TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

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Transport Scotland's Carbon Management Plan 4th Edition (2022-2027)

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Executive Summary

As the national transport agency for Scotland, our purpose is to support and advise Scottish Ministers on operational delivery, strategy and policy relating to a wide range of transport functions.

We update Scottish Ministers annually on our efforts to limit emissions associated with our core business. This 4th edition of the Carbon Management Plan (CMP4) sets out our commitment to achieving Net Zero across our corporate functions.

CMP4 provides details of both our historic performance, and our corporate carbon emission targets to 2027, along with the various initiatives we will undertake to achieve those. The goal of this plan is to not only achieve Net Zero across our own corporate activities, but to also challenge the way in which emissions are managed throughout our supply chain.

We have widened our emission scopes within CMP4 as, while we may not quantify, measure, or report on all indirect emissions, we can influence our supply chain across the portfolio we manage on behalf of Scottish Ministers.

As such, certain indirect emissions (Scope 3), which have previously sat out-with our corporate boundary, for reporting purposes, these sources will fall under Scope (i). Scope(i) emissions are those out-with our direct operational control, for example, those which sit with our supply chain or stakeholders. While we will not directly report or quantify the emissions associated with these areas, we will however provide a narrative within our Public Bodies Duties reporting on the work we are undertaking to influence and assist these areas in managing and mitigating emissions.

Emissions associated with our corporate business have been quantified using a consolidated approach identified through the GHG protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard. While we will endeavour to reduce all emissions associated with our business, there are limitations on what can be achieved due to a lack of technology.

We will report emissions, compared against our current emissions as reported in 2021/22 – 5,795 tCO_2e, however this will also be measured against our 2015/16 baseline – 22,222 tCO_2e. Our targets below meet the latest legislative requirements to set Zero direct and Net Zero indirect emissions targets associated with our operational control; and additionally, we have also set a Scope (i) target;

- By **2025**, Transport Scotland's Scope 1 emissions will be zero,
- By **2025**, Transport Scotland's Scope 2 emissions will be Net Zero,
- By **2025** Transport Scotland's Scope 3 emissions will be Net Zero primed,
- By **2027** Transport Scotland will reduce indirect emissions by **15%** (combination of Scope 2 & 3)
- By **2045**, Transport Scotland's Scope 'i' emissions will be Net Zero.

Performance in relation to these targets will be measured as part of our Annual Accounts and mandatory Climate Change Public Bodies Duties reporting.

Organisational Profile

Background to the Organisation

Transport Scotland (TS) is Scotland's national transport agency, delivering the Scottish Government's (SG) vision for transport. We currently have eight directorates, each supporting different areas of the transport system in Scotland with one overseeing TS's corporate functions, as shown in **Figure 1**.

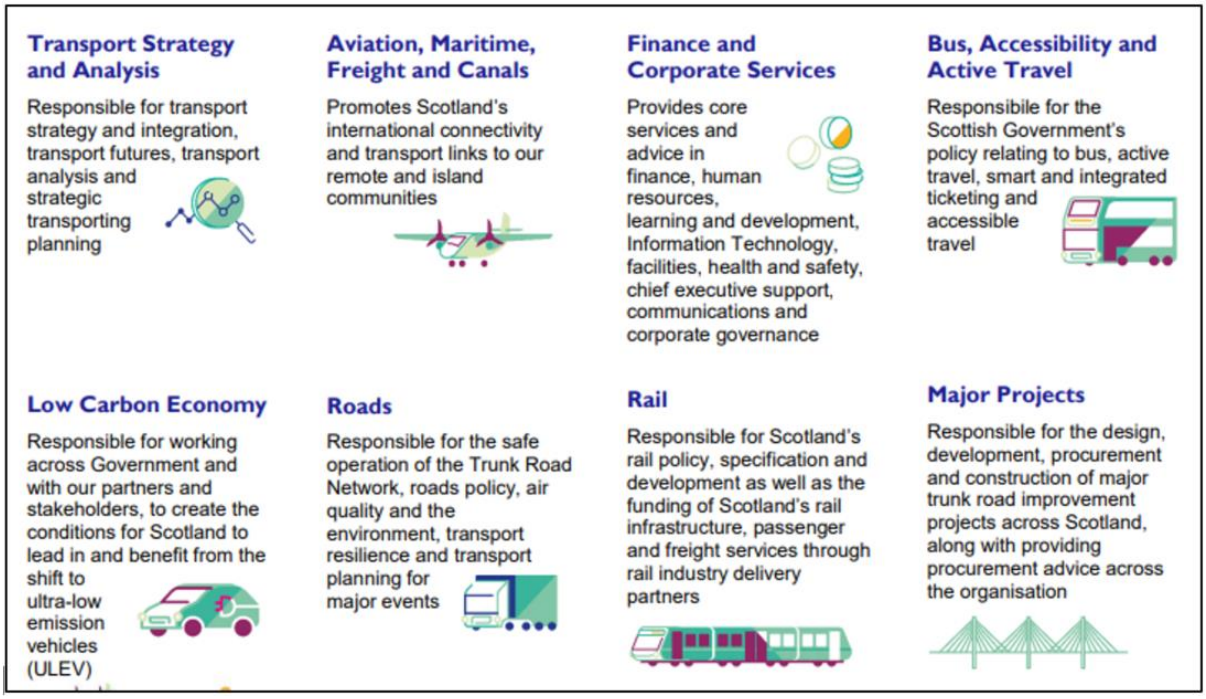

Figure 1 - Transport Scotland's Directorates and functions.

This corporate structure delivers operational, strategic, and policy-based actions across a number of transport areas, based on the level of influence for each mode, including infrastructure, public transport, active travel, and freight. TS works closely with a number of stakeholders and partners in this regard.

We currently employ over 500 members of staff and operate from a mixture of leased and owned property in Glasgow, Edinburgh and South Queensferry. Our most recent Corporate Business Plan has a specific delivery priority to reduce emissions, and the second National Transport Strategy (NTS2) seeks to '*take climate action*' by identifying "travel choices that minimise the long-term impacts on our climate and the wellbeing of future generations".

Our Annual Business Plans commit to implementing a Carbon Management Plan (CMP), and we have also stipulated this as a specific deliverable within the NTS2 Delivery Plan. Through our CMP we will seek to reduce those emissions that fall directly within our operational control to enable us to set an organisational pathway to Net Zero, as well as supporting reductions for emissions within our wider scope of influence.

