



APPENDIX I

ANNUAL ENERGY REPORT 2018/19

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1 Introduction

Improving energy efficiency not only provides financial benefits but also reduces on-going carbon emissions in the most cost-effective manner.

Energy efficiency has been a long term priority for the Scottish Government and Scottish Ministers designated energy efficiency as a national infrastructure priority in 2015, recognising the many benefits delivered by improving the energy performance of our buildings.

During the financial year 2018/19 Moray Council's expenditure on utilities (including street lighting) was approximately £3.62M, with associated carbon emissions of 10,135 tonnes CO₂.

1.1 Council Aims and Objectives

The Council's Corporate Plan 2018 – 2023 stated priorities, objectives and actions make no reference to energy efficiency or carbon reduction, with the exception of the Energy from Waste Project. This was picked up by an Internal Audit review (refer to Section 3.2.2) and is in the process of being addressed.

Reducing energy consumption in the Council's non-domestic operational properties by 2% per annum remains the main objective of the Council's Energy Policy. However it has been recognised that the current energy based reduction target is no longer appropriate, particularly given that national targets are based on carbon emissions reduction.

On the 27th of June 2019 (para 6 of the Minute refers) Moray Council declared a Climate and Ecological Emergency and set a target of net zero carbon emissions by 2030. This includes forming a Climate Change Group made up of officers and elected members to direct and scrutinise the climate change strategy currently being prepared within the Council.

2 Performance

2.1 Consumption and Costs

Table 1 provides a summary of the Council's utilities' consumption, costs and emissions during 2018/19.

Table 1

Annual Report Figures 18-19			
Commodity	Consumption (kWh/m3)	Net Cost (£)	Carbon (tonnes CO ₂)
Biomass	2,525,531	£121,871	38
Oil	3,062,739	£162,586	847
Gas	22,815,767	£647,018	4,197
Electricity	12,180,860	£1,669,079	3,742
Street Lighting & Unmetered Elec	3,782,875	£489,102	1,162
Water (m3)	141,838	£532,645	149
Totals		£3,622,301	10,135

The operation of the Council's 255 non domestic buildings cost £3,133,199, with further expenditure of £489,102 on street lighting and unmetered electricity.

2.1.1 Combined Energy Consumption

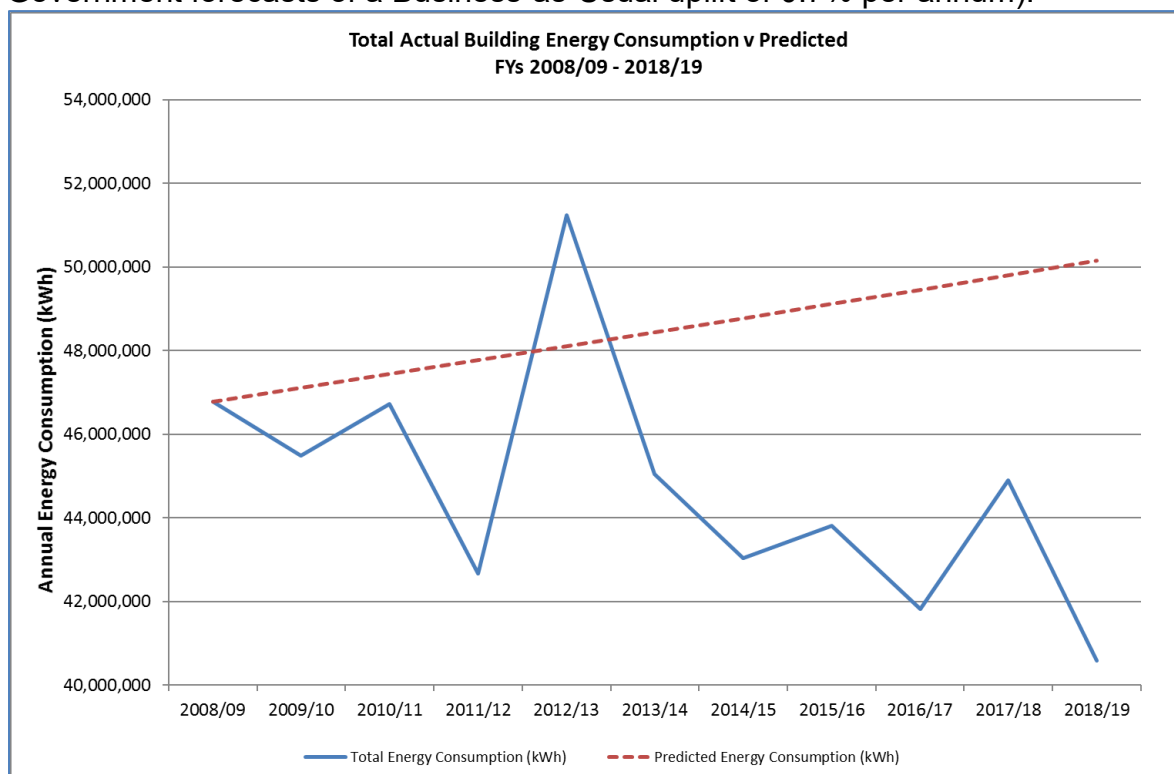
Table 2 below provides a comparison between 2017/18 and 2018/19 for individual utilities.

