

PERTH AND KINROSS COUNCIL

Property Sub Committee

16 April 2018

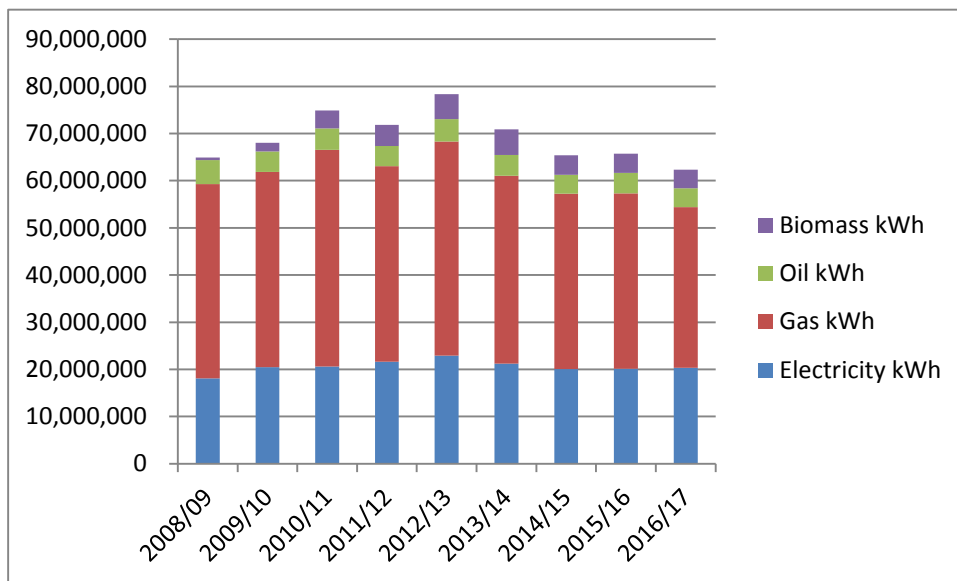
Energy Consumption in Council Buildings

Report by Executive Director (Housing & Environment)

This report updates the Property Sub Committee on the position with regard to energy consumption within the Property Estate. It focuses on the recent management initiatives and monitoring arrangements in place to deliver energy reduction and cost savings.

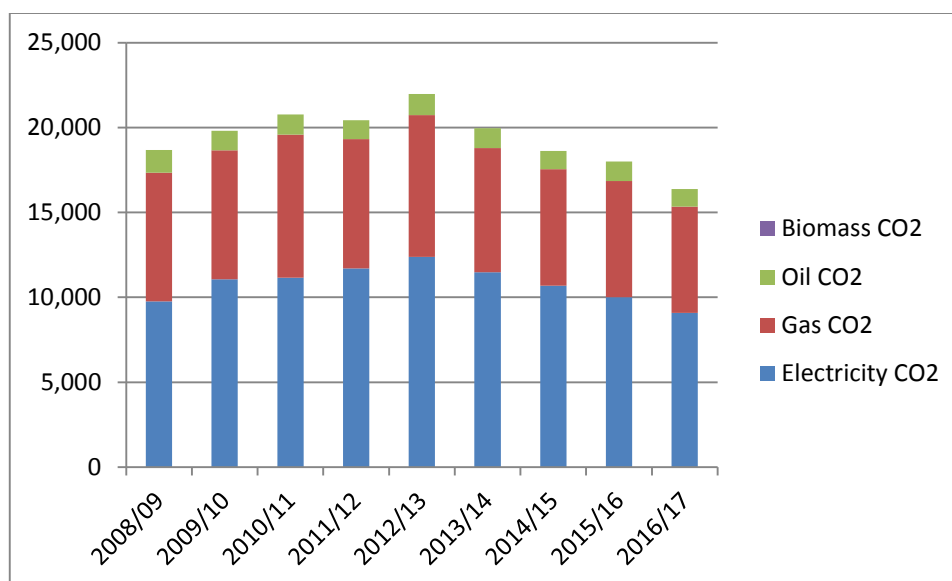
1. BACKGROUND**2008 – 2017 Energy Consumption**

- 1.1 The following graph and accompanying table shows the Council's energy consumption in kwh over the last nine financial years.



