THE UNIVERSITY of EDINBURGH

Sustainable Laboratories Steering Group (SLSG)

Tuesday 28th September 2021, 2pm

via Microsoft Teams

AGENDA

1	**Minute** To *approve* the minute of the previous meeting on 22nd June 2021 and *raise* any matters arising	**A**
2	**Covid-19 Impact and Implications for Labs** *Discussion* led by Director SRS. *Specific focus on impact on labs of recent guidance changes.*	**Verbal**
3	**Sustainable Labs Programme Plan Update** To *note* and *discuss* a report from the SRS Projects Coordinator (AA)	**B**
4	**New Lab Awards and Sustainability Framework** To receive an update on changes to the Lab Awards, and the replacement of the Office Awards with a Sustainability Framework from the SRS Projects Coordinator (AA).	**Verbal**
5	**Findings from ULT Freezer Survey 2021** To *receive and discuss* a paper from the SRS Projects Coordinator (AA)	**C**
6	**Freezer Fund Update** To *receive* a report from the SRS Projects Coordinator (AA)	**D**
7	**Sustainable Estates Design update** To receive an update from Director SRS on progress in the area of standards/guidance for design and construction of new buildings and refurbishments.	**Verbal**
8	**Technician Commitment update** To *receive* an update from Laboratory Technician Val Gordon	**Verbal**
9	**Any Other Business** To *consider* any other matters from Group members - EDI and diversifying membership of SLSG	

As a member or attendee of University committee meetings, we process and store your data in accordance with our privacy statement. Your involvement in a committee is public by default, but you may opt-out by contacting SRS.Privacy@ed.ac.uk or Jane.Rooney@ed.ac.uk

If you require this agenda or any of the papers in an alternative format please contact Jane Rooney on 0131 650 4375 or email jane.rooney@ed.ac.uk

A

UNIVERSITY OF EDINBURGH

MINUTE OF A MEETING *of the Sustainable Laboratories Steering Group held on Microsoft Teams on 22nd June 2021.*

Members: Dave Gorman, (Convener), Director of Social Responsibility and Sustainability
Andrew Arnott, SRS Projects Coordinator
Chris Litwiniuk, Engagement Manager
Claudia Schaffner, Technical Services & Estates Manager, School of Biological Sciences
Robert MacGregor, Energy Engineer, Utilities Management
Val Gordon Technical Officer, Institute for Education, Teaching & Leadership
Lee Murphy, Genetics Core Manager
Candice Schmid, Occupational Hygiene and Projects Manager
Tony Newjem, Procurement Officer
Brian McTier, Easter Bush Campus Facilities and Services Manager
Neil Johnston, Lab Manager, Centre for Cardiovascular Science
Yuner Huang, Early Stage Researcher,Engineering
Steve McLean, Centre for Cardiovascular Science
Sharon Hannah, Bioquarter Campus Operations Manager

Apologies: David Brown, Technical Services Manager, School of Chemistry
Kate Fitzpatrick, Waste & Recycling Manager
Michelle Brown, Head of SRS Programmes
Matthew Sharp, BVS Deputy Director – Business
David Gray, Head of the School of Biological Sciences
David Jack, Energy & Utilities Operations Manager
Julia Laidlaw, Estate Development Manager
Grant Ferguson, Director of Estates Operations
Stewart McKay, Technical Services Manager, IGM

Angela Ingram, Service Manager, IGMM

Dean Drobot, Head of Energy and Utilities Management
Glen Cousquer,

Rachael Barton, SRS Projects Coordinator

1 Minute **A**

Minutes were accepted.

2 Covid impact for labs

- Tony Newjem
  - Some supply chain issues, e.g. pipette tips.
  - Shortage of irradiated bedding for animals due to shortage of cobalt 60 (used for irradiating items)
    - Looking at alternative products and procedures
- Steven McLean
  - Increased energy consumption due to covid (HVAC 24/7) (written comment)
- Neil Johnston
  - More equipment switch off because smaller workforce
  - Consumption of single use items significantly increased
- Claudia Schaffner
  - More waste
  - Reduced occupancy

    - Increased energy consumption from extended opening hours and increased ventilation
    - People are keen to reverse the unsustainable changes imposed for Covid19
- Robert McGregor
    - Confirms that long hours + vent mean high energy use
    - As soon as we're done with covid, return to previous settings
- Candice Schmid
    - Ventilation can be switched off when lab is unoccupied
    - H&S also want to return to normal ventilation rates as soon as possible
    - Vaccination and ventilation are 2 issues that are going to continue to be high priority over the next year, even if other measures are reduced (especially if Distancing measures are reduced)
        - Likely to remain a requirement when occupancy returned
    - Huge amount of work going on guidance on ventilation
        - CS will keep under consideration the reduction in vent hours
- Brian McTeir (written comment)
    - Agree with Claudia - easter bush very similar

Action

CS to see how sustainability can be implemented into ventilation guidance

- **if approved by H&S, AA to promote sustainable ventilation guidance (I.e. switch off over night)**

3 Sustainable Labs Programme Plan with RAG Status Update **B**

- Positive progress across almost all areas (only one Objective graded amber instead of green)
- Candice Schmid (chat)

