Going Beyond Net-Zero

Leading the way in the public sector

Webinar 6 May 2020

Agenda

- Welcome - George Tarvit, SSN Project Director

- SSN member survey - June Graham, SSN Engagement

- ZWS Net-Zero Draft Plan - Fraser Millar, ZWS Environmental Analyst

- Q & A session

- Next steps

SSN Member Survey

16 Questions & 5 interviews
20 organisations (21 responses)

10 councils
3 Education

1NHS
6 National

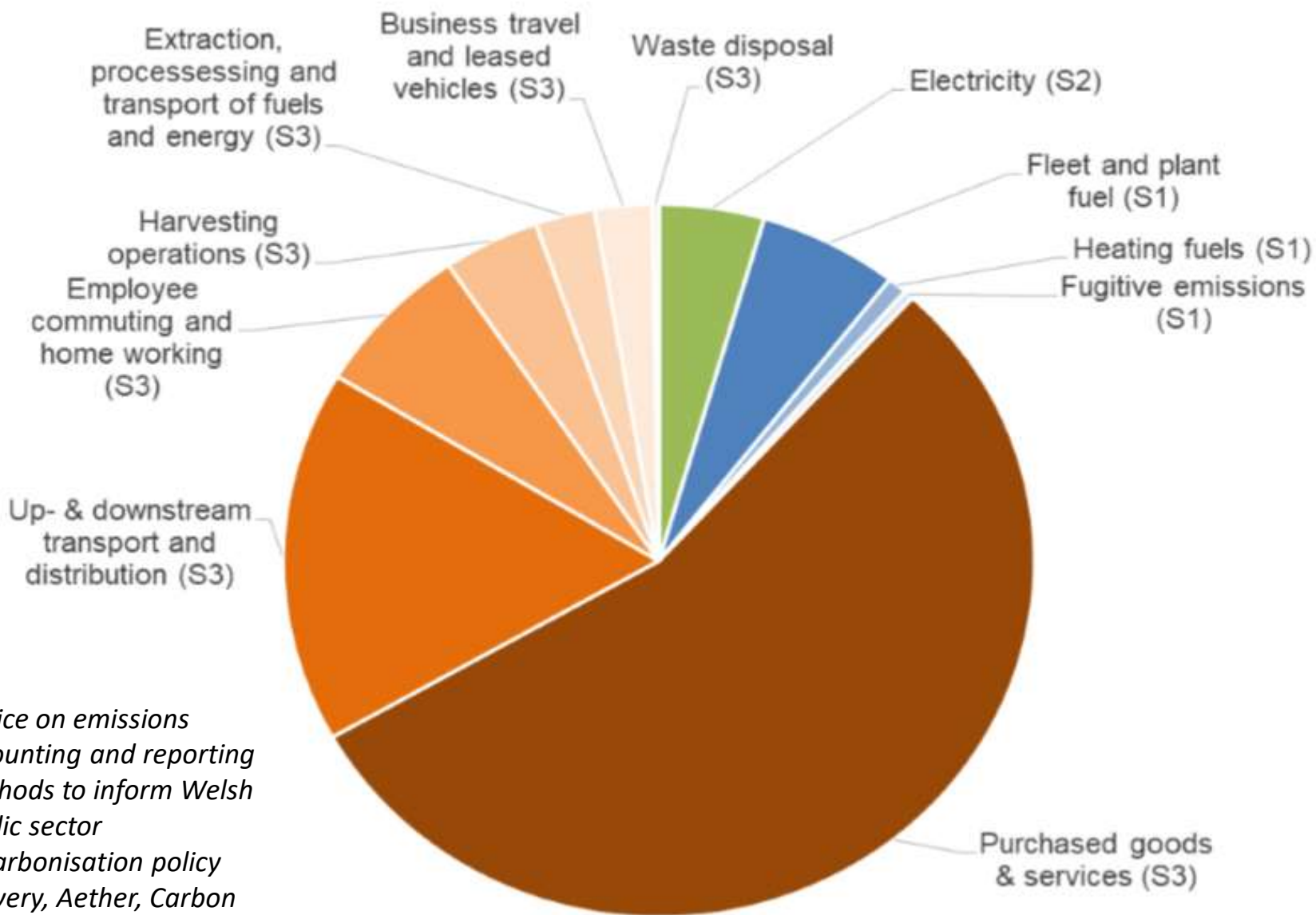| Emission sources and sinks | Planning for Net Zero | Assump-tions | Monitoring & forecasting | Support needs |

Emission sources and sinks

Scope 3

- under-reported - substantive source
- travel, waste, water
- procurement supply chain
- rules and tools?