Legislative and policy context

Addressing anthropogenic (human) contributions to climate change has been an important legislative requirement for both the Scottish and United Kingdom (UK) governments for a number of years. The majority of legislation has been developed to support a comprehensive package of policy measures, aimed at reducing greenhouse gas emissions, initiated through the European Climate Change Programme and the United Nations Framework Convention on Climate Change (UNFCCC).

In 2015, during the UNFCCC's Conference of Parties - COP 21, the Paris Agreement was adopted, committing Governments to:

- A long-term goal of keeping the increase in global average temperature to well below 2°C above pre-industrial levels;
- Aim to limit the increase to 1.5°C, since this would significantly reduce risks and the impacts of climate change;
- Undertake rapid reductions thereafter in accordance with the best available science, so as to achieve a balance between emissions and removals in the second half of the century.

During COP 26 in 2021, nations adopted the Glasgow Climate Pact, a strengthened commitment to build resilience to climate change, curb greenhouse gas emissions and to provide the necessary finance for both.

Nations reaffirmed their collective agreement to work to reduce the gap between existing emission reduction plans and what is required to reduce emissions, so that the rise in the global average temperature can be limited to the Paris Agreement's 1.5°C.

2015 also saw the United Nations General Assembly launch the Sustainable Development Goals. The 17 global goals are designed to be a blueprint for a more sustainable future for everyone. These goals have influenced both Scotland's National Performance Framework and the outcomes associated with Climate Ready Scotland, shown in **Figure 2**.

Figure 2 - Climate Ready Scotland & the UN's Sustainable Development Goals.

Following the declaration of a climate emergency and advice from the independent UK Climate Change Committee, the Scottish Government (SG) set some of the most ambitious Greenhouse Gas (GHG) emission reduction targets in the world. The amended targets set in the Climate Change (Scotland) Act 2009, have committed Scotland to Net Zero emissions by 2045, compared to 1990 levels with several interim targets also set including at least a 75% reduction by 2030 and 90% reduction by 2040.

In tandem, our NTS2 sets out an ambitious vision for Scotland's transport system for the next 20 years. The vision is underpinned by four priorities: "*Reduces Inequalities*"," Takes *Climate Action"*, "*Helps Deliver Inclusive Economic Growth*" and "*Improves our Health and Wellbeing*." This CMP supports the "*Takes climate action*" priority to help deliver Scotland's Net Zero target.

The Climate Change (Scotland) Act 2009 also places a statutory obligation (known as the public bodies duties) on public sector bodies like TS to:

- Contribute to the delivery of the targets;
- Help deliver any programme laid before the Scottish Parliament.

Each major public body is required to submit their annual emissions performance to Scottish Ministers via the Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Order 2015.

Our Public Bodies Climate Change Duties Report acts a mechanism to assess TS' emissions performance in relation to the targets initially set in our Carbon Management Plan (CMP) 3rd Edition. Recent changes to the reporting requirements necessitate that major public bodies declare a date by which their operations will be Net Zero; with absolute zero emissions for Scope 1, and Net Zero for Scope 2 and identified Scope 3.

Review of Transport Scotland's CMP 3rd Edition

CMP3, was published in 2016 as a high-level statement of intent concerning carbon emissions associated with our business. The scope of our carbon footprint boundary was expanded to encompass both our operations-based emissions (business travel, building utilities etc.) and energy consumption on the Trunk Road Network (TRN), based on a baseline year of 2015/16. CMP v3 set two distinct targets:

- By 2019/20, Transport Scotland will have reduced our operational emissions carbon footprint by 20%, based on the 2015/16 baseline;
- By 2019/20, Transport Scotland will have reduced our Network Energy emissions carbon footprint by 25%, based on the 2015/16 baseline.

Operational Emissions

The scope of our operational emissions in CMP3 included:

- Gas (Scope 1);
- Electricity (Scope 2);
- Water - Buchanan House Only (Scope 3);
- Waste - Buchanan House Only (Scope 3);
- Business (Scope 3); and,
- Commute travel (Scope 3).

The combined baseline calculated for these emissions sources was 1,375 tCO_2e. At the end of the financial year 2019/20, as shown in **Figure 3** the combined emissions associated with these sources had been reduced to 976 tCO_2e, 29% below baseline levels and surpassing the original target by 9%.

Reductions were made via a series of projects outlined in CMP3, however the largest reduction in emissions was made in electricity use at our buildings. This reduction was twofold and was in part due to our "Smarter Workplaces" project which reduced floor space at our main office, but also reduced by the decarbonisation of the UK electricity grid.

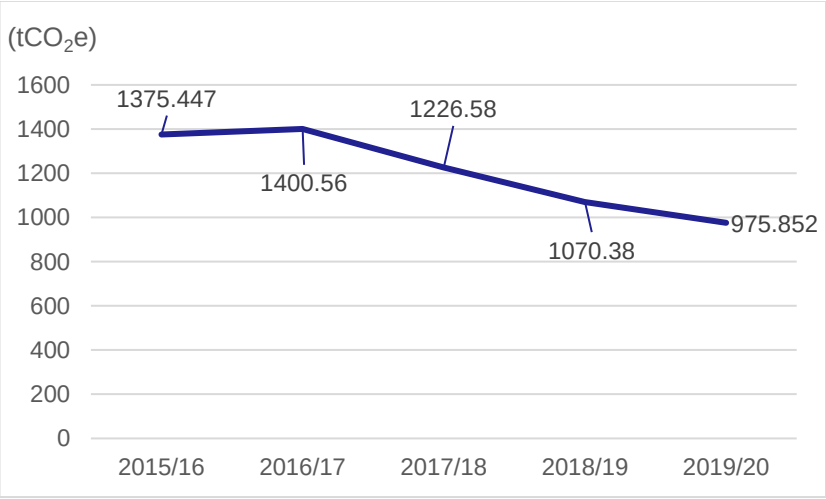

Figure 3 - Operational Carbon Emissions: Baseline to CMP3 Completion.

Network Energy Emissions

TS is responsible for the management and operation of a considerable number of Roadside Electrical Assets (REAs) on the TRN throughout Scotland. While our previous CMP (v2) only took account of our operational carbon footprint, it was agreed that CMP3 would baseline and include Network Energy emissions associated with the REAs.

