



10 March 2016

Agenda Item: 6

REPORT OF THE SERVICE DIRECTOR FOR ENVIRONMENT, TRANSPORT AND PROPERTY

ENERGY OPPORTUNITIES UPDATE AND STRATEGY

Purpose of the Report

1. This report provides a further update on energy opportunities subsequent to the report to this committee on 3 September 2015 and outlines a draft energy strategy to drive forward performance in addressing the costs, impacts and opportunities across the Council's non-school buildings and land.

Information and Advice

2. The energy opportunities update reported to this committee in September 2015 noted the establishment and membership of a new cross-party energy group and that the initial focus of this group has been on renewable heat and solar energy. The report also noted that this cross-party energy group would act as a reference group for the development of a County Council energy strategy.
3. Whilst the report brought to this committee in September covered a broad range of energy opportunities previously agreed as worth pursuing by this Committee, here updates on progress are limited to a few key areas.

A. Energy efficiency

4. Investment in energy efficiency measures, such as boiler controls, low energy lighting, and insulation continues to be supported by the Council's £1.3m revolving Local Authority Energy Finance (LAEF) fund. Since the allocation within the Council's capital programme of additional funding of £3million over the next 3 years for energy efficiency schemes (Additional Capital for Energy, ACE), it has been possible to use this to complement LAEF funds and enable projects to proceed that would otherwise have failed to meet the strict and demanding criteria placed on LAEF loans by the funds partner, Salix Finance. In many cases this support is also complementing and enhancing the Council's property maintenance programme.
5. Projects on Council non-school properties that are being supported through LAEF, ACE or a combination of both, include:
 - Replacing inefficient electric storage heaters with efficient air source heat pumps at the Mill Adventure Base
 - Upgrading lighting to highly efficient LEDs at offices at Sherwood Energy Village

- Major improvements to lighting and heating systems at Sir John Robinson House.
6. The Council's good relationship with Salix Finance has been instrumental in securing further interest-free loans for energy efficiency measures in street lighting. This on-going project has so far seen around 18,000 LED street lights installed county-wide, with plans approved for a further 8,000-10,000 a year for the next 3 years. Interest-free funding has been secured from Salix Finance totalling over £6 million with a further bid pending. This is a spend-to-save scheme, with the expenditure saved in the energy budget paying for the new infrastructure, therefore not costing the authority any additional money. To date the project is on target to reach its £1.5 million savings commitment, with additional savings being realised as the project progresses. Once the loans have been repaid, the street lighting energy budget should be reduced by between £800k - £1m per year, with the added benefit of improved street lighting and more easily maintained stock throughout the County.

B. Small scale renewable electricity

7. The SunVolt programme of photovoltaic (PV) panel installations on non-school buildings continues to progress through a Property-managed contract, with the total installed capacity spread across 32 sites (up from 16 in January 2015) now just over 0.75MW. These arrays are estimated to generate about 750,000 kWh p.a., and yield about £175,000 in annual savings resulting from index-linked Feed in Tariff (FiT) payments (of about £110,000 p.a.) combined with the value of consumed 'free' electricity. This annual generation is approximately equal to the average annual electricity consumption of Sir John Robinson House and Lawn View House combined.
8. In spite of significant reductions in FiT rates introduced in January of this year, falling technology costs may still mean that further investment in solar arrays on Council properties remains viable, particular where high amounts of the generated electricity will be consumed on site. In the future, it may be that battery storage will present a viable technology to complement solar PV at Council sites.
9. Further to this, over 60 Nottinghamshire schools and Academies have had PV panels installed on their roofs, predominantly under a scheme offered by British Gas, which enables the schools to benefit from free electricity generated by the panels. This represents a total of about 1MW of installed capacity (roughly equivalent to a couple of 75m high wind turbines). A further scheme, which would have seen free PV arrays installed at an additional twenty or so schools, with the schools set to benefit from free consumption of their generated electricity, was withdrawn by the provider at the end of December 2015 due to the earlier than expected significant reductions in FiT rates.