Carbon sinks

- 60% not considered, ltd/ no sinks
- some starting to consider
- greenspace / biodiversity audit
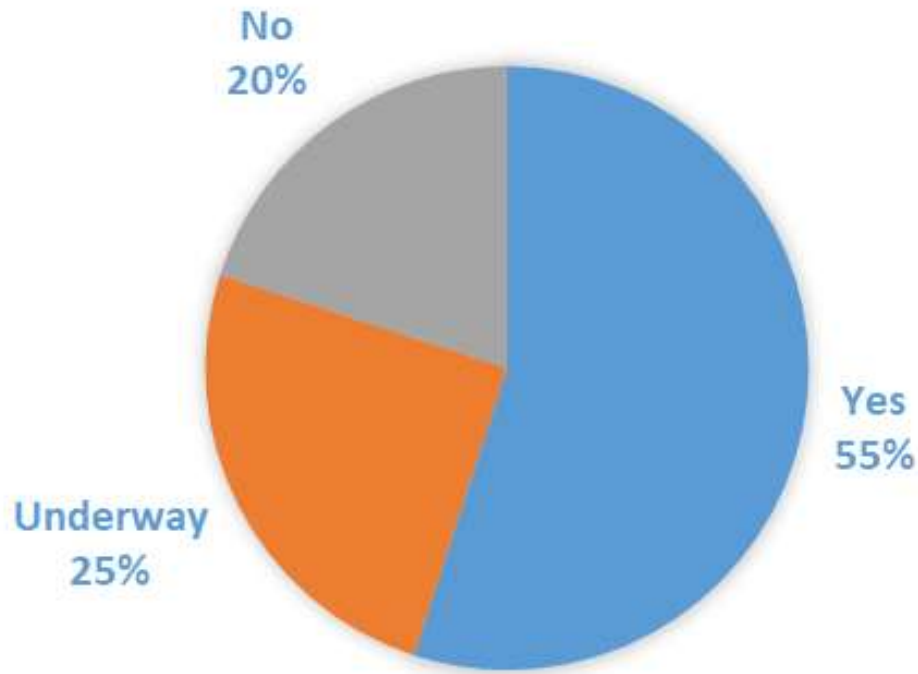- engaging consultants, software

Figure 1 GHG Inventory for NRW, by category and Scope (data source: Carbon Positive Project Summary Report, January 2018 – some categories have been collated to aid presentation)

Advice on emissions accounting and reporting methods to inform Welsh public sector decarbonisation policy delivery, Aether, Carbon Forecast, May 2019

