Paper 1
Sustainability Steering Group Performance Update: SEP 2022 – 21/22 Year End

The University has set a target to achieve Net-Zero carbon emissions by 2040 or sooner – KPI 16 within the University's strategic plan. The first interim target towards this goal is set within the Vision 2025 Strategy to achieve a 70% reduction against the 2018/19 baseline of 37,500 TCO2e by the end of 2024/25.

1 KPI 16 – Carbon Emissions Reductions

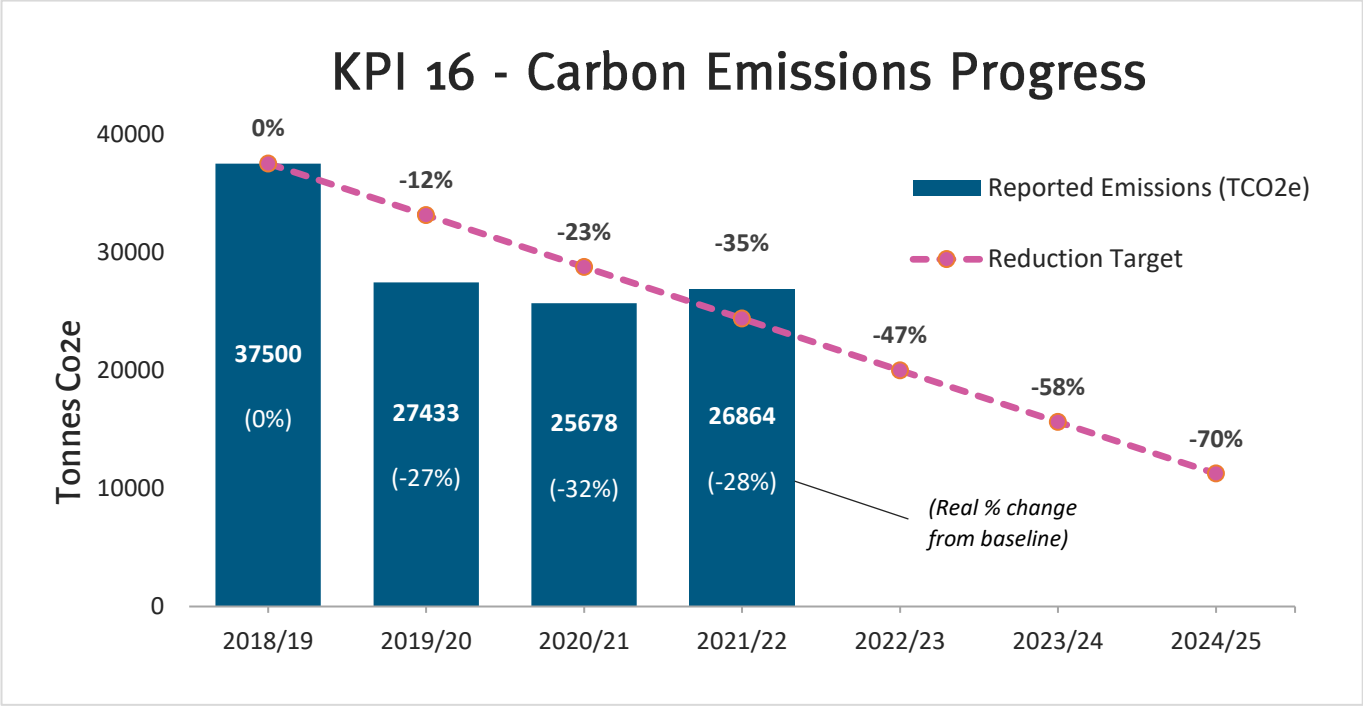


Figure 1: Annual carbon emissions against 2025 target trajectory. Values subject to some change as smaller emission sources have been not been fully collated (e.g. fleet diesel consumption and non-automated utility data).

1.1 Year End Summary

Meeting the annual KPI 16 milestone for 2021/22 required a reduction of at least 1307 TCO2e on the previous year. However, carbon emissions in 2021/22 rose by approximately 7% (1750 TCO2e) on the previous year, meaning **the 2021/22 milestone was missed.** Further detail on reasons for this increase is given in section 1.3.

