the UK's carbon emissions which has seen the introduction of legal mechanisms including the Feed-in Tariff, the Carbon Emissions Reduction Target, and the Green Deal. As the pressure to achieve legally binding carbon reduction targets increases, it can be anticipated that the UK Government will place further duties on the Council. Therefore, there is a need to plan ahead, particularly when there are currently financial incentives available for renewable energy projects to assist in this regard.
- 1.9 At the moment, progress in this regard is relatively good but has tended to be in response to the need to make savings or as a reaction to opportunities that have arisen. An Energy Strategy will provide a fully considered view on what the aspects of the Corporate Plan outlined above really mean to Lancaster City Council and; what the Council is going to do about them. Areas covered could include: emissions reduction, renewable energy, behaviour change, the living environment, impact on the local economy, job creation etc.
- 1.10 In addition, using an Energy Strategy to plan ahead could help-
  - reduce emissions
  - lower overall costs
  - protect against energy inflation
  - provide valuable income to the Council
  - provide jobs and growth for the local economy.
- 1.11 The strategy should be one that is clear, agreed, understood and can be realistically attained by the Council. Essentially a document that sets out how the Council is going to achieve this aspect of the Corporate Plan.
- 1.12 It would essentially have three elements-
  - **targets / aims / or goals as to what the Council wants to achieve.** As an example 'we will produce 25% of the energy that the authority uses from renewable sources by 2015;'
  - **a plan of how to get there.** In order to deliver that, we will install X MW of solar PV, Y MW of wind or biomass etc;
  - **Identify projects that will deliver those goals.** The first projects will be solar PV on Salt Ayre, White Lund Depot etc. This will be followed by X, Y and Z;
- 1.13 If agreed the strategy would need to be funded and adequately resourced.

- 1.14 It is expected that, besides the more obvious efficiency initiatives, renewable energy projects could be considered when developing the strategy. These obviously require significant up-front costs but have the potential to generate income and make real savings for the Council. A number of ongoing renewable energy projects in other Councils are included in Appendix 1 by way of example.

## **2.0 Proposal Details**

- 2.1 Cabinet are requested to consider their approach to delivering this significant part of the corporate plan.

- 2.2 The Council has made considerable progress already that will contribute to the agreed outcomes. There will no doubt be further opportunities that arise. The ability to take advantage of these opportunities depends very much on alignment of opportunity with funding, officer capacity and other priorities.

- 2.3 It is proposed that to fully address this aspect of the corporate plan the Council develops an energy strategy. Based on the capacity the Council has it is clear that the adoption of a strategic approach is one that will require additional resource. Clearly there are a number of services of the Council that will be integral to the development of a Council Energy Strategy. Officers from these services will need to have a significant input in its development. What will be needed though is expertise to help translate what we want achieve into something that can be delivered. Expertise is needed, as examples to assess the types of technology available, what the costs are, what the expected income will be and so forth. It is estimated that in order to develop a fit for purpose strategy that is provided to the point where it could realistically start to be implemented would cost £20,000. This one off cost though as highlighted by the examples in the appendix would be more than offset by, as an example, the future income that could be generated from further renewable energy projects.

## **3.0 Details of Consultation**

- 3.1 Were the Council to consider a strategic approach to this aspect of the Corporate Plan it would be important that the resultant strategy had been fully consulted on.

## **4.0 Options and Options Analysis (including risk assessment)**

- 4.1 **Option 1-** Continue to deliver this aspect of the Council's corporate plan in the way that it has been delivered to date. The main risks of this are that there will be no real focus and when opportunities do arise the lack of underpinning strategy will create problems in terms of resourcing, staffing, consultation and ability to deliver real wins to the Council. It is also considered certain that ultimately energy costs will continue to rise, targets for reducing carbon emissions etc will continue to rise, commercially proven renewable technologies will improve and incentives for introduction of renewables will decrease. Not having any planned approach could act against the Council's best interests and there can be no guarantees that this approach will effectively deliver this aspect of the Corporate Plan.

- 4.2 **Option 2-** Seek to develop a Council energy strategy, subject to

consideration as part of the budget. This would help to ensure the Council has in a place a clear, agreed and realistic plan for the future that will allow us to protect ourselves against rising energy costs, meet emission targets, generate income and take advantage of available technologies at the opportune moments. It will require a budgetary allocation of around £20,000 to develop the actual strategy. Dependent on the approach chosen it could potentially cost millions to deliver, but potentially the benefits financially, economically and environmentally may far outweigh the initial costs.

## **5.0 Conclusion**

5.1 The report sets out how the Council could deliver this aspect of the Corporate Plan

### **RELATIONSHIP TO POLICY FRAMEWORK**

As outlined in the report

### **CONCLUSION OF IMPACT ASSESSMENT**

**(including Diversity, Human Rights, Community Safety, Sustainability and Rural Proofing)**

As outlined in the report

### **LEGAL IMPLICATIONS**

Any strategy will have to take into account any statutory duties the Council may have.