Planning for Net-Zero
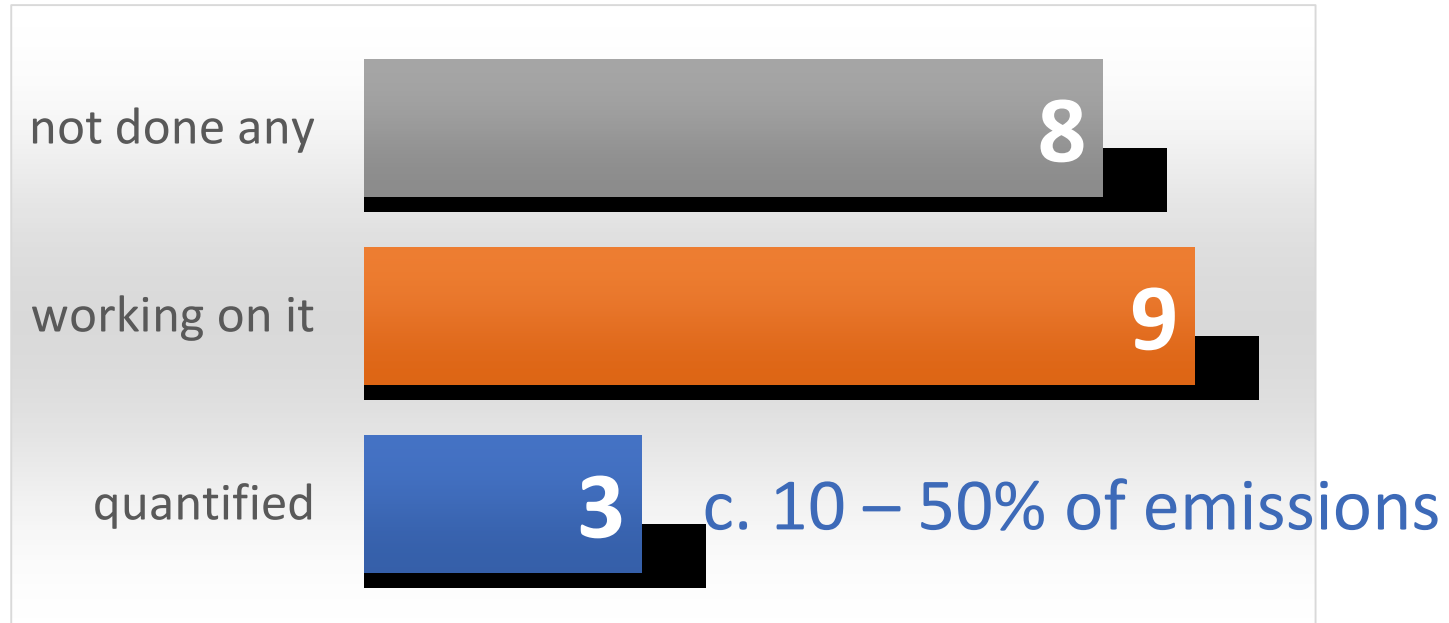

Net-zero target agreed?

Majority aligned with Scottish Government targets

- Aberdeenshire Council: developing 10 year action plan

- W. Dunbartonshire Council: annual budgets, % reductions and 5 year review periods; 2019-20 new baseline

- Fife College: 4% reduction p.a. from 2019 baseline

Strathclyde University:

70% by 2025 / 80% by 2030 / net-zero by 2040

Determined residual emissions?

not done any	**8**
working on it	**9**
quantified	**3** c. 10 – 50% of emissions

- commuting
- flights
- water
- gas heating

- processes
- refrigerants
- medical gases
- back-up generators

Emission reduction assumptions?

- Grid will decarbonise (according to BEIS forecast rates)

- Gas heating will be phased out under government policy

- Continued fleet electrification

- No offsetting (carbon credits) will be allowed for the public sector

- Supply chains will decarbonise

Behaviours?

- difficult to predict
- tricky to implement /stick
- hard to quantify and attribute

"...that we can reduce impact of business travel and staff/student commuting by 3% pa to 2035, despite higher staff/student numbers." University of Glasgow

SSN Sustainable Scotland Network

Emissions monitoring and forecasting?

BEIS UK Emission Factors

Carbon Footprint Project Register

energy management software

Scottish Waste Carbon Metric

HESCET – higher education supply chain emissions tool

ePC – procurement team

bespoke spreadsheets

travel management services

BEIS UK Energy and Emissions Projections

key performance indicators

utility bills, expense claims

Public Bodies Duties template

~~PROCXED~~

Support needs?

Rules

Guidance, methods & standards

Data specs, e.g. scope 3

GHG Protocol Principles

Definitions and terminology

Net Zero v absolute zero?

Tools

Forecasting, scenario planning

Trend analysis and budgeting

Assessing carbon sinks

Comparative assessments of tools

Budgeting and spend profiles

Training

Measuring scope 3 emissions

Determining residual emissions

Business travel accounting

Training for senior staff, elected members

Wider impact

Learning

Influencing others – leaders, supply chains etc.

service-led events e.g. planning, energy, transportation

Events for leaders, decision-makers

Tackling tensions e.g. increased "numbers"

CPD on changing policy, priorities, practice

SSN Sustainable Scotland Network

Proportionality

Figure 11 Ease of collection versus importance in footprint

Support needs?

Rules

Guidance, methods & standards

Data specs, e.g. scope 3

GHG Protocol Principles

Definitions and terminology

Net Zero v absolute zero?