C. Large scale renewable electricity

10. Members may recall that September's energy update reported that proposed changes to the incentive regime for encouraging renewable electricity generation were likely to have a significantly detrimental impact on the business case for large scale ground-mounted solar arrays.
11. Following these expected significant changes to incentive payments for renewable electricity generation, advice is now awaited from APSE Energy and others, along with evidence to support the view that in the near future such projects will be financially viable without subsidy. This would be at a point when declining installation costs combine with favourable

long term Power Purchase Agreements or on/near site use to create a more compelling case for investment.

D. Renewable heat

12. The Council's biomass boiler programme completed its most recent phase in April 2015, and this utilises the Government's Renewable Heat Incentive (RHI) to generate an income for the Council to cover boiler maintenance costs and fuel purchase. The annual income from the RHI, which is index-linked over 20 years, is estimated to be around £110,000. To date about £140,000 in total has been received after about 18 months. This programme follows on from previous activity over many years, which has resulted in over 60 Council sites heated by modern biomass boilers, saving each year over 6,000 tonnes of carbon dioxide, and brings the Council's installed renewable heat capacity to an impressive figure of over 10MW.
13. There are now relatively few sites within the Council's property portfolio that remain heated by oil, coal or LPG, most of which are schools. Feasibility work is planned for these sites in order that options for replacing their boilers with cleaner, more energy efficient heat systems can be considered as the boilers approach their end of life.
14. In addition to biomass, other forms of renewable heat also qualify for RHI payments, including ground source heat pumps, water source heat pumps, geothermal energy, solar thermal and bio-methane. The Council has been active in exploring opportunities presented by these technologies and, in general, the tariff rates still provide a strong incentive, particularly for water source heat pumps.
15. This exploration includes commissioning feasibility work for utilising water source heat from the lake at Rufford Country Park and from the River Trent at County Hall. An initial feasibility report for such a scheme at County Hall identified a number of possible options with encouraging indicative business cases. Thus this work has now moved to a Property-led options appraisal stage, under which the relative merits of a high temperature system, retaining the existing pipework and radiators, will be compared to a low temperature system, involving replacement of the ageing pipework and radiators. Similarly, at Rufford, an initial feasibility study was positive enough to warrant some further, more detailed work led by Property, with a view to replacing the existing oil-fired heating system at the Mill end with heat pump technology.

E. Supporting community action

16. Following the award to the Nottinghamshire and Derbyshire Local Authorities Energy Partnership (LAEP) of £163,900 from DECC's Fuel Poverty and Health Booster Fund in March 2015, mentioned in the September update report, the LAEP has recently secured £325,000 from National Energy Action's Warm and Healthy Homes Fund. This is being used in Nottinghamshire to support a Warm Homes on Prescription pilot project, by funding heating and other measures for households in fuel poverty, where one or more occupants has a cold-sensitive health condition. Such households are being identified through careful targeting in association with health sector partners.

F. Energy Strategy

17. In order to cement long term commitment, engender cross-council and cross-party support, and make further progress in delivering financial and carbon savings, and community benefits, it has been agreed that an energy strategy be developed.
18. The proposed energy strategy 2016-20 will outline high level ambition, principles and targets in regard to energy use and opportunities. The strategy should embed energy and carbon saving into service plans within departments and allow specific targets to be set. A first draft, building on the 'energy smart Council' principles previously approved by this Committee, is attached as Appendix 1 for observations. Subject to comments from this Committee the intention is to develop this into a draft for consultation with internal stakeholders, prior to taking to Policy Committee for approval.

Other Options Considered

19. None. This report builds on and updates the principles agreed at Environment and Sustainability Committee in June 2014.

Reasons for Recommendations

20. As set out in para 17, the energy strategy is intended to cement long term commitment to securing the benefits of good energy management and to engender cross-council and cross-party support, and make further progress in delivering financial and carbon savings, and community benefits.