Total annual emissions were 26864 Tonnes CO2e*; 2493 behind the milestone target of 24371. This puts the overall reduction against baseline at 28%, 7 percentage points behind the 2020/21 milestone of 35% reduction.
** excluding some small sources yet to have data submitted*

1.2 Implications on Next Milestone

The total emissions reduction required next year to meet the 2022/23 milestone now stands at approximately 6870 Tonnes CO2e – a 26% reduction on 2021/22 emissions. Significant action on reducing gas consumption and continued work on reducing business travel will be required to achieve this.

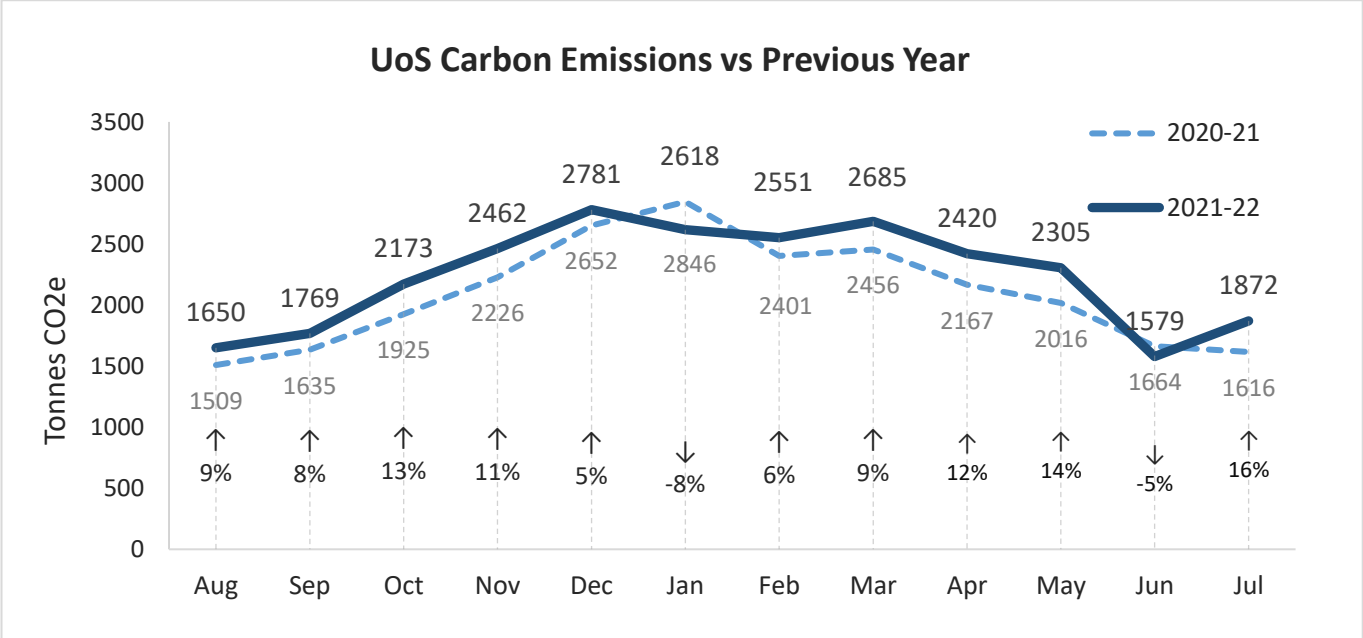


Figure 2: Monthly Carbon Emissions vs Previous Year of Main Categories. Values subject so some change as smaller emission sources have been not been fully accounted for yet (e.g. fleet diesel consumption and non-automated utility data)

1.3 Change in Emissions by Source

Most sources of emissions have risen compared to last year, apart from home working emissions and gas consumption. The most significant rise was in business travel emissions, which were previously less than 5% of baseline.

1.3.1 Natural Gas

Emissions from gas use fell by 1037 Tonnes over the year, despite being higher for most months of the year. This early year increase was due to the new Learning and Teaching building opening and Wolfson building being re-opened in the past year. However, from April to June the CHP system was largely offline for maintenance, resulting in a large drop in gas emissions but increase in mains electricity consumption.