Table 2
Consumption

Utility	17-18	18-19	Difference	%
Biomass	2,683,474	2,525,531	-157,943	-6%
Oil	4,063,176	3,062,739	-1,000,437	-25%
Gas	25,044,411	22,815,767	-2,228,644	-9%
Electricity	13,110,091	12,180,860	-929,231	-7.1%
Overall Building Total (kWh)	44,901,152	40,584,897	-4,316,255	-9.6%
Street Lighting & Unmetered Elec	4,900,855	3,782,875	-1,117,980	-23%
Overall Total (kWh)	49,802,007	44,367,772	-5,434,235	-10.9%
Water (m3)	134,306	141,838	7,532	5.6%

The combined energy consumption from the Council's buildings, (the measure to which the annual reduction target is assessed), for 2018/19 was 40,584,897 kWh compared with consumption of 44,901,152 kWh for 2017/18, equivalent to a 9.6% decrease.

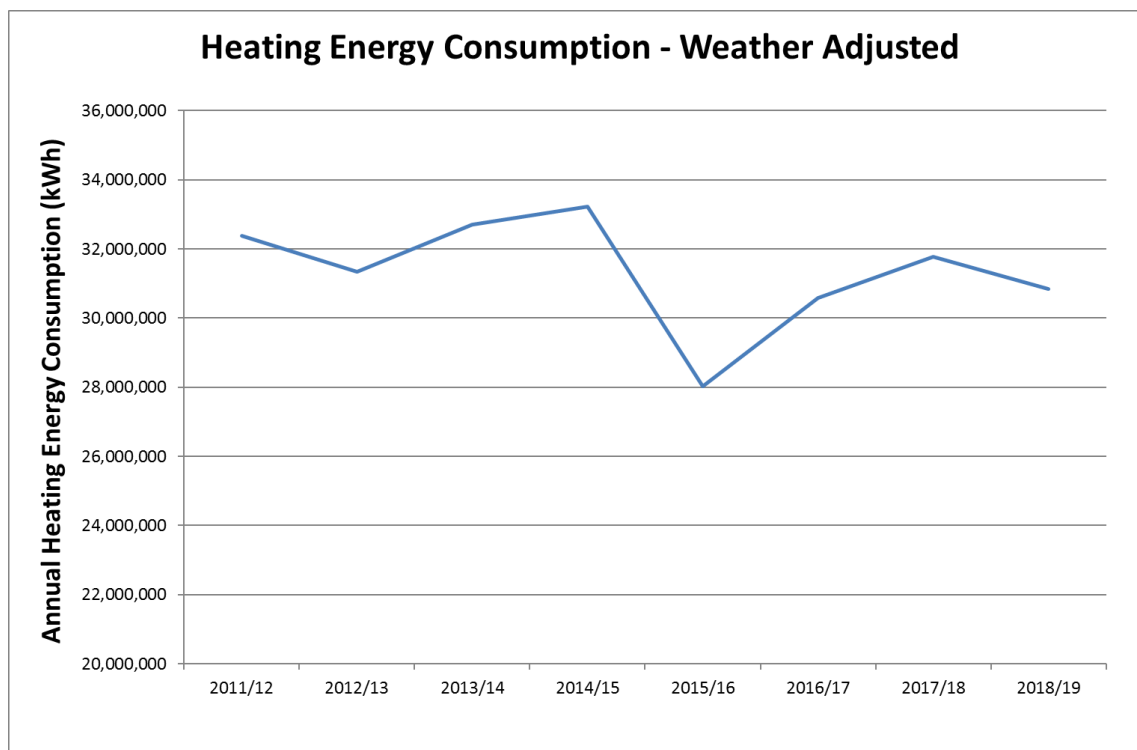
The graph below shows the Council's total energy consumption in its non-domestic buildings for the last 9 years, compared to the predicted increases, (based upon Government forecasts of a Business-as-Usual uplift of 0.7% per annum).



