The background of the slide features a large, light blue watermark of the University of Victoria crest. The crest is a shield divided into four quadrants. The top-left quadrant shows a building with a cross on top. The top-right quadrant shows a stag's head with large antlers. The bottom-left quadrant shows a three-masted sailing ship on the water. The bottom-right quadrant shows an eagle with its wings spread. Above the shield is a crown with four floral motifs. Below the shield is a banner with the motto 'ANNE FOR A'.

Agenda Item 6

Climate Change: Future Actions

Falkirk Council

Title: Climate Change: Future Actions
Meeting: Executive
Date: 14 January 2020
Submitted By: Director of Development Services

1. Purpose of Report

1.1. At its meeting of 27 August, the Executive requested a review of current and proposed future actions in response to the Council's Climate Emergency declaration, with the aim of establishing meaningful carbon reduction targets which would aid the Council in achieving net zero emissions by 2030.

2. Recommendations

2.1. The Executive is requested to:

- 1) Note the progress of work underway to reduce the Council's greenhouse gas emissions**
- 2) Endorse the ambitious emission reduction targets set out in sections 4.2 which are required if the Council is to approach the achievement of net zero emissions by 2030 in line with the Climate Emergency declared by the Executive at its meeting of 27 August.**
- 3) Note the considerations set out in section 4.3, which will contribute to addressing the Climate Emergency.**
- 4) Note the potential scale of capital investment required to enable carbon reduction measures such as the retrofitting of existing buildings & infrastructure, decarbonisation of the Council's fleet and carbon sequestration projects, as noted in section 6.1.**
- 5) Endorse that targets will be reviewed by each Service area to ensure a one Council approach to carbon reduction.**
- 6) Note that carbon sequestration is essential to offset the remaining emissions that cannot be further reduced to achieve net zero emissions, and recognise that current tree planting and peatland restoration projects need to be significantly intensified, with a substantial increase in resource and funding requirements.**
- 7) Endorse that the Climate Emergency declaration calls for a cohesive organisational approach prioritising how we budget, work, travel and deliver services to minimise our impact on the environment.**

8) Note that by taking the above actions and ensuring that emissions reduction targets are fully embedded within the Council's governance and service delivery, the Council will be taking action to limit the consequences of climate change, with the corresponding benefits to the wider community health and wellbeing.

3. Background

3.1. Current Legislative Drivers:

3.1.1. The Climate Change (Scotland) Act 2009 places duties on public bodies with respect to climate change.

3.1.2 The Climate Change Bill was passed on 25 September 2019 and has strengthened obligations placed on Local Authorities by amending the Climate Change (Scotland) Act with targets that are currently amongst the most ambitious in the world:

- (a) The emissions reduction target has increased from – 80% by 2050 (compared to the 1990 baseline) to net zero emission by 2045.
- (b) They must be achieved without the use of international carbon trading schemes.

3.1.3 The Council reports progress in meeting its obligations within its yearly statutory return to Scottish Government, the Public Bodies Climate Change Duty Report (PBDR). A copy of the report for 2018/19 is attached in Appendix 1.

3.1.4 In light of the Global Climate Emergency, the Scottish Government considers that the public sector reporting duties should be amended. The changes proposed would come into effect in 2022. Current consultation is undergoing which will require local authorities to:

- (a) state the year by which they will cease to emit any direct greenhouse gases and their targets for reducing indirect emissions;
- (b) report on how the local authority will align their spending plans with these targets;
- (c) require every local authority to make their report publicly accessible, in a way that empowers stakeholders and members of the public to view and understand it, in addition to providing the report to the Scottish Government.

3.1.5. Following the national Climate Emergency declaration in April 2019, the Scottish Government has placed climate change mitigation and adaptation at the core of the Programme for Government 2019-20¹.

3.2. Council's Carbon Footprint

¹ "Protecting Scotland's Future: the Government's Programme for Scotland 2019-20". Published 3 Sep 2019

- 3.2.1. The Council's emissions are published yearly in the form of the PBDR. The Council's Energy & Climate Change Team (ECCT) produced a comprehensive report to explain the Council's carbon footprint and its evolution (cf Appendix 2). The report details carbon footprints per service area, as well as their top 10 energy-consuming buildings. It has been circulated and reviewed by the Corporate Sustainability Working Group (CSWG) members.
- 3.2.2. Falkirk Council's Carbon Footprint totalled 48.8 kilo-tonnes CO₂ equivalent (ktCO₂e) in 2018-19, 2% higher than the 2017/18 figure (48.0 ktCO₂e) and 1% less than the 2013/14 baseline year. The decreases in the electricity consumption and business mileage have been offset by the increase in the waste emissions (+25%).
- 3.2.3. The Council's top 4 emission sources are waste management (43%), followed by building energy consumption (40%), vehicle fuel (8%), and street lighting (5%).

4. Considerations

4.1. Current actions to reduce emissions

- 4.1.1 The ECCT monitors projects from all service areas that contribute to emissions reduction in the carbon project register. As such, the ECCT works closely with service areas across the Council through the CSWG. To date, the project register captures more than 90 projects, expecting to save a total of 13,000 tCO₂e by 2022/23. In 2018/19, 1,230 tCO₂e were saved thanks to 20 projects, representing 2.5% of the Council's carbon footprint. Projects commissioned in the last few years are detailed in Appendix 3.
- 4.1.2 The Council is currently involved in the LHEES (Local Heat & Energy Efficiency Strategy) pilot project, which considers two areas, Grangemouth and Falkirk town centre. The pilot aims to assess our current building stock and determine measures and level of commitment required to meet national emission reduction strategies and targets. Set out as a 20 year plan, LHEES will soon be mandatory for local authorities, who will be responsible for leading industry and community stakeholders in a programme of projects designed to increase energy efficiency and employ carbon reduction measures.
- 4.1.3 Northern Connections INTEREG is a project that contributes to a shift to a low-carbon economy. INTEREG is a European project where Falkirk Council, along with Scottish Enterprise, have partnered up with 21 other European partners to deliver energy efficiency and technological innovation, by establishing a Living Lab focused on the Grangemouth area. Currently, this work ties into several other large scale projects such as the Falkirk and Grangemouth Investment Zone.

4.1.5 In addition to being a unique habitat for biodiversity, peatlands are a hugely important carbon store and restoring them is a natural form of carbon capture and storage. This will be vital in achieving the net zero target. The Council's Biodiversity Action Plan includes a range of measures to restore peatlands. In particular, the Falkirk Bog Restoration Project will restore over 240 ha of peat bog. The Forest Estate Plan looks at woodland management and expansion on Council owned land. Implementing the plans will lead to the planting of nearly 40,000 new trees.

4.1.6 To reflect the scale of change required to fulfil the Council's statutory obligations, sustainability/climate change has been raised from medium to high in the Corporate Risk Register.

4.2. Proposed emissions reduction targets

4.2.1 Following the Council's climate emergency statement, it is first and foremost important to define the scope of the net zero emissions target. Falkirk Council direct operations (i.e. the current footprint calculation) only represent 2% of the Falkirk Council area's estimated emissions. Due to data limitations the Council is unable to monitor and establish robust targets area wide. It is therefore recommended that the Council's direct activities form the basis of the target's scope, while still focussing efforts to reduce emissions in the whole area.

4.2.2 A modelling exercise conducted by the ECCT has shown that, to achieve net zero emissions by 2030:

- (a) Very ambitious carbon sequestration projects must be implemented (starting in 2020)
- (b) Radical targets are needed in several sectors, as shown in Table 1.

Table 1: Targets per sector to achieve net zero emissions by 2030 - Falkirk Council activities (Baseline 2018/19)

	Building (gas)	Building (elec)	Building (oil)	Vehicle fuel	Business mileage	Water	Electricity trans. losses	Street lighting	Waste
2030 TARGET FULL SCOPE	86.5%	61.5%	50%	80%	90%	15%	61.5%	85%	70%

4.2.3 This would mean, in just 10 years, that the Council would be required to drastically reduce business mileage, building gas consumption and decarbonise its fleet. A very significant drop in waste produced by the Council but also from households must be achieved, as even recycling and composting produces emissions.

4.2.4 Although very ambitious, these targets are achievable, but require adequate resourcing. Significant building emissions reductions can be achieved by implementing energy efficiency improvements (LED lighting, improved

building controls, building fabric improvements) and low carbon heat solutions (electrical heating, heat pumps, biomass and hydrogen).

- 4.2.5 The planned restoration of 240 ha of peatland and the Forest Estate Plan will not be enough to offset our remaining emissions. In the calculations, it was assumed that 50% of the new woodland potential determined in Falkirk Forestry & Woodland Strategy (850 ha over the 40-year lifespan of the Strategy) will be planted.
- 4.2.6 Due to the significance of potential offsetting, the Council will look to engage CSGNT in a comprehensive study to accurately quantify the carbon absorption capacity within Council owned land. The cost of this study will be in the region of £10k, and the Corporate Sustainability Working Group will consider funding for this study from within existing budgets. The study will include a review of green roof potential within the local authority area.