  With covid I think we can allow slippage of timeframes

- Dave Gorman:
    - Move towards embedding of sustainability, where implementation of sustainability becomes a priority for all parts of the University, like H&S
- Question from Val Gordon about mandating Sust Champions for schools, with allocated time for staff to undertake sustainability responsibilities
    - DG: SRS will provide guidance on how to implement sustainability within Schools/Departments, which will likely include the creation of a position with dedicated time to work on this
    - Might want to include this in planning round submissions
- Robert MacGregor - energy masterplan and engaging with building users
- Neil Johnston
    - Sustainability committee in QMRI
    - Neil to join
    - Academics, professorial staff more and more keen on sustainability
    - Funding bodies asking for sustainable practices in labs
- Tony Newjem on the point about procurement
    - Plastic pipettes in short supply
    - Increasing coverage and priority of sustainability in tenders
    - Noting UK government requirement for asking about climate targets (need to require a 2050 climate target to bid for govt contract)

    - This could lead to an increase in weighting of sustainability criteria within tenders.
- Valerie Gordon (written comment)
    - Interesting you have good engagement at the online sessions. The value of the webinars was highlighted in our Technician Commitment self-assessment feedback
- Robert MacGregor
    - Working with KJ Tait engineering consultants to identify and implement ventilation improvements
    - May be adopting University of California Irvine approach
        - Smart labs with VAV systems able to ramp down ventilation when occupancy or pollutants are low
        - Establishing framework to work on this
- Brian McTeir
    - Focused on air change rates to respond to concerns from staff about returning to work
    - Had to figure them out from first principles;
    - Some data available
- Dave Gorman
    - Campus Fund Update
    - SCF coming to the end in July
    - Retaining £200k for next year
    - Increasingly thinking that things that were funded by SCF over the years, will need to be normalised into other budgets (Schools/Departments/Estates)
    - Repurpose the bulk of the remaining £2m into improvements on heat
        - Paybacks will be much worse
            - Impacts on how labs might be ventilated

4 Freezer fleet reduction **C**

- Neil Johnston
    - 11 or 12 successful freezer applications
    - Got rid of 7 and replaced them with 4 freezers
    - Welcomes the idea of increased grants for freezer fleet reduction
- Dave Gorman
    - Wider benefits for science of new units
    - AA, yes, greater temperature uniformity and accuracy, and the process of clearing out samples before refilling the new freezer means samples are quick and easy to find in the new freezer.
- Robert MacGregor
    - Noting the request to top up the £20k the freezer fund
        - Neil Johnston noting that people in general are more likely to trust their samples in a new freezer at -70 than an old freezer at -70

<u>Action</u>

- **Dave Gorman and Andrew Arnott to get the approval to top up the freezer fund**

5 Funders' interest in sustainability **D**

- Neil Johnston
    - Senior academic significantly more supportive

    - More interest from funding bodies
- Dave Gorman
    - Sits on UKRI environmental strategy advisory group
    - Starting conversation about the research and innovation community (e.g. University of Edinburgh)

6 Technician Commitment update

- UKRI have now signed up to Technician Commitment
    - Likely to put University of Edinburgh in good place
- University of Edinburgh was commended for how Technician's Commitment actions and responsibilities are embedded and implemented
- Technician contribution in research is more recognised
    - Technician Steering Committee to prepare a paper for Edinburgh Research Office
- More technicians becoming Professionally Qualified
    - Sustainability forms a more explicit part of official qualifications now

7 Freezer farm

- Short on funds, being worked on
- There is interest in making use of an archive facility from across the University
    - Roslin, Queens Medical Research Institute, King's Buildings (School of Biological Sciences), Western General (WTCRF – Genetics Core)
- Lee Murphy
    - Desperate for freezer archive
    - Researchers worried about storing more samples
    - Having to turn down additional samples as don't currently have the space
- Claudia Schaffner
    - Commented on logistical issues, which would be necessary to ensure the archive freezers weren't too accessible, and therefore weren't just used as additional daily freezers.
    - Engagement with lab users, who might be using their archive freezer incorrectly
- Neil Johnston
    - Noting the value of samples stored in a freezer can be close to £1m
    - Clinicians might be willing to contribute more

<u>Action</u>

Brian McTeir and Andrew Arnott to continue to advocate for sustainable passive design of the building, despite tight budgets.

Brian McTeir and Andrew Arnott to recommend to the Project Board that they could approach partners across the University of Edinburgh for additional funding, in exchange for archive freezer space.

8 AOB

- School of Biological Sciences congratulated on successful application for 2 large grants from the Sustainable Campus Fund (LED lighting for plant growth facility, and replacement chiller for plant growth facility)
- Procurement and others congratulated on the water-cooling system for the new national super computer facility
- AA asked SLSG to visit the newly revised SRS Labs website

- AA asked SLSG academic members if funding applications are seasonal or spread evenly throughout the year
    - Conclusion was that they are fairly evenly spread, with some clustering around traditional ‘holiday’ periods e.g. summer and Christmas.
- AA reiterated Tony Newjem’s mention of the UK Government’s requirement that government suppliers with contracts worth £5m/yr or more must have a carbon reduction plan to zero by 2050.
    - TN advised that this is likely to be duplicated by Scot Gov and will help to increase the weighting of sustainability criteria in tenders.

Sustainable Laboratories Steering Group

B

28th September 2021

SLSG Programme Plan August 2020 – July 2025 – Progress Report

Description of paper *(to include Contribution to Strategy 2030*)

1. This document is intended to give an update on progress against the objectives of the 2020-2025 Sustainable Laboratories Steering Group Programme, which was drawn up to provide a structured approach to improving sustainability within laboratories at the University of Edinburgh over that time period, with a view to achieving wider University goals such as the Zero by 2040 target within the Climate Strategy.