Due to the large proportion of CO_2e emissions associated with lighting on the TRN, the CMP focused on those projects which would have the greatest impact in reducing these emissions. The agency therefore invested in a large-scale conversion programme for all roadside lighting assets, from the standard typical high intensity discharge luminaries currently in place, to light-emitting diodes (LED).

The benefits were two-fold as, not only would it support the ambitious carbon reduction targets set in CMP v3, but it would also support wider SG energy efficiency ambitions.

The baseline calculated for Network Energy emissions was 20847 tCO_2e. Following completion of the financial year 2019/20, as shown in **Figure 1**, emissions associated with this source had been reduced to 6,247 tCO_2e, with emissions having been reduced by 70%, surpassing the target by 45%.

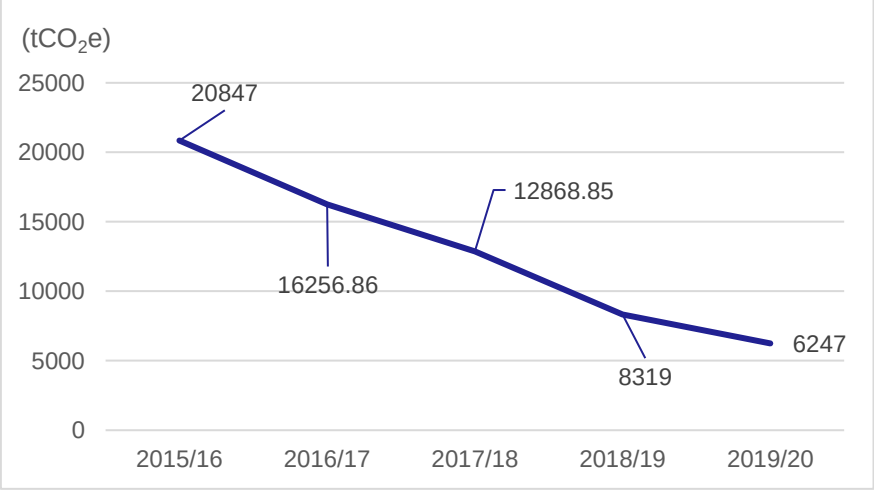

Figure 4 - Network Energy Carbon Emissions: Baseline to CMP v3 Completion.

The success of our CMP3, and in particular our LED replacement project, led to 4 awards over the course of 2019, including:

- Scottish Green Apple awards - silver award for Environmental Best Practice;
- International Green Apple awards - a bronze award for Environmental Best Practice;
- Energy Managers Association - Energy Management Project of the year 2019; and,
- Scotland Region Energy Efficiency Awards - Large Scale Project of the year.

Mandate and Governance

Mandate

This CMP is a deliverable within our NTS2 Delivery Plan 2022-23 and our Corporate and Annual Business Plans. The inclusion of the CMP at a strategic level within these documents emphasises a clear mandate and commitment from our senior management team (SMT) and Chief Executive that action on carbon management is a mandatory task to be embedded within our Agency operations.

Delivery of the CMP tasks and projects will require sustained momentum, management accountability and governance on our pathway to Net Zero.

Governance

The Environment & Sustainability (E&S) team within TS includes a Climate Change branch with responsibility for day to day decision making and reporting in relation to the CMP, with strategic oversight provided by our SMT. The governance and reporting for this CMP has been influenced partially by lessons learned during the life span of CMP3.

Corporate governance activity will include:

- Overseeing the deliverables within the CMP;
- Provision of annual corporate carbon performance updates to both TS SMT and the Minister for Transport;
- Submission of annual Public Bodies Climate Change Duties Reports;
- Publication of carbon performance within TS' annual accounts;
- Collaboration and shared learning on CMP delivery with other public bodies via the national Environmental Managers Forum;
- Delivery of behavioural change campaigns, and climate change related seminars and activities;
- Engagement with partners and stakeholders on climate change and carbon emission best practice activities.

Corporate Emissions

Boundary

Defining an organisational boundary is a vital component in corporate GHG accounting, as this determines which elements will be included as part of the carbon footprint (in scope), and how emissions from each operation are consolidated and reported.

The Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard details three consolidation approach options for defining an organisational boundary, which encourages a consistent approach across the scope 1, scope 2, and scope 3 inventories. The selection of a consolidation approach affects which activities in the company's value chain are categorised as direct emissions (scope 1) and indirect emissions (scope 2 & 3).

Table 1 - GHG Protocol Consolidation approaches illustrates the three options for defining organisational boundaries.

Consolidation approach	Description
Equity Share	Under the equity share approach, a company accounts for GHG emissions from operations according to its share of equity in the operation. The equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation.
Financial control	Under the financial control approach, a company accounts for 100 percent of the GHG emissions over which it has financial control. It does not account for GHG emissions from operations in which it owns an interest but does not have financial control.
Operational control	Under the operational control approach, a company accounts for 100 percent of the GHG emissions over which it has operational control. It does not account for GHG emissions from operations in which it owns an interest but does not have operational control

Table 1 - GHG Protocol Consolidation approaches

Scopes

To define TS' corporate carbon footprint boundary, an operational control consolidation approach has been applied, as this will allow carbon emissions directly attributed to the agency's corporate activities to be tracked and incorporated into Scopes 1 and 2 and identified Scope 3 activities.

Charting performance in relation to emissions requires a clear definition and approach. Reporting requirements associated with the Public Bodies Climate Change Duties have utilised the Greenhouse Gas (GHG) Protocol, a standard adopted worldwide to measure and manage emissions.

The GHG Protocol divides emissions into direct and indirect, which are captured under three scopes, each of which correlate to the owner of the emissions and the level of control related to changing those emission levels. Direct emission sources are controlled by the organisation and fall under Scope 1 emissions, and indirect emissions are captured under Scopes 2 and 3. **Figure 5 - GHG Protocol: Diagram of scopes ,** provides an overview of emission types and scopes.