Statutory and Policy Implications

21. This report has been compiled after consideration of implications in respect of finance, equal opportunities, human resources, crime and disorder, human rights, the safeguarding of children, sustainability and the environment and those using the service and where such implications are material they are described below. Appropriate consultation has been undertaken and advice sought on these issues as required.

Implications for Service Users

22. Energy is a significant area of spend for the Council, and as such effective energy and carbon management can protect or enhance budgets available for service delivery, by limiting, or reducing energy spend, generating income, and reducing maintenance costs, as well as contributing to the comfort and well-being of building users.

Recommendations

23. That Committee:

1. Notes the contents of the report and the progress which has been made in the development and implementation of suitable energy projects.
2. Notes the role of the cross-party energy group in the development of an energy strategy for the Council, and

3. Agrees to the draft energy strategy attached as forming the basis of a consultation with internal stakeholders, and to comments arising being considered by the cross-party energy sub-group.

Constitutional Comments (SLB 16/02/2016)

24. Environment and Sustainability Committee is the appropriate body to consider the content of this report

Financial Comments

25. [To be completed].

Background Papers

Environment and Sustainability Committee report, "Energy Opportunities Update", 3 September 2015.

Environment and Sustainability Committee report, "Energy Management Principles and Opportunities", 5 June 2014.

Electoral Divisions

All

Jas Hundal

Service Director for Environment, Transport and Property

Any queries on this report should be directed to:

Mick Allen, Group Manager, Waste and Energy Management

Nottinghamshire County Council Energy Strategy 2016-2020

CONSULTATION DRAFT

1. Introduction and background

- 1.1 With increasing pressures on local government budgets, the need for councils to be efficient and innovative whilst still delivering essential services and fulfilling a community leadership role has arguably never been greater. As part of this requirement councils are inevitably exploring opportunities to reduce costs and generate income through effective management of their property assets.
- 1.2 Action to address the cost, impacts and opportunities presented by energy use and generation not only offers the potential for forward thinking Councils to meet this need for efficiency and innovation, but also to play a positive part in contributing to the international imperative to tackle the causes of climate change, enshrined in the UK's 2008 Climate Change Act.
- 1.3 Nottinghamshire County Council has a long history of investing in energy with the combined objectives of managing its energy costs, limiting its impact on the environment and contributing to the development of the local low carbon economy as recognised, for example, by the award of Beacon Status for Sustainable Energy in 2005. These objectives are consistent with the Council's current Strategic Plan and complement the aims of the Derbyshire and Nottinghamshire Local Enterprise Partnership, D2N2 and the ambitions of the combined authority for the North Midlands.
- 1.4. This energy strategy focuses on energy use and opportunities across the Council's non-school buildings and land building on existing activities and programmes, and forms part of a wider commitment to broader environmental goals.

Q1. Should the scope of the strategy be limited to energy management and opportunities connected to the Council's non-school buildings and land, or should it be extended to look at energy and carbon emissions within schools and across other areas of the Council's operations, and/or across the community of Nottinghamshire?

"Looking after the environment is the responsibility of us all.

We can influence some key aspects of this environmental protection through determining major planning permissions for new developments such as schools, libraries, elderly person's homes and roads. We will also seek to deliver our services in new ways that limit the environmental impact of our properties, vehicles and resources. We will continue to invest in sustainable technology that helps to reduce our carbon footprint. We aim to minimise the impacts of transport on people's lives, maximise opportunities to improve the environment and help tackle carbon emissions."

Nottinghamshire County Council Strategic Plan 2014-2018.