This document will be updated prior to each meeting of the Sustainable Laboratories Steering Group. A Gantt Chart using a traffic-light colouring system (Red/Amber/Green) has been used to communicate quickly and clearly the progress which has been or is being made. In general, this is taken to mean: green = on track, amber = delayed or problematic, red = objective is in danger of not being met, and grey = action scheduled for future work.

The RAG grading is applied to the Objectives and the Targets of the plan, but not the individual actions, which are described in the body of the text where appropriate.

2. Contribution to Strategy 2030 (from selection of pre-set statements):

i) We will see our research having a greater impact as a result of partnership, international reach and investment in emergent disciplines.

x) We will see integrated reporting of our whole organisational impact against the United Nations Sustainable Development Goals.

xi) We will be on track to be a Carbon-Zero University by 2040.

xiii) Our estate will be fit for purpose, sustainable and accessible. We will support learning, research and collaboration with our neighbours, businesses and partners.

Action requested/Recommendation

3. SLSG is asked to note the progress described in this paper and provide any advice or guidance for further improvement.

Background and context

4. Between October 2019 and May 2020 this 2020-2025 programme plan was developed and approved. This report notes the progress against this 5-year plan.

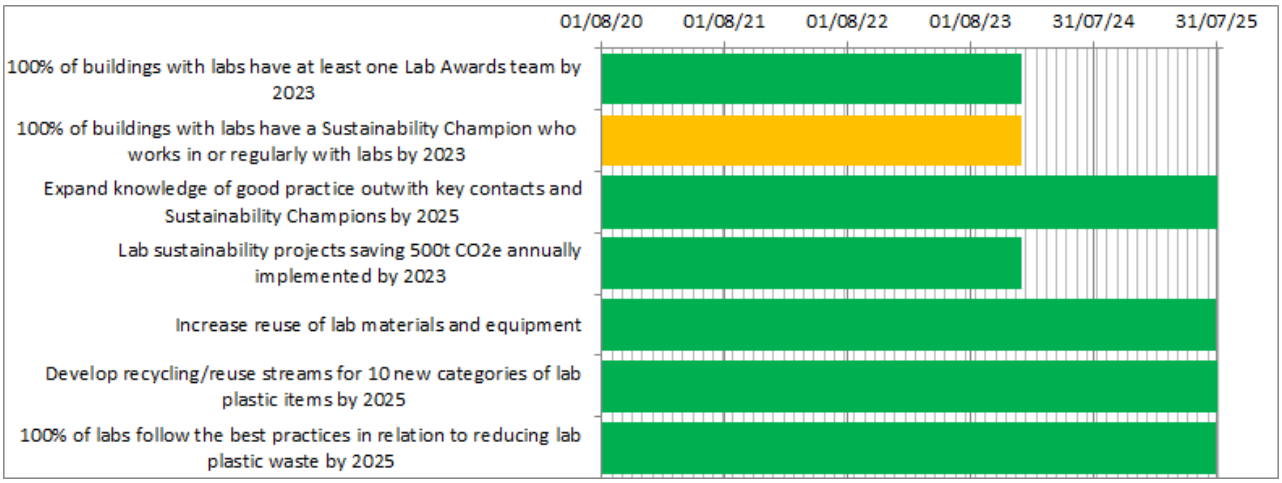
Discussion

5. Summary of objectives and targets:

1. Good practice behaviours adopted across all labs
    a. TARGET 1: 100% of buildings with labs have at least one Lab Awards team by 2023
    b. TARGET 2: 100% of buildings with labs have a Sustainability Champion who works in or regularly with labs by 2023

    c. TARGET 3: Expand knowledge of good practice outwith key contacts and Sustainability Champions (as measured in biannual SRS staff and student surveys) by 2025
2. Funding is made available and used to support lab sustainability
    a. TARGET 4: Lab sustainability projects saving 500t CO2e annually implemented by 2023 (including ventilation/HVAC improvements in lab buildings)
3. Increase reuse of materials and equipment across University labs
4. Eliminate avoidable lab plastic waste through increasing options and increasing awareness
    a. TARGET 5: Develop recycling/reuse streams for 10 new categories of lab plastic items by 2025
    b. TARGET 6: 100% of labs follow the best practices in relation to reducing lab plastic waste that are practicable in their lab by 2025

RAG Progress Reporting



OBJECTIVE 1: Good practice behaviours are adopted across all labs

TARGET 1: 100% of buildings with labs have at least one Lab Awards team by 2023

Action	Responsible	Timescale	RAG
Schools mandate that all labs achieve at least Bronze in sustainability awards.	SRS and School management	December 2021	Deputy Director and Director SRS have met most Heads of Schools for a conversation on “embedding” sustainability. This covered multiple topics, travel, research, climate change and the lab and office Sustainability Awards. A Sustainability Framework is being developed to support the embedding of sustainability within all Schools and Departments.
Lab-based PG students get amount of credits for working on a lab sustainability	SRS and School management	December 2022	Communications were sent out in early May 2021 to awards teams about eligibility for SLICCs.

awards team (as part of their skills training outside of the curriculum)			SRS Student Pathways / Edinburgh Award were also included in the communication and were promoted again in September 2021.
Develop an e-learning course specifically focussed on sustainable labs (as a spin-off from Be Sustainable)	SRS	July 2021	Completed April 2020 An online interactive workshop delivered quarterly since April 2020. The relevant section of Be Sustainable was updated in May 2021.
Review the Awards processes making the awards more appealing / less burdensome for participants.	SRS	February 2022	A review of potential alternatives to the current online Awards Platform (where Awards submissions are made), is underway. A comparison of the SRS Lab Awards with other similar schemes to identify possible improvements will commence in late Q1/early Q2. This will also look at the inclusion of research excellence. Alongside this, a Sustainability Framework for Schools is being developed, which will replace the Office Awards, focussing on comprehensive embedding of sustainability across all areas within each School. Where Schools have lab facilities, participation in the Lab Awards will be expected as part of completing the Sustainability Framework.