Tools

Forecasting, scenario planning

Trend analysis and budgeting

Assessing carbon sinks

Comparative assessments of tools

Budgeting and spend profiles

Training

Measuring scope 3 emissions

Determining residual emissions

Business travel accounting

Training for senior staff, elected members

Wider impact

Learning

Influencing others – leaders, supply chains etc.

service-led events e.g. planning, energy, transportation

Events for leaders, decision-makers

Tackling tensions e.g. increased "numbers"

CPD on changing policy, priorities, practice

SSN Sustainable Scotland Network

Our path to net zero
The Zero Waste Scotland journey

Fraser Millar
Environmental Analyst

zerowastescotland.org.uk
@zerowastescot

Introductions

Fraser Millar

Environmental Analyst at Zero Waste Scotland

Been with ZWS for 8 months

My role within ZWS

Part of the E.A team. We quantify whole life carbon impacts of products, services and just about everything else.

I also operate as the day-to-day lead on co-ordinating the net-zero plan for Zero Waste Scotland.
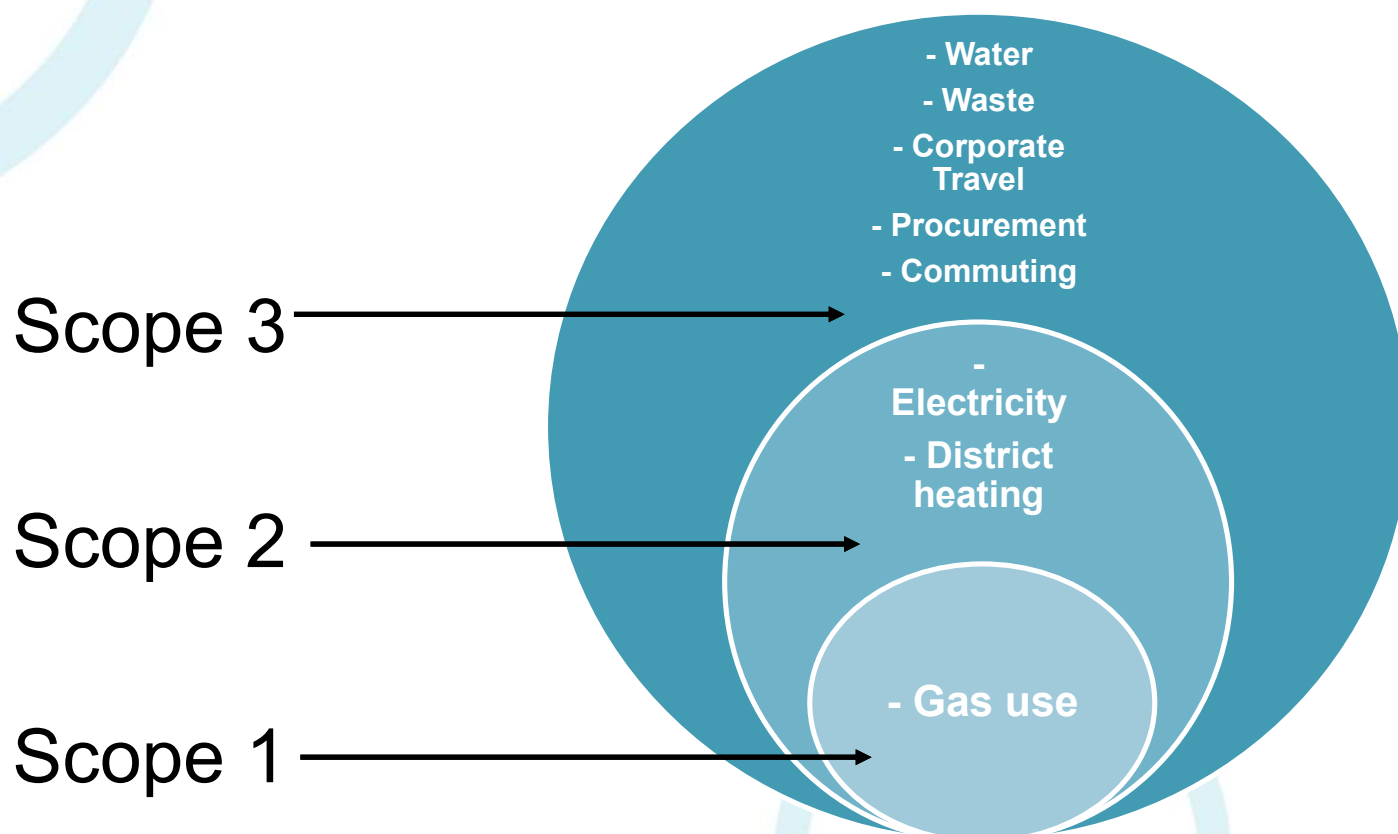
About Zero Waste Scotland

