

Environmental and Public Protection Scrutiny Committee
15th January 2018

Energy Consumption in the Council's Non-domestic Buildings

Introduction

1. This report is submitted in response to the request from the Environmental and Public Protection scrutiny committee at its meeting on 17th November 2017 for a report on the Council's energy consumption.
2. The procurement of energy has become increasingly complex with prices volatile and linked to both national and global factors. In order to minimise risk, the Council procures its energy using Crown Commercial Services Framework Agreements, via the National Procurement Service (NPS), for the vast majority of supplies.
3. Under the NPS procurement arrangements, the larger users of electricity with mandatory 'half hourly' meters are supplied by EDF Energy. All other 'non half hourly' establishments were supplied by British Gas; however, the contract with British Gas was recently terminated, with electricity for all establishments to be supplied by EDF Energy (unfortunately, some establishments are experiencing a delay in this transfer due to outstanding billing issues). Gas is supplied by Corona Energy; oil by Certas Energy; and, liquefied petroleum gas (LPG) by Flogas.
4. The 'SystemsLink' energy management software system has recently been procured in order to achieve better monitoring of the Council's energy consumption; better management of billing (potentially via paperless systems); and to allow web-based access to individual sites.
5. Since 2010, the Council has been a participant under the mandatory UK-wide Carbon Reduction Commitment (CRC) Energy Efficiency Scheme. As a consequence, it is required to purchase non-refundable allowances for each qualifying tonne of carbon dioxide (CO₂) arising from its electricity and gas consumption. The Council paid £344,850 under this scheme based on its CO₂ emissions for 2016/17. Whilst the Council's emissions have continued to reduce, the level of 'tax' levied for each tonne of CO₂ emitted increases annually in order to further incentivise carbon reduction (£17.20 per tonne in 2016/17). The UK government has announced that the CRC Energy Efficiency Scheme will be abolished following the 2018/19 compliance year; however, this cost will not disappear as the Climate Change Levy will be raised to compensate.

Performance Measures

6. Energy consumed by the Council's non-domestic buildings in 2016/17:

Utility	kWh
Electricity ¹	22,118,500
Gas	36,256,286
LPG	1,442,987
Oil	6,303,594
Kerosene	612,368
Solid fuel ²	75,000
Total	66,808,735

7. The Council has consistently reduced its energy consumption and CO₂ emissions:

Key Measures of Success	2012/13	2013/14	2014/15	2015/16	2016/17	Progress: 2016/17 v 2015/16	
• Consumption (kWh) ³	77,252,930	74,614,632	72,821,595	68,452,917	66,808,735	Improved	2.4%
• CO₂ emissions (tonnes) ⁴	22,453	22,010	21,787	20,855	20,522	Improved	1.6%
• Cost (£) ⁵	£4,727,803	£4,745,312	£4,228,683	£4,440,880	£4,032,916	Improved	9.2%
• Renewable electricity generated (kWh) ⁶		207,698	229,652	280,742	670,401	Improved	138.8%

Notes:

- (1) All electricity procured via the NPS is from renewable energy sources.
- (2) Solid fuel (coal) is no longer used to heat any of the Council's non-domestic buildings.
- (3) Consumption data has been revised from the 66,883,735 kWh originally reported (this has correspondingly reduced CO₂ emissions).
- (4) This performance measure has applied the same carbon conversion factors year-on-year, and has not used recent carbon conversion factors for electricity that have reduced to reflect the increasing amount of electricity generated nationally from renewable energy sources.
- (5) There are on-going billing issues with one of the Council's electricity suppliers.
- (6) The Council has invested in solar photovoltaic (PV) systems and currently has a total installed capacity of 1.15 MWp on its non-domestic buildings.

Energy efficiency programmes

8. To-date, the Council has invested over £2 million in some 200 energy efficiency projects financed under the interest-free Salix invest-to-save programme. This investment is projected to save over £7+ million / 41,000 tonnes CO₂ over the lifetime of the installed technologies. One of these energy efficiency projects was the pool cover at Carmarthen Leisure Centre which became operational in September 2014 at a cost of £41,000 and resulted in savings of £24,268 in the first year (1.7 year payback). Pool covers have subsequently been installed at all the Council's wet sites.
This investment, coupled with the Council's on-going property rationalisation programme is producing financial and carbon savings in times of increasing utility prices.
9. We are currently participating in the Welsh Government supported Re:fit Cymru programme in order to identify energy, and water, efficiency opportunities in non-domestic buildings including schools. Once an initial comprehensive assessment has been completed, a potential programme(s) may be procured under an energy performance contract to deliver identified energy savings – these savings to be underwritten/guaranteed by the successful contractor. An initial expression of interest has been submitted under the Wales Funding Programme for £2 million to install conservation measures in 25-30 various corporate buildings. An invitation to tender is to be launched in March 2018, with an anticipated start in September 2018. Further phases may follow.