TARGET 2: 100% of buildings with labs have a Sustainability Champion who works in or regularly with labs by 2023

Action	Responsible	Timescale	RAG
Increase number of contacts/labs undertaking pilots to demonstrate	SRS	1 case study published	Pilots on lab plastics now taking place at Reagan Wallace lab (SBS) as well as Roslin.

that good practices are compatible with science Case studies to include details to contact the participants. Including information on costs, staff time, buy-in from management and practicalities		each year (ideally on different topics).	Case study on Roslin has been written (by the lab) and published in Access Microbiology. Case study of Reagan Wallace can be written later 2021, or early 2022. Recent (August 2021) interviews with technicians leading sustainable practices will result in blog posts and inclusion in various newsletters (e.g. CSE newsletter, Bulletin, etc)
Colleges mandate that each School with labs has an appointed/nominated Sustainability Leader who heads up a committee of Sustainability Champions and coordinates sustainability actions across their School.	SRS and College management	First Schools declare their decision by July 2021 50% of Schools declared by July 2022 100% of Schools declared by December 2025	The outcomes of this work may not look exactly as described in the action plan – there are other ways for Colleges and Schools to integrate sustainability into their governance structures, e.g. Sustainability Committees. A draft Sustainability Framework is being developed for Schools to follow – it is likely this will include a requirement for committees/sustainability leaders. Target of 1 School by July 2021 was missed. 50% and 100% targets currently seem quite a stretch.
Sustainability Champions encouraged to work with neighbouring labs, helping to spread good practice and information	Lab Users, SRS	November 2020	This is delayed but forms part of the various communications messages which are included in the planned SLSG communications via SRS channels (I.e. entering content in existing School/College newsletters rather than having a Sustainable Labs newsletter).

			This will most likely occur from autumn 2021 onwards.

TARGET 3: Expand knowledge of good practice outwith key contacts and Sustainability Champions (as measured in biannual SRS staff and student surveys) by 2025

Action	Responsible	Timescale	RAG
Publicise that the Sustainability Awards criteria is available to all lab users to inform good practice.	SRS	November 2020	This is delayed but will form part of the various communications messages which are included in the planned SLSG communications via SRS channels (I.e. entering content in existing School/College newsletters rather than having a Sustainable Labs newsletter) This is also included in the lab sustainability training webinars which many people have attended this year.
Link communications about lab sustainability to academic research e.g. Horsfall Labs' work on complete life cycle analysis / Bio Technology and Circular Economy ('theme' within CSE) / Chemistry's work on global mineral scarcity/ capacity	SRS with input from key academics and lab users	July 2022	This will form part of the various communications messages which are included in the planned SLSG communications via SRS channels (I.e. entering content in existing School/College newsletters rather than having a Sustainable Labs newsletter) This specific action will also involve our SRS Comms team building relationships with School Comms teams Recent (August 2021) interviews with technicians leading sustainable practices will result in blog posts and inclusion in various newsletters (e.g. CSE newsletter, Bulletin, etc)
Restrict procurement options/	SRS and Procurement with input from lab users	July 2022	Work continues between SRS and Procurement, although recent meetings have been

heavily promote better options			postponed due to other urgent tasks. AA has provided Procurement with a list of ULT freezers and glassware drying ovens with good performance credentials. Other ULT freezers and glassware drying ovens will be removed from SciQuest catalogues where technically possible. These shortened lists of 'green' items will also be transferred to People and Money when that system is rolled out. Information about suppliers who use more sustainable packaging materials/take-back schemes is included in the lab sustainability training webinar. Procurement have cautioned that restricting procurement options may not be wise right now as for some items (e.g. gloves) just getting hold of them is hard enough due to supply chain disruption from Covid, Brexit and recently revealed forced labour practices in the world's largest glove manufacturer (TopGloves in Malaysia).
Undertake more face to face lab audits/advice visits to give targeted and personalised advice	SRS	3 new labs visited each year, with follow up advice and support provided where appropriate.	Due to Covid19 disruption and restriction of lab time to urgent priorities it is not currently thought justifiable for a generic lab audit/advice visit to take place. As restrictions and advice related to Covid19 develop, this position may change, but 2020-2021 target of 3 tours was missed. A virtual lab tour was undertaken at Edinburgh Genomics lab (SBS) in July,

			highlighting a number of opportunities for sustainability improvements. SRS communications includes promotion of video tours of labs for sustainability audits.
Identify the top 5 initiatives that labs are working on and develop into posters and other communications to prompt spread of good practice.	SRS	December 2020	Data gathering was completed in November 2020. Poster completed May 2021 and published on website.

