Sustainability Operations Advisory Group (SOAG)

Wednesday 1 February 2017, 3pm

Cheviot Room, Charles Stewart House

AGENDA

1   Minute   **A**
   To *approve* the minute of the previous meeting on 13 September 2016

2   Matters Arising
   To *raise* any matters arising not covered on the agenda or in post-meeting notes

SUBSTANTIVE ITEMS

3   Waste, Reuse & Recycling Quarterly Report   **B**
   To *discuss* and *endorse* a report from the Waste & Recycling Manager

4   Energy & Climate Quarterly Report   **C**
   To *discuss* and *endorse* a report from the Energy Manager

5   SRS Department Programmes Quarterly Report   **D**
   To *discuss* and *endorse* a report from the Head of SRS Programmes

6   Developments within the Energy Office   **E**
   To *discuss* a paper from the Head of Estates Operations

ITEMS FOR FORMAL APPROVAL/NOTING

7   Sustainable Campus Fund & Pathways to 10%   **F**
   To *note* an update from the Director of SRS

8   Drinking Water Project   **Verbal**
   To *note* an update from the Head of SRS Programmes

9   Edi Green Fest   **Verbal**
   To *note* an update from the Students' Association VPS

10   SRS Reporting Micro-site   **Verbal**
   To *note* an update from the Director of SRS

11   Any Other Business   **Verbal**
   To *consider* any other matters from Group members

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 Sustainability Operations Advisory Group held in the Cuillin Room on Tuesday 13 September 2016.*

Members:	Hugh Edmiston, Director of Corporate Services
	Michelle Brown, Head of SRS Programmes
	Rab Calder, Energy & Utilities Manager
	Michelle Christian, Senior Accommodation Manager
	Grant Ferguson, Head of Estates Operations
	Kate Fitzpatrick, Waste & Recycling Manager
	Dave Gorman, Director of Social Responsibility & Sustainability
	Sarah Gormley, Business Manager & Deputy Head of IS Planning
	Lee Hamill, Deputy Director of Finance
	David Jack, Energy Manager
	Andy Kerr, Director of Edinburgh Centre on Carbon Innovation
	Jenna Kelly, EUSA Vice President Services
	Brian McTeir, Roslin Campus Facilities & Services Manager
	Candice Schmid, Health & Safety Advisor
	George Sked, Assistant Director of Procurement
In attendance:	Ian Macaulay, Assistant Director (Catering) for item 6
Apologies:	Michelle Christian; Andy Kerr; David Jack

1   The minute of the meeting held on 24 May 2016 was approved as a correct record.   **A**

SOAG welcomed Jenna Kelly, incoming EUSA Vice President Services.

2   **Matters Arising**
The Sustainable Campus Fund was agreed at Estates Committee. Sharable content from the University of St Andrews business case for renewables investment, particularly on modelling energy, was still outstanding. The Good Food Policy had been agreed at CMG and was being implemented and promoted. The Climate Strategy had been approved at CMG and would go on to Court.

Post-meeting note: the Fund was approved by Court on 26 September and would be launched publicly in November.

SUBSTANTIVE ITEMS

3   **Waste, Reuse & Recycling Quarterly Report**   **B**
The Waste & Recycling Manager reported on performance for the fourth quarter of 2015/16. Arisings for the quarter were down from 2014/15. The cost of waste disposal and reuse was rising, outpacing the increase in staff and student numbers. SOAG recognised the difficulty in setting KPIs around cost. The University's Waste Policy and Implementation Plan would be updated this year. The tendering process was ongoing for the biological, hazardous, and confidential waste contracts. The Head of Soft Services was following up with the Furniture Office on securing space at Peffermill to store, sort, and manage bulky waste. A meeting was scheduled to discuss the future of the Charles Street Lane waste compound and waste storage in the Central Area. Following the successful clear-out at the Law School, the team were looking at ways to manage large scale clear-outs in future, improving communication within departments and offering one cost for contractors to handle the whole process, and a lower rate if the department was willing to assist.