Financial Year	Electricity	Gas	Oil	Biomass	Total (kWh)	Increase/ Decrease (from previous year)
2008/09	18,063,485	41,188,458	5,089,600	580,000	64,921,543	
2009/10	20,442,243	41,406,192	4,376,511	1,792,450	68,017,396	5%
2010/11	20,620,207	45,925,330	4,529,833	3,822,830	74,898,200	10%
2011/12	21,619,570	41,477,850	4,238,539	4,512,450	71,848,409	-4%
2012/13	22,899,349	45,406,460	4,765,773	5,254,730	78,326,312	9%
2013/14	21,227,338	39,796,293	4,411,530	5,456,245	70,891,406	-9%
2014/15	20,053,626	37,191,473	4,025,449	4,107,597	65,378,145	-8%
2015/16	20,147,761	37,160,987	4,378,696	4,008,176	65,695,620	0%
2016/17	20,327,361	34,089,662	3,982,354	3,922,694	62,322,071	-5%

- 1.2 The graph and accompanying table shows that during the period 2008/09 – 2012/13, electricity consumption increased by 27%, gas consumption by 10% and total consumption by 21%. However, during the period 2012/13 – 2016/17 electricity consumption reduced by 11%, gas consumption by 25% and total consumption reduced by 20% (note 2012/13 was 20% colder than 2016/17 and 15% colder than 2008/09 as measured by Degree days).
- 1.3 The increase in consumption over the period from 2008/09 until 2012/13 is primarily due to the increase in the property estate particularly from the commissioning of six new schools under the Investment in Learning Initiative.
- 1.4 The consumption figures for 2016/17 indicate a decrease in total consumption from the previous year of 5%. This is primarily due to less gas (the Council's primary source of heating) being consumed due to upgraded building control systems. The reduced fixed temperature initiative, investment in energy efficient equipment and low carbon technologies.
- 1.5 The total decrease in energy consumption during the review period has had the effect of decreasing the Council's carbon dioxide (CO₂) emissions for energy from 18,600 tonnes of CO₂ (in 2008/09) to 16,400 tonnes of CO₂ (2016/17). This reduction has been achieved despite increases to the Gross Internal Floor Area (GIFA) of the overall property estate within this time. The increase in GIFA between 2012/13 to 2017/18 equates to 3,487 Sq.m. The Council's annual carbon dioxide emissions (tonnes) are illustrated in the graph below.



1.6 The resultant decrease in energy consumption, and therefore a consequential decrease in CO2 emissions, means that the Council's Carbon Reduction Energy Efficiency Scheme (CRCEES) cost was reduced for 2016/17 to £248,668 from £263,887 in 2015/16, despite the annual CRCEES allowance price increase. The CRCEES is a mandatory emissions reduction scheme that applies to large non-energy intensive organisations in the public and private sectors.

1.7 From 2012/13, a 20 % reduction in energy consumption has been made. Based on 2016/17 energy prices, this reflects an annual saving of £145,000.

2. Energy Use to Date – 2017/18

2.1 The summary below compares the available current data i.e. April to December of the immediate preceding financial year (2017/18) with a similar period in 2016/17.

Utility Type	2016/17 kWh	2017/18 kWh	Difference	%
Electricity	13,869,607	13,054,411	-815,196	-6%
Gas	20,270,727	21,534,914	+1,264,187	+6%
Oil	2,400,643	2,042,316	-358,327	-15%
Biomass	2,771,660	1,557,493	-1,214,167	-44%
Total	39,312,637	38,189,134	-1,123,503	-3%

2.2 The figures show an overall decrease in total energy consumption from 2016/17 to 2017/18 of 3%. In financial terms, this equates to £135,000.

- 2.3 This decrease in energy consumption is due to the following measures being applied by Property Services energy team:
- (i) Adopting a more pro-active role in controlling heating through new and upgraded building control systems.
 - (ii) A reduction in building temperatures to a maximum of 19 Deg C as set out in the Council's Energy Policy (Report Number 16/184 refers).
 - (iii) More detailed analysis of recorded energy data and adopting energy reduction measures across the property estate.
 - (iv) Providing technical engineering support for new build and refurbishment projects.
- 2.4 In future years, increased energy savings can be achieved by:
- (i) Further investment in building control systems and energy monitoring.
 - (ii) Increasing the current level of engagement with all stakeholders to raise energy awareness.
 - (iii) Reducing the overall size of the property portfolio.
 - (iv) Increased use of low and zero carbon technologies for new and refurbished buildings (LED lighting, air and ground source heat pumps, photovoltaics and solar thermal systems).

Energy Projects

- 2.5 For financial year 2017/18, Property Services budget for energy & water conservation projects is £94,000. This budget has been spent on:
- (i) Alyth Primary School Renewable Heat Incentive application.
 - (ii) Water Automatic Meter Reading (AMR) installations.
 - (iii) Renewable technology remote monitoring and metering equipment.
 - (iv) Feasibility for Perth Academy and Perth High School energy centre design.
 - (v) Building Energy Management System (BEMS) remote monitoring.
 - (vi) Electronic thermometers.
- 2.6 Completion of the above energy conservation projects is enabling the Property Services energy and engineering team to meet the 3% energy reduction target to December 2017. However, given the poor weather January – March 2018 this may not continue when final figures are collated.
- 2.7 The Property Services energy and engineering team have carried out a case study of the energy consumption for 2 High Street before and after completion of the full building refurbishment. Details of this case study are contained in Appendix 1.