OBJECTIVE 2: Cost effective lab sustainability improvement projects are identified, funded and implemented

TARGET 4: New lab sustainability projects implemented between August 2020 and July 2023 save 500t CO2e annually (including ventilation/HVAC improvements in lab buildings)

Action	Responsible	Timescale	RAG
Assess labs to optimise ventilation rates and controls, including night set-back	SRS, Estates, Lab users, H&S	Ongoing	**[RM to give verbal update]** *Below is from June* K.J. Tait have just been appointed for the second phase of the Lab Ventilation Effectiveness programme. Included buildings will be contacted shortly to arrange site visits and to request information from lab users and Health and Safety teams. Proposals for improvements to ventilation for IVCs at SCRM are in development (K.J. Tait + Contractor). This involves ducting the extract from IVC AHU directly into the room extract. Other BRFs will be reviewed for possibility of similar changes. Building Ventilation in response to COVID continues to be led by the Building Services Group

			following the published guidance.
Lab users are trained in ventilation risk assessment	H&S, Estates, Lab users	Ongoing	**[RM to give verbal update]** *Below is from June* Estates Building Services and Controls teams remain extremely busy and do not have time to support any non-priority activities.
Pilot projects funded for novel approaches such as LILEE	SRS, Lab users, Estates	2 more pilots by 2023	Disruption from Covid19 will impact this, but it's still possible to achieve within the timescale described. Lab plastics re-use/substitutions may be one area which could be suitable for this. Possible project at IGMM MRC labs involving sending polystyrene plastics for a heat treatment to recover high quality feedstocks for making new plastics. This project is currently applying for funding from MRC.
Identify replicable actions which are cost effective, impactful and broadly relevant across labs.	SRS, Lab users, Estates	By February 2021	Published July 2021
Roll out replicable actions identified (e.g. drying ovens)	SRS, Lab users, Estates	By July 2022	The SCF and Staff Grants funds are promoted to staff in ad hoc communications, training, and planned communications to enable the adoption of these actions.
Work on ensuring the Sustainable Campus Fund is available until 2025	SRS, Estates	Ongoing	There is an SCF fund of c.£180,000 for 2021-22 to support staff and student identified projects. Carbon costs from successful lab SCF projects are around £250/t, so if we manage to spend £180k we should hit the

			target of 500t/year carbon savings by the target date of July 2023. This will be entirely dependent on getting enough good quality applications - see above point about promotion of SCF.

OBJECTIVE 3: Increase reuse of lab materials and equipment

Action	Responsible	Timescale	RAG
Identify any gaps in the departments/Schools which use Warpit, and target these to increase participation	SRS	July 2021	AA completed desk-based analysis from Warpit data July 2021. Lab Equipment analysis: Medics are good at using Warp It to get rid of lab equipment (avoiding waste), while Medics, Engineering and SBS are good at using Warp It when they need lab equipment (I.e. avoiding purchases). Chemistry and Vets have low levels of activity on Warp It for lab equipment. All Items analysis: SBS, Medics and Engineering are good at donating items (avoiding waste); and that SBS, Medics, Informatics and Engineering are good at using Warp It to receive items and avoid purchases. Which lab-based schools have high levels of activity? - Medicine (including clinical research, medical school, biomedical) - Biology - Engineering (including Informatics, Bayes Centre and Edinburgh Parallel Computing Centre)

			Which lab-based schools have low levels of activity? - Chemistry - Vets - Maths - Physics and Astronomy - (CSE college office) Which lab-based schools have no activity? - Geosciences This will inform communications.
Raise awareness of Warpit and promote external sale/donation with Lab managers/Stores/those with purchasing responsibilities	Procurement	July 2021	This is covered in the lab sustainability training webinar, and on the newly relaunched lab sustainability website. This will be covered in SRS communications channels SRS are in communication with Procurement (Andy Wright, Colin Miller and Kirsty Hughes) about incorporating various sustainability messages and 'nudges' into the new procurement system which will be embedded in People and Money. Procurement have advised that the People and Money implementation for procurement won't now happen before end of this calendar year.
Provide greater clarity on what is and is not allowed on Warpit (e.g. plasticware and consumables can be included), processes and guidelines	SRS	December 2020	This will be covered in the SRS communications channels but not until autumn 2021.
Provide more case studies of successful usage of	SRS	March 2021	This will be covered in the SRS communications

WARPit, including savings.			channels but not until autumn 2021.
Adopt a policy requiring people to show evidence of trying to source from Warpit or 2nd hand before purchasing new equipment/resources.	Procurement	July 2022	See above notes about SRS contact with Procurement regarding implementing sustainability into the new procurement system on People and Money. Procurement are developing a project considering options for managed equipment services which is now moving on and should involve novel approaches to equipment acquisition and keeping the technology leading-edge, without the usual scrap and replace cycle. If this comes to fruition procurement will ensure sustainability objectives are built into strategic agreements.
Increase visibility of information about Warpit e.g. the main page of the Procurement website, clearly on SRS and Waste websites, and as a reminder box on SciQuest.	SRS, Waste and Procurement	July 2021	This is included within the new version of the SRS Labs website. See notes above about P&M. AA to work with Procurement to develop text for inclusion in P&M.

OBJECTIVE 4: Eliminate avoidable lab plastic waste

TARGET 5: Develop recycling/reuse streams for 10 new categories of lab plastic items by 2025

Action	Responsible	Timescale	RAG
Hold a workshop to bring suppliers and waste contractors together to share challenges on both sides, and to prompt development of new	Procurement Waste SRS NHS	April 2021	A workshop with stakeholders is not ruled out, but is not in planning currently as we may be able to make progress without it.

lab plastics waste streams.	EAUC ZWS		It did not happen by April 2021. A working group on lab plastics in Scotland has been established by AA, using EAUC to advertise it, with members from Aberdeen, Glasgow, Glasgow Caledonian and Napier. Lab plastics were also covered in a recent EAUC-S waste TSN. At present this group is sharing best practice and barriers. Once Napier can undertake a site visit of the Enva facility to confirm it genuinely recycles their used lab plastics, we will be in a better position to consider our options. AA has had discussion with lab supplier and is pressing them to make better information available about plastic types, as well as to encourage them to work with Procurement/IS to highlight 'environmentally preferrable' options within UoE purchasing systems (P&M). AA has also been involved in creating sustainability questions for the APUC tender, and analysing responses. Some suppliers are offering (limited) recycling schemes for decontaminated used lab plastics. Once this tender process is complete SRS will work with Procurement to ensure we establish the most useful of these schemes.