Over these 3 months, gas consumption fell considerably, somewhat offsetting the higher consumption earlier in the year.

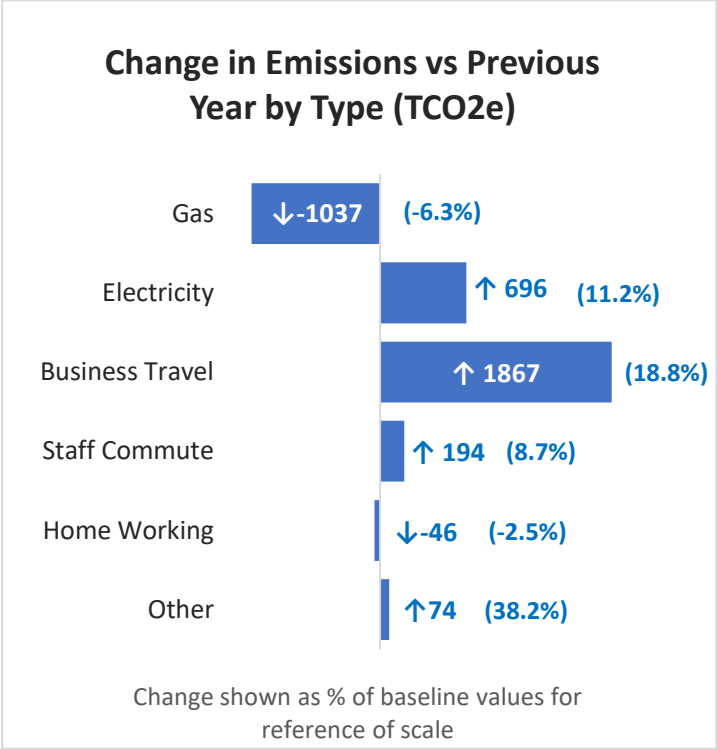


Figure 3: Change against previous year. "Other" Includes emissions from waste, water consumption

1.3.2 Electricity Consumption

Electricity consumption increased this year due to a number of factors. Like gas use, electricity demand on campus increased as more buildings opened. For much of the period April – June 2022, the CHP was offline for servicing and maintenance, meaning an increased reliance on grid electricity rather than electricity generated from the CHP which is reported as gas emissions due to the way it is generated.

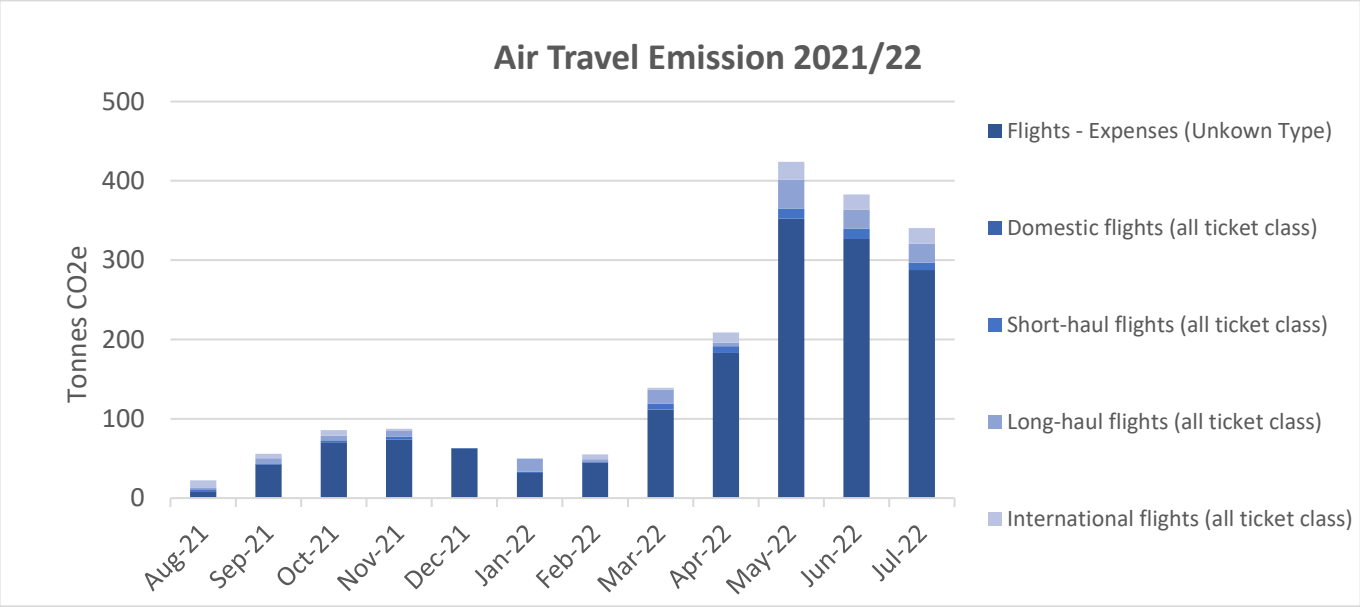
Looking at the combined utility emissions over this period shows a net reduction of 12% on the same period the previous year, with a particularly high reduction of 32% in June while the CHP was only active 20% of the time. Due to low summer heating demand, this may be a strategy that the University can use to reduce overall gas consumption, relying on Grid Electricity in summer when the CHP is not needed for heating.