4.3 Recommended immediate actions

- 4.3.1 The actions outlined in this report will require the Council to consider budget provision to ensure that these actions are embedded in project delivery going forward. As noted in the sections above, examples are carbon sequestration projects, the retrofitting of buildings and infrastructure, and the decarbonisation of the Council’s fleet. The level of investment will be significant. The first estimate of capital expenditure for the Council’s buildings identified in the current LHEES pilot study, when extrapolated for the full council area, suggests costs in the region of £165 million over a ten year period.
- 4.3.2 Below is a list of considerations for action which are in line with proposals put forward by climate emergency response groups^{2 3} across Scotland. The ECCT has developed recommended actions below which would contribute to the Council’s climate emergency declaration:

Table 2: List of 10 considerations to address the climate emergency declaration

Buildings	<ul style="list-style-type: none"> • <i>Existing buildings</i>: Consider adopting the recommendations set out in the LHEES pilot study to significantly reduce the Council’s estate carbon emissions • <i>New buildings</i>: Consider embedding zero-carbon design principles in new procurement for buildings & homes • Consider rationalising & reducing the Council’s built estate in line with the recommendations of the Strategic Property Review
Land use	<ul style="list-style-type: none"> • Consider significantly accelerating tree planting and peatland restoration projects, and support to biochar projects
Energy	<ul style="list-style-type: none"> • Consider the purchase of 100% renewable energy for the Council estate
Transport &	<ul style="list-style-type: none"> • Consider that all newly procured vehicles should be electric

² 12 immediate actions for Scotland’s response to the Climate Emergency

³ The report and recommendations of Glasgow City Council’s climate emergency working group

fleet	<ul style="list-style-type: none"> • Explore potential for hydrogen-fuelled transport options • Consider requirement for all taxis to be electric vehicles through licensing • Consider Introduction of the workplace parking levy to discourage car use and to raise money for low carbon transport initiatives • Explore low carbon public transport opportunities
Business travel	<ul style="list-style-type: none"> • Explore potential to require employees who live more than 10 km away from their workplace to work from home 2 days a week – sector of activity permitting • Accelerate the provision of support mechanisms for mobile and flexible working • Consider the requirement for employees to travel by train instead of flying when it takes less than 5 hours. • Strongly encourage cycling between Council offices • Consider incentivising public transport to encourage employees to commute to work sustainably.
Procurement	<ul style="list-style-type: none"> • Use the Sustainability Test for all tenders to ensure appropriate carbon reduction targets are incorporated into tender documents and contracts
Waste	<ul style="list-style-type: none"> • Consider how to support residents and businesses across Falkirk to access recycling and reuse facilities provided by Council and private sector – increasing recycling and reuse performance • Consider increased opportunity to access and make reuse and repair the preferred choice rather than disposal to landfill
Food	<ul style="list-style-type: none"> • Explore potential to purchase 100% organic & vegetarian food in the Council's canteens and for public catering services, and the potential to implement meatless days in schools, nurseries & care homes • Consider making space for food growing a requirement of new housing developments.
Investment	<ul style="list-style-type: none"> • The Council considers how it can influence decisions relating to investment to support low-carbon projects instead of fossil fuels, acknowledging that the Pension Fund is already active in this area. • Consider how all policy, strategic and budget decisions and subsequent action planning is aligned with a move to net zero emissions by 2030. • Explore embedding the principles of climate justice and whole life costing into budgets and project spend at inception of delivery.
Carbon Literacy	<ul style="list-style-type: none"> • Consider a training programme for elected members and senior officers with the aim of becoming climate leaders/champions

4.4. Specific comment on the ambition for Grangemouth to be a Zero Carbon Town by 2030

- 4.4.1 According to the UK local authority and regional carbon dioxide emissions national statistics (2005-2017)⁴, Grangemouth is home to some of Scotland's highest emitting industries. The Council however has no direct control over the emissions from industries, but has a role to explore partnership projects, such as the INTEREG project, with industry partners. It is recommended the Council continue to work with industry to explore the potential for technologies that will significantly reduce the impact of their emissions, such as carbon capture, usage and utilisation. It must be acknowledged however that the Council has no direct control over the delivery timescale and ultimate success of these technologies.

5. Consultation

- 5.1. Each Council service area will be consulted to review the proposed targets, which will be presented and discussed at Service senior management team meetings. As well as providing proposed targets to each service area, the ECCT shall develop a report outlining the need behind the actions proposed in the above table. The anticipated scale of emissions reduction efforts to respond to the climate crisis will inevitably require difficult choices, and a key aspect of any consultation will be to ensure, through Climate Justice considerations, that all stakeholders contribute to solutions.

6. Implications

6.1. Financial

The financial challenges will be significant, depending on the extent of the chosen solution and the corresponding carbon reduction to be achieved, as highlighted for the Council's buildings in section 4.3.1. The CSGNT study noted in section 4.2.6 will include a quantification of the required funding for carbon absorption projects.

- 6.1.2 There are currently funding opportunities which can contribute to supporting carbon reduction initiatives (Energy Efficient Scotland, LCITP, SEEP, SALIX, Woodland Creation Grant) however the extent and level to which these will remain or indeed be increased is not yet apparent.

6.2. Resources

There are no immediate resource issues arising from this stage of work, however the Executive approval of wider Council and Service area targets will generate the need for clear governance and budget support to ensure that carbon reduction delivery targets are embedded within service delivery models.

⁴ Published 27 June 2019, Department for Business, Energy & Industrial Strategy. Accessible at: <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-carbon-dioxide-emissions-national-statistics-2005-to-2017>

6.3. **Legal**

Failure to report progress against targets set within our current and future PBDR, could result in severe reputational damage. In light of the Climate Emergency declared by the Scottish Government, increasing pressure on public bodies can be expected, as mentioned in section 3.1.3.

6.4. **Risk**

6.4.1 Until emissions reduction targets are fully embedded within the Council's organisation governance and service delivery structures, the risk of failing to comply with our climate change obligations remains high. Failure to reduce our carbon emissions will exacerbate the risk of failure to deliver service provisions due to the more severe consequences of climate change (severe weather events, heat waves, biodiversity loss, sea level rise, etc.).

6.4.2 Failure to identify and secure the resources required to deliver carbon reduction initiatives on the scale identified in this report will significantly restrict the Council's ability to deliver on its stated climate emergency declaration, and on its wider obligations under the amended climate change act.

6.5. **Equalities**

An adaptation strategy will embed Climate Justice within its outcomes, ensuring that those affected the greatest are afforded the greatest priority.

6.6. **Sustainability/Environmental Impact**

The ambitious nature of the Council's emissions reduction targets will ensure that sustainability and environmental impact considerations are embedded throughout all outcomes.

7. **Conclusions**

7.1. The Council's climate emergency declaration and net zero target timescale is enormously challenging, and will require decision making that prioritises and adequately resources the delivery of Council services that minimise our impact upon the environment. The timescale to deliver change is such that action is required immediately, appropriate to the scale of the challenge presented.

7.2. The embedding of service climate risk targets and the successful delivery of projects and initiatives to support these will rely upon robust governance and support from all parts of the organisation internally, and further will require the Council to identify and secure support from external sources to ensure that the challenges, opportunities and risks identified within this report can be addressed, if progress towards successful conclusion of the Council's stated declaration is to be made.

Director of Development Services

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Date: 23 December 2019

Appendices

Appendix 1: PBDR Report 2018/19

Appendix 2: Carbon Footprint report

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Other Notable Reportable Activity

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1 Profile of Reporting Body

	1b	1c
Body Name	Body Type	FTE
Falkirk Council	Local Government	5942.8

		1d			
Body Name	Body Type	Metric	Unit	Value	Comments
Falkirk Council	Local Government	Floor area	m2	384215	Approx value of operational estate
Falkirk Council	Local Government	Other (Please specify in the comments)	other (specify in comments)	285	Total number of operational buildings

		1e		1f		1g
Body Name	Body Type	Budget	Budget Comments	Report Year	Report Year Comments	Context
Falkirk Council	Local Government	336605000		Financial (April to March)		The local authority is comprised of 3 Services incorporated within a diverse estate including; operational buildings e.g. offices and municipal buildings, schools and nurseries and community facilities; and non operational buildings e.g. communal occupancy buildings where the council provides some amenities e.g. stair lighting. Aside from the built estate, the Council has an operational fleet including pool cars and waste vehicles. Where staff mileage is calculated, grey fleet is not included within the Councils footprint. The Council also records emissions which arise from waste and water supply and treatment.

2 Governance, Management and Strategy

		2a How is climate change governed in the body?	2b How is climate change action managed and embedded by the body?
Body Name	Body Type	Governed	Managed
Falkirk Council	Local Government	Responsibility for delivery of the Carbon Management Plan lies with the Corporate Sustainability Working Group. The Climate Change Team reports to this group on a quarterly basis, outlining future developments, potential barriers/opportunities. This group is responsible for ensuring that Falkirk Council meets legal requirements under the Climate Change Scotland Act 2009. It scrutinises progress reports on delivery of the CMP as well as public reports on climate change performance which include a significant carbon emissions element.	<p>As can be seen from the above diagram the Energy & Climate Change Team are responsible for integrating and implementing carbon reduction throughout the local authority.</p> <p>The Energy & Climate Change Team forms a major part of the Councils response to embedding climate change throughout the organisation. This role includes production of the CMP, supporting the development for projects, monitoring carbon emission trends, tracking project delivery and securing external funding and support. The team supports both the operational and management groups, reporting to Corporate Sustainability Working Group.</p> <p>Going forward the team shall be responsible for implementing statutory guidance emerging from recently passed bills within the Scottish Government such as the climate change bill and embedding targets outlined in such bills into Council policies. This will also include the LHEES which will form an overarching plan which will outline measure and projects the council shall implement both within its internal assets but also area wide. This will run in tandem with a revised CMP from 2021, an adaptation strategy and LCLIP (due 2020) and a robust project register (2020).</p>

		2c Does the body have specific climate change mitigation and adaptation objectives in its corporate plan or similar document?		
Body Name	Body Type	Objective	Doc Name	Doc Link
Falkirk Council	Local Government	"Promoting stronger, more self-reliant communities."	Falkirk Council Corporate Plan Falkirk Council Corporate Plan	

		2d Does the body have a climate change plan or strategy?
Body Name	Body Type	Strategy Doc
Falkirk Council	Local Government	The council is currently deciding on which direction to take regarding policy documents. With the introduction of LHEES, the council will aim to bring together relevant strategies into one overarching document. The current CMP is still active.