			Separately, UoE is now seen as quite 'expert' on the topic of lab plastics and are regularly contacted about this, including internationally.
Identify the most commonly used lab plastic items and confirm which plastic types they are.	SRS	December 2020	A desk-based assessment of the lab consumables procurement spreadsheet was undertaken, which identified tips, stripettes, tubes, plates and syringes as the most common. Resin-code information was not often included in the spreadsheet. However, where it was available it showed that PP (5) and PS (6) were the common types. (see note above about working with suppliers to get better resin code data). Unfortunately PS is not currently recycable – although see note above about pilot project at IGMM-MRC. In a recent EAUC TSN a colleague from the Life Sciences College in Dundee shared their findings describing which items are commonly produced using which plastic types. This information can be used in discussions with waste contractors in future.

TARGET 6: 100% of labs follow the best practices in relation to reducing lab plastic waste that are practicable in their lab by 2025.

Action	Responsible	Timescale	RAG
Develop case studies on swapping	SRS	March 2021	The group at Roslin undertaking a pilot published their own write-up in Access

to use glassware instead of plastic.			Microbiology in October 2020. The online version is available here: **https://doi.org/10.1099/acmi.0.000173** When further information becomes available from Reagan Wallace lab a case study can be written.
Communicate to provide clarity on what can (and cannot) be recycled in a lab setting	SRS Waste Lab users	December 2020	This has been covered in the lab sustainability training which has been conducted quarterly since April 2020. This was also covered in the website launch May 2021.
If new recycling streams/ recyclable items become available promote these options to lab users.	SRS Procurement Waste Lab users	July 2024	Action will be taken if/when this occurs. This is dependent on outcomes from discussions with Waste Contractors (Biffa) - which will happen after our colleagues at Napier have audited their decontaminated waste contractor, Enva. Take-back schemes are highlighted within the quarterly lab sustainability training. See note above about tender responses to the APUC tender – offers of recycling streams from suppliers.
Work with labs to undertake trials/pilots to phase out non-recyclable / reusable plastics, and help designing experiments to reduce waste.	SRS Waste Lab users	2 labs undertake trials by July 2023	The work of the Reagan Wallace group means we now have 2 pilots underway/completed. Further pilots are always welcomed, and SLSG

			members are encouraged to promote this in their area.
Share the findings of the trials/pilots	SRS	December 2023	The Access Microbiology paper from Roslin was shared with the SLSG in October 2020.
Encourage labs to rethink the location of bins and consider allowing recycling bins in labs to facilitate ease of segregation.	SRS Waste Lab users	July 2023	No action taken to-date but the long timescale of this means it's still on track.

Resource implications

7. No resource implications are related to reporting on progress against this plan. Implementation of the plan will have wider resource implications, which have been detailed elsewhere.

Risk Management

8. No risks associated with reporting on progress against this plan. No items on the plan are currently at risk of failure (red graded).

Responding to the Climate Emergency & Sustainable Development Goals

9. Climate Emergency: the actions in this plan will reduce either direct or indirect carbon emissions (or sometimes both) through reducing energy consumption, water consumption, waste production (and high impact hazardous waste streams), and resource consumption.

10. SDGs: the various actions in this plan will contribute positively to the following SDGs:

3 – Good health and wellbeing

Many sustainability actions also improve health and wellbeing, for example good practices with fume cupboards, or substitution of hazardous chemicals.

4 – Quality education

A quality education requires incorporation of the global challenges we face (as set out in the SDGs) and also the practical actions which can be taken to combat these challenges.

6 – Clean water and sanitation

Sustainable lab practices promoted by this plan will reduce potable water consumption.

9 – Industry, innovation and infrastructure

Some of the actions which might be taken in relation to sustainable labs will fall into the categories of innovation and/or infrastructure.

11 – Sustainable cities and communities

Actions to make UoE labs more sustainable will contribute to making the city of Edinburgh more sustainable.

12 – Responsible consumption

Sustainable lab practices promoted by this plan will reduce material consumption.

13 – Climate action

Sustainable lab practices promoted by this plan will reduce greenhouse gas emissions.

14 – Life below water

Actions on lab plastic waste reduction will help to reduce negative impacts on aquatic and oceanic life.
15 – Life on land
Reducing our material consumption reduces the amount of raw materials which must be mined, extracted, or grown – all of which have negative impacts for life on land.

Equality & Diversity
11. No foreseen impacts.

Next steps/implications
12. A further progress report will be provided at the next SLSG meeting by the SRS Project Coordinator – Labs (or appropriate substitute). During that time further actions will be taken towards the outcome objectives of the plan.

Consultation
13. This document has been reviewed by:

Deputy Director and Head of Programmes – SRS

Sustainable Innovation and Engagement Manager – SRS

Further information
14. Author and Presenter

Andrew Arnott SRS Projects Coordinator - Labs

Department for Social Responsibility and Sustainability

September 2021

Freedom of Information
This is an open paper.

Sustainable Laboratories Steering Group

28th September 2021

C

Report on a survey of ULT freezers

Description of paper

1. This paper provides the results of a recent survey to attempt to identify the number of Ultra Low Temperature (ULT) freezers across the University of Edinburgh estate.