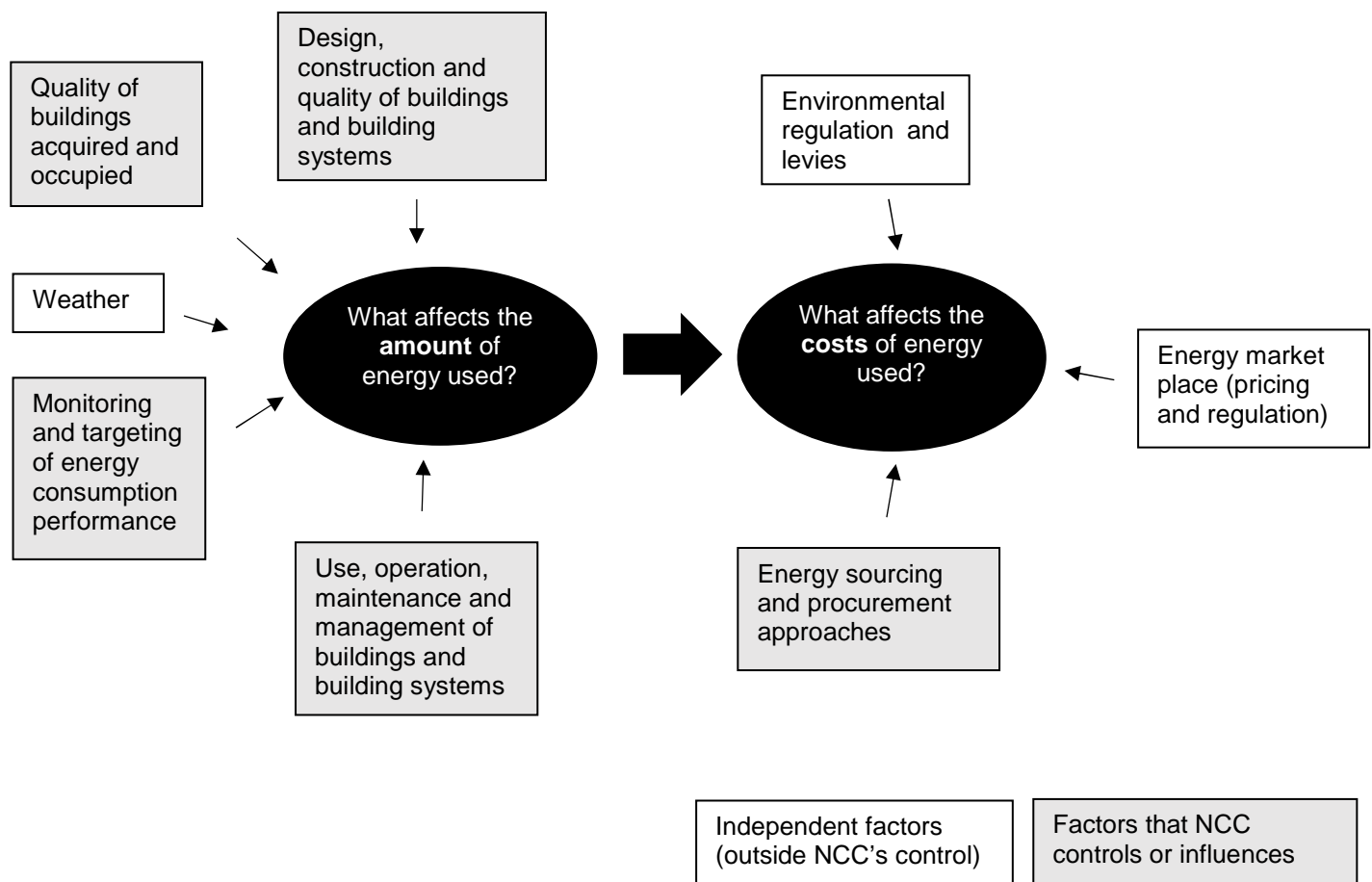
1.5 Key national and local policy drivers other than the aforementioned Climate Change Act, include:

- the Carbon Reduction Commitment Energy Efficiency Scheme
- the requirement to produce an annual local greenhouse gas emissions report
- the EU Energy performance in Buildings Directive, requiring Display Energy Certificates and Energy Performance certificates
- National policy and strategy aimed at delivering more decentralised, decarbonised and secure energy supply
- The low carbon strategy of the Local Enterprise Partnership, D2N2.