		2e Does the body have any plans or strategies covering the following areas that include climate change?				
Body Name	Body Type	Topic area	Name of document	Link	Time period covered	Comments
Falkirk Council	Local Government	Adaptation	Adaptation strategy LCLIP		on going on going	Still to be formally adopted. Revised draft currently in the process of being approved internally. It is the aim that this document will be reviewed and updated on a yearly basis. The council will engage a Graduate to collate and produce an LCLIP. This will inform a revised Adaptation Strategy.
Falkirk Council	Local Government	Business travel	Local Transport Strategy		2014 - onwards	One of the key objectives of the strategy is to "Reduce emissions, to tackle issues of climate change, air quality, and health improvement which impact on our high level objective for protecting the environment and improving health". A draft Active Travel Proposals document which sets out initiatives and actions to help the Council achieve its vision is currently being reviewed for adoption.
Falkirk Council	Local Government	Staff Travel	Personal Travel Planning		on going	A future green travel strategy is being prepared and will focus on staff and business travel. Currently, there is some work being done through the Smarter Travel, Smarter Working project (pool cars). Besides "Take the Right Route" is a marketing campaign aimed at raising awareness of sustainable travel.
Falkirk Council	Local Government	Energy efficiency	LHEES		on going	Under development. Falkirk Council are currently involved in pilot projects with Scottish Government to trial measures to implement LHEES within the local area.
Falkirk Council	Local Government	Fleet transport	Fleet asset management policy		2015-2020	work in progress
Falkirk Council	Local Government	Information and communication technology	Digital Strategy		2019-2024	Section 2.39: "To this end we will be looking to develop the Scottish Government's Digital Service Standards in conjunction with services... Green ICT – reducing our carbon footprint, reusing technology etc."
Falkirk Council	Local Government	Renewable energy	Carbon Management Plan Local Development Plan		2015/16-2020/21 2015-2020	New LDP approved in August 2018 and is planned to be adopted in 2020. Contributing to climate change mitigation is one of the key strategic objectives of the Falkirk Local Development Plan, and carbon reduction is promoted through a number of the plan's policies
Falkirk Council	Local Government	Sustainable/renewable heat	Local Housing Strategy Carbon Management Plan Local Development Plan		2017-2022 2016-2021 2015-2020	LHS Priority 5 Tackling fuel poverty, energy efficiency and climate change Contributing to climate change mitigation is one of the key strategic objectives of the Falkirk Local Development Plan, and carbon reduction is promoted through a number of the plan's policies
Falkirk Council	Local Government	Waste management	Zero waste strategy Community Litter plan		2012-2022 2015-2019	Updated regularly
Falkirk Council	Local Government	Water and sewerage				
Falkirk Council	Local Government	Land Use	Falkirk Greenspace Open Space Strategy Second nature: A biodiversity Action Plan for the Falkirk Council area Forestry and Woodland Strategy		2013-2018 2016-onwards 2019-onwards 2015-2055	It is planned to amalgamate it with the Open Space Strategy, Sports Pitch Strategy and the Forestry and Woodland Strategy by around 2021. Open Space Strategy Vision (p.03): "Our parks and open spaces will be high quality,... and be of significant ecological value; and help to mitigate the effects of climate change" Biodiversity action plan: Climate Change is identified as a threat. The action plan includes ecosystem restoration, Invasive species management as well as natural flood management projects. Forestry strategy - Vision (p16): Climate change: Improving woodlands' contribution to climate resilience and reducing our impacts - Contribute to emissions reduction - Encourage adaptation to the predicted effects of climate change.
Falkirk Council	Local Government	Other (state topic area covered in comments)	Corporate Asset Management Strategy Corporate Procurement Strategy Falkirk Economic Strategy		on going 2015-2025	Strategic Property review. Currently being updated. Procurement Vision : "To secure Best Value through professional, planned and sustainable procurement, which best

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						<p>meets the needs of our communities and supports the delivery of the Council's Corporate Plan goals". Environmental Sustainability - Ensuring that all relevant contracts are arranged to include environmentally sustainable procurement requirements</p> <p>Economic strategy: "This economic strategy sets out our ambitions for the area's future, creating a smarter, more sustainable economy which offers opportunity for all. " "A Greener, Smarter, More Sustainable Falkirk" "We will promote the Falkirk Gateway as a new centre of low carbon futures for the area"</p>
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2f What are the body's top 5 priorities for climate change governance, management and strategy for the year ahead?			2g Has the body used the Climate Change Assessment Tool (a) or equivalent tool to self-assess its capability / performance?
Body Name	Body Type	Top 5 Priorities	Climate Change Assessment Tool
Falkirk Council	Local Government	<ul style="list-style-type: none"> • The Council will continue to feed into the optimisation of the built estate –Strategic property review shall focus operations and more on using energy efficient properties, with poorer performing ones mothballed or closed. Any additions to Council assets should be countered by divestment elsewhere. • The Council will look to embed climate change mitigation, adaptation and consideration of biodiversity into decision making processes regarding policy development, service delivery and project implementation. • Develop LHEES directing how the Council shall embed energy efficiency area wide and within its own assets. This shall also include how the Council shall reduce its impact through transport. • Develop an LCLIP and a resulting adaptation strategy which will feed into the corporate risk register. • In line with recent legislative drivers such as the Climate Change Bill and the Energy Efficiency Strategy published by the Scottish Government, the Council shall adapt targets outlined and embed them within council service delivery. The Council shall continue to report progress clearly and regularly undertake evaluation of targets 	<p>Results from the 2019 internal workshop:</p> <p>Scores: Governance : 18/28 - 64% Emissions : 21/30 - 70% Adaptation: 21/28 - 75% Behaviour: 11/20 - 55% Procurement: 9/16 - 56% Overall: 80/122 - 66%</p>

2h Supporting Information and Best Practice		
Body Name	Body Type	Further Information
Falkirk Council	Local Government	By signing up to Scotland's Climate Change Declaration in 2007, Falkirk Council made a number of commitments, including one to report publicly on progress on addressing carbon emissions. A report has been submitted to the Sustainable Scotland Network for each reporting year and they in turn, publish the reports on their website.

3 Emissions, Targets and Projects

3a Emissions from start of the year which the body uses as a baseline (for its carbon footprint) to the end of the report year.

Body Name	Body Type	Reference Year	Year	Scope1	Scope2	Scope3	Total	Units	Comments
Falkirk Council	Local Government	Baseline carbon footprint	2013/14	16853	21257	11297	49407	tCO2e	These figures are based on operational estate ONLY.
Falkirk Council	Local Government	Year 1 carbon footprint	2014/15	15861	22284	11781	49926	tCO2e	These figures are based on operational estate ONLY.
Falkirk Council	Local Government	Year 2 carbon footprint	2015/16	15378	18430	18852	52660	tCO2e	These figures are based on operational estate ONLY.
Falkirk Council	Local Government	Year 3 carbon footprint	2016/17	14873	15982	14619	45474	tCO2e	These figures are based on operational estate ONLY.
Falkirk Council	Local Government	Year 4 carbon footprint	2017/18	15785.36	13695.8	18502.09	47983	tCO2e	These figures are based on operational estate ONLY.
Falkirk Council	Local Government	Year 5 carbon footprint	2018/19	15195	10634	22995	48824	tCO2e	These figures are based on operational estate ONLY.

3b Breakdown of emission sources

Body Name	Body Type	Total	Emission factor comments	Emission source	Scope	Consumption data	Units	Emission factor	Units	Emissions (tCO2e)	Comments
Falkirk Council	Local Government	48824.43		Grid Electricity (generation)	Scope 2	37568442	kWh	0.28307	kg CO2e/kWh	10634.5	for operational buildings only
Falkirk Council	Local Government	48824.43		Natural Gas	Scope 1	61328011	kWh	0.18396	kg CO2e/kWh	11281.9	for operational buildings only
Falkirk Council	Local Government	48824.43		Gas Oil	Scope 3	616756	kWh	0.27652	kg CO2e/kWh	170.6	for operational buildings only
Falkirk Council	Local Government	48824.43		Car - diesel (average - unknown engine size)	Scope 3	1720148	miles	0.28572	kg CO2e/mile	491.5	
Falkirk Council	Local Government	48824.43		Diesel (average biofuel blend)	Scope 1	1217930	litres	2.62694	kg CO2e/litre	3199.4	
Falkirk Council	Local Government	48824.43		Water - Supply	Scope 3	227120	m3	0.344	kg CO2e/m3	78.1	for operational buildings only
Falkirk Council	Local Government	48824.43		Water - Treatment	Scope 3	215764	m3	0.708	kg CO2e/m3	152.8	
Falkirk Council	Local Government	48824.43		Refuse Municipal to Landfill	Scope 3	34162	tonnes	586.5313	kg CO2e/tonne	20037.1	
Falkirk Council	Local Government	48824.43		Paper & Board (Mixed) Recycling	Scope 3	45366	tonnes	21.3842	kg CO2e/tonne	970.1	
Falkirk Council	Local Government	48824.43		Organic Garden Waste Composting	Scope 3	13028	tonnes	10.2586	kg CO2e/tonne	133.7	
Falkirk Council	Local Government	48824.43		Grid Electricity (transmission & distribution losses)	Scope 3	37568442	kWh	0.02413	kg CO2e/kWh	906.5	
Falkirk Council	Local Government	48824.43		Organic Food & Drink Composting	Scope 3	5369	tonnes	10.2586	kg CO2e/tonne	55.1	
Falkirk Council	Local Government	48824.43		Petrol (average biofuel blend)	Scope 1	71387	litres	2.20307	kg CO2e/litre	157.3	
Falkirk Council	Local Government	48824.43		Gas Oil	Scope 1	187156	litres	2.97049	kg CO2e/litre	556.0	

3c Generation, consumption and export of renewable energy

Body Name	Body Type	Technology	Renewable Electricity		Renewable Heat		Comments
			Total consumed by the organisation (kWh)	Total exported (kWh)	Total consumed by the organisation (kWh)	Total exported (kWh)	
Falkirk Council	Local Government	Solar PV	65495	0			
Falkirk Council	Local Government	Biomass			622141	0	Carronrange

3d Targets

Body Name	Body Type	Name of Target	Type of Target	Target	Units	Boundary/scope of Target	Progress against target	Year used as baseline	Baseline figure	Units of baseline	Target completion year	Comments
Falkirk Council	Local Government	Net Zero target	absolute		tCO2e reduction	Other (please specify in comments)		2018/19	48824	tCO2e	2030/31	The Council will look to commit to Net Zero emissions by 2030. Work is on-going to clearly define the scope and set targets per service area.