Utility Emissions April - June Comparison	
2020/21 Tonnes CO2e	5231
2021/22 Tonnes CO2e	4644
Net Change (Tonnes CO2e)	-588
% Change over period	-11.2%
Net change as % of annual total	-2.6%

1.3.3 Business Travel

While business travel emissions remained relatively low compared to baseline values for the first 8 months of the year, April through to year end saw steep rise in air travel leading to a large increase in emissions. Air travel emissions in May rose to half of the average monthly baseline emissions and remained nearly as high throughout June and July.

Travel expenses claims are still the most common method of flight booking by a large margin. Staff are being encouraged to use Key Travel (the contracted University travel provider company) which provides additional benefits and more accurate data. This trend highlights the scale of behaviour change needed.



1.3.4 Commuting & Home Working

Levels of commuting have been assumed to increase to 10% of pre-covid level for the first half of the year (previously 5%) and to 20% from May onwards to estimate increased presence of staff on campus. Assumptions around home working energy use have remained static while most teaching is still being done online.

Zoom meeting minutes are still being used to calculate emissions associated with virtual meetings. As we move towards more permanent agile working, more regular data on commuting patterns and numbers of staff on campus will be required to increase the accuracy of these estimates.

2 Strategic Task Groups

Executive Team approved a revised governance structure for sustainability and the management of KPI 16, our net zero target. A Sustainability Strategic Steering Group was formed and is supported by 6 Task Groups working on specific areas. These are: Energy and Adaptation; Sustainable Resources and Supply Chain; Climate Finance; Travel and Transport; Performance Review and Reporting; and Community and Engagement.

Task groups began meeting in late January and a Microsoft Team has been set up to aid sharing of minutes, papers, and collaborative documents. All groups are visible to members of the steering group for reference of these documents. Below is an update from each Task Group

The summary below describes current work being carried out.

2.1 Energy and Adaptation

- The group is bringing forward the 'Net Zero Pathway' work on the existing estate. Which is reporting to Steering Groups in October following postponement in order to observe the period of mourning after the Queen's passing.
- A climate risk assessment of University building assets is complete for all locations.
- The University's Climate Neutral Districts Vision has won two awards and is shortlisted for a third in recognition of our collaboration and ambition. The project has also secured a grant of £80K for Phase 2 detailed design work from Rockefeller Foundation.
- A proposal was endorsed by ET in August detailing five ways in which the University can seek to reduce its reliance on natural gas in the short and medium-term.
- Phase 2 rooftop solar PV projects continue to progress through grid connection, planning and building control to enable a tender package to be compiled for the works.
- Financial authority to appoint has been granted to employ a Sustainability Operations Manager. The Task Group have agreed to share via their networks.