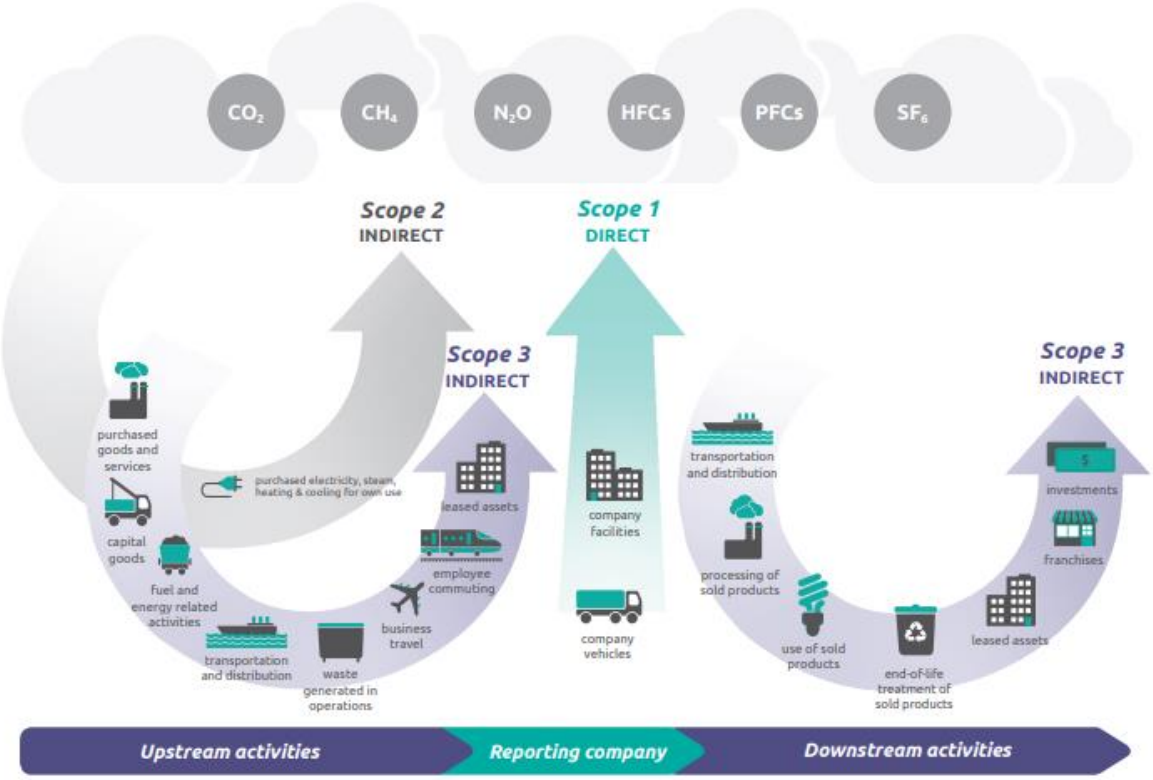

Figure 5 - GHG Protocol: Diagram of scopes

The requirements for what should or should not be reported fall to the decision of the reporting body. While Scopes 1 and 2 and identified Scope 3 provide a solid basis for reporting requirements, it can lead to confusion around indirect emissions which are out with an organisation's direct operational control. With this in mind, as part of this CMP, we will seek to engage and work with our service providers, partners, supply chain and stakeholders to aid in their actions to address their emissions. These emissions will not form part of our own carbon footprint and will be captured under the procurement and wider influence sections of the Public Bodies Climate Change Duties reporting.

Ensuring clarity of emissions which will be captured is essential, however we must not ignore the emissions which will be not classed as part of our corporate footprint. To consider our wider influence properly, we will not class any emissions as being "*out of scope"*, instead, we will be seeking to influence and support our service providers, partners, supply chain and stakeholders in addressing their emissions.

Therefore, we have added an additional Scope to our boundary which aims to manage those indirect emissions, which are not identified as part of our corporate carbon footprint - our Scope of Influence or Scope 'i', which is defined below and will be expanded upon further in this document:

- **Scope 1** - direct emissions from owned or controlled sources;
- **Scope 2** - indirect emissions from the generation of purchased electricity, steam, heating, and cooling consumed;
- **Scope 3** - all other indirect emissions that occur in a company's value chain identified as part of our corporate functions;
- **Scope 'i'** (Scope of influence) – indirect Scope 3 emissions associated with service providers, partners, supply chain and stakeholders, which do not form part of our corporate functions, we do not control and are not quantified as part of our carbon footprint; however, have capacity to influence their processes and actions.

The boundary of our carbon footprint is shown in

Table 2 and sets out the emission sources (Scope 1, 2 & 3) which are directly under our operational control and are attributed to the agency's corporate activities, and provides an example of indirect (Scope 3) sources which fall under our Scope 'i'. Boundary definitions are determined by a combination of the extent of our estate, transport activities and other areas under our corporate operational control. Operations and services carried out on behalf of TS or Scottish Ministers will remain outside our direct carbon footprint but will be considered as part of a wider roadmap in areas which will fall under our influence. Our boundary has changed slightly from CMP3, as Victoria Quay has been removed from our footprint, as emission associated with that building, will be solely reported by the Scottish Government.

Scope	Description
1	Gas Consumption: Buchanan House & Traffic Control Centre
2	Electricity consumption: Buchanan House, Traffic Control Centre & Roadside Electrical Assets
3	Business & commute travel, employee home working, water consumption, waste generated through corporate activities
i (example sources)	Transport Contracts: ScotRail, HIAL, CalMac Ferries Ltd (CFL) and Caledonian Maritime Assets (CMAL) Trunk Road Operating Company Contracts: Operations, Construction and Maintenance Infrastructure projects Fugitive emissions (leaks & other irregular releases of gases or vapour from a pressurized containment)

Table 2 - Transport Scotland GHG emissions sources and relevant scope

Scope of Influence

Emission sources associated with our Scope ‘i’ greatly surpass our own corporate emissions, with greater social and environmental costs than our own operations. While we will not directly quantify capture or report these emissions, we cannot ignore them. Carbon emissions across our Scope ‘i’ can consume resources on a large scale (Natural, Material and Human), therefore it is essential that we work with industry partners and stakeholders to reduce these emission sources and aid in meeting Scotland’s 2045 GHG targets.

Scope ‘i’ emissions are too complex to generalise. Our network of partners and stakeholders have different operational purposes, with supply chain demands varying widely between organisations, companies, products, and processes.

To fully understand the level of influence we have over emissions associated with our Scope ‘i’, it will be essential to examine and understand these sources. This will require engagement across the agency, undertaking a form of audit.