3e Estimated total annual carbon savings from all projects implemented by the body in the report year

Body Name	Body Type	Total	Emissions Source	Total estimated annual carbon savings (tCO2e)	Comments
Falkirk Council	Local Government	870.00	Electricity	870	NDEEF: 364 tCO2e/year
Falkirk Council	Local Government	870.00	Natural gas	0	
Falkirk Council	Local Government	870.00	Other heating fuels		Unknown
Falkirk Council	Local Government	870.00	Waste		Unknown
Falkirk Council	Local Government	870.00	Water and sewerage		Unknown
Falkirk Council	Local Government	870.00	Business Travel		Unknown
Falkirk Council	Local Government	870.00	Fleet transport		Unknown
Falkirk Council	Local Government	870.00	Other (specify in comments)		Unknown

3f Detail the top 10 carbon reduction projects to be carried out by the body in the report year

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Body Name	Body Type	Project name	Funding source	First full year of CO2e savings	Are these savings figures estimated or actual?	Capital cost (£)	Operational cost (£/annum)	Project lifetime (years)	Primary fuel/emission source saved	Estimated carbon savings per year (tCO2e/annum)	Estimated costs savings (£/annum)	Behaviour Change	Comments
Falkirk Council	Local Government	Efficiency Framework	Energy efficiency loan fund	2019/20	Estimated	902819		20	Grid Electricity	364	120		
Falkirk Council	Local Government	LED lighting at various sites	Energy efficiency loan fund	2019/20	Estimated	292017		20	Grid Electricity	134	54546		
Falkirk Council	Local Government	California PS - External Wallpacks	Energy efficiency loan fund	2019/20	Estimated	32000		20	Grid Electricity	13	3066		
Falkirk Council	Local Government	Kinnaird PS - Solar PV	Energy efficiency loan fund	2019/20	Estimated	21597		20	Grid Electricity	8	4206		
Falkirk Council	Local Government	Reduction in paper use + 100 % recycled paper		2019/20	Estimated		0		Paper & Board (Mixed) Recycling	39	40000	Awareness raising campaign	<p>There are 2 saving sources:</p> <p>1) The total number of boxes purchased decreased by about 15% following the awareness raising campaign. This represents a saving of about 20.9 tonnes of CO2e/year.</p> <p>2) If the recycled paper purchased in 2019 would have been virgin paper instead, then we would have emitted 18.1 additional tonnes of CO2e.</p>

3g Estimated decrease or increase in the body's emissions attributed to factors (not reported elsewhere in this form) in the report year

Body Name	Body Type	Total	Emissions source	Total estimated annual emissions (tCO2e)	Increase or decrease in emissions	Comments
Falkirk Council	Local Government	12520.00	Estate changes			No changes
Falkirk Council	Local Government	12520.00	Service provision		Increase	Falkirk's population is expected to increase by 6.9% between 2017 and 2037 according to the Office for National Statistics, which will require additional services such as schools.
Falkirk Council	Local Government	12520.00	Staff numbers		Decrease	Slow decline
Falkirk Council	Local Government	12520.00	Other (specify in comments)	491	Decrease	Staff Travel - Council's ambition to reduce grey fleet mileage while enhancing pool cars provision. Steady decrease year on year
Falkirk Council	Local Government	12520.00	Other (specify in comments)	8185	Decrease	Electricity consumption - Slightly lower electricity consumption coupled with a much lower conversion factor (-19%).
Falkirk Council	Local Government	12520.00	Other (specify in comments)	21196	Increase	Waste management - Methodology changes (bigger scope). The total waste tonnage collected by the Council remained stable (+0.6%). Composted waste remained stable too, while recycling increased. However, in 2018/19, nothing was sent to incineration, but the landfilled tonnage increased. The emission factor related to landfilling is 27 times higher than the one for incineration, which explains the increase.

3h Anticipated annual carbon savings from all projects implemented by the body in the year ahead

Body Name	Body Type	Total	Source	Saving	Comments
Falkirk Council	Local Government	402.00	Electricity	402	
Falkirk Council	Local Government	402.00	Natural gas		
Falkirk Council	Local Government	402.00	Other heating fuels		Unknown
Falkirk Council	Local Government	402.00	Waste		The introduction of the burgundy bin should improve recycling rates by decreasing contamination.
Falkirk Council	Local Government	402.00	Water and sewerage		Unknown
Falkirk Council	Local Government	402.00	Business Travel		
Falkirk Council	Local Government	402.00	Fleet transport		
Falkirk Council	Local Government	402.00	Other (specify in comments)		

3i Estimated decrease or increase in the body's emissions attributed to factors (not reported elsewhere in this form) in the year ahead

Body Name	Body Type	Total	Emissions source	Total estimated annual emissions (tCO2e)	Increase or decrease in emissions	Comments
Falkirk Council	Local Government	0.00	Estate changes			Estate is likely to remain the same with possibility of increased provision due to natural growth of council area.
Falkirk Council	Local Government	0.00	Service provision		Decrease	Services have been consolidated possible reduction
Falkirk Council	Local Government	0.00	Staff numbers			N/A
Falkirk Council	Local Government	0.00	Other (specify in comments)		Increase	waste figures are currently unverified until summer of 2019. Possible increase
Falkirk Council	Local Government	0.00	Other (specify in comments)		Decrease	Introduction of service wide climate change targets may focus efforts.
Falkirk Council	Local Government	0.00	Other (specify in comments)		Increase	Fluctuating conversion factors

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3j Total carbon reduction project savings since the start of the year which the body uses as a baseline for its carbon footprint			
Body Name	Body Type	Total	Comments
Falkirk Council	Local Government	3640	Based on 20 projects where savings have been quantified (out of 61 projects captured)

3k Supporting information and best practice		
Body Name	Body Type	Further Information
Falkirk Council	Local Government	<p>Work is on-going to set targets per service area.</p> <p>The Council is still focused on increasing resources and projects which can make a meaningful impact on emissions reductions. In 2019, the Council will expand the Energy & Climate Change team with 2 new staff members and one graduate position.</p> <p>Work is progressing to develop a detailed risk assessment based on the findings of the on-going LCLIP.</p> <p>In terms of Carbon Footprint calculation, the methodology has been reviewed to take into account the full scope for the Council's waste emissions.</p>

4 Adaptation

		4a	4b
Body Name	Body Type	Has the body assessed current and future climate-related risks?	What arrangements does the body have in place to manage climate-related risks?
Falkirk Council	Local Government	Work continues in the development of an up to date climate risk impact assessment. Using UKCP 18 along with data gathered in the 2010 LCLIP and combining that with recent events, we are hoping to draw together a comprehensive record of weather impacts to date. This work will ultimately shape project development in the future by applying knowledge gained from these events and combining them with the updated risk factors in a climate risk assessment.	We have identified several actions within the process of defining a climate and adaptation risk register. Actions will be primarily related to Services, with project managers updating key performance indicators which are recorded within the Council. Detailed actions have still to be confirmed with applicable Services.

		4c
Body Name	Body Type	What action has the body taken to adapt to climate change?
Falkirk Council	Local Government	Aside from measures included within the flood risk management strategy and associated contingency plans, we are undergoing a process of collating all the other work which is conducted throughout the Council that may not necessarily be thought of as adaptation but in essence is. Review of these projects is on-going. Significant work is also being done to collate as robust data on climate impacts to strengthen the existing adaptation action plan. Regular engagement with a Forth Valley collaboration is allowing the council to take an area wide perspective and ensure best practice from other local authorities and stakeholders within this area is shared and developed where possible into any ongoing plans.

4d Where applicable, what progress has the body made in delivering the policies and proposals referenced N1, N2, N3, B1, B2, B3, S1, S2 and S3 in the Scottish Climate Change Adaptation Programme(a) ("the Programme")?							
Body Name	Body Type	Objective	Objective reference	Theme	Policy / Proposal reference	Delivery progress made	Comments
Falkirk Council	Local Government	Understand the effects of climate change and their impacts on the natural environment.	N1	Natural Environment		The council is reviewing and collating an up to date local weather impact assessment. The creation of an area on the council website that allows the public to record any incidents of severe weather and its impact.	The timing of completion of this will be largely down to available resources however it is a higher priority to ensure the data is robust as opposed to completed quickly.
Falkirk Council	Local Government	Support a healthy and diverse natural environment with capacity to adapt.	N2	Natural Environment		Several measures are outlined in the local development plan which take account of biodiversity and adaptation.	
Falkirk Council	Local Government	Sustain and enhance the benefits, goods and services that the natural environment provides.	N3	Natural Environment		on going	Work is ongoing within our Procurement team and Economic Development service area (under tourism remit) to enhance biodiversity within the area.
Falkirk Council	Local Government	Understand the effects of climate change and their impacts on buildings and infrastructure networks.	B1	Buildings and infrastructure networks		Work is on going under the LCLIP to assess the potential damage and risk to the buildings from a changing climate.	Adaptation is included in the councils biodiversity programme where enhancements are considered with future environmental conditions.
Falkirk Council	Local Government	Provide the knowledge, skills and tools to manage climate change impacts on buildings and infrastructure.	B2	Buildings and infrastructure networks		On going. This will be mapped out on completion of the LCLIP and Adaptation strategy.	As outlined above this is an ongoing project which looks at the council area as a whole. The council annually undertake self analysis via the CCAT toolkit and use the results of this to feed into future service delivery.
Falkirk Council	Local Government	Increase the resilience of buildings and infrastructure networks to sustain and enhance the benefits and services provided.	B3	Buildings and infrastructure networks		on going	With the completion of the climate risk assessments, this will highlight potential impacts on climate related risks to new infrastructure buildings or services. Recommendations from the risk assessments will be considered from the outset and built into any potential solutions/projects that the council undertake going forward.
Falkirk Council	Local Government	Understand the effects of climate change and their impacts on people, homes and communities.	S1	Society		on going	The climate change team have created an area on our Council website in the hope to gather quantitative data on impacts to householders to allow us to assess and mitigate future detrimental impacts. The Council's website sustainability pages have been updated too.
Falkirk Council	Local Government	Increase the awareness of the impacts of climate change to enable people to adapt to future extreme weather events.	S2	Society		on going	Once the updated adaptation action plan is completed work will begin to roll out our findings across the council area where we will run workshops to raise awareness and communicate our findings.
Falkirk Council	Local Government	Support our health services and emergency responders to enable them to respond effectively to the increased pressures associated with a changing climate.	S3	Society		Work is currently carried out by the NHS and IJB regarding impacts on service delivery and provision. The Council shall work with our partners to develop and implement mitigative action.	This is part of the Council's approach to build upon the resource of the Falkirk Heat map as a tool used for scoping out project whilst taking account of all aspects of climate change and adaptation.

		4e	4f
Body Name	Body Type	What arrangements does the body have in place to review current and future climate risks?	What arrangements does the body have in place to monitor and evaluate the impact of the adaptation actions?
Falkirk Council	Local Government	The Adaptation Strategy will be reviewed, it is expected, on a yearly basis. The risk register continues to be under development at this time, however it is expected that time scales will be short to allow for continuous improvement of defined actions.	It is expected that upon completion of the risk register toolkit several actions shall be directly embedded into each Service plan. This will transpose through to the Councils key performance indicators by being included in the corporate risk register. Output are annually updated and monitored by this medium. It is hoped this will enhance Service "buy-in" and allow Services to monitor and correct any actions to achieve the best results. Progress shall also be monitored and assessed within the annual CCAT process to identify any gaps in implementation.

		4g
Body Name	Body Type	What are the body's top 5 priorities for the year ahead in relation to climate change adaptation?
Falkirk Council	Local Government	Service Plans will be reviewed to ensure that commitments made in policies and strategies are translated into clear, measurable actions and performance indicators: and to improve the process of reporting and monitoring these actions. for example. using Covalent

Public Sector Climate Change Duties - Summary Report

		<p>to provide performance updates on actions to the Corporate Sustainability Working Group.</p> <p>Develop a climate change risk register and align this with the corporate risk register.</p> <p>Work with the Community Planning Partnership to ensure climate resilience is included in their risk register.</p> <p>Explore links between climate resilience, adaptation and flood prevention management, and if necessary refer to the adaptation actions in Service Plans</p> <p>Review Falkirk's priority species and habitats to identify those at greatest risk from climate change, and utilise green space and ecological services to help mitigate and adapt to future impacts.</p>
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		4h
Body Name	Body Type	Supporting information and best practice
Falkirk Council	Local Government	Contained within the Adaptation Strategy there is currently a detailed action plan which shall increase the profile of adaptation both within the Council and with external stakeholders. We have also created an area on our Falkirk Council Web site which allows the public to record severe weather impacts to strengthen the data collation for any future LCLIPS.