- Zero Waste Scotland exists to lead Scotland to use products and resources responsibly, focusing on where we can have the greatest impact on climate change

- Using evidence and insight, our goal is to inform policy, and motivate individuals and businesses to embrace the environmental, economic, and social benefits of a circular economy

- Primarily operates out of two Stirling offices, with a focus on mobile, agile, flexible working

The Zero Waste Scotland net zero strategy has now been approved

- Strategy was approved by the board on 12 March 2020

- Publication has been postponed due to COVID-19

- Implementation period ending in FY 2022/23

- Outlines how we plan to achieve net-zero through positive action and minimising use of offsets
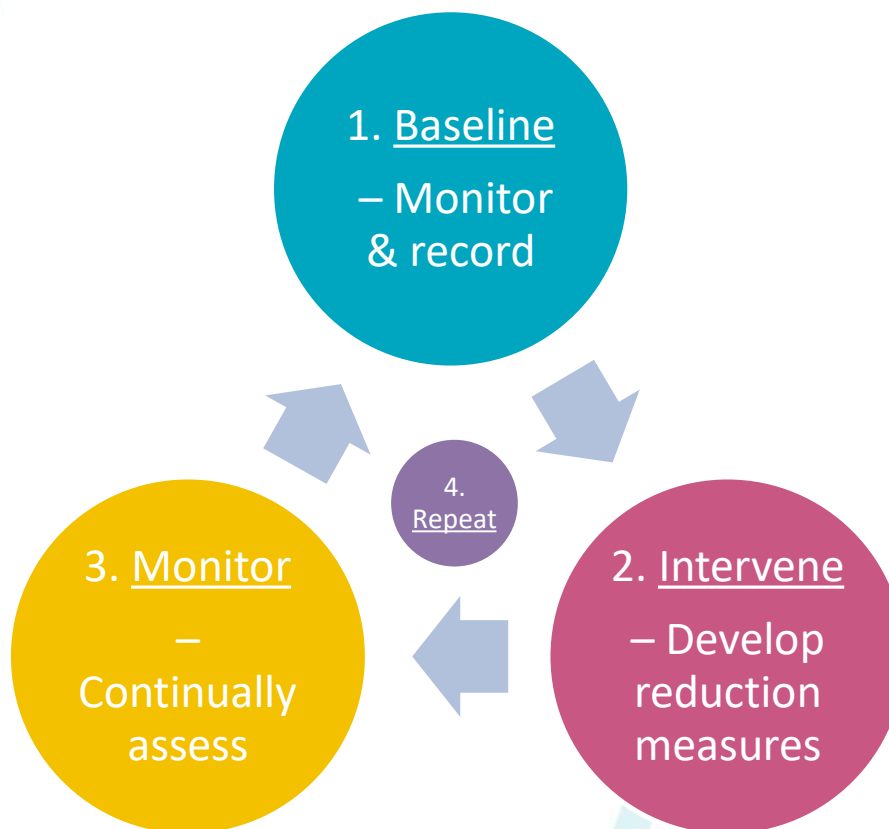
Formulating the net zero plan: what's in and what's out?