This understanding will enable key decision makers to specify, through the development of business cases, procurement practices, contracts and engagement, the expectations of TS, and to consider efficiencies that could be implemented in the journey towards a Net Zero world. While quantifying emissions associated with our Scope ‘i’ will not be a priority in all cases, it will provide qualitative data on our influence which we will report in the “wider influence” section of our annual mandatory Public Bodies Climate Change Duties Report.

Addressing Scope ‘i’ will be challenging, particularly as features of these emission sources may not fall within our partners’ own Scope 1, 2 and 3 emissions, with elements outsourced. This may require additional consideration, with carbon transparency a requirement for extended supply chains. By engaging with our partners, stakeholders, and supply chains to emphasise the importance of carbon transparency and potential carbon reductions throughout all processes, it will enable them to address perhaps some of the more difficult emissions sources.

Baseline & Current Footprint

Our baseline was derived from the rich datasets that we have collected since we published our first CMP, however we established our current baseline during the financial year 2015/16, following a re-baselining process. Given the variation between emission sources, we initially set two separate baselines specific for these emission sources. **Figure 3 - Operational Carbon Emissions: Baseline to CMP3 Completion.**provides the baseline data for our Corporate Carbon Footprint.

Metric	Network Energy	Operational Carbon Footprint	Combined Baseline
tCO2e	20,847	1,375	22,222

Table 3 - Transport Scotland's Carbon Footprint Baseline 2015/16

As noted in the review of CMP v3, our emissions have reduced significantly since establishing our baseline and the plans completion in 2019/20. Equally, with data collection methods having improved since establishing our baseline, we have additional emission sources which were not captured as part of the combined baseline. We have taken the decision to add these emissions to our current carbon footprint, rather than undertake another baselining exercise, as this would limit our ability to show progress over a number of years. Emission performance will be measured against the combined baseline called our corporate carbon footprint, with 2021/22 emissions captured in **Table 4** below. Appendix A shows a more detailed breakdown of emissions for 2021/22.

Metric	2021/22 Corporate Carbon Footprint
tCO2e	5,795

Table 4 - Transport Scotland's Corporate Carbon Footprint 2021/22[1]

Data

The data sources used to calculate both our baseline and annual emissions are based on data provided by both internal and external partners. Sources include our building agent and facilities management contractors, Scottish Government travel agent and hire car providers, and our own commute to work survey. REA's energy data is sourced from a combination of metered and unmetered assets on the TRN, with data provided from our energy suppliers to our Network Operations Team. Data is converted into a CO_2e tonne equivalent using the Department for Business, Energy & Industrial Strategy (BEIS) Government conversion factors for company reporting of GHGs.

Business as Usual (BAU) & Value at Stake (VAS)

Due to the fluctuating nature of our corporate operations, analysis of projected emissions and the expected impact, a BAU figure is not considered relevant or particularly helpful. Likewise providing a breakdown of the Value at Stake is not practicable or feasible; this is the cost to Transport Scotland if no action is taken to invest in carbon saving measures.

[1] A detailed breakdown of emissions sources can be found in Annex A

Net Zero Primed, Targets & Projects

Net Zero Primed

As Scotland transitions to a Net Zero future, it must be emphasised that reaching this goal will require wholesale changes in our processes and functions. Currently, however, while we will aim to reduce our scope 3 emission as much as practically possible, there remains limitations as to what can be decarbonised as technologies and policies are still developing.

Carbon sequestration, through tree planting on our estate, will therefore form a major element of our journey towards Net Zero and our aim to being "Net Zero primed" by 2025. While woodland creation will be vital to this, the majority of the work and cost associated with its development occurs long before any carbon capture. Through the Woodland Carbon Code, we will have our planting programmes independently assessed and receive "Pending Issuance Units", which represent a "promise to deliver" Woodland Carbon Units (a tonne of CO_2e sequestered in WCC-verified woodland) in the future.

As these projects are measured over decades, we cannot claim an offset until any sequestration potential has been independently verified. With this in mind, we will be transparent with the amount of emission we will produce and the amount of future Woodland Carbon Units we will require.

As the offsetting associated with corporate Scope 3 will therefore not be fully matured by 2025, we will essentially establish a "Net Zero Primed Emissions Overdraft" based on our scope 3 sources, with a view to compensating for emission associated with our corporate business from 2025 and future emissions from this date onward.

Any scope 3 emission within the "overdraft" cannot be removed until a PIU has been converted to a verified WCC credit, both balances will be reported via our Public Bodies Climate Change duties reporting.

In addition to tree planting the potential for further carbon sequestration opportunities on our estate will also be reviewed.

Emission targets

Setting measurable, achievable, and realistic targets against a timeline relies on credible data. We have set the following Corporate Emission targets:

- By **2025**, Transport Scotland's Scope 1 emissions will be zero;
- By **2025**, Transport Scotland's Scope 2 emissions will be Net Zero;
- By **2025** Identified Scope 3[2] emissions will be Net Zero primed, with an associated target of 15% reduction (for Scopes 2 & 3) by **2027;**
- By **2045**, Transport Scotland's Scope 'i' emissions will be Net Zero.

[2] The offsetting associated with corporate Scope 3 will not be fully matured by 2025, however planting projects conducted by the agency, will not only offset emissions once full maturity and verification/validation are complete, they will also offset historical emissions produced by the agency from 2025 onwards – This will be measured via our public bodies climate change duties reporting

Projects

In order to achieve the corporate emissions targets noted, we have identified a number of projects which will seek to reduce, limit or offset carbon emissions. These are outlined in **Table 5**. Following the commentary of the BAU section, we have not quantified the predicted carbon savings for each project due to yearly variation in our activities.

The required carbon savings identified in column 5 of Table 5 quantify the amount of Carbon that will need to be reduced from each emission source related to Scope 2 & 3 to meet our 15% reduction target. In practice, these figures will vary based on the project and will depend on various aspects such as emerging technology, policies, staff behaviour and levels of hybrid working, however they do provide an indicative target to be met. There are also a number of projects where potential savings need to be determined through further desk studies.