5 Procurement

		5a	5b
Body Name	Body Type	How have procurement policies contributed to compliance with climate change duties?	How has procurement activity contributed to compliance with climate change duties?
Falkirk Council	Local Government	<p>Sustainability is a core theme within Falkirk Council's Corporate Procurement Strategy 2017-20 where we aim for procurement to contribute fully to the Council's sustainability and carbon reduction plans by embedding sustainable procurement into all our activities. The strategy's vision is "to secure Best Value through professional, planned and sustainable procurement, which best meets the needs of our communities and supports the delivery of the Council's Corporate Plan goals".</p> <p>To support the Corporate Procurement Strategy, we have completed a self-assessment using the Flexible Framework Assessment Tool. Based on the self-assessment exercise a Sustainable Procurement Delivery/Action Plan has been developed to support the Council achieve Level 3 of the Flexible Framework by November 2019.</p> <p>Falkirk Council utilise the Sustainable Procurement Tools published by Scottish Government and by using the Prioritisation Matrix have identified the top categories that have the highest sustainability impacts helping to focus attention in these areas. The Sustainability Test is also used when developing commodity strategies prior to going out to tender to ensure sustainability considerations are covered by our contracts. The use of tool has been approved by the Procurement board and the Procurement & Commissioning Unit has been supporting its adoption making sure it is widely used across the organisation.</p>	<p>Sustainability considerations are embedded within our procurement processes, supported by the Council's Corporate Procurement Procedures, which are mandatory under the Council's Contract Standing Orders. Sustainable Procurement Toolkits have also been developed for Council officers.</p> <p>Some examples of toolkits are:</p> <ul style="list-style-type: none"> - The Sustainable Timber Toolkit, which has guided Council Officers to ensure that timber and timber related products is sourced from legal and sustainable forests. Falkirk Council was one of only two Scottish Local Authorities to achieve Gold Status for the WWF What Wood You Choose Campaign to source timber and related products from legal and sustainable forests. - The Government Buying Standards (GBS) Toolkit provides guidance on using GBS specifications within our tenders for products and services with the highest environmental impacts, e.g. cleaning products and services, replacing gas boilers, using recycled content within Building Contracts. <p>We also provided two of the five best practice case studies for the Zero Waste Scotland booklet entitled Sustainable Procurement - A Collection of Case Studies.</p> <p>In October 2018, Sustainable Procurement workshops were organised in partnership with Sustainable Procurement Ltd, with participants from across the whole organisation. All services were represented. In 2019, the Procurement & Commissioning Unit (PCU) followed up on these workshops and sought evidence of sustainability being incorporated into the procurement process.</p> <p>In 2019, the Energy & Climate Change team supported the PCU to start quantifying carbon savings from procurement's activities. The Procurement Contracts Register has therefore been analysed to estimate the contribution of the Procurement Team to the Council's efforts to reduce its greenhouse gas emissions. The purchase of vehicles, buildings, meals, goods or services all generate greenhouse gases. However, through the choice of more sustainable alternatives, procurement can have a significant positive impact to reduce emissions.</p> <p>This exercise revealed the following good practices:</p> <ul style="list-style-type: none"> • By banning single-use plastics in Sept 2018, the purchase of plastic cups decreased by 40.6 % in 2018/19 compared to 2017/18 (from 165,000 cups to 98,000 cups). This is estimated to represent 3.2 tonnes of CO2e avoided. The first full year of savings will be 2019/20 with even larger savings expected. • Following the switch from virgin to 100 % recycled paper in Feb 2019, an effective behaviour change campaign has also led to a fall in the volume of paper purchased (- 2 million sheets in the first 6 months, or 22 tonnes of paper for one full year). In addition to the reduced consumption, recycled paper has a lower carbon footprint than virgin paper. Overall, the Council saves about 39 tonnes of CO2e per year. • In 2018/19, the Council ordered biodegradable dog waste disposal bags. • Outdoor play equipment: The supply and delivery scope document outlines that the following must be made from recycled materials: Surfacing Grass Mat, Rubber Safety Tiles, Wet Pour Surfacing, Rubber Chipping (Loose Fill Material)

		5c
Body Name	Body Type	Supporting information and best practice
Falkirk Council	Local Government	<p>The Procurement team is also aiming to engage more with its suppliers on sustainability related topics. A "Stakeholder Sustainability Survey" has been sent to 250 suppliers and results are currently being analysed.</p> <p>Some examples from our Housing Investment Programme include:</p> <ul style="list-style-type: none"> • The current HIP aims to deliver 617 new council homes designed to the Silver Standard which is a sustainability labelling introduced to the Scottish Building Standards through the Building (Scotland) Act. • Window and door replacement programme which will include triple or Double glazing upgrades to c 1,875 properties/annum from April 2020 over a 8 year period • Programme of insulation measures which may including external wall, cavity, roof & loft insulation to improve energy efficiency to both Council. Similar work planned for specific privately owned properties through HEEPS:ABS funding. • Project to extend the existing combined heating and power (CHP) to an additional 260 flats contained within 3 x tower blocks to both Council and privately owned properties within the Callendar Park Estate. • Project to install a private wire to transmit/sell the energy generated from the CHP to communal areas within 7 x tower blocks; local schools and office blocks within the Callendar Park Estate. • Project to install a combined air source heat pump system to 3 tower blocks to both Council and privately owned properties which cannot be connected to the CHP. • Project to install Photovoltaic Cells on properties within 'off gas areas' and housing with care properties to improve energy efficiency and reduce the risk of fuel poverty. • Ongoing programme to upgrade efficient heating systems in all Council houses based on 15 year replacement cycle. • Installation of Internal Wall Insulation programme for non-traditional properties where there is no cavity. • The current 3 yr HIP aims to deliver 340 new council homes designed to the Silver Standard which is a sustainability labelling introduced to the Scottish Building Standards through the Building (Scotland) Act.

6 Validation and Declaration

		6a	6b	6c	6d	6e - Declaration		
Body Name	Body Type	Internal validation process	Peer validation process	External validation process	No Validation Process	Name	Role in the body	Date
Falkirk Council	Local Government	This report is internally audited where data is cross checked with data sources and interrogated for viability.	This report was reviewed by the Corporate Sustainability Group and then passed out for consultation across all Council services.	NA				

Other Notable Reportable Activity

5 Please detail key actions relating to Food and Drink, Biodiversity, Water, Procurement and Resource Use in the table below						
Body Name	Body Type	Key Action Type	Key Action Description	Organisation's Project Role	Impacts	Comments
Falkirk Council	Local Government					

Body Name	Body Type	6 Please use the text box below to detail further climate change related activity that is not noted elsewhere within this reporting template				
Falkirk Council	Local Government					



CARBON FOOTPRINT ANNUAL REPORT 2018/19

TOTAL EMISSIONS

1. Council's Carbon Footprint

Figure 1 shows the Council's Carbon 5.

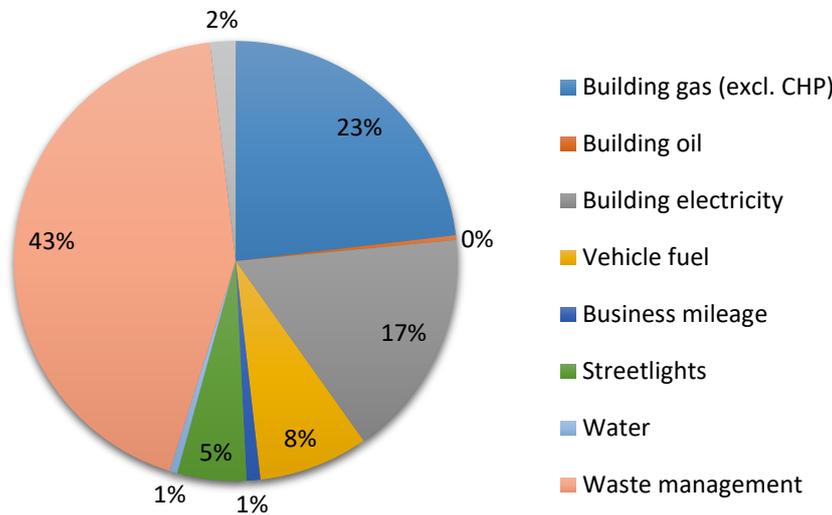


Figure 1: Falkirk Council's Carbon Footprint - 2018/19

Falkirk Council's Carbon Footprint totalled **48.8 ktCO₂e** in 2018-19, or **2% higher** than the 2017-18 figure (48.0 ktCO₂e) and **1% less** than the 2013/14 baseline year.

It should be underlined that methodology changes were introduced for this reporting year. They are detailed in section 2. If the scope for the waste figures had not been modified, the Council's carbon footprint would have been stable compared to last year.



2. Methodology changes in 2018/19

A few changes in the methodology have been made for the calculation of the 2018/19 Carbon Footprint. The document called “Data requirements for the Carbon Footprint”¹ has been updated accordingly.

○ Fleet

For more accuracy, we now use emission factors for diesel, petrol and oil, while we only used to take the diesel emission factor. This slightly increases the total (+0.09 % for 2018/19) because **13% of the total amount of fuel is oil**, which has a very high emission factor. The introduction of 30 new petrol pool cars should lead to a decrease in emissions for the coming years.

○ Water

To be consistent with the energy consumption figures, the water consumption includes operational buildings only. (Operational buildings represent more than 95% of the total buildings’ water consumption).

○ Waste

To improve the robustness of the Carbon Footprint, the waste figures being captured in the Carbon Footprint now cover all Household, Commercial and Industrial waste collected by the Council. The changes in scope are presented in Table 1.

Table 1: Changes in scope - Waste emissions

	Previous scope	Scope from 2018/19
(Mixed) Recycling	Blue bin material only	Includes Blue bin CDR Household and Commercial, HWRC Commercial and Household and all non-MSW Recycling. In other words everything we sent for recycling
Organic Garden Waste Composting	Household only	Household, Commercial & industrial and Gully waste that was composted
Organic Food & Drink Composting	Household only	Total food waste

¹ Document written by the ECCT and explaining how the Carbon Footprint is calculated. Available upon request.