2.1.2 Heating-related Energy Consumption

To take account of weather conditions a measure termed “Degree Days” is utilised to incorporate the effect of warmer or colder conditions – permitting a comparison of heating related efficiency.

The graph below shows the Council's weather adjusted heating consumption for the last 7 years.



Heating accounts for a significant proportion of the Council's energy consumption. The weather in 2018/19 was 8% warmer than in 2017/18 and the graph above shows a weather adjusted decrease in heating consumption of 9.6% compared to 2017/18. This indicates that the overall efficiency of heating provision within Moray Council properties has improved, i.e. became more efficient.

- Nearly 50% of the recorded reduction was attributable to secondary schools, which all recorded notable decreases.
- Elgin Library increased gas consumption by 10%, most likely due to the main ventilation system being refurbished and made operational.
- Cumulatively, the impact of CATs, building closures etc (9 buildings) to gas consumption was a reduction of 365,000 kWh, approximately £10k
- Percentage increases (greater than 8%) were recorded for
 - Libraries
 - Industrial Premises
- Large percentage decreases (greater than 20%) were recorded for
 - Closed Sites
 - Premises (OT Store – heating system broken)
 - Residential Homes (Maybank, Taigh Farris now closed)

Given the number of potential factors which affect heating related performance, beyond the warmer winter conditions, it is very difficult, without detailed and time consuming analysis, to identify exactly why consumption has decreased individually and collectively. However the milder weather and closure of a number of Council buildings will have contributed. Additionally it is believed there is an increased level of awareness amongst staff on energy and climate issues, which would have had a positive impact on good energy house-keeping practises.

Climate change is likely to exacerbate fluctuations in weather conditions in future.

2.1.3 Water Consumption

The Council's water consumption for 2018/19 was 141,838 m³ compared with consumption of 134,306 m³ for 2017/18, an increase of 7,532 m³, equivalent to a 5.6% increase.

Although many properties reduced consumption, both primary and secondary schools recorded large increases, with a combined increase of 10,800 m³. During March 2018 urinal sensors were installed across all applicable schools, which should reduce consumption on an on-going basis - the Energy Team will continue to monitor consumption data.

2.1.4 Relative Energy Efficiency Performance - Benchmarks

During 18-19, the public sector Scottish Energy Officers Network (SEON) commissioned University College London (UCL) to undertake a review of benchmarks for all public sector building types in Scotland, based upon 2016-17 data. Now published, the benchmarks have been initially used to assess the energy performance of Council property types. Graphical depictions of the Local Authority "Typical" energy performances of varying building types compared to those within Moray are contained within **APPENDIX II**.

Commentary

- Electricity
 - The performance of most building types are comparable to the Scottish Local Authority average
 - Building types which perform better than the Scottish Average include
 - Care/Nursing Homes
 - Sheltered Housing
 - Industrial Premises
 - Building types which perform worse than the Scottish Average include
 - Libraries – particularly Elgin Library
 - Museums/Visitor Centres
 - Secondary Schools with pools
 - Buckie Pool and the Annex skew the results for their respective building types due to respectively their poor efficiency and the addition of the ICT server load
- Thermal
 - Building types which perform better than the Scottish Average include
 - Day Centres
 - Sheltered Housing

- Industrial Premises
- Secondary Schools with pools
- Building types which perform worse than the Scottish Average include
 - Community Centres
 - Libraries – particularly Elgin Library (attributable to inefficient lighting and ventilated heating system)
- Buckie Pool again skews the results for swimming pools due to its poor efficiency (relating to very old boilers and inefficient pool hall ventilation system)

It is the intention during 2019/20 to undertake further analysis on individual buildings with a view to incorporating the results into asset management assessments and for targeting future energy surveys and audits.