Some data required for the annual report was still outstanding. Landfill avoidance remained at 94%. Tonnage arising from the main contract was 83% of that during the same period in 2014/15. Reuse had increased significantly, and was a strong theme in the new WEEE contract. Warp-it was progressing well, and the Waste & Recycling Manager was keen to see it communicated and used more. Food waste tonnages had increased, with five more cafes and more being split off from general waste. A coffee cup recycling and coffee ground reuse trial would be run at the Main Library. A trial composting animal bedding at Ann Walker was underway. Estates, Finance and SRS staff would meet to discuss developing KPIs for waste, in terms of amount per head or landfill diversion.

<u>Action – KF</u> to include cost in the waste annual report, not as a formal KPI but for context, as well as indication that cost would have been higher had measures not been taken.

Post-meeting note: to be discussed under agenda item 3.

Discussions around the UniGreenScheme were expected to make an impact, but there was a lot more work to be done and the University would need to go out to tender, even for a pilot. On the whole, UoE was performing well, given the transient nature of its population, and the focus now would be on managing the flow of materials through the University.

4   **Energy & Climate Quarterly Report**
The Head of Estates Operations apologised for the absence of the energy report and outlined the current position. There had been significant changes within Estates, particularly the Energy Office, and additional groundwork was needed to be able to deliver reporting to the standard that SOAG, SRS and the University require. The Energy Office was being reconfigured to align to that need. The energy consolidation project having been completed, the focus would now be on how to manage data, including metering, data capture, and a suitable software platform. This had been Optima, but it was not structured to accommodate the scale of data being managed. An Action Plan would be generated and presented at the next meeting, including collating data from meters and getting the physical infrastructure in place, before overlaying reporting structures. As part of the reorganisation, Estates were looking at implementing ISO 50001, to give the required governance structure.

SOAG recognised that the necessity for data quality was absolute, and acknowledged the complexity and interdependence of University supplies, overlaying CHP and other networks. The largest consuming buildings would continue to be prioritised. The Group recognised huge opportunities around BMS. The Convenor requested for the next meeting a high level one page report, thoughts on piloting, and getting six buildings running to demonstrate the look and feel of the new approach, as a basis to win support to roll it out across the campus. Holyrood was the closest fit to the preferred model. It was recommended that student accommodation also be considered. There would be a cost element involved in investing in infrastructure and an offer of resource could be made if value for money opportunities could be identified to offset this cost.

5   **SRS Department Programmes Quarterly / Year End Report**   **D**
The Head of SRS Programmes reported on 2015/16 to Q4, against 7 priorities: carbon and energy savings; resource efficiency; supply chain SRS; responsible investment; localised advice and projects; community / public engagement and links to learning and teaching and associated programmes. Performance is reported on a quarterly basis. At the programme level we are tracking performance at the output and outcome level where possible. Programmes should ultimately contribute to improved waste and energy performance. The Sustainable Campus Fund was serving to galvanise interest and

engagement from around the University. There was additional work to do to increase the number of sustainability champions, including energy coordinators. A series of programme videos were being produced to help draw people in. There was a target of 40 Edinburgh Sustainability Awards teams, with a larger ceremony taking place next year. The University had won a bid to work on an Erasmus project looking at student involvement and would report back to the Group. Warp-it was growing, but there was scope to raise awareness further. SRS were working with Procurement to better understand supply chain risks and opportunities. Work was ongoing to improve reporting metrics, deciding what to report on, setting targets, and benchmarking.