3. Evolution of the emissions

Table 2 explains why the Council's Carbon Footprint increased by 2 %. As it can be seen, it is largely due to the Waste emission that increased by 25 %. The increase in Oil and water consumption (respectively +10 % and + 14 %) play no role since they account together for less than 1 % of the total footprint. The decrease observed in the electricity consumption and business mileage are offset by the increase in the waste emissions.

Table 2: Evolution of Falkirk Council's emissions since 2017/18

Component	2017/18 (tCO2e)	2018/19 (tCO2e)	Evolution	% of the total	Reason for change
Waste management	16,243	21,196 (inc. 20,368 under previous scope)	25% ²	43.4%	The total waste collected by the Council remained stable (+0.6%). Composted waste remained stable too, while recycling increased. However, in 2018/19, nothing was sent to incineration, but the landfilled tonnage increased. The emission factor related to landfilling is 27 times higher than the one for incineration, which explains the increase.
Building gas (excl. CHP)³	11,834	11,282	-5%	23.1%	Energy efficiency improvements
Building electricity	10,531	8,174	-22%	16.7%	Slightly lower electricity consumption (-3%) coupled with a much lower conversion factor (-19%)
Vehicle fuel	3,951	3,913	-1%	8.0%	The fleet is more fuel efficient with the purchase of newer vehicles and some service areas (roads) have also consolidated their fleet by replacing one vehicle whilst disposing of 2. Likely positive impact of fuel efficient driving.
Streetlights	3,165	2,461	-22%	5.0%	Steady decrease year on year thanks to LED replacements
Electricity transmission losses	1,281	907	-29%	1.9%	Lower total electricity consumption and lower conversion factor
Business mileage	585	491	-16%	1.0%	Council's ambition to reduce grey fleet mileage while enhancing pool cars provision. Steady decrease year on year.
Water	238	231	-3%	0.5%	
Building oil	155	171	10%	0.3%	Increased consumption for Hallglen sports centre (+10%) and Slammanan PS (+14%)
Total emissions	47983	48824	+2%	100%	Increase in Waste emissions

² 25% if compared to the same scope for 2017/18. If compared with the previous scope, the increase would have been 30%.

³ Combined Heat & Power



Focus on the five largest emission sources:

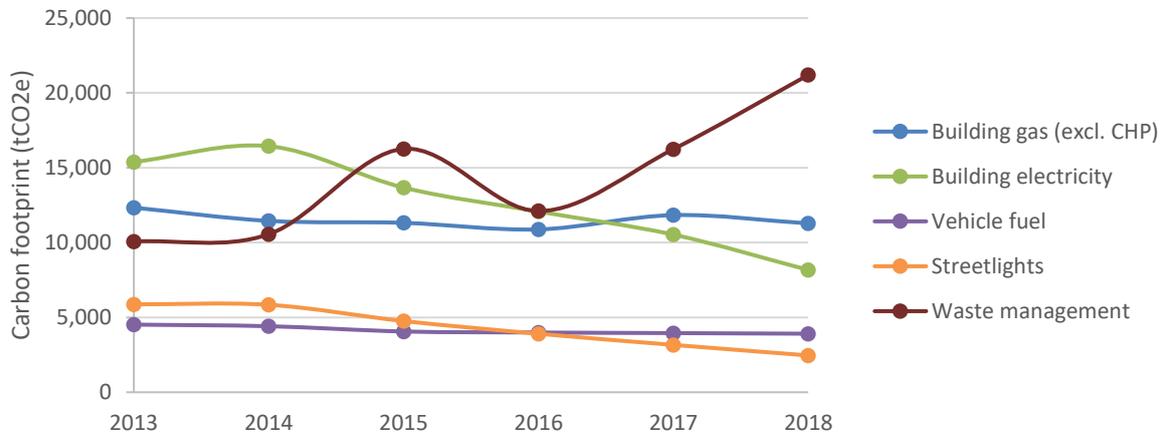


Figure 2: Evolution of the five largest emission sources

Waste

Waste emissions have fluctuated due to changes in emission factors and scope.

In 2015/16, the increase is due to a change in scope (addition of composted waste) combined with an increase in the landfilled waste emission factor (from 290 to 459 kgCO₂e/tonne).

In 2016/17, the total waste tonnage remained stable but there was an increase in waste incinerated (and as a consequence less waste landfilled). The emission factor related to landfilling is 27 times higher than the one for incineration, which explains the decrease.

In 2017/18, the landfilled waste emission factor further increased to reach 588.9 kgCO₂e/tonne.

In 2018/19 total waste tonnages have increased by 0.6 %^[1] compared to the previous year. Due to the closure of the landfill operators dirty MRF⁴, no diversion from landfill was achieved, resulting in greater tonnage being landfilled which has produced a significant impact on emissions.

It should be noted that the methodology changes have only led to a 0.4% increase in the Waste footprint in 2018/19.

Electricity (Buildings + street lighting)

Building electricity and street lighting emissions have steadily dropped. Consumption has dropped by 20 % since 2013/14 for street lighting thanks to LED replacement and by 9 % for buildings. In parallel, the grid electricity emission factor has steadily decreased (by roughly 40 % since 2013/14).

Gas

Gas consumption has remained stable and no decreasing trend can be observed.

Fleet

Fleet emission have decreased by 13 % since the baseline year.

^[1] Taking into account the full scope for both years

⁴ There are two types of Material Recovery Facilities (MRF) – dirty and clean. A dirty MRF receives mixed waste material that requires labor intense sorting activities to separate recyclables from the mixed waste. A clean MRF accepts recyclable materials that have already been separated from the components in municipal solid waste (MSW) that are not recyclable.



EMISSIONS PER SERVICE AREA

Figure 3 shows that Children’s Services have the highest emissions. This is due to their bigger estate.

Social Work / IJB and Corporate & Housing represent the lowest shares of the Council’s footprint.

Note that Corporate & Housing includes Chief Executive Office.

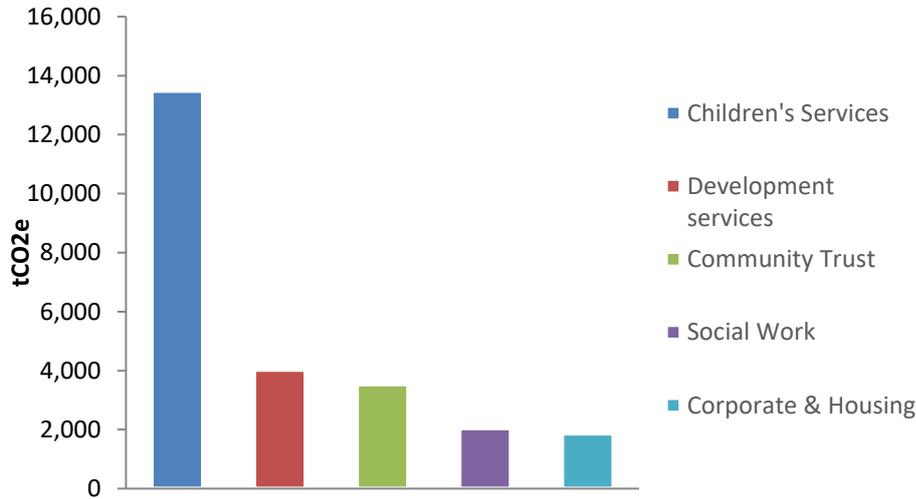


Figure 3: Emissions per service area in 2018/19



1. Focus on Development Services

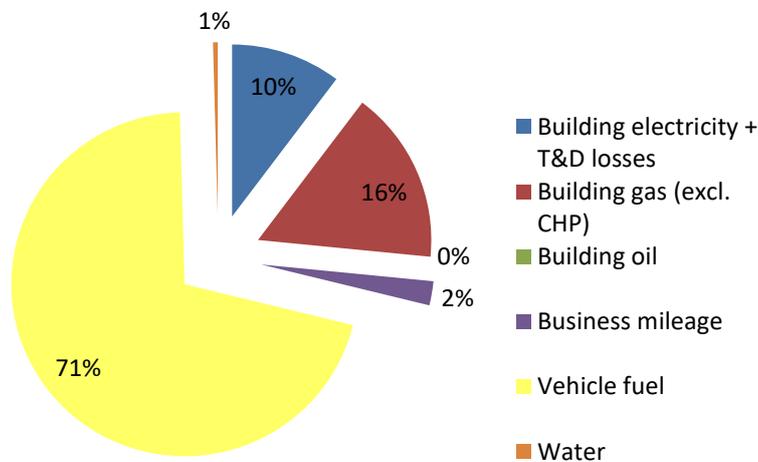


Figure 4: Development Services 2018-19 Carbon Footprint

Unlike other service areas, emissions from **buildings** only represent only 26% of Development Services’ carbon footprint. There are no oil-fuelled buildings.

Vehicle fuel represents the main emission source (71%). As it can be seen from Figure 5, Development Services are the main fleet users, with over 1300 litres of fuel consumed per employee. It should be noted Development services fuel consumption also includes (among others) roads services, Waste services, Street cleansing services and special uplifts.

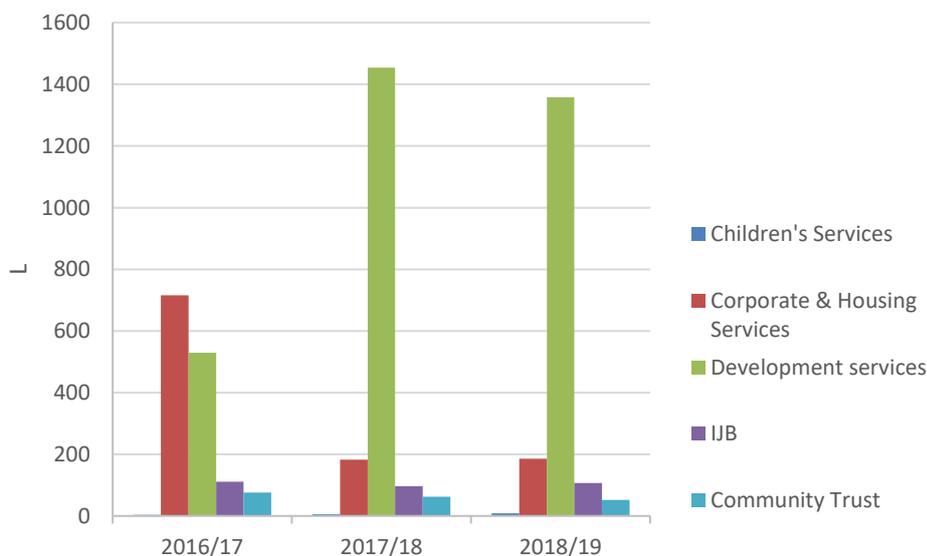


Figure 5: Evolution of the vehicle fuel consumption per employee

Business mileage has significantly decreased (from 609 miles/year/employee in 2016/17 to 406 in 2018/19) as the Council encourages staff to travel with the more fuel efficient pool cars.