2. Areas of Strategy 2030 to which this work contributes:
   - ix) We will have more user-friendly processes and efficient systems to support our work.
   - x) We will see integrated reporting of our whole organisational impact against the United Nations Sustainable Development Goals.
   - xi) We will be on track to be a Carbon-Zero University by 2040.
   - xiii) Our estate will be fit for purpose, sustainable and accessible. We will support learning, research and collaboration with our neighbours, businesses and partners.

Action requested/Recommendation

3. SLSG are asked to review and acknowledge the results of this survey.

A comparable follow up survey should be undertaken in 2023 to ascertain any change to the freezer population.

Background and context

4. This paper follows a similar paper which described the findings of the baseline survey in 2018.

ULT freezers are vital for a variety of scientific disciplines as they can store materials at temperatures between -50 and -86°C. However they also consume a substantial amount of energy to do so, with typical annual energy costs per freezer ranging from c.£500 for a new efficient model in a well ventilated space, to £1,000 for an older model or one operating in a poorly ventilated space. They have a knock-on effect on building heat gain and cooling loads too. Thus it is important that the University of Edinburgh has a reasonably good understanding of how many ULT freezers are operating on its estate, and to use this baseline to ascertain whether the number of freezers is changing significantly over time (with associated impact on energy, cost and carbon).

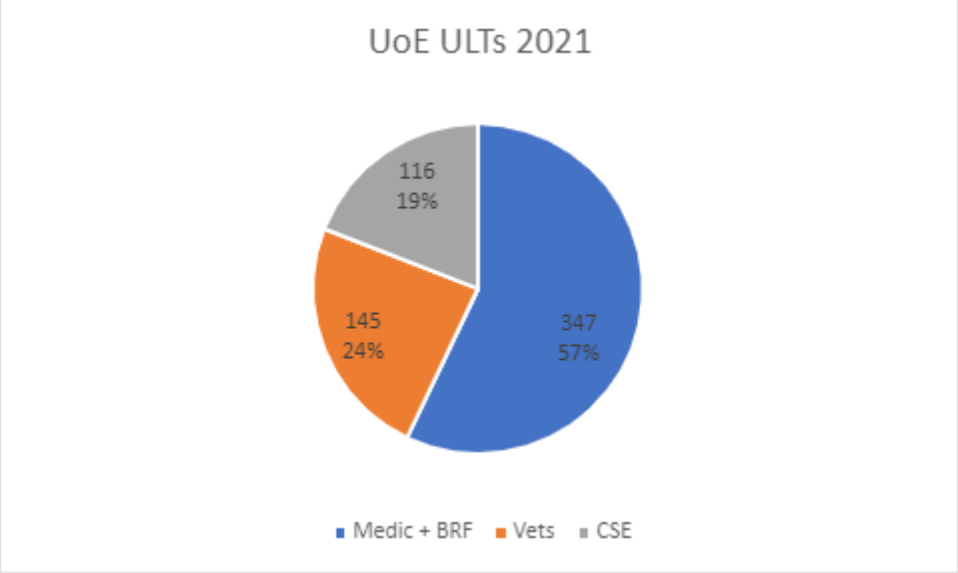
Discussion

5. The results of the survey are below:

Location	**2018** **Number of ULT freezers**	**2021** **Number of ULT freezers**	**% change**
University of Edinburgh TOTAL	**587**	**608**	**4% increase**

WGH TOTAL	**82**	**107**	**30% increase**
IGMM North	32	34	
IGMM South	17	22	
IGMM West/Central/East	18	26	
JHB Lab	7	9	
Wellcome Trust CRF	8	9	
Evans		1	
WG Clinical Trials Lab		2	
WG BRF		4	
Little France TOTAL	**198**	**210**	**6% increase**
SCRM	30	32	
Chancellor's	41	46	
QMRI	127	132	
Easter Bush TOTAL	**175**	**145**	**17% reduction**
Block F	10	6	
Roslin Institute	100	86	
Other areas combined	65	53	
Central TOTAL	**28**	**30**	**7% increase**
1 George Square	4	5	
Hugh Robson Building	24	25	

KB TOTAL	**104**	**116**	**12% increase**
JCMB	8	9	
Joseph Black	7	9	
Swann	34	34	
Ashworth	20	26	
Waddington	6	9	
Rutherford	12	11	
Roger Land Building	14	14	
Peter Wilson Building	1	0	
Alrick Building	1	3	
John Murray Building	1	1	



There has been a small increase in almost all areas, except for Easter Bush where there has been a 17% reduction, and IGMM where there has been a 30% increase. This difference might be due to actions taken at Easter Bush and IGMM, or it might be due to different counting/reporting methods between 2018 and 2021.

The overall increase of 4% is not unexpected, and may well be proportional to increases in other performance metrics around growth in scientific research and teaching activity – however this analysis has not included those metrics.

Resource implications

6. Assuming an average annual energy consumption of 6,500kWh/year per ULT (17.8kWh/day), the University of Edinburgh's fleet of 608 reported ULT freezers will have combined energy costs of over £500,000 annually (at 13p/kWh). This energy consumption results in over 900 tonnes of CO_2e annually, equivalent to the annual emissions of c.160 UK residents. Additional energy is also consumed via the heat expelled from freezers adding to the cooling load of buildings.

This survey takes around 1-2days of SRS staff time in total.

Risk Management

7. There is a risk of rising energy costs and carbon emissions if the fleet of ULT freezers increases. Understanding the distribution of ULT freezers across the University of Edinburgh can help to inform strategic decisions around cold storage.