The Convenor recommended that the 3 year element be removed from discussions of the Sustainable Campus Fund, to reflect the aspiration that it become an evergreen fund. A business plan would be developed and put to Finance to explore how to recirculate benefits back into the fund and keep it running. No decision had yet been received regarding the £7M bid to the Scottish Funding Council.

| 6 | **Increase in Minimum Numbers for Delivered Catering** | E |

The Assistant Director (Catering) introduced a proposal to increase the minimum order number per item to six, reflecting growth of the delivered catering service (now covering 130 buildings) and the University estate. This new minimum threshold would bring UoE in line with comparable institutions, improve financial viability, and achieve efficiencies across resources such as fuel, packaging and staff time, and contribute towards carbon reductions. The service was not run for profit, but to keep spend within the institution (offering a 20% saving as no VAT was added), leaving a modest surplus for reinvestment. Growth had been seen in drops of two to four items, which were currently making a loss. There were other options for smaller groups in a number of areas, including University cafés. Other institutions' practices had been reviewed, with minimum drops around 10, and the proposed minimum of six, possible due to cross-subsidy, would bring UoE in line, while remaining more advantageous.

Members raised concerns about a potential increase in waste, with staff ordering catering for six for smaller meetings. Risks from a food waste cycle perspective had been noted, but these orders were mostly drinks, and UoE did not use paper cups. Leftovers were minimised as staff generally took excess catering away for later consumption. Detail of the food offering available should be more clearly articulated, emphasising that food was sourced locally in an environmentally friendly way, catering to different needs, and building flexibility into the model. Members noted that provision at KB would need to be addressed. SOAG noted that food, parking and transport were emotive issues that needed careful presentation, and discussed how to frame the proposal. Further work was needed to communicate what was being done and why, how it would save time, cost and carbon, and contribute economically and environmentally to the local community.

Action – SRS to pick up on issues of presentation and consultation with Ian Macaulay.

ITEMS FOR FORMAL APPROVAL/NOTING

| 7 | **Draft Climate Strategy** | F |

SOAG noted the latest version of the Climate Change Strategy 2016-2026, and remit for a renewables review group to report in 2017. The draft strategy was approved at PSG in April, by CMG on 30 August, and would go to Court on 26 September. The Strategy would be launched in October with an internal and external communications exercise and a launch event on each campus. These would cover the main elements of the Strategy (setting better, more achievable targets, then over-achieving them; looking at efficient building design; taking action on food, IT and so forth), next steps, and how

individuals could contribute. SRS would work with CaM to brief politicians, some of whom had already positively received aspects of the strategy. Direction setting on renewables was a major issue. A renewables group would meet in November and, following the approach taken by the Fossil Fuels Review Group, report its recommendations back to CMG by next summer.

While there was some reliance on the national grid decarbonisation, predictions had been based on worst case scenarios. The Strategy would be reviewed by Investment Committee, to consult on carbon offsetting. A mid-term review would be carried out in 2021, as well as more informal interim reviews. There would be quarterly updates on how UoE was performing in terms of carbon emissions, as well as an annual Implementation Plan. A three year Implementation Plan would be finalised in 2017 setting out steps and timeframes for programmes integral to achieving the targets.

8   **Sustainable Campus Fund & Pathways to 10%**   **G**
The Sustainable Campus Fund would launch formally in October. Following a soft launch earlier in the year, the first batch of projects had been approved by the Director of Estates. While it had not been set up as a revolving fund, discussions were ongoing on how to sustain it in the long term. It was anticipated that a significant number of projects coming to the fund would be revenue rather than capital, and Estates, Finance and SRS were working to manage the issue. The SCF was only part of the package of measures designed to meet the 10% energy reduction target. While progress was still some way short of achieving 10%, the journey was underway. There was discussion on how much match funding schools and units should be asked to provide. 17 projects were submitted to the Utilities Working Group, of which 9 were recommended and 6 pre-approved. SOAG discussed representation from both the Finance Department and Estates Finance on UWG, to feed in on financial governance.

Action – LH & KA to discuss further and agree representation, and clarify whether it would be a revolving fund.

Post-meeting note*: KA has now joined the Utilities Group.*

SOAG recognised the value of the Fund as a mechanism to stimulate and drive best practice activities, and noted the opportunity to put forward projects of this kind in the planning round. The group noted a potential capacity issue within Estates to deliver the projects.

Action – JK to help promote the fund to the student body.