Table 5 - Transport Scotland projects identified to reduce, limit or offset carbon emissions

Project Name	Overview	Emission Source	Estimated Timescales	Required Carbon Savings (tCO_2e)
TS Offsetting/Insetting Project	TS will establish a number of bespoke tree planting projects on its estate, with sequestration potential captured and verified via the Woodland Carbon Code. We will also explore further insetting options.	Scope 3	Ongoing rolling projects	N/A
REGO Certification	We will ensure that electricity associated with our buildings and roadside electrical assets are purchased from a renewable source	Scope 2	2022-27	N/A
Roads Projects Carbon Tool	We will create an updated embodied carbon calculator associated with roads construction and operation, which will replace our current CMS Project tool. This tool will be updated frequently and once launched will be publicly available	Scope 'i'	2022-23	N/A
Move to new energy efficient building	TS is moving to 177 Bothwell Street, an energy efficient building with sustainable specifications	Scope 1 & 2	2023-24	To be determined
Removal of Gas from our buildings	We will remove gas boilers from our buildings	Scope 1	2023-24	150.5
Business Travel Position Statements 2.0	We will tighten our business travel position statements to ensure public transport is always considered as our first option	Scope 3	2023-24	3.7
Energy Harvesting Trials	We will work with our partners to innovate and trial potential energy harvesting projects	Scope 2 & 'i'	2022-27	To be determined
Net Zero Route Map Construction & Maintenance	We will develop a route map to support the delivery of Net Zero through construction and maintenance on the TRN	Scope i	2023-24	N/A
Commute Travel to work Survey	We will continue to undertake commute travel to work surveys to capture emission associated with our staff travelling to work	Scope 3	2022-24	N/A
Bespoke Climate Literacy Training for staff and stakeholders	We will undertake climate literacy courses for staff to ensure that they have an understanding of climate change and how to respond it appropriately	Scope 1, 2, 3 & 'i'	2022-27	N/A
Increased Cycling Capacity	We will offer more cycling and active travel facilities to our staff members	Scope 3	2023-24	1.1
Car Hire - Hierarchy	We will set a new car hire hierarchy to ensure that electric cars are always considered first. Where not available we will ensure the cars, we do hire emit the lowest emissions	Scope 3	2023-24	2.5

SG Pool Cars	Removal of combustion engine pool car from our allocation from motor services unit	Scope 3	2027	N/A
Low carbon lighting in our buildings	Lighting in our building will be energy efficient	Scope 2	2023-24	To be Determined
LED Replacement	We will continue the upgrade to LED lighting across our TRN	Scope 2	2022-27	To be Determined
LED Dimming Trials	We will consider the potential for dimming lights of the TRN to support carbon savings	Scope 3	2023-24	To be Determined
Hybrid Working	We will promote and encourage hybrid working across the agency	Scope 3	2022-27	To be Determined
Promotion of vegan/vegetarian business/canteen lunches	We will encourage non meat alternatives within our canteens and for business lunches	Scope ‘i’	2023-27	N/A
Scope ‘i’ Audit	We will undertake a Scope ‘i’ audit to ensure that we have a full understanding over the influence we have with our stakeholders, business partners and supply chain, to ensure that we can work with them on their journey to Net Zero	Scope ‘i’	2023-24	N/A
Staff Personal electronics reuse/recycling initiative	We will offer an initiative to reuse/recycle personal electronic equipment which are no longer required by staff	Scope ‘i’	2024-25	N/A

Carbon offsetting/Insetting

Carbon offsetting is a method of compensating for emissions produced by funding the reduction or storage of carbon elsewhere. Carbon insetting refers to when the carbon reduction or storage occurs inside the organisation's value chain. There are 2 main types of carbon offsetting mechanism:

- **Emissions reduction** – invest in reducing an existing emissions source e.g. some peatland restoration; and,
- **Emissions removal** – investing in projects that will remove carbon emissions from the atmosphere e.g. tree planting.

Our offsetting and insetting will follow The Oxford Principles for Net Zero Aligned Carbon Offsetting which outline how offsetting needs to be approached to ensure it helps achieve a net zero society.

Prioritise reducing your own emissions first, ensure the environmental integrity of any offsets used, and disclose how offsets are used.

As a public body we are required to reduce our emissions as much as possible and achieve absolute carbon reduction. There will be some emissions that we are unable to remove entirely, which will require investment in carbon offsetting and in-setting to enable us to achieve our Net Zero targets. We will record why any direct emissions we are offsetting are unavoidable in our annual mandatory Climate Change Public Bodies Duties Report.

Environmental integrity will be achieved by following Scottish Government guidance for public bodies on carbon offsetting. Our projects will be reviewed to ensure the properties outlined below are fully understood and appropriately applied:

- Permanence – whether the GHG removal can be reversed, e.g. a forest fire, and what mitigation is in place for this.
- Leakage – any increased emissions that occur elsewhere from the offset e.g. construction emissions.
- Additionally – the project would not have been carried out if not to achieve the carbon offset.
- Verification – the carbon removed/avoided must be quantifiable and be able to be verified.
- Co-benefits – the wider benefits of the project, such as biodiversity net gain or climate change adaptation.

We are committed to verifying any offset projects through the Woodland Carbon Code and Peatland Code, or any future standard of equivalent or higher environmental credibility. Any offsets used will be recorded in our annual mandatory Climate Change Public Bodies Duties Report.

In terms of co-benefits, we will aim to follow the key principles framed within Connecting Nature – a project funded through EU Horizon 2020. They provide a useful introduction to identifying and developing natural sequestration solutions and include the following considerations for projects:

- Does it use natural processes?
- Does it provide/improve social benefits?
- Does it provide/improve economic benefits?
- Does it provide/improve environmental benefits?
- Does it have a net-benefit on biodiversity?

Shift offsetting towards carbon removal, where offsets directly remove carbon from the atmosphere.

We will seek to deliver carbon insets through activities within our organisation boundary, such as carbon sequestration projects on our own land assets.

We will establish a number of bespoke tree planting projects on our estate, with sequestration potential captured and verified via the Woodland Carbon Code.

Shift offsetting towards long-lived storage, which removes carbon from the atmosphere permanently or almost permanently.

Due to the nature of our estate and work, tree planting will be the mainstay of our insetting programme. While trees cannot be considered to remove carbon permanently, they can be seen as a natural element of long-lived storage. We work closely with our landscaping colleagues to ensure that planting is well-managed, risks to the trees are minimised and the longevity of the storage is maximised as far as possible.

Support for the development of a market for net zero aligned offsets.