Development Services’ top 10 priority sites are listed in Table 3. They are ranked by total energy costs and only include operational buildings.

Camelon Crematorium has a very high consumption, but it is mainly for the process. The gas boilers were upgraded recently and heating is therefore fairly efficient. **Earls Road Depot** (built in the 70’s) is both a big electricity and gas consumer, exceeding by far the typical public sector benchmark⁵ figures for depots (Electricity: 196 kWh/m² vs Good practice benchmark figure: 55 kWh/m²; Gas: 371 kWh/m² vs Good practice benchmark: 82 kWh/m²).

Table 3: Development Services - Top 10 priority sites

Name	UPRN	Gas (kWh)	% of service’s total	Electricity (kWh)	% of service’s total	Total energy cost (£)
CAMELON CREMATORIUM	136013040	1,948,826	54%	199,843	15%	83,146
EARLS ROAD DEPOT (OLD ESWA)	136046285	502,025	14%	264,548	19%	60,763
ABBOTSFORD HOUSE	136020015	257,549	7%	247,062	18%	45,561
ROUGHMUTE TRANSFER STATION	136075229	0	0%	200,953	15%	32,278
DALGRAIN DEPOT	136079072	0	0%	173,087	13%	28,263
GRANGEMOUTH MUNICIPAL CHAMBERS	136046282	332,325	9%	76,058	6%	23,097
KINNEIL PLANT NURSERY	136056497	227,631	6%	31,374	2%	12,268
KINNEIL KERSE LANDFILL	136055381	0	5%	65,313	3%	9,924
MEEKS ROAD - CAR PARK	136074934	0	0%	16,479	5%	8,452
CAMELON CEMETERY LODGE/OFFICE	136079581	167,378	0%	8,529	1%	6,899
BONESS CEMETERY STORE	136079037	0	5%	21,150	1%	2,978

⁵ SEON Benchmarking Exercise, 2019



2. Focus on Corporate & Housing Services

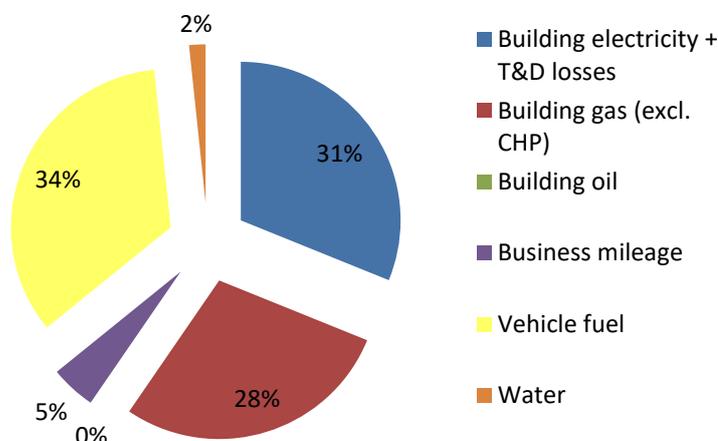


Figure 6: Corporate & Housing 2018/19 Carbon Footprint

As it can be seen on Figure 6, an important share (~60%) of Corporate & Housing Carbon Footprint comes from **buildings**, with significant emissions linked to **fleet** (32 %) and **business mileage** (5 %). There are no oil-fuelled buildings.

Corporate & Housing’s top 10 priority sites are listed in Table 4.

They are ranked by total energy costs and only include operational buildings.

The Strategy Property Review will inform any changes in these buildings.

Table 4: Corporate & Housing - Top 10 priority sites

Name	UPRN	CHIEF EXECUTIVE OFFICE – CEO; CORPORATE & HOUSING – C&H	Gas (kWh)	% of total	Electricity (kWh)	% of total	Total energy cost (£)
FALKIRK MUNICIPAL BUILDINGS	136000002	CEO	1,820,590	63%	1,037,669	55%	204,611
INCHYRA DEPOT	136051428	C&H	381,932	13%	219,755	12%	45,522
CALENDAR BUSINESS PARK (THE FORUM)	136033873	C&H	313,214	11%	139,454	7%	31,710
ONE STOP SHOP FALKIRK	136030730	C&H	0	0%	149,448	8%	22,699
BURNBANK DEPOT	136063161	C&H	138,459	5%	83,294	4%	16,755
PRINTWORKS (REPROGRAPHICS UNIT)	136030730	C&H	21,210	1%	69,388	4%	11,271
REGISTRARS OFFICE FALKIRK	136018686	C&H	0	0%	82,896	4%	9,926
ONE STOP SHOP GRANGEMOUTH	136046381	C&H	84,931	3%	40,209	2%	9,259
ONE STOP SHOP STENHOUSEMUIR	136008338	C&H	88,263	3%	17,162	1	5,729
GLEBE STREET PUBLIC TOILETS/BOTHY	136079015	C&H	0	0%	14043.60	1%	2,170



3. Focus on Social Work / IJB

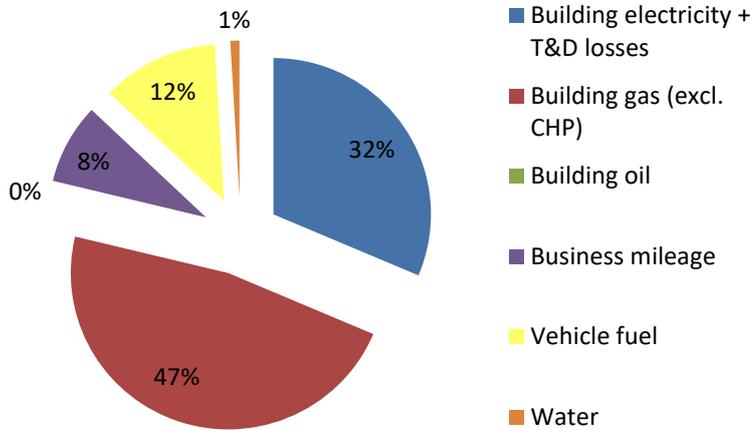


Figure: Social Work 2018/19 Carbon Footprint

Social Work’s Carbon Footprint is similar to the one of Corporate & Housing, as shown on Figure 7.

Buildings-related emissions represent about 79 % of the total footprint.

Transport-related emissions account for 20 % of the total (36 % for Corporate & Housing), but with a much **larger share of staff travel** emissions (40 % of transport-related emissions, versus 11 % for Corporate & Housing and 3 % for Development Services).

Social Work’s top 5 priority sites are listed in Table 5.

They are ranked by total energy costs and only include operational buildings.

Dundas Resource Centre (built in the 90’s) is both the biggest electricity and gas consumer, and provides a good potential opportunity for making savings. Grangemouth Social Work Office is part of the Strategic Property Review and has LED lighting replacement proposed.

Table 5: Social Work - Top 10 priority sites

Name	UPRN	Gas (kWh)	% of total	Electricity (kWh)	% of total	Total energy cost (£)
DUNDAS RESOURCE CENTRE / GRANGEMOUTH SW OFFICE	3003722843	562,996	11%	369,090	18%	69,486
GRAHAMSTON HOUSE O.P.H.	3003722876	473,864	9%	198,717	10%	35,084
SUMMERFORD HOUSE	3003721545	573,630	11%	143,081	7%	32,874
BROCKVILLE SOCIAL WORK	3003721677	207,584	4%	157,583	8%	32,260
CAMELON CENTRE (social work)	3004081047	454,270	9%	123,363	6%	31,275
BURNBRAE HOME	3003721006	202,597	4%	190,930	9%	30,825
CARRONBANK HOUSE	3003722733	564,644	11%	79,791	4%	30,302
CUNNINGHAM HOUSE	3003722788	514,708	10%	144,694	7%	29,178
JOINT LOANS EQUIPMENT SCHEME	3003722942	381,350	7%	90,836	4%	25,055
TORWOODHALL O.P.H.	3003721501	439,664		94,267		23,022

4. Focus on Children Services

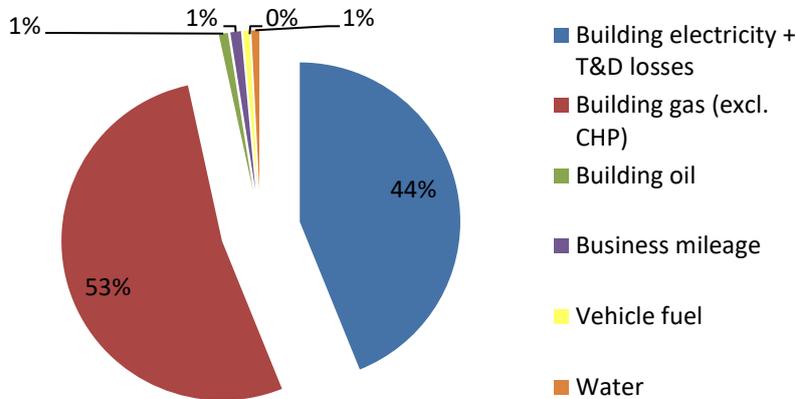


Figure 7: Children's services 2018/19 Carbon Footprint

The main emission sources are **buildings** electricity and gas. They account for more than 95 % of the total footprint. **Oil** is consumed in two primary schools (Slammanan and Whitecross primary schools) and represents 1 % of Children Services' footprint.

A breakdown of buildings emissions per estate type is depicted on Figure 9. It can be seen that secondary schools are the main gas consumers (64 % of total gas emissions), although there are only 9 secondary schools for more than 40 primary schools. This is due to the fact that High schools are equipped with swimming pools, which represent a significant share of the gas consumption. When it comes to electricity, the main consumers are the primary schools (47 % of the total), followed by secondary schools (41 %).