Scope 3

Scope 2

Scope 1

- Water
- Waste
- Corporate Travel
- Procurement
- Commuting
- Electricity
- District heating
- Gas use

Our strategy is founded on 5 key principles

1. Evidence-led
2. Achieves absolute emissions reductions
3. Reduction before offsetting
4. Tackle whole carbon footprint
5. Share our successes as well as our learnings

Our evidence-led approach to mitigation

1. Baseline

– Monitor & record

4. Repeat

2. Intervene

– Develop reduction measures

3. Monitor

– Continually assess

Measurement methods

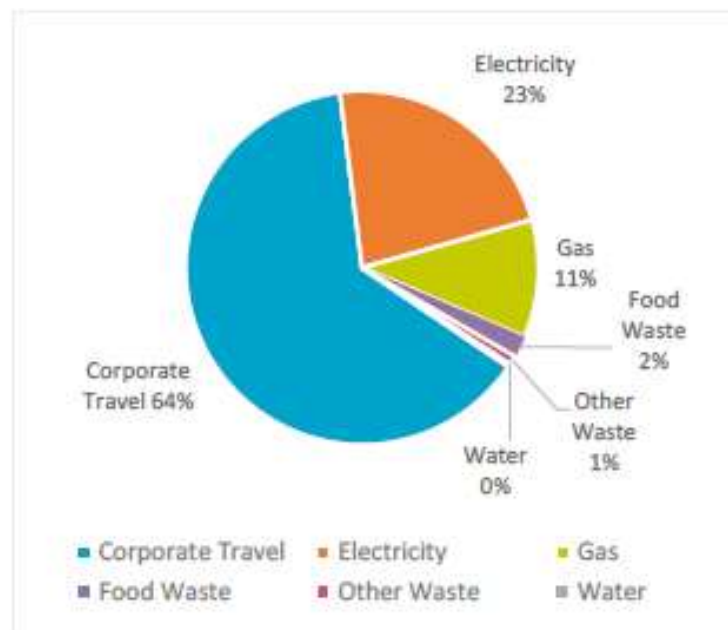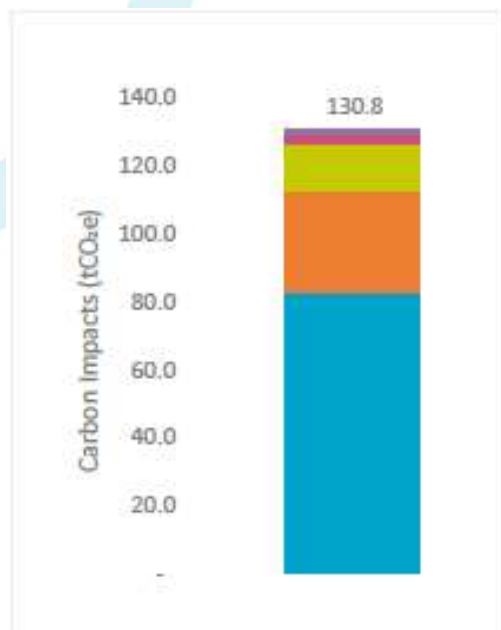| What we measure	How we measure it
Gas use	Monthly meter readings
Electricity use	Daily meter readings (automatic)
Business travel	Expenses and procurement cards
Water use	Monthly meter readings
Waste	Weighing food waste, recycling and residual waste bins
Paper use	Printer server reports
Staff commuting	Biannual survey

Our 'COCA' footprinting tool
(Comprehensive Office Carbon Audit)