### **FINANCIAL IMPLICATIONS**

The development of an energy strategy will require significant officer time as well as the use of external expertise. If deemed a priority the officer time will be prioritised from existing budgets however it is estimated that the one-off cost of external expertise would be in the region of £20K. There is currently no specific budgetary provision for this and therefore it would need to be considered as part of the current revenue budget exercise.

It should be noted that once developed, the strategy is likely to highlight areas requiring significant financial investment (potentially into the £millions) and Members should be mindful that difficult financial decisions will need to be taken in order to support the strategy. However, as the results are unquantifiable at this moment in time, further reports will need to be prepared in order to outline options available including full financial appraisals to justify their support.

### **OTHER RESOURCE IMPLICATIONS**

#### **Human Resources:**

None

#### **Information Services:**

None

#### **Property:**

Responsibilities regarding energy management for property need to be clearly set out, in context of other potential strands of any energy strategy. For council owned property, support from the County Council is currently being considered, linked to the joint working

arrangements in place. The work involved in developing any energy strategy would need to reflect this, to avoid duplication and ensure co-ordination.

**Open Spaces:**

None

**SECTION 151 OFFICER'S COMMENTS**

The s151 Officer has been consulted and her comments reflected in the report. She would add also that in due course and as with all budget proposals, any capital investment options would need to be considered in accordance with the Prudential Code, to ensure affordability, prudence, and sustainability.

**MONITORING OFFICER'S COMMENTS**

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

**BACKGROUND PAPERS**

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APPENDIX 1

**BUSINESS CASES FOR RENEWABLE ENERGY PROJECTS IN LOCAL GOVERNMENT**

**PROVIDED BY STEPHEN CIRELL (Stephen Cirell Consultancy Ltd) at member briefing 19/09/12.**

*Preston City Council – wind energy project;*

Under an early business case, it was indicated that a 3 MW wind farm (three 1 MW wind turbines) would cost £4.5m and the net income (based on a wind speed of 6-7 m/s) would be £800,000 pa. This would pay back over 5 years and offer a return of 20% tax-free for the Council for 20 years.

Since that report was presented, further discussions have taken place and it now appears as though a larger scheme might be more appropriate. An example might be three 3 MW turbines, giving a total capacity of 9 MW, with a cost of around £12m and an income of £2.5m pa tax free for 20 years. This would generate 21,000 MWh of energy per annum (almost three times the total energy usage of the Council currently).

*Wrexham County Borough Council – solar PV project*

The Council is borrowing £25m to put solar PV on 3,000+ of its Council properties. This is being funded partly by the HRA and partly by borrowing. The scheme is providing a profit to the Council across the 25 year period of around £15m. It has managed to secure a very competitive price well under £2500 per kw installed for this project (by undertaking its own procurement exercise), which has decreased its costs

and increased its profit.

#### *Severn Trent Water – AD plant*

Severn Trent commissioned and built the AD plant at Stoke Bardolph and its capital cost was £15m. It took two years to build, will earn approximately £1.5m pa and will pay back in 10 years. It creates 15,000 MWh of energy per annum. To replicate this project, 700 hectares (or 1400 acres) of land is required at 50 tonnes of maize per hectare. This produces 37,000 tonnes of maize annually. Either the FIT can be used for this or there are 2 ROCs currently for AD under the ROC banding. Heat is produced by the plant too but only 10% of this is used in the process (as there is currently no outlet for it). The IRR on this plant is 11.5%.

#### *Derby City Council – hydropower plant*

Derby City Council has undertaken a project in the more traditional area of hydropower. It has put a hydropower facility at Longbridge Weir, on the River Trent near the Council House in Derby.

The facility is 200 KW but will produce around 12,500 MWh of electricity per annum, for a capital cost of around £2m. Much of the power will be used in the Council's own offices, and its carbon footprint will be radically reduced.

#### *Renewable Heat Incentive*

The example here is a large local authority secondary school. The building has an annual heating requirement of 3,351 MWh from a X capacity gas boiler.

It costs £877,250 for a new biomass boiler, with improved controls and fittings, which then generates £88,279 'cash back' per annum through RHI guaranteed for 20 years. It costs £17,464 per annum for wood pellets to fuel the boiler so you make £83,066 per annum from this for 20 years.

The scheme will pay for itself in just over 8 years. This works out at just under a million pounds net profit, tax free, (£996,000) over the 20 years not even counting inflation.

#### *Solar Thermal Project*

This example is a leisure centre with a 20 m / 8.5 m pool, 1.2 m deep. Pool temperature has to be 29 degrees. Turnkey cost for solar thermal £45,000 (supplied, installed and commissioned). Collector power 53 kw. This system has a five year payback - the total cost is £45k with the RHI and fuel cost savings being £75k, delivering a surplus of £30,000 over 20 years.