Our inset projects should enable us to meet our net zero targets. However, as tree planting takes time to establish, we may consider the purchase of carbon credits. Any credits purchased will be from offsets that are verified and purchased through external carbon markets. We will prioritise purchasing offsets from Scottish natural sequestration projects to support Scotland's territorial 2045 net zero target.

Offsetting and in-setting will be integral to meeting the ambitious net zero targets outlined in this plan. Furthermore, our bespoke tree planting projects will support our organisation in adapting to a changing climate and enhancing the landscape and biodiversity related to our assets. Through offsets/insets we will seek to ensure they provide co-benefits for mitigation, adaptation, and biodiversity.

Climate Change Adaptation & Resilience

Although different, climate change mitigation and adaptation are intrinsically linked and the best interventions will be those that aim to provide benefits for both, particularly as we move towards Net Zero. For example, a tree planting scheme could provide carbon removals through sequestration whilst also providing benefits for adaptation on transport networks such as slope stabilisation and increased biodiversity. As a public sector organisation, Transport Scotland has a key role to play in not only mitigation of climate change, but also in adapting to the impacts of climate change such as flooding, sea level rise and high winds. We are taking steps to move towards a proactive adaptation approach to ensure that our assets are well adapted to these impacts resulting in a safe, reliable, and resilient transport system for current and future generations.

The Climate Change Committees' (CCC) UK Climate Risk independent Assessment (CCRA3), which has now been laid in the United Kingdom Parliament as the United Kingdom Climate Change Risk Assessment 2022 (UKCCRA3) identifies 7 key climate risks that relate to transport infrastructure (**Table 6**). Our approach to climate change adaptation and resilience we will take account of both the CCRA3 and UKCCRA3 and an annual report on our adaptation actions is published in our mandatory Climate Change Public Bodies Duties Report.

Climate Ready Scotland is the second edition of the Scottish Government's Climate Change Adaptation Programme (SCCAP2) which runs until 2024. Transport Scotland leads on 13 SCCAP2 policy outcomes, which aim to assist delivery of the programme and address climate risks to transport. We submit statutory contributions on progress against the national outcomes to an annual progress report published by the Scottish Government. We will continue to actively engage with our Scottish Government colleagues on adaptation and resilience, responding to the transport risks set out in the UKCCRA3 and providing input from a transport perspective for the next iteration of SCCAP in 2024.

CCRA3 Identifier	CCRA3 Risk	CCRA3 Urgency Score
I1	Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures	More Action Needed
I2	Risks to infrastructure services from river, surface water and groundwater flooding	More Action Needed
I3	Risks to infrastructure services from river, surface water and groundwater flooding structure services from coastal flooding and erosion	Further Investigation
I4	Risks to bridges and pipelines from flooding and erosion	Further Investigation
I5	Risks to transport networks from slope and embankment failure	More Action Needed
I7	Risks to subterranean and surface infrastructure from subsidence	Further Investigation
I12	Risks to transport from high and low temperatures, high winds, lightning	More Action Needed

Table 6 - CCRA3 risks and urgency scores relating to transport infrastructure

Procurement

Following its commitment in CMP3, Transport Scotland implemented the Scottish Government's Flexible Framework, and an action plan was put in place to address where we can improve upon highlighting and reducing our Scope 'i' emissions through the supply chain. We will continue to monitor and review this as legislation and policy are updated.

In addition to the flexible framework, Transport Scotland has adopted the SG suite of Sustainability tools for all regulated procurements. This includes the prioritisation tool and sustainability test which are mandatory for regulated procurements. Relevant measures identified in the sustainability test must then be included in the requirements for contracts which are being procured.

The Scottish Government's Climate Literacy Procurement e-learning is mandatory for all staff involved in procurement, and Transport Scotland also runs bespoke training sessions on carbon management and circular economy considerations through the procurement process.

In line with the requirements of the Procurement Reform (Scotland) Act 2014, our Corporate Procurement Strategy is reviewed annually and identifies our key procurement policies and processes and sets out the corporate procurement aims, associated actions and the framework in which we will work to ensure that our procurements are carried out in a sustainable manner and deliver value for money. This addresses Climate Emergency as a key procurement priority outlining the following sub-actions:

- Working across TS Directorates to ensure consideration of the climate emergency is integral to procurement decisions;
- Collaborate with internal and external stakeholders, as appropriate, to facilitate sharing of best practice in carbon management; and
- Gather data and monitor information to support and develop procurement opportunities to address climate emergency priorities

Our Annual Procurement Report details Transport Scotland's procurement activity, and demonstrates how we have met the procurement commitments set out in our Corporate Procurement Strategy. Examples of activities undertaken through our procurements include:

- Monthly carbon reporting on major projects.
- Public Bodies Climate Change reporting.
- Capturing data from the supply chain to inform how we tackle the climate emergency.
- Utilising data gathered via our contracts database to assist with monitoring and ensuring compliance with the sustainable procurement duty.
- Implementing of Primary Impact Area for Climate Change (PIACC) Guides.

- using carbon calculator tools where relevant and proportionate. This meets the PAS 2080 standards, setting carbon management targets through the supply chain.

Following the publication of SPPN 3/2022, public procurement - taking account of climate and circular economy considerations, Transport Scotland has worked to integrate the principles of this guidance into our procurement processes, ensuring that the climate emergency remains central through the development of our procured contracts. In addition to updating our project procurement strategies to reflect the guidance, we are also working to ensure that the principles of the SPPN are embedded in the decision-making processes which take place prior to the procurement commencing.

Transport Scotland will continue to review and develop processes for reducing carbon through our procurements, ensuring that we are operating in line with current best practice and Scottish Government policy.

Communication, Awareness and Training

In addition to publication of the CMP on the TS website, annual progress report updates will also be published as part of our statutory Public Bodies Climate Change Duties reporting. These reports are publicly available through the reporting website, managed by the Sustainable Scotland Network (SSN), on behalf of the SG.

In addition to our statutory reporting, we also regularly communicate with our staff regarding climate change, the CMP and associated projects via our staff notice, intranet articles and via staff engagement events delivered throughout the year, such as Climate Week.

All existing and new staff within TS will be offered bespoke climate literacy training, with a view to making this mandatory training, as noted in the projects section of this document. Additionally, we will engage with our stakeholders and sponsored bodies, such as our TRN Operating Companies, and deliver these sessions to their staff where appropriate in order to influence emissions reduction within our scope of influence.