2.2 Energy Performance Certificates (EPCs)

The Council remains statutorily obliged to provide EPCs for its public buildings with a floor area above 250m² as well as all properties for lease or sale (including Housing Revenue Account dwellings). EPC's are valid for 10 years following which they require renewal. It is understood 17 of our public buildings were renewed in 2018/19 and 29 are due to be renewed in 2019/20

2.3 Street Lighting

The management and maintenance of street lighting is undertaken by Direct Services. The associated energy consumption in 2018/19 was 3,782,785 kWh, 23% lower than the 2017/18 consumption of 4,900,855 kWh. A five year programme to upgrade existing street lighting to LED technology began in 2015 and is scheduled to complete in 2020.

2.4 Carbon

Carbon dioxide emissions are increasingly the measure by which energy management and sustainability activities are monitored and evaluated. It provides a single common denominator between disparate activities such as electricity, transport and waste recycling. The following table details the carbon emissions associated with energy and water consumptions attributable to Moray Council.

Table 3

Carbon

Utility	17-18	18-19	Difference	%
Biomass	34	38	4	12%
Oil	1,121	847	-274	-24%
Gas	4,612	4,197	-415	-9%
Electricity	5,040	3,742	-1,298	-26%
Street Lighting & Unmetered Elec	1,884	1,162	-722	-38%
Water	141	149	8	6%
Overall Total CO₂	12,832	10,135	-2,697	-21%

The carbon emissions from the Council's non-domestic buildings in 2018/19 were 21% lower than in 2017/18. Contributory factors which would have impacted on the above performance include:-

- Lower consumptions for all utilities except water
- Reduced carbon intensity of grid electricity
- Decreased heat requirement due to warmer weather
- More street lighting provided from LED technology

3 Utility Management

3.1 Utility Contracts

Electricity – The new framework contract has been awarded to the incumbent supplier EDF. Supply of electricity under the new framework commenced on 1 April 2019 and will run until 31 March 2021, with options for three yearly extensions until 31 March 2024.

Gas - The current contract with Total Gas & Power expires in March 2020. Scottish Procurement are currently undertaking the tender process for the subsequent contract.

Water - Anglian Water replaced Business Stream for water services on 1 March 2016 and the Council has experienced on-going significant difficulties with inaccurate invoicing and issue resolution. It should be noted that these issues are not restricted to Moray Council and are common across the Scottish public sector. Payment for water services is made annually in advance to realise a 2% discount on all charges. In June 2018 Scottish Procurement awarded a 12 month contract extension to Anglian Water bringing the contract termination date to 28th Feb 2020 – at that point it will be re-tendered.

Biomass – the Council has a joint contract with Highland Wood Energy for Biomass fuel supply and maintenance. The contract covers the 4-year period 1st September 2017 to 31st August 2021 with an option to extend for a further 12 months.

Utility Cost Management

3.1.1 Budget Monitoring

Budget Managers currently receive monthly budget reports including details of utility spend from the Finance Department. The Energy Team supplies utility consumption data in various formats to budget holders and carries out energy audits, walk-rounds and briefings as requested.

3.1.2 Utility Expenditure

In 2018/19 the Council's total utility bill amounted to £3,622,301, a decrease of £115,336 (3.1%) compared to 2017/18 - with buildings constituting the largest element at £3,133,199. Table 4 below gives a breakdown of costs.

Table 4

Net Cost

Utility	17-18	18-19	Difference	%
Biomass	£127,088	£121,871	-£5,217	-4%
Oil	£192,542	£162,586	-£29,956	-16%
Gas	£601,898	£647,018	£45,120	7%
Electricity	£1,732,691	£1,669,079	-£63,612	-4%
Water	£506,794	£532,645	£25,851	5%
Overall Total - Buildings Only	£3,161,013	£3,133,199	-£27,814	-0.9%
Street Lighting & Unmetered Elec	£576,624	£489,102	-£87,522	-15.2%
Overall Total (£)	£3,737,637	£3,622,301	-£115,336	-3.1%

3.1.3 Commodity Market Factors

The following factors should be noted with regard to the utility costs for 2018/19:

- Biomass unit rate for heat remained relatively steady.
- Oil and gas average unit rates increased by 12% and 18% respectively
- Electricity rates rose by 3.7%, with further increases forecast for the next financial year, (refer to following section)

Note: the above costs are exclusive of CRC.