Responding to the Climate Emergency & Sustainable Development Goals

8. **Climate emergency**: the replacement of inefficient cold storage freezers with more efficient models makes a substantial impact on the electricity consumption of the units, and also reduces the cooling-load on the building's HVAC system. In addition, the new units must be confirmed to have low GWP refrigerants before they can receive funding.

9. **SDGs**: the actions in this plan will contribute positively to the following SDGs:

9 – Industry, innovation and infrastructure

The provision of good quality, energy efficient cold storage is an example of sustainable infrastructure.

13 – Climate action

The replacement of inefficient cold storage units with more efficient units reduces electricity consumption, and associated carbon emissions. In addition, the new units must be confirmed to have low GWP refrigerants before they can receive funding.

Equality & Diversity

10. No Equality and Diversity implications have been identified relating to this survey.

Next steps/implications

11. It is recommended that the survey be repeated every 2 years and trends in the data analysed to inform strategic approaches to cold storage. If possible, the next survey should be compared to changes in research intensity (perhaps measured by income) in life sciences to allow analysis of whether any growth in the freezer fleet is explained by/justified by increased research activity, or if it is an inefficiency which should be addressed by behaviour change campaigns and perhaps financial incentives for freezer fleet reduction.

Consultation

12. The Deputy Director SRS and Head of SRS Programmes, as well as the Sustainability Innovation and Engagement Manager have been consulted.

Further information

13. *Author and Presenter*

Andrew Arnott

Project Coordinator - Labs

Sustainability Innovation and Engagement Team

Department for SRS

31/08/21

Freedom of Information

14. This is an open paper.

Sustainable Laboratories Steering Group

28th September 2021

D

Performance of the Freezer Fund

Description of paper

13. This paper describes the financial and carbon performance of the Freezer Fund, a ring-fenced section of the University of Edinburgh's Sustainable Campus Fund.

14. Contribution to Strategy 2030 (from selection of pre-set statements):

x) We will see integrated reporting of our whole organisational impact against the United Nations Sustainable Development Goals.
xi) We will be on track to be a Carbon-Zero University by 2040.
xiii) Our estate will be fit for purpose, sustainable and accessible. We will support learning, research and collaboration with our neighbours, businesses and partners.

Action requested/Recommendation

15. SLSG is asked to note the performance.

Background and context

16. The freezer fund was set up as a ring-fenced section of the Sustainable Campus Fund shortly after the fund was established in 2016. It was recently topped up in July 2021 with an additional £20k - taking the cumulative total budget to £60k.

Discussion

Using the SCF Project Tracker spreadsheet the following analysis was produced using figures up to end of August 2021:

1. Total spend £47,928 (from SCF grants, not including the amounts spent by the recipients - we haven't been tracking this. For example we give a maximum grant of £1,500 per ULT freezer but we don't track if that freezer cost £6k or £9k)
    a. NB: From August 2021 we will begin to track freezer purchase cost too, and this has been updated in the application form.
2. Total annual electricity cost savings £15,323
3. Simple payback 3.2 years
4. Average NPV is £3,491
5. Average IRR is 30%
6. Average ROI is 361%
7. Total annual CO2e savings 43.7tonnes
8. Average £/tonne CO2e saving is £85
9. 30 applications have been received (mostly for a single ULT, two for a pair of ULTs, two for a single -20 freezer). Two applications (one for a pair of freezers) were an 'eco top up' for someone purchasing additional freezers, which obviously we try to discourage unless absolutely necessary.
10. More than half of all applications (19) have come from only 4 applicants (with 10, 4, 3 and 2 applications each)
11. An additional application was funded in July 2021 via the main Sustainable Campus Fund as it was a fleet reduction project (I.e. 1 new freezer to replace 2 old freezers) and so warranted a greater grant than the Freezer Fund would support.

Further applications for replacements or fleet reductions are sought and welcomed from SLSG members and wider colleagues.

Resource implications

12. The grants given (maximum £1,500) are relatively small, compared to the cost of the ULT (c.£6-9k). There has been a steady but not excessive increase in use of the fund over the past year or so. The usage of the fund is deemed to be within the capacity of the SCF to support.

Risk Management

13. Discontinuation of the freezer fund could risk reducing the number of new contacts SRS makes through this fund, as well as disincentivising engagement in wider SRS activities from existing contacts.

Responding to the Climate Emergency & Sustainable Development Goals

14. Climate emergency: the replacement of inefficient cold storage freezers with more efficient models makes a substantial impact on the electricity consumption of the units, and also reduces the cooling-load on the building's HVAC system. In addition, the new units must be confirmed to have low GWP refrigerants before they can receive funding.

15. SDGs: the actions in this plan will contribute positively to the following SDGs:

9 – Industry, innovation and infrastructure
The provision of good quality, energy efficient cold storage is an example of sustainable infrastructure.

13 – Climate action
The replacement of inefficient cold storage units with more efficient units reduces electricity consumption, and associated carbon emissions. In addition, the new units must be confirmed to have low GWP refrigerants before they can receive funding.

Equality & Diversity

16. No Equality and Diversity implications have been identified relating to this fund.

Next steps/implications

17. It is recommended the fund continue to be reviewed and 'topped up' as and when the ring-fenced funds are exhausted.

Consultation

18. The Deputy Director SRS and Head of SRS Programmes, as well as the Sustainability Innovation and Engagement Manager have been consulted.

Further information

19. *Author and Presenter*

Andrew Arnott
Project Coordinator – Labs
Department for SRS

31/08/21

Freedom of Information

20. This is an open paper.