9   **PC Reuse Project**   **H**
SOAG noted the final output report of this Zero Waste Scotland funded project to enhance capacity for reuse of PC desktops within the University. The project resulted in 174 PCs being reused internally, along with 257 other IT items, saving an estimated £63,086 and 39,382kg of CO_2e, and diverting 2,657kg of waste. It also yielded significant savings in terms of staff time.

SRS, Waste and IS put together a project scoping document and Zero Waste Scotland invested £25K. The project showed how a relatively small amount of funding could be used to demonstrate a strong business case for PC reuse. The Group recommended that an internal PC reuse service be continued, with further discussions needed on approach and next steps. Members agreed that it would be best to locate the project within Information Services. Representatives from IS would explore whether funding for the project could be created internally and report back, and SRS would look at how to keep the project going in the short-term. The project would be included in the Annual Report and Accounts.

SOAG discussed purchase of PCs and tablets, and whether some devices were easier to move through the value chain at end of life. There was a select PC and laptop contract in place, recyclability was part of that contract, and IS were working to limit the spectrum of devices purchased, to make maintenance easier. Only certain types and ages of device could be reused internally, though partnerships with social enterprises were in place for older machines. It was important to communicate to purchasers the implications of their choices. Issues of energy efficiency and whole life cycle costs were now being captured in UoE procurements.

10   **Measuring Performance & Sustainability Benchmarking Update**   **I**

SOAG noted this update summarising external benchmarks and early thoughts on development of an internal benchmarking framework to assist with measuring and supporting SRS performance across academic schools and support groups.

Members discussed LiFE, the EAUC self-assessment tool for universities to improve social responsibility and environmental performance through a whole institution approach. The project has developed based on learning through working with the Business School last year on their sustainability strategy and a school specific approach. Feedback would be sought on internal benchmarking across the University to help with management information, based on energy and waste impact at a School level. The Business School had agreed to participate in the pilot, and another school or unit was being sought. Feedback from benchmarking work with schools would be translated into the Edinburgh Sustainability Awards.

Action – MB to follow up with GF on the approach.

Post-meeting note: *met to discuss on 23rd September 2016.*

SOAG discussed the People & Planet Green League which the University had strongly supported. Now that the sector had responded, with AUDE looking at a tighter sustainability tool with an estates focus, it was more appropriate to focus the University's efforts on the AUDE and EAUC tools. People & Planet had decided to continue its University League and had been gathering information over the summer. UoE had ensured that all relevant data was publicly available on its website. SRS would continue to track developments.

11   **Fairtrade University Status Renewal 2016**   **J**

SOAG noted the University's application for renewal of its Fairtrade status, thanking colleagues in Procurement and ACE for providing data. Following review last year, the Fair Trade Steering Group stood down, but the University's long-standing commitment to fair trade continued, part of which was the obligation to renew its FT status every two years. FT status had been successfully renewed to 2018 and this would be publicised through CaM. The staff and student surveys had indicated that food and supply chain issues were a priority concern.

Action – GF & IM to meet to catch up on energy data required to secure a three star catering award.

Sustainability Operations Advisory Group (SOAG)

Wednesday 1 February 2017

Waste Quarterly Report 2016/17 (Q1)

Description of paper
This paper summarises the University's performance within the academic and support estate for waste for the first quarter of the 2016/17 academic year.

Action Requested
SOAG is invited to discuss, identify the information to be included in future reports and endorse this paper.

Recommendation
It is recommended that this report be made publically available.

Background and Context
The current University Strategic Plan has an objective to minimise our environmental impact through improving our overall management of resources to reduce waste and maximise recycling. The University's Recycling and Waste Management Policy further outlines this along with objectives and actions built into the annual SRS implementation plan.

This paper provides a report by the Waste Manager summarising the University's waste management performance within the academic and support estate for the first quarter of 2016/17 in order to assist with projections for performance for the remainder of 2016/17 and further.

Resource Implications
Current resource implications have been accounted for within existing staff, and operational and equipment budgets included in departmental planning.