2.2 Resource Use and Supply Chain

- Top 10 emission areas have been identified. The top 4 emission areas are now being worked on I.e. Construction; Laboratories; I.T.; Catering.
- A Miro Board with areas of focus for each area has been created
- A supplier engagement tool (Ecovadis) is now being used.
- A programme of furniture reuse for community and third sector use has been implemented with over 200 items of furniture and electrical goods collected and reused by community organisations across Glasgow (Home Comforts team from Wheatley Group, Starterpacks.co.uk gathering kitchen items for households struggling when moving into new homes, British Heart Foundation and Glasgow City Council Community Resources team. Collections so far have saved 13.5 TCO2e; over 7 tonnes of waste from landfill, and furniture with a value of £25,000 has been collected between May and June this year. StarterPacks were extremely grateful for the support from the university, stating that the items donated would help them create at least 40 packs for families and represented one of the largest donations they had received to date.

2.3 Climate Finance

A ranking table of projects that require funding has been developed. Based on this ranking, a budget figure has been put in place to start the programme for delivery. The projects identified form the basis of the agenda for this Task Group and progress is reported at these meetings.

2.4 Transport and Travel

- A draft University Travel Policy has been developed by Finance with input from the Travel Task Group and taking account of the findings of the Internal Audit Report on International Travel. Further workshops are taking place to refine this policy and to develop an engagement strategy which will be critical to ensuring adherence to the policy. Draft Travel policy hopes to be shared at a Steering Group early in 22/23
- As seen in section 1.1.2, business travel has risen significantly over April and May 2022. This poses a significant risk to KPI 16 if it continues and remains high over 2022/23.
- The University Travel Plan is being updated to take account of the imminent opening of NMIS and work ongoing with Renfrewshire Council.
- Staff EV salary sacrifice scheme is being assessed via an Equalities Impact Assessment, to determine if it is accessible to enough staff and how it could be delivered in line with university values.
- Funding has been secured for a whole university membership for the city's bike hire scheme Nextbike, which will provide free 60-minute hires to all staff and students. This launched at the start of September and is being promoted heavily during welcome week.

2.5 Performance Review and Monitoring

- The group has refined procedures for progress updates (this paper) and will continue to revise as the Sustainability and Social Impact Policy update provides specific actions points and projects.
- Work on the data validation for the Sunbird dashboard for carbon emissions is continuing through a student project reviewing all data sources.
- Next steps are to map out potential sub-KPI or metrics for reporting and communications.

2.6 Community and Engagement

The review of the CCSR Policy and Plan is being carried out by this group. A new policy framework has been developed. The supporting Action Plan is being developed.

One highly discussed topic within the Community and Engagement Task Group is the roll out of non-academic "Carbon Literacy" training to all staff and students at the University. To date, 101 staff and students have been trained through the Carbon Literacy workshops. In consultation with the Centre for Sustainable Development and with the Strathclyde Business School, the Sustainable Strathclyde team have been creating a plan to upscale the offering to build an online course version of Carbon Literacy training (subject to accreditation approval from the Carbon Literacy Project) which would involve a series of entertaining video-based online self-led modules as well as an in-person workshop at the end of the training. This would allow us to make this accessible to ~30,000 Strathclyde staff and students.

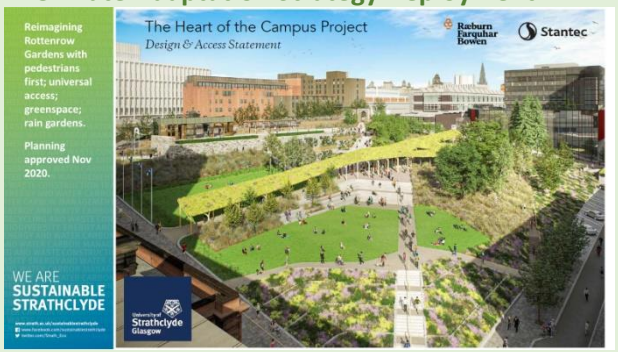
The joint work with the Centre for Sustainable Development and other internal stakeholders will enable a set of sustainability-focused training offerings that create a single clear vision for everyone to adhere to concerning our approach to training. We have agreed to work on an internal framework that ensures no duplication of work and a coherent message shared across all sustainability training work at the University.