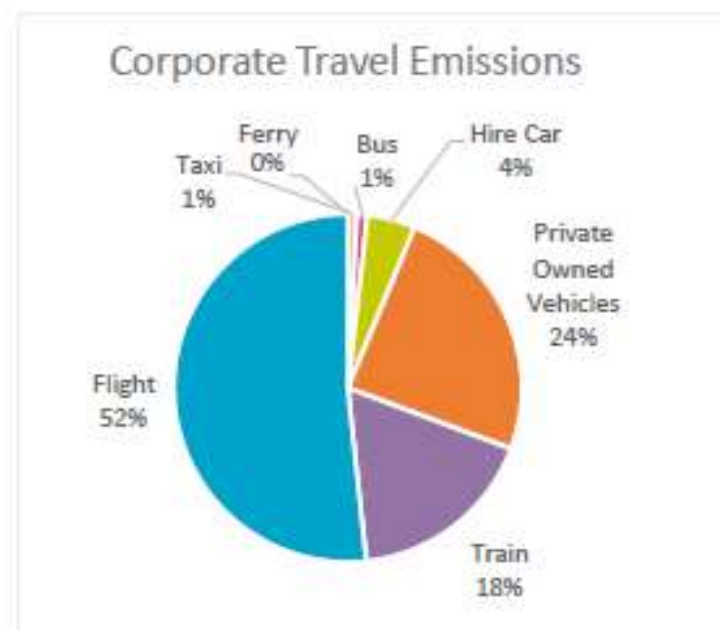| Financial Year	Quarter	Mode of Transport	Ref categories	Mileage	Carbon factor	GHG impacts (kg CO2 eq.)
2018/2019	Q3	Private Owned Vehicles	Business Travel - Land; Avg. Unknown	19,943	0.291	5,798
2018/2019	Q3	Bus Equivalent	Business Travel - Land; Local bus (not London)	1,281	0.193	248
2018/2019	Q3	Hire Car Equivalent	Business Travel - Land; Avg. Unknown	1,663	0.291	483
2018/2019	Q3	Ferry Equivalent	Business Travel - Sea; Avg. all passenger	4	0.182	1
2018/2019	Q3	Taxi Equivalent	Business Travel - Land; Black cab	595	0.345	205
2018/2019	Q3	Train Equivalent	Business Travel - Land; National rail	30,196	0.071	2,150
2018/2019	Q3	Flight Equivalent	Business Travel - Air; Avg. passenger, Short-haul to/from UK	101,611	0.261	26,550

- We input raw energy, waste and transport data

- The model uses the appropriate carbon factor to calculate our emissions.

- Results are generated as charts and graphs

- Allows us to measure progress over time.
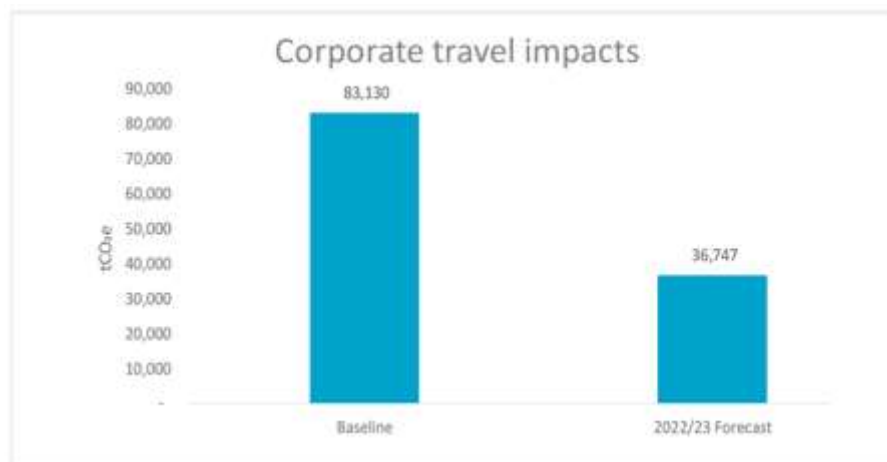
Baseline data

Initial data analysis has told us a great deal, and allows us to focus interventions on where they will be most effective

Baseline corporate travel in detail

Corporate Travel Miles

- Hire Car 3%
- Ferry 0%
- Taxi 0%
- Bus 1%
- Private Owned Vehicles 15%
- Flight 36%
- Train 45%

Corporate Travel Emissions

- Ferry 0%
- Taxi 1%
- Bus 1%
- Hire Car 4%
- Private Owned Vehicles 24%
- Flight 52%
- Train 18%

ZERO WASTE SCOTLAND
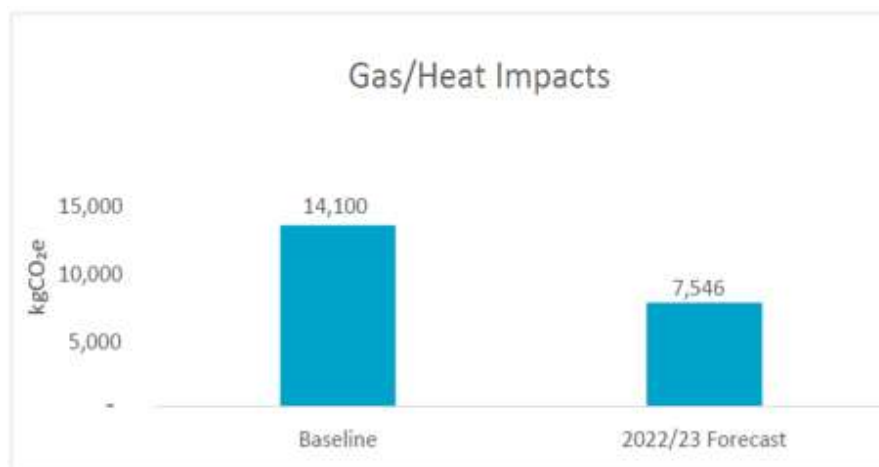
Corp. travel reduction measures