New build programme

10. The Council has a significant new build programme. All major new build projects incorporate renewable energy technologies where appropriate with solar PV installations incorporated into many recent Modernising Education Provision 21st Century school projects. In addition, and in order to minimise energy use from new buildings, a 'Fabric First' approach to energy efficiency is also being progressed and, where feasible, to achieve 'Passivhaus' certification.
11. The 'Passivhaus' Standard is a rigorous energy standard for buildings that provides a quality assurance for both energy and environmental performance. This involves designing buildings to meet the required performance standards and include: very high levels of insulation; extremely high performance windows with insulated frames; airtight building fabric; 'thermal bridge free' construction; and, a mechanical ventilation system with highly efficient heat recovery. 'Passivhaus' buildings have been shown to achieve a 75% reduction in space heating requirements, compared to standard practice for UK new build.
12. In September 2015, the Council successfully delivered the first 'Passivhaus' educational facility in Wales for the redevelopment of the former Burry Port Infant School site. Further schemes at the recently opened Ysgol Trimsaran and the currently under construction Ysgol Parc y Tywyn have been built to achieve the 'Passivhaus' Standard.

13. In addition, all non-domestic projects receiving an element of Welsh Government funding are required to achieve a BREEAM (Building Research Establishment's Environmental Assessment Method) rating of 'Excellent', a part of which is linked to designing buildings to achieve reductions in energy use and carbon emissions. A building achieving a BREEAM 'Excellent' rating is considered to be in the top 10% of UK new non-domestic buildings based on typical sustainability performance.

Opportunities for renewable energy

14. Various opportunities for carbon reduction and income generation associated with renewable energy on the Council's land have been explored. Whilst a range of potential projects has been identified, the prohibitive cost of connecting these to the National Grid has rendered them financially not viable; however, potential opportunities for ground mounted solar PV are actively being revisited under the Welsh Government's Green Growth Wales programme.
15. In April 2015, the Executive Board accepted a tender for an ambitious and innovative programme to install solar PV systems on the Council's housing and non-housing buildings. This was a no-cost community 'rent-a-roof' model with the option for the Council, and local community, to directly invest if desired. Unfortunately, subsequent UK Government announcements of major, immediate cuts to feed-in-tariff subsidies resulted in the programme for the Council's housing stock being abandoned in September 2015. Whilst a programme of solar PV installations on non-domestic buildings was completed, this was greatly reduced to the one originally proposed (due to the removal of a national pre-registration process to enable schemes to secure favourable feed-in-tariff rates, and compounded by severe local capacity issues on the National Grid).
16. Since 2015, whilst there has been a virtual demise in feed-in-tariff subsidies, the cost of solar PV systems has continued to decline, and battery technology has emerged as a potential mainstream application. Coupled with the rising cost of electricity it seems inevitable that there will be a viable solar solution – it appears to be just a question of when. We have continued to monitor the situation to assess whether the market has sufficiently stabilised to consider re-introducing a housing-based solar project. Over recent months the Council has received a number of unsolicited approaches from companies offering free solar PV installations across the housing stock. It was, therefore, considered timely to test the market by placing these approaches on a level playing-field to enable potential opportunities to be assessed. Accordingly, we are working with Local Partnerships (a joint venture between HM Treasury and the Local Government Association, formed in 2009 to help the public sector deliver local services and infrastructure) as part of Welsh Government's Green Growth Wales programme, and have recently undertaken a market testing exercise, via a Prior Information Notice in the Official Journal of the European Union (OJEU), to identify potential interested companies. The responses to this OJEU exercise are currently being evaluated and will be reported to Executive Board for consideration and to seek formal approval for a project, if viable, prior to pursuing an OJEU solar PV tender exercise.

Jonathan Fearn
Head of Property
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