These in turn influence County Council plans and strategies, such as those relating to finance, asset management, procurement, economic development and the environment.

1.6 A range of factors affect energy consumption and costs, some of which are within the Council's sphere of control and influence, and some of which are not. These are summarised in Figure 1 below.

Figure 1. Factors affecting energy consumption and costs within Nottinghamshire County Council buildings



2. Vision

2.1 Nottinghamshire County Council as an 'energy smart council' embraces both the aim to drive down energy costs and the desire to make the most of energy opportunities for the benefit of the Council, its communities and the environment. In support of this the Council has adopted the following energy management principles:

- **Avoid needless costs** - by ensuring best value from energy procurement, compliance with energy-related legislation and the inclusion of energy cost considerations in procurement and major decision making.
- **Reduce energy demand** - through engagement with staff to promulgate energy saving behaviours, and through the management, refurbishment and design of Council buildings.
- **Use energy more efficiently** - through continued investment in quick payback energy efficiency measures in Council buildings.
- **Increase the use of renewable energy** - where appropriate opportunities exist for energy cost savings and income generation.

2.2 The vision is for the Council to:

Reduce the amount of energy consumed by its buildings and operations

Reduce carbon emissions arising from energy use in its buildings and operations

Increase the energy efficiency of its buildings

Contribute to the generation of local, clean energy and use of renewable heat, where it is financially prudent to do so.

As part of this vision, the Council will also look to secure additional benefits, including increased occupancy comfort, reduced maintenance costs, and increased asset values. Action towards the above vision will help to limit any impact of energy price increases and contribute to maximising the resources available for front line services.

Q2. Is this vision ambitious enough and wide enough in scope?

2.3 In pursuit of the above the Council will:

- Monitor the performance and value for money of its energy supply arrangements
- Comply with relevant energy-related legislation.
- Include energy considerations in decisions that will affect energy use in buildings and operations.
- Target energy audits and efficiency measures in buildings to maximise savings.
- Monitor, record and communicate energy costs and consumption data to appropriate managers and budget holders.
- Encourage and support managers and budget holders to pursue improvements in energy performance.
- Encourage and support all staff to contribute to saving energy in its buildings and operations.
- Continue to support investment in energy efficiency measures in its buildings and operations.
- Continue to explore investment in renewable energy generation and use.

- Consider the energy and carbon implications of its decisions as part of the Committee reporting process.
- Work in partnership to secure benefits to Nottinghamshire residents, businesses and communities from energy efficiency and renewable energy..

3. Targets

3.1 The Council aims to:

- Reduce weather corrected emissions of carbon dioxide from energy use in its non-school buildings by 5% p.a.(tonnes)
- Reduce energy consumption in its street lighting, signs and signals by 5% p.a.(kWh)
- Reduce weather-corrected energy consumption in its non-school buildings by 4% p.a. (kWh)
- Improve the efficiency of weather-corrected energy use in its buildings by 3% p.a. (kWh per m²)
- Improve the average Display Energy Certificate score of its non-school buildings of over 1000m² floor area (i.e. those that have an annually renewed certificate) by 5% p.a.

Q3. Are these targets realistic?

Q4. Should they be expressed as a medium term goal against a benchmark year – e.g. X% by 2020 compared to 2014-15?

Q5. Are there other targets that should be adopted, such as around renewable energy generation/consumption – e.g. increase amount of installed capacity from X to Y by ZZZZ?

3.2. All Departments will be expected to contribute to meeting these targets and those with responsibilities for energy budgets and site management will be charged with reporting progress against these targets on an annual basis.

4. Approach to investment

4.1 The Council will continue to invest in energy saving and income generating measures where it makes sense to do so, taking into account:

- our asset management strategy – as a general rule only investing in measures that payback prior to any planned disposal of the property affected or add sufficient value to the asset
- the estimated return (saving or income) on investment – with a guide threshold of achieving a simple payback period of 10 years or better
- the availability of human and financial resources
- political support
- a broad view of the benefits likely to be realised.