3. CONCLUSION

- 3.1 This report provides an update on the energy use within the Property estate taking into consideration the impact of all energy reduction measures applied by the Property Services energy and engineering team. The financial savings noted in this report for April to December 2017/18 have been achieved despite significant increases in charges for electricity.

3.2 The Property Sub Committee is asked to:

- (i) Note the efforts of the energy and engineering team in reducing energy consumption within the property estate.
- (ii) Note that the opportunity for future energy savings will become more challenging as our overall property estate is made more efficient through upgrade and refurbishment programmes.
- (iii) Requests the Executive Director (Housing & Environment) to bring back a further report on energy consumption in one year's time.

Authors

Name	Designation	Contact Details
Grant Key	Team Leader, Energy and Engineering	01738 475000
Stephen Crawford	Head of Property Services	TESCommitteeReports@pkc.gov.uk

Approved

Name	Designation	Date
Barbara Renton	Executive Director (Housing & Environment)	7 March 2018

1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	Yes / None
Community Plan / Single Outcome Agreement	Yes
Corporate Plan	Yes
Resource Implications	
Financial	None
Workforce	None
Asset Management (land, property, IST)	None
Assessments	
Equality Impact Assessment	Yes
Strategic Environmental Assessment	None
Sustainability (community, economic, environmental)	Yes
Legal and Governance	None
Risk	None
Consultation	
Internal	None
External	None
Communication	
Communications Plan	None

1. Strategic Implications

Community Plan / Single Outcome Agreement

- 1.1 The Perth and Kinross Community Planning Partnership (CPP) brings together organisations to plan and deliver services for the people of Perth and Kinross. Together the CPP has developed the Perth and Kinross Community Plan which outlines the key things we think are important for Perth and Kinross.

- (i) Giving every child the best start in life
- (ii) Developing educated, responsible and informed citizens
- (iii) Promoting a prosperous, inclusive and sustainable economy
- (iv) Supporting people to lead independent, healthy and active lives
- (v) Creating a safe and sustainable place for future generations

- 1.2 It is considered that the actions contained within this report contribute to objective v.

Corporate Plan

- 1.3 The Council's Corporate Plan 2013-2018 outlines the same five objectives as those detailed above in the Community Plan. These objectives provide a clear strategic direction, inform decisions at a corporate and service level and

shape resource allocation. It is considered that the actions contained in the report contribute to the objectives as outlined in paragraph 1.2 above.

2. Resource Implications

Financial

- 2.1 This report has no additional financial resource implications.

Workforce

- 2.2 This report has no specific workforce implications.

Asset Management (land, property, IT)

- 2.3 This report has no specific asset management implications.

3. Assessments

Equality Impact Assessment

- 3.1 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. Carrying out Equality Impact Assessments for plans and policies allows the Council to demonstrate that it is meeting these duties.
- 3.2 This section should reflect that the proposals have been considered under the Corporate Equalities Impact Assessment process (EqIA) with the following outcome:
- (i) Assessed as **not relevant** for the purposes of EqIA.

Strategic Environmental Assessment

- 3.3 Strategic Environmental Assessment (SEA) is a legal requirement under the Environmental Assessment (Scotland) Act 2005 that applies to all qualifying plans, programmes and strategies, including policies (PPS). The proposals have been considered under the Act and no further action is required as it does not qualify as a PPS as defined by the Act and is therefore exempt.

Sustainability

- 3.4 Under the provisions of the Local Government in Scotland Act 2003 the Council has to discharge its duties in a way which contributes to the achievement of sustainable development. In terms of the Climate Change Act, the Council has a general duty to demonstrate its commitment to sustainability and the community, environmental and economic impacts of its actions.
- 3.5 The proposals contained within the report are assessed to have a positive impact on sustainability, particularly with regard to reducing energy use.

Legal and Governance

- 3.6 This report has no legal or governance implications.

Risk

- 3.7 This report has no significant risk implications.

4. Consultation

Internal

- 4.1 The Head of Legal and Governance, Head of Finance and the Head of Democratic Services have been consulted with this report.

External

- 4.2 Not applicable.

5. Communication

- 5.1 Not applicable.

2. BACKGROUND PAPERS

- 2.1 None

3. APPENDICES

- 3.1 Energy Consumption in Council Buildings Case Study - Appendix 1