3.1.4 Future Budget Guidance

Compared to 2018-19, unit costs for electricity and gas in 2019-20 rose by 4.3% and 5.6% respectively.

Scottish Procurement issue periodic updates on price forecasts for the electricity and gas contracts. The following is based on guidance issued in June 2019 and reflects median forecast figures.

		2020-21	2021-22
Variance to 19-20	Gas	-6%	+2%
	Electricity	+9%	+13%

Based upon our current consumption patterns, should the predicted increases detailed above come to pass, the following additional costs would be incurred.

		2020-21	2021-22
Variance to 19-20	Gas	-£38,821	£12,940
	Electricity	£194,236	£280,564
	Combined	£155,415	£293,504

3.1.5 Carbon Reduction Commitment (CRC)

The CRC was designed to incentivise large commercial and public sector organisations to implement cost effective energy efficiency opportunities at non-domestic properties and street lighting. The Energy Team undertook the preparation and submission of the CRC Annual Report and associated evidence

pack. The charge per tonne (allowance) of CO₂ emitted increased year-on-year and varied dependant on when the allowance was purchased. The CRC scheme finished in March 2019 with Climate Change Levy rates increasing from 1 April 2019. Overall, the annual net cost to the council has reduced by approximately £100,000.

As 2018-19 was the last year of the scheme, there was a requirement to specify closely the allowances purchased to ensure that no excess remained at the end of the scheme. (Excess allowances would become worthless).

In April 2018 Moray Council purchased 3,100 allowances at £17.20 each for the reporting period 2018/19, at a cost of £53,320. Applicable carbon emissions in 2018/19 amounted to 8,779 tonnes. With consideration of allowances already held (8,260), there was a requirement to purchase a further 519 allowances in June 2019 at a cost of £9,498. The surrender of these held allowances in September 2019 will conclude the CRC scheme.

3.1.6 Renewable Heat Incentive (RHI)

The council currently operates 2 biomass heating systems, at Speyside and Milne's High Schools and a solar thermal system at Forres Swimming Pool.

For the 2018/19 period the Council received combined RHI payments of £109,846.

Table 1

Total RHI Income	17/18	18-19	Difference	%
Milnes PS	£45,746	£47,315	£1,569	3%
Speyside HS	£57,549	£57,875	£326	1%
Forres Pool	£1,079	£1,913	£833	77%
Total RHI Income	£104,374	£107,103	£2,728	3%

3.2 Invoice Processing

All utility invoices go directly to the Energy Team for verification and validation prior to centralised authorisation and payment. The vast majority of utility invoices are received electronically and uploaded directly onto the Council's monitoring and targeting system – TEAM Sigma. The software automatically performs validation checks on the data received, highlighting any abnormalities for the Energy Team to investigate. During 2018/19 over 13,500 utility invoices were processed by the Energy Team.

The monitoring and targeting system produces consolidated information for the Energy Team to pass to the Finance Section to facilitate payment. Currently 2 officers in Finance have access to the system to allow financial investigations and specific reports to be handled. The Council receives a discount of 0.3% for paying its electricity and gas invoices by direct debit – this also removes the potential for late payment charges.

During 2018-19 the active management, checking and validation of utility consumptions and invoices identified over £88,000 erroneous charges, including

- Duplicate charging
- Over-estimates
- Incorrect rates applied
- Cancellation of charges for redundant infrastructure

Full details can be found in **APPENDIX III**.

3.2.1 TEAM Sigma Monitoring & Targeting Software

Since April 2018 Sigma software has been operated on a supplier-hosted basis and is performing satisfactorily. Associated cost savings from the cessation of IT server equipment and associated maintenance have been realised.

In line with recommendations made as part of an internal audit review, (see following section) additional invoice accuracy validators are in the process of being tested to assess their suitability and practical application.

3.2.2 Internal Audit

During 2018/19 Internal Audit undertook a review of the Energy Section with respect to CRC and energy management procedures.

The following table provides an overview of the recommendations contained within the report submitted to the Audit and Scrutiny Committee on 27 February 2019. An expanded table with progress to date can be found in **APPENDIX IV**.