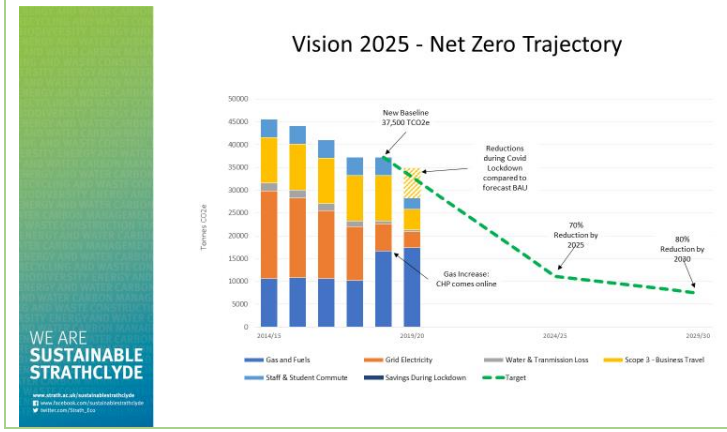
Appendix 1 - Climate Neutral Districts Vision Update, Sept 2022

The University has developed an ambitious vision that forms the potential to achieve at scale and at speed decarbonisation that is also socially inclusive. Using a whole systems approach, the ten work packages outlined here are all innovative and bold in their approach. They involve multi-stakeholder collaborations and they directly respond to the UN SDGs 11, 12 and 13 as the main focus. Much of the funding for this work is provided by our SALIX Energy Investment Fund at this feasibility stage.

Climate Neutral District Vision – Project Summary	Scope of Work	Emissions Reduction Potential/Investment Scale and Progress
1. Glasgow City Innovation District 	A 100% renewable heat, power, transport, adaptation and well-being plan for our community. Technical Feasibility underway. First UK climate neutral innovation district. 80KT CO2e reduction challenge. **Why is it important?** – It enables climate neutral GCID; a first for the University; green investment in the order of circa £0.5BN; leading by example. Now included within City Region Investment prospectus.	Emissions Reduction Potential – **Very High** Investment Scale – Very High (£0.5BN est. for DH element) • Task Group meeting scheduled for August 4th 2022 • Rockefeller Foundation has awarded £80K grant for detailed design work. • An application for funding of £218K has been made to the Heat Network Fund for Pre Capital Support
2. National Manufacturing Institute NMIS – Energy Carbon Neutral in Operation 	The University's first energy carbon neutral development. Enabling the AMIDS district heating scheme using waste heat from Laigh Park STW. Large scale roof top solar. BREEAM Outstanding. Collaboration with Renfrewshire Council; SFC; LCITP; EST, Cycling Scotland, SALIX Finance. **Why is it important?** – It enables carbon neutral NMIS; a University first; leading by example.	Emissions Reduction Potential – **Medium** Investment Scale – **Medium** (in budget) Progress - Under construction. Heat loop, PV canopy, battery storage and EV and E Bike charging. Also discussing active travel and public transport with RC as part of their Levelling Up investment (£38M).
3. Stepps – heat from Minewater Project	Heat from minewater study at our Stepps Playing Fields. Using the heat resource of the minewater in	Emissions Reduction Potential – **Medium**