- Largest contributor to our operational emissions - Currently accounts for 64% of our operational output
- We have devised interventions designed to reduce travel impacts by 56% by FY 2022/23

Corporate travel impacts

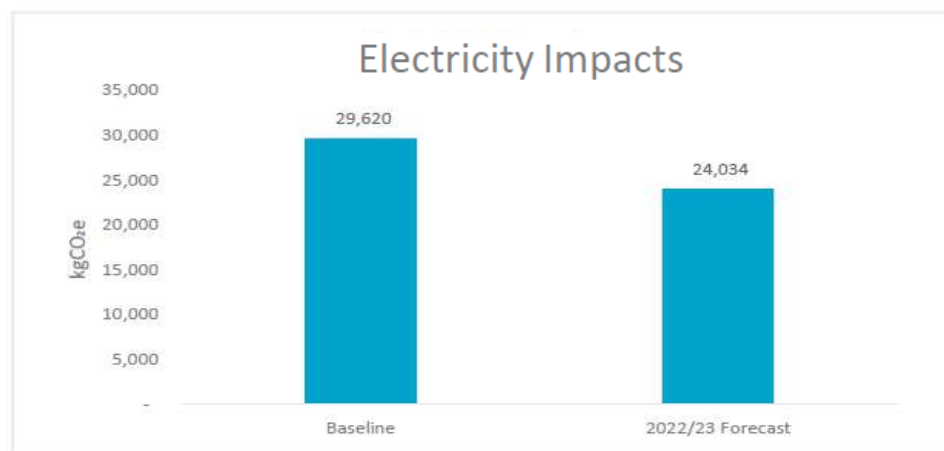|	
2018/19 Baseline (KgCO$_2$e)	83,130
Cap & reduce total flight miles by 20% per annum to 2022/23 (KgCO$_2$e)	-36,881
Cap & reduce total non hybrid/EV miles by 50% per annum to 2022/23 (KgCO$_2$e)	-9,502
2022/23 Forecast (KgCO$_2$e)	36,747
Reduction (%)	-56%

Gas use reduction measures

- Accounts for 11% of our operational emissions
- We plan to reduce our output by 46% through district heating savings and installation of double glazing within MH.

Gas/Heat Impacts

2018/19 Baseline (KgCO$_2$e)	14,100
District Heating System (KgCO$_2$e)	- 4,371
Install double-glazed windows in headquarters (Moray House) (KgCO$_2$e)	- 2,183
2022/23 Forecast (KgCO$_2$e)	7,546
Reduction (%)	- 46%

Electricity reduction measures

- Accounts for 23% of our operational emissions
- We plan to reduce our output by 19% by switching our servers to a cloud-based platform
- We have experienced issues with reporting here, which has led to a change in strategy.

Electricity Impacts

	kgCO$_2$e
Baseline	29,620
2022/23 Forecast	24,034

2018/19 Baseline (KgCO$_2$e)	29,620
Move 60% of servers to cloud (KgCO$_2$e)	- 5,586
2022/23 Forecast (KgCO$_2$e)	24,034
Reduction (%)	-19%

Monitoring issues identified (so far)

- We weren't counting procurement card travel transactions

- The district heating system wasn't providing any heat

- Our electrical monitoring device wasn't giving accurate readings

- There are still gaps in our data

- Whatever comes next

Offsetting

We will use a combination of sequestration and reduction offsets equalling 200% of our residual emissions.

We will also reduce our reliance on offsets YoY, until FY 2022/23.

And finally - a word on Coronavirus….

Thank you.

zerowastescotland.org.uk

@ZeroWasteScot