No.	Audit Recommendation	Timescale for Implementation
5.1	Consideration should be given to include a commitment within the Corporate Plan to reduce the Council's carbon footprint, with the aim of contributing to the long term national target established by the Scottish Government of a reduction in carbon emissions by 42% by 2020 and 80% by 2050.	31/03/2020
5.2	The Annual Report on Energy Strategy/ Actions should also report CO2 emissions, including comparisons with prior year figures to show the direction of travel for this key indicator.	Implemented
5.3	Consideration should be given to providing further analysis within the Annual Report on Energy Strategy/ Actions of the actual savings generated from each energy saving project.	With effect from Annual Report 2018/19
5.4	The Energy Supplier should be reminded to use actual meter readings wherever possible.	28/02/2019
5.5	Random sampling should be undertaken of the meter readings detailed on the Energy Supplier's Invoice to the actual recorded meter reading submitted to the Energy Section. Any concerns or queries should then be raised with the Energy Supplier.	31/03/2019

5.6	The Energy Manual should be updated to include procedures for ensuring the regular checking and submission of energy consumption meter readings.	31/03/2019
5.7	Consideration should be given to undertaking regular reconciliations between expenditure recorded within Team Sigma system to information supplied to FMS.	31/03/2019
5.8	Consideration should be given to exploring the variance analysis functions within Team Sigma, as this may provide some additional management information of areas for further investigation or identify anomalies in energy consumption.	31/03/2019

4 Policy & Strategy

4.1 Scottish Government

4.1.1 Energy Efficient Scotland

Scottish Ministers announced in June 2015 that they would take long-term action to reduce building energy demand and decarbonise heat supply; designating energy efficiency as a national infrastructure priority.

In May 2018 the Scottish Government launched the Energy Efficient Scotland Route Map, a 20-year programme containing a set of actions aimed at making Scotland's existing buildings near zero carbon wherever feasible by 2050, and in a way that is socially and economically sustainable.

Energy Efficient Scotland has two main objectives:

- Removing poor energy efficiency as a driver for fuel poverty. (The Programme will be the primary mechanism by which this is achieved).
- Reducing greenhouse gas emissions through more energy efficient buildings and decarbonising our heat supply.

The Scottish Government has committed to invest more than half a billion pounds to Energy Efficient Scotland over the four years to 2020/21.

Amongst its objectives the Route Map aims for all public sector buildings to reach a relevant benchmark by 2040 and all non-domestic buildings to be improved for energy efficiency to the extent this is technically feasible and cost effective by 2040. At present new regulations are expected to come into force from 2021 on a phased basis.

Once fully implemented and operational, Energy Efficient Scotland is envisaged to be a whole system approach to delivering energy efficiency improvements and the provision of low carbon heat. A framework of energy efficiency standards, advice and funding would be applied to help create long-term consistency and confidence for consumers and industry, backed up by legislation where needed.

4.1.2 Scotland's Climate Change Plan and Proposals and Policies

The Scottish Government published the draft Climate Change Plan (CCP) 2017-2032 on 19 January 2017, which presents policies and proposals to meet

Scotland's annual targets until 2032. Based on the most recent Scottish greenhouse gas inventory (2014), it contains annual targets which represent an emissions reduction of 66% compared to baseline levels by 2032. This level of transformational change presents Scotland with significant challenges and opportunities, which are explored within the draft plan.

The principal target of the draft CCP is the “almost complete decarbonisation of Scotland by 2050”, with what are considered to be transformational outcomes in transport, heat, electricity generation, and energy efficiency, along with increased natural carbon sinks and more efficient and profitable agricultural practices.

4.1.3 Scottish Energy Strategy

Published in December 2017, the Strategy is intended to guide the decisions of the Scottish Government, and also in working with partner organisations, which need to be made over the coming decades for a whole-system approach that considers both the use and the supply of energy for heat, power and transport.

The Strategy is designed to highlight the connections between the energy system and all parts of the economy, and its importance to sustainable, inclusive growth. It also makes a strong commitment to improving the Scottish Government's approach to public awareness-raising and engagement on energy issues.

4.1.4 Climate Emergency Declaration

On 28 April 2019, Scotland and Wales became the world's first national governments to declare Climate Emergencies.