Reporting & Validation

Annual Reporting

Our performance towards CMP targets will be conducted on an annual basis with results captured in our annual accounts and Public Bodies Climate Change Duties Report. This will allow us to ensure that the CMP remains fit for purpose to deliver targeted carbon reductions, as well as delivering a mechanism to highlight offsetting/in-setting where appropriate. We do not intend to publish a CMP every year, but we will publish amendments as necessary via a form of version control, and produce a new CMP every five years (currently financial year 2022/23 until 2027/28). Our reporting mechanisms will monitor the following:

- Progress towards our overall CMP corporate carbon reduction targets;
- Progress with, and close-out of, identified carbon reduction/offsetting projects and stated Net Zero Primed Overdraft Balance; and,
- Identification and target engagement for emissions captured under our Scope ‘i’.

Validation

An internal validation process of the data and information used to underpin the CMP is undertaken by our Environment and Sustainability team. Our Climate Change branch coordinates data compilation and carries out checks for accuracy and relevance. This level of scrutiny is required because the raw datasets, predominantly associated with business travel, are prone to contain administrative or unexplainable errors that may need to be corrected.

The data is subsequently used to report on our CMP performance via our Annual Report and Accounts, and our statutory Climate Change Public Bodies Duties Report.

The Head of Environment and Sustainability reviews the final Public Bodies Climate Change Duties Report as a form of final internal validation, and an informal peer review is also carried out with another public body to improve and share best practice. The report is then submitted to our SMT for final approval before submission to the SG.

Appendix A

Corporate Carbon Footprint Emission Sources for 2021-22

Emission	Emission source	Scope	Consumption data	Units	Emission factor	Units	Emissions (tCO_2e)	Comments
All	Hotel Stay - UK (if not UK please state country in comments)	Scope 3	3	Room per night	13.90000	kg CO2e/room per night	0.0	Hotel Italy
All	Hotel Stay - UK (if not UK please state country in comments)	Scope 3	141	Room per night	13.90000	kg CO2e/room per night	2.0	Hotel UK
Transport	Car - diesel (Medium car from 1.7 - 2.0 litre engine) km	Scope 3	4,660	km	0.16496	kg CO2e/km	0.8	Business Travel
Transport	Car - diesel (Large car 2.0 litre engine +) km	Scope 3	2,478	km	0.20721	kg CO2e/km	0.5	Business Travel
Transport	Car - petrol (Small car up to a 1.4 litres engine) km	Scope 3	3,948	km	0.14946	kg CO2e/km	0.6	Business Travel
Transport	Car - petrol (Medium car from 1.4 - 2.0 litre engine) km	Scope 3	59,380	km	0.18785	kg CO2e/km	11.2	Business Travel
Transport	Car - petrol (Large car 2.0 litre engine +) km	Scope 3	13,120	km	0.27909	kg CO2e/km	3.7	Business Travel
Transport	Business Travel Car - Battery Electric Vehicle (average) km	Scope 3	256	km	0.05477	kg CO2e/km	0.0	Business Travel
Transport	Domestic flight (average passenger)	Scope 3	10,408	passenger km	0.24587	kg CO2e/passenger km	2.6	Business Travel
Transport	Short-haul flights (average passenger)	Scope 3	18,423	passenger km	0.15353	kg CO2e/passenger km	2.8	Business Travel
Transport	Rail (National rail)	Scope 3	69,014	passenger km	0.03549	kg CO2e/passenger km	2.4	Business Travel
Transport	Ferry (average passenger)	Scope 3	71	passenger km	0.11286	kg CO2e/passenger km	0.0	Business Travel
Transport	Rail (National rail)	Scope 3	54,669	passenger km	0.03549	kg CO2e/passenger km	1.9	Commute Travel
Transport	Light rail and tram	Scope 3	73	passenger km	0.02813	kg CO2e/passenger km	0.0	Commute Travel
Transport	Car - diesel (average - unknown engine size) km	Scope 3	10,493	km	0.16843	kg CO2e/km	1.8	Commute Travel
Transport	Car - petrol (average) km	Scope 3	15,563	km	0.17431	kg CO2e/ km	2.7	Commute Travel
Transport	Coach	Scope 3	1,979	passenger km	0.02684	kg CO2e/passenger km	0.1	Commute Travel
Transport	Bus (local bus, not London)	Scope 3	7,391	passenger km	0.11774	kg CO2e/passenger km	0.9	Commute Travel
Waste	Refuse Municipal to Landfill	Scope 3	9	tonnes	446.24150	kgCO2e/tonne	3.8	Buchanan House Only
Waste	Paper & Board (Mixed) Recycling	Scope 3	5	tonnes	21.29357	kgCO2e/tonne	0.1	Buchanan House Only
Waste	Mixed recycling	Scope 3	11	tonnes	21.29357	kg CO2e/tonne	0.2	Buchanan House Only
Water	Water - Supply	Scope 3	1,310	m3	0.11000	kg CO2e/m3	0.14	Buchanan House Only - using BEIS emission factor 0.149 kgCO2e/m3 = 0.195
Water	Water - Treatment	Scope 3	1,310	m3	0.23000	kg CO2e/m3	0.3	Buchanan House and Traffic Control Centre - using BEIS emission factor 0.272 kgCO2e/m3 = 0.357
Fuels	Natural Gas	Scope 1	711,219	kWh	0.18316	kg CO2e/kWh	130.3	Buchanan House and Traffic Control Centre
Electricity	Grid Electricity (generation)	Scope 2	1,299,173	kWh	0.21233	kg CO2e/kWh	275.9	Buchanan House and Traffic Control Centre
Electricity	Grid Electricity (transmission & distribution losses)	Scope 3	1,299,173	kWh	0.01879	kg CO2e/kWh	24.4	Buchanan House and Traffic Control Centre
Electricity	Grid Electricity (generation)	Scope 2	22,410,879	kWh	0.21233	kg CO2e/kWh	4,758.5	Trunk Road Network
Electricity	Grid Electricity (transmission & distribution losses)	Scope 3	22,410,879	kWh	0.01879	kg CO2e/kWh	421.1	Trunk Road Network
	Hybrid/Homeworking emissions	Scope 3	91.50%	percentage of total FTEs	0.30000	tCO2e/FTE/annum	146.0	
TOTAL							**5,795**	