Risk Management
Key risks associated with implementation of waste management actions at the University include:
1. The cost of waste disposal and recycling continues to rise outpacing the increase in staff and student numbers (Biffa's costs have increased and it is likely that the costs for Clinical and Biological Waste and Confidential Waste will increase, although these costs are recharged to producers).
2. A requirement to update the overarching Waste Policy and develop Strategy (and associated Policies) (scheduled for Q2/Q3 this year).
3. Tender of Clinical and Biological, Hazardous, and Confidential Waste contracts are all due in Q2 2016/17.
4. Space to store and manage bulky wastes effectively is at a premium.
5. Ongoing discussions as to the future of the Charles Street Lane Central Area waste compound (where waste from approximately 16 buildings is managed, equating to an annual tonnage of approximately 300 tonnes).

6. Estates projects to include management of building clearouts efficiently, and adequate consideration of waste management in refurbishments and multiple new builds (including construction of a centralised waste compound as part of the Masterplan at King's Buildings and Easter Bush).
7. Food waste – the Waste (Scotland) Regulations will bring into effect a ban on biodegradable municipal waste being sent to landfill from 2020. Implications will include increased recycling of food waste across the Estate, resulting in additional operational and contractual costs.

In order to control and mitigate these risks, it is essential that sufficient resource is available to manage the waste and recycling service.

Equality & Diversity
No implications identified.

Next Steps/Implications

- Procurement of Clinical and Biological, Hazardous, and Confidential Waste contracts in order to ensure that the University remains compliant with procurement law and has appropriate, best value contracts.
- Work with colleagues in Estates to: further develop the process for clearouts, and waste management for refurbishments and new builds; and to reach a conclusion about the future of waste management within the Central Area, King's Buildings and Easter Bush.
- Identify further routes for reuse through working with contractors, social enterprises and our licensed WEEE contractor.
- Website – it is recognised that the Waste section of the website needs overhauled. SRS has agreed to assist with this process and it is envisaged this work will be complete by the end of 2016/17.
- Update Waste Policy and develop Strategy (and associated Policies).

Consultation
This paper has been reviewed and approved by David Brook, Head of Support Services.

Further Information
Author & Presenter
Kate Fitzpatrick
Estates Department
25 January 2017

Freedom of Information
This paper may be included in open business.

Waste Quarterly Report 2016/17 (Q1)

QUARTERLY METRICS

Headlines:
- Q1 arising: 880 tonnes (compared to 960 tonnes in Q1 2015/16)
- Landfill diversion: 94% (equal to Q1 2015/16 and average for 2015/16)