4.2 Moray Council Policies and Strategies

4.2.1 Energy Policy & Strategy

The Council's current Energy Policy and Strategy (**APPENDIX V**) was first produced in 2005 and subsequent revisions have been agreed by this Committee and made available publicly via the Council's Energy Internet website. In accordance with the Carbon Trust Management guide CTC733 “An energy management best practice model for Scottish local authorities”, the Policy and Strategy document is reviewed annually.

There is no explicit reference in the Moray Local Outcome Improvement Plan (LOIP) or Council's Corporate Plan to energy efficiency and nominal reference to other related aspects of sustainability such as climate change adaptation, carbon emission reduction etc.

It has been previously stated a corporate review should be undertaken to determine a Council wide carbon emissions reduction target, including waste, water and sewerage, business travel and fleet transport, in the context of the national legislative initiatives in this area, as detailed above. The review should consider consolidating individual targets and aspirations currently in place, including the Council's Corporate Asset Management Plan target of reducing CO₂ from building usage by 20% by 2023.

With the Council's declaration of a Climate and Ecological Emergency in June 2019 it is expected that the Energy Policy and Strategy will be reviewed/superseded by an expected Climate Change Strategy and action plan.

4.2.2 Corporate Heating Strategy

A Corporate Heating Strategy, containing guidelines on the use and responsibilities for heating at Council buildings, was agreed by this Committee at its meeting on 9 September 2014 (paragraph 4 of the Minute refers). This document gives clarity and advice to building occupiers, whilst allowing sufficient flexibility to facilitate local and/or changing circumstances.

The Energy Team monitor heating use and consumption and investigate any inconsistencies and discrepancies with the Heating Policy.

4.2.3 Strategic Energy Action Plan (SEAP)

As reported to the Policy and Resources Committee on 8 May 2018 Moray Council has been working with Aberdeen City, Aberdeenshire and Angus in preparing a Sustainable Energy Action Plan (SEAP) for the whole North East of Scotland entitled "Empowering the North East". The report advised that progress has been made in relation to the majority of actions identified within the SEAP. The projects that have the most significant impact in terms of emission reductions relate to large scale energy centres proposed by the private sector. The report also noted that the Council has limited staffing and financial resources to contribute significantly to reducing emissions.

The report advised that in addition to the North East SEAP there is a Moray specific SEAP which covers the time period 2015 to 2030. The target within this plan is for Moray to aim to achieve greenhouse gas (GHG) emission reductions of 35% by 2030 compared with the baseline year (2005).

4.2.4 Mandatory Carbon Reporting

The Energy Team contributed to the submission of the Council's Public Sector Climate Change report in November 2018.

5 **Building Energy Management Systems (BEMS)**

There are BEMS systems in 33 Council buildings and the Energy Team use them to regularly monitor temperatures in buildings, identify anomalies early and adjust heating settings accordingly.

BEMS are now being used to assist water safety management in producing concise information reports on hot water storage temperatures.

The recently introduced BEMS technical specification is improving consistency across the Council's properties, including new-build projects and refurbishments. Examples of the measures applied include performance dashboards, visibility of all set point & control parameters, interactive graphics of facilities and consistent representations of boiler system components and arrangements. This continues to be rolled out as and when the opportunity arises, however the current financial restrictions and the impact of the Make do and Mend programme are limiting development of the system.

6 Energy Initiatives

6.1 Energy Awareness

6.1.1 Energy Website

The Energy website on the internet and intranet continues to be reviewed and updated. The pages detail how to help the environment by following simple energy saving tips for your home, workplace or school. In March 2019 the Council supported the WWF's Earth Hour through switching off the electrical lighting to Landshut Bridge and statues in Elgin, as well as promoting a "no power for an hour" initiative in the Council's schools.

Copies of the Council's latest energy saving posters and the corporate heating strategy are also available on the website. Regular articles were included in the Connect magazine during 2018/19, covering a variety of energy issues, which are continuing in 2019/20.

6.1.2 Corporate Training

A total of 200 staff and 753 primary school pupils attended energy awareness events in 2018/19, this includes 3 staff induction sessions and 12 school visits (STEM, workshops and assemblies).

Energy Awareness briefings are incorporated as part of the Corporate Staff Induction Training programme. Since January 2019 this has been delivered on-line with new members of staff encouraged to work through the materials themselves. 22 visits to the on-line site page have been recorded.

6.1.3 Energy Team Training

The Energy Team have participated in training to improve the benefits provided by the TEAM Sigma energy monitoring & targeting system.

Energy Team staff regularly attend Scottish Energy Officers Network meetings.

6.2 Energy Surveys

In 2018/19 the Energy Team carried out surveys of the following sites:-

- Keith Grammar School
- Milne's High School
- Buckie High School
- Hythehill Primary School
- Milne's Primary School
- Lhanbryde Primary School

These audits resulted in the identification of energy saving projects/measures - a number have been implemented and others are being actively pursued. A series of follow up visits to gauge the progress of the measures recommended were carried out and showed that the majority of the recommendations were in the process of being implemented.

Both the initial findings and follow up reports are provided to the particular school and copied to the Educational Resources Manager and the Head of Schools and Curriculum Development.

Guidance is issued to all schools on procedures for minimising energy usage prior to each main holiday and summer shutdown inspections were undertaken at the following sites:-

- Elgin High School
- Elgin Academy
- St Gerardine's Primary School
- Greenwards Primary School
- Milne's Primary School

In total 300 items of electrical equipment were found to be left on, (excluding items in useful operation). This included 30 fridges, 36 smartboards and 182 PC monitors and televisions. Extrapolated across all schools this would represent a cost, just for the summer holiday period, of £6,916 with associated carbon emissions of 16,217 kgCO₂. These schools were subsequently advised of the inspection findings and asked to ensure items are switched off during holidays in future.

We would commend St Gerardine PS where no items were found to be left on anywhere in the school.

Planned audits and surveys to be undertaken in 2019/20 is as follows

- Botriphnie Primary School
- Aberlour Primary School
- DLO Unit 6, Mosstodloch
- Breechbrae Education Centre
- St Sylvesters Primary School
- Richmond Quarry Depot

The above properties were selected based upon their relative poor energy performance in 2018-19, and that they have not yet undergone a full energy survey.

6.3 Energy Projects

APPENDIX VI lists the energy saving projects carried out in 2018/19, including the anticipated savings in kWh and £'s for each. It also lists further energy saving projects being considered.

During 2018/19 lighting within 8 large school and sports halls was converted from an older inefficient type of lighting to LED. **APPENDIX VII** contains a graphical profile of energy consumptions pre and post project at Forres Academy Boy's Gym Hall which demonstrates the savings achieved. Based upon this measurement, the pre project predicted payback period of 3 years has been revised to 2.5 years.

A second phase of replacing older inefficient lighting with LED in large halls is being progressed in 2019/20. Properties currently being considered include Speyside

High School, Rothes Primary School, Mortlach Primary School, Lhanbryde Primary School, New Elgin Primary School and Bishopmill Primary School.

A programme of installing insulation within boilerhouses was also undertaken in 2018-19. **APPENDIX VII** contains before and after infra-red thermal pictures demonstrating the resultant reduction in heat loss.

An estate wide programme to install urinal controls across all applicable schools was undertaken in February and March 2019. Initial analysis of AMR data shows that a consumption reduction has been achieved, however it will take longer to assessment the full impact of the project.

6.4 Future Energy Initiatives

Although significant progress has been made in recent years in reducing the Council's energy consumption it is considered that there is scope to achieve further significant reductions, principally as a result of:-

- (a) Further energy saving projects.
- (b) Rationalisation of the Council's property assets.
- (c) Raising corporate awareness and corporate training.
- (d) Targeting worst performing schools.
- (e) Better utilisation of BEMS and other systems to analyse accurate energy data and identify energy saving opportunities.

To achieve the target in the Climate and Ecological Emergency Declaration of carbon neutrality by 2030 it is essential to incorporate energy efficiency/carbon management as a prime consideration into all on-going work.

6.5 Funding

The revenue budgets for 2018/19 are as follows:-

Awareness & Information	£ 3,200
Small Projects	£16,000

In addition a sum of £15,000 is allocated in the Council's 2018/19 capital plan for energy saving projects and the Energy Officer will also continue to take forward spend to save proposals.

With respect to Spend-to-Save proposals, the Council's policy is that projects must have projected payback periods of 5 years or less. This has reduced the number of projects potentially viable.

The limitations of current permissible payback periods would require to be reviewed if the Council is to achieve the target in the Climate and Ecological Emergency Declaration of carbon neutrality by 2030.