	the former Cardowan Colliery. Technical work led by Prof. Zoe Shipton and Dr Billy Andrews. 3D model under development. 1MW heat potential. Potential links to North Lanarkshire Low Carbon Heat and Energy Efficiency Strategy planning. **Why is it important?** – It enables carbon neutral Stepps; displacement of emissions using renewables; potential community energy connection at Stepps.	Investment Scale – **Medium** Progress – Stage 2 technical report complete. Desktop drilling pump test completed. Now discussing next stage with North Lanarkshire Council to assess joint work potential (LHEES).
4. Ross Priory Community Solar PV Array 	Community solar array to deliver energy and transport carbon neutral estate and form community links with Gartocharn. Partnership with Scottish Water and Local Energy Scotland. 21MW potential with e transport and community benefits. **Why is it important?** – It enables carbon neutral Ross Priory; removal of oil burning; displacement of emissions using renewables; a good ROI; community benefits.	Emissions Reduction Potential – **Medium** Investment Scale – Medium (has good ROI) Progress – Screening Assessment complete and meeting with the planners from the National Park is scheduled for September. Grid connection constrained to 6MW (4MW export) with energy storage. Screening assessment drafted.
5. Existing Estate – Net Zero Pathway (decarbonising and adapting) 	Developing decarbonisation and adaptation plans for all existing estate assets; costs; commercial models for funding for the retrofit required. Includes mitigation and adaptation solutions. **Why is it important?** – It enables demand side reduction i.e reduced energy in use, improved user comfort, future proofs the built estate and enables connection to city scale district energy (Project 1 above).	Emissions Reduction Potential – **High** Investment Scale – **High £100M+ est** Progress – Reports October 2022 Draft report in place and materials and intervention costs awaited to enable completion.

6. Management of Residual Emissions University of Strathclyde Concept – a green recovery solution for net emissions 	'Invest- Divest- Sequester' Model has been developed to test potential for carbon sequestration via a renewable investment model. Clyde Climate Forest Programme Board. Member of EAUC UK offsetting pilot that will trial a UK based offset project within the HE sector. Offsetting TIC COP 26 emissions as a minimum. **Why is it important?** – It enables understanding of offsetting strategy for the University.	Emissions Reduction Potential – **High** Investment Scale – **High (£100/TCO2e)** Progress – QMPF have submitted draft report with options. Pending assessment.
7. Climate Adaptation Strategy Deployment 	Delivery of the University Climate Adaptation Plan. University Board members of Climate Ready Clyde. Collaboration ongoing across city and region. **Why is it important?** – It enables existing University assets to be uprated to cope with climate change. Informs new green infrastructure for new build and nature based solutions.	Emissions Reduction Potential – **N/A** Investment Scale – **medium to low** Progress – Climate Risk Assessment completed as part of the Net Zero Pathway work.
8. Scope 3 Supply Chain Analysis and Supplier Engagement	Scope 3 emissions are better understood for Business Travel but work needed on staff and student commuting, consumables, construction, embodied carbon. Need to better understand our 'gaps' in knowledge and how to remedy them. **Why is it important?** – Informs Scope 3 emissions including our consumption patterns. Embodied carbon and operational carbon emissions	Emissions Reduction Potential – **High** Investment Scale – **low** Progress – top 10 emission areas identified. Top 4 to be addressed. Ecovadis sustainability assessment tool in place for existing supply chain.

9. Last Mile Delivery Consolidation and Circular Economy – Corn Street Facility  **The Consolidation, Resource Reuse and Recycling Centre (CRRReC) at Corn Street, Glasgow**	Preparing to repurpose and expand the infrastructure at Corn Street to create a last mile delivery platform and bulk recycling and reuse centre for furniture, wood, metal, card, paper, general. £250K of funding has been allocated to this work within the Capital Investment Plan. **Why is it important?** – Enables Last Mile Delivery process. Enhances student experience by removing HGV, LGV and Vans from campus. Enables E cargo. Reduced congestion. Improved air quality.	Emissions Reduction Potential – **Low** Investment Scale – **low (included in CIP)** Progress – upgrade of Corn Street in Capital Investment Plan. Project planning ongoing. Cost plan in place and being evaluated against the available budget.
10. Monitoring and Reporting of progress against Net Zero  	Working with the University Strategy and Policy team to develop the SUNBIRD tool for monthly monitoring and KPI regime for our Net Zero targets tracking. Using GRI and GHG protocol for future reporting and verification. **Why is it important?** – Will need robust monitoring and reporting tools. Aligns with plan to report against Global Reporting Index. Enables insight into areas of focus.	Emissions Reduction Potential – **N/A** Investment Scale – **low** Progress – ongoing via the Performance and Monitoring Task Group.