Q1 Comparisons *(with 12 month average substitutions where data not available)*
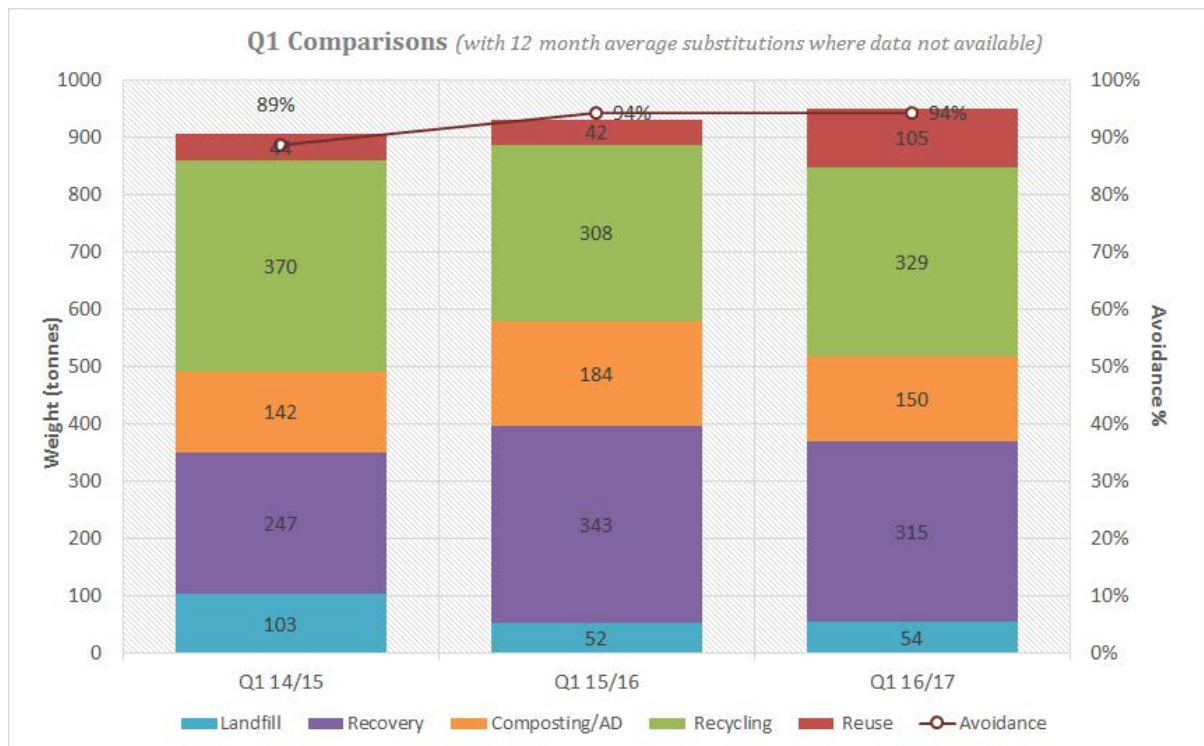
Trends
- The overall landfill avoidance rate in Q1 is 94% which is equal to the rate for the previous quarter in 2015/16.
- The tonnage of waste arising from the main contract during Q1 is 92% of that during the period in 2015/16.
- Reuse has increased to 11% in Q1 (approximately 105 tonnes), compared to 4.6% in Q1 2015/16 (approximately 5 tonnes). As a requirement of the new contract, our licensed WEEE contractor, CCL North Ltd, have now started to focus on reuse, and in Q1, they reused approximately 7 tonnes of WEEE (42% of the waste they collected).
- An increase in arisings from Q4 2015/16 to Q1 2016/17 was observed and this is to be expected after the summer period.
- Food waste tonnages increased from Q4 2015/16 to Q1 2016/17 (to approximately 21 tonnes from 27 tonnes). This is linked in an increase in trade in the cafes due to students and staff returning from the summer and the Festival in August; by comparison the tonnages are approximately half that of the same quarter in 2015/16.

- Percentage recycled is up slightly from Q4 2015/16 (28% to 35%).

MAJOR PROJECTS/ACHIEVEMENTS

- Reuse, and routes for reuse, continues to grow. This has been helped by forging good relationships with external organisations and using various channels of communication.
- Animal bedding waste is now also being sent to composting from SCRM; this route is being taken into consideration for any new build animal houses.
- The coffee cup trial continues at the Main Library however, until a solution for processing coffee cups is developed, this will not be expanded across the Estate. Carbogenics Ltd (a spin-out of the UK Biochar Research Centre, School of GeoSciences) have developed a technology to upcycle paper/plastic waste into functional biochar. They currently receive the coffee cups from the Main Library bin and also have their own bin in the School of Geosciences.
- Lab equipment reuse/sale/transfer – a workshop was held in October and led by Procurement with input from Legal Services and the Waste Office. It recognised that a clear process was required within the University to enable Schools/Departments to reallocate redundant lab equipment. An Equipment Assets Reallocation Map has been drafted.
- A new compactor has been purchased for the Vet School for Dry Mixed Recycling; the result will be less collections at this site meaning reduced costs.

THE UNIVERSITY of EDINBURGH

Sustainability Operations Advisory Group (SOAG)

1 February 2017

SRS Programmes Report (Q1 2016/17)

Description of paper

This paper provides a report on SRS Programmes 2016/2017. It includes data to end of Q1 with some additional notes for