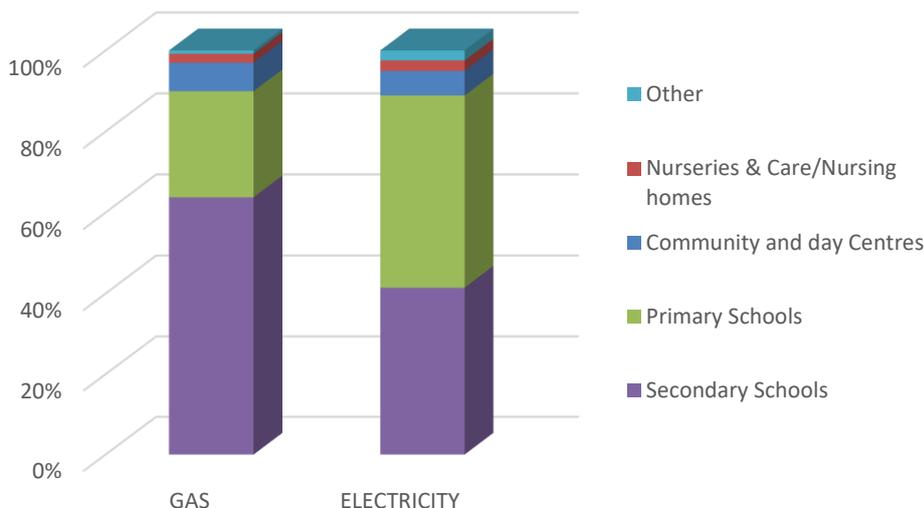


Figure 8: Breakdown of electricity and gas emissions - Children Services estate

Children Services' top 10 priority sites are listed in Table 6.

They are ranked by total energy costs and only include operational buildings.



All schools presented in this Table use gas as a primary heating fuel. Most of these schools are built after 1995.

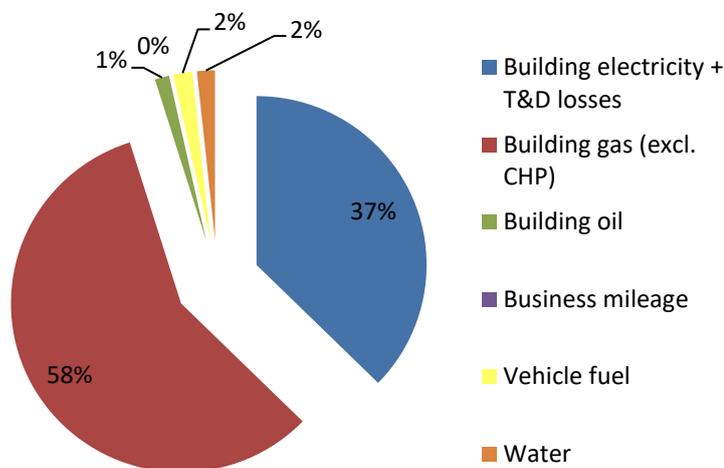
Table 6: Children's services - Top 10 priority sites

Name	UPRN	Gas (kWh)	% of total	Electricity (kWh)	% of total
LARBERT HIGH SCHOOL	136070398	3,965,466	10%	1,539,379	8%
GRAEME HIGH SCHOOL	136062622	3,247,291	8%	771,215	4%
BONESS ACADEMY	136060536	3,209,425	8%	864,762	4%
BRAES HIGH SCHOOL	136036354	3,088,463	8%	720,862	4%
DENNY HIGH SCHOOL (NEW)	136076413	2,705,149	7%	927,195	5%
ST MUNGOS HIGH SCHOOL (NEW)	136079081	2,202,815	6%	849,743	4%
FALKIRK HIGH SCHOOL (NEW)	136078913	2,156,417	6%	985,718	5%
GRANGEMOUTH HIGH SCHOOL (NEW)	136078914	1,819,125	5%	859,918	4%
LARBERT HS - CARRONGRANGE	136013696	1,814,510	5%	1,539,380	8%
CAMELON EDUCATION CENTRE	136011857	789,690	2%	156,202	1%



5. Focus on Community Trust

Figure 9: Community Trust 2018-19 Carbon Footprint



The breakdown of the Community Trust’s carbon footprint is similar to that of the Children’s service, with 95 % of the emissions being related to **buildings**. The Community Trust has only one **oil**-fuelled building (Hallglen Sports Centre), yet it accounts for already 1 % of the total.

The Trust’s top 10 priority sites are listed in Table 7.

Grangemouth Sports Complex, the Mariner Centre and Bo’ness Recreation centre alone represent **70 %** of the Trust’s total gas consumption and **51 %** of its electricity consumption.

Table 7: Community Trust - Top 10 priority sites

Name	Code	Gas (kWh)	% of total	Electricity (kWh)	% of total	Total energy cost (£)
GRANGEMOUTH SPORTS COMPLEX	136045873	2,627,114	24%	838,405	20%	199,187
MARINER CENTRE	136006672	2,916,108	26%	809,106	19%	197,424
BONESS RECREATION CENTRE	136060519	2,232,415	20%	545,682	13%	147,635
GRANGEMOUTH STADIUM	136050907	324,920	5%	240,242	6%	47,542
THE HELIX	136083467	0	0%	249,253	6%	40,595
FALKIRK LIBRARY	136018924	298,649	3%	158,438	4%	33,805
CALLENDAR HOUSE	136028049	0	0%	144,180	3%	21,627*
STENHOUSEMUIR GYM	136079650	0	0%	113,541	3%	17,201
BONESS TOWN HALL	136079333	304,943	3%	43,726	1%	16,276*
GRANGEMOUTH TOWN HALL	136076626	273,444	2%	42,970	1%	15,346

*estimated (based on average electricity price)



FOCUS ON WATER CONSUMPTION

The top 15 sites with the highest water consumption are listed on Table 8, while Table 9 focusses on Schools only. It can be noted that the largest buildings do not necessarily use the most water.

Table 8: Water consumption - Top 15 sites

SITE NAME	UPRN	SERVICE AREA	Water consumption (m3)
MARINER CENTRE	136006672	FALKIRK COMMUNITY TRUST	15,184
APC FALKIRK	136076473	CORPORATE & HOUSING	7,628
BONESS RECREATION CENTRE	136060519	FALKIRK COMMUNITY TRUST	6,885
FALKIRK MUNICIPAL BUILDINGS	136000002	CHIEF EXECUTIVE OFFICE	6,510
KINNAIRD PRIMARY SCHOOL	136074511	CHILDRENS SERVICES	5,816
KINNEIL PLANT NURSERY	136056497	CORPORATE & HOUSING	5,646
APC BONESS	136079021	CORPORATE & HOUSING	5,520
GRANGEMOUTH SPORTS COMPLEX	136045873	FALKIRK COMMUNITY TRUST	5,475
BONNYBRIDGE PRIMARY SCHOOL	136000099	CHILDRENS SERVICES	4,496
EARLS ROAD DEPOT (OLD ESWA)	136046285	DEVELOPMENT SERVICES	4,057
STENHOUSEMUIR PRIMARY SCHOOL	136070388	CHILDRENS SERVICES	3,771
WESTQUARTER PRIMARY SCHOOL	136036483	CHILDRENS SERVICES	3,732
GRANGEMOUTH GOLF COURSE	136054804	FALKIRK COMMUNITY TRUST	3,570
CAMELON EDUCATION CENTRE	136011857	CHILDRENS SERVICES	3,174
GRAHAMSTON HOUSE O.P.H.	136030704	ADULT SOCIAL WORK SERVICES	3,121

Table 9: Top 15 Schools ranked by water consumption per person

SCHOOL NAME	UPRN	Water consumption (m3)	Water cons. Per person (m3/pers)
DENNY NURSERY SCHOOL	136089434	800	34.8
RANNOCH NURSERY SCHOOL	136050906	920	36.8
BOTHKENNAR PRIMARY SCHOOL	136035261	203	33.8
LIMERIGG PRIMARY SCHOOL	136004334	175	19.4
EASTER CARMUIRS PRIMARY SCHOOL	136002784	3008	10.9
BONNYBRIDGE PRIMARY SCHOOL	136000099	4496	10.4
DRUMBOWIE PRIMARY SCHOOL	136039062	224	9.0
CARRONGRANGE HIGH SCHOOL	136089506	2442	8.8
BANKIER PRIMARY SCHOOL	136000685	2172	8.6
WESTQUARTER PRIMARY SCHOOL	136036483	3732	8.1
LARBERT DAY NURSERY	136078126	673	7.9
CAMELON NURSERY	136012648	968	7.4
STENHOUSEMUIR PRIMARY SCHOOL	136070388	3771	7.4
WOODBURN DAY NURSERY	136034573	363	7.4
ST JOSEPHS PRIMARY SCHOOL	136069080	1463	7.4

Appendix 3: Carbon reduction projects:

At total of 27 projects have been commissioned in the last few years including:

- Non-domestic Energy Efficiency Scheme (LED lighting to several school, leisure and SW buildings, micro CHP installations, Solar PV installations)
- Street lighting LED replacement – Phase 1 (& ongoing)
- Graeme High LED replacement
- Beancross PS/Nethermains PS – Refurbishment of heating system and LED lighting
- Carronrange High School – Biomass boiler, total installed capacity = 250 kW
- Three Solar PV projects (Kinnaird PS, Carronrange High PS, Carron PS)
- Council-wide ban of single-use plastics
- Switch to 100% recycled paper
- Installation of numerous Electric Vehicles charging points
- Launch of Falkirk Active Travel Hub
- Solar Canopy / EV charging hub at Falkirk Stadium

Other projects are in the feasibility study stage, the associated carbon savings calculations for which have yet to be finalised. **As such, the overall anticipated savings could be substantially higher.**

New projects currently being installed or proposed, and that will lead to CO2 savings from 2019 onwards include:

- Project to extend the existing combined heating and power (CHP) to an additional 260 flats contained within 3 x tower blocks to both Council and privately owned properties within the Callendar Park Estate.
- Project to install a private wire to transmit/sell the energy generated from the CHP to communal areas within 7 x tower blocks; local schools and office blocks within the Callendar Park Estate.
- Double glazing upgrade – 1,500 properties/annum from April 2020 over a 10 year period
- Programme of insulation measures which include external wall, cavity, roof & loft insulation to improve energy efficiency and withstand adverse weather to both Council and Privately owned properties. External wall insulation works to 93 properties have been complemented in Carronshore and Polmont (out of 104).
- LED Street Lighting lantern replacement programme
- LED lighting projects in schools (Mitie schools, Graeme High, Boness Public School, Grange PS, Drumbowie, Sacred Heart, Blackness, Shieldhill, Beancross)
- Other LED lighting projects (The Forum, Kinneil Civic Recycling, Carronbank House,
- Pilot project to install Photovoltaic Cells on properties within 'off gas areas' and housing with care properties.
- Solar Canopy/EV charging facility at Falkirk Stadium, and roll out of more extensive EV charging network and EV fleet vehicles
- Park Power project