APPENDIX 2 – CLIMATE FINANCE COST PLAN

Climate Change and Social Responsibility Plan - Funding Requirements

		Project Cost per stage			Cashflow (revenue)	External Funding Availability (Design Development Stage)		External Funding Availability (Implementation Stage)		Can deliver net zero for the University Asset	Emissions reduction potential	Alignment with Scotgov and UK and City and Region plans, Climate Policy e.g. Adaptation, LHEES, Transport Strategies	Aligns with University Strategy and Academic Research and Teaching	Total University Cost (£m)	
Climate Neutral Districts Projects	**Priority ranking 1 = high; 5 = low**	Phase 1 Report	Design Phase (revenue)	Implementation (capital/revenue)	**22-23 spend**	Design Stage (Revenue)	Amount	Implementaion Stage (Capital)	Amount	Yes/no	High, Med, low	Yes/No	Yes	Low Estimate	High Esimate
Climate Neutral GCID	1	Complete	£150k-£500k	£210m-£510m	**externally funded**	Yes - Project partners; £300M Heat Network Fund; SE;	£500K	Yes - energy company and public/private partnership	£201M to £500M	Yes	High	Yes	Yes	210.15	500.50
Ross Priory Solar Array (6MW)	1	Complete	£25 to 2000K	£7m	**Environment Statement cost TBD but circa £100K**	Yes - University; Project partners e.g. Local Energy Scotland	£100K if we sign up with LES	1. option of joint venture and PPA 2. Wholly owned and PPA; 3. Lease land to SW and PPA.	£7M	Yes	Medium	Yes	Yes	7.25	8.25
Net Zero Pathway Existing Built Environment	1	TBC	£250K	TBC	**£250K**							Yes	Yes	TBC	TBC
NMIS	1	NA	NA	NA	**N/A**	SFC Transaction and SALIX Funding	TBC	N/A	N/A			Yes	Yes	NA	NA
Stepps Geothermal (1MW)	1	Complete	Funded	£250k	**potential for external funding £250K**	Local authority	£125k	£250K to £400K	£250K to £400K	Yes	Medium	Yes	Yes	0.25	0.50
Sustainable Supply Chain	1	N/A	N/A	£40k	**0**							Yes		0.04	0.04
Staff Resourcing	1	N/A	N/A	£300K	**already budgeted for**	No	0	No	0	Yes		Yes	Yes	0.25	0.30
Climate Adaptation	2											Yes	Yes		
Green Walls	*2*	Complete	Complete	£250k-£1m	**£250k-£1m**	https://www.gov.scot/policies/community-empowerment/empowering-communities-fund/								0.25	0.50
Tiny Forests	*2*	Complete	Complete	£100k	**£100k**									0.10	0.10
Last Mile Delivery	2	N/A	N/A	£250k	**£250k**	already budgetted in CIP						Yes	Yes	0.25	0.25
Management of Net Emissions	2	TBC	TBC	£1m per MW	**0**							Yes	Yes	TBC	TBC
Sustainable Transport	2											Yes	Yes		
NMIS EV Chargers	*2*	N/A	N/A	£70k	**£70k**									0.07	0.07
Travel Survey Support	*3*	N/A	N/A	£10k annually	**£10k annually**									0.01	0.01
Car Sharing Platform	*2*	N/A	N/A	£8k annually	**£8k annually**									0.01	0.01
Transition Fleet to EV	*2*	N/A	N/A	£20k-£40k annually	**£20k-£40k annually**	already budgetted for								0.02	0.04
Grey Fleet Solution	*2*	N/A	N/A	£25k	**£25k**									0.03	0.03
Carbon Literacy Rollout	2	N/A	N/A	£100K	**£100K**							Yes	Yes	0.01	0.10
Monitoring and Reporting to GRI	3	N/A	N/A	£50k/annum	**0**	**£50K/annum**							Yes	0.05	0.05
Student Sustainability Officers (Full	2	N/A	N/A	£60k annually	**0**	**£60K for 2 x FTEs**							Yes	0.01	0.06
Total														**218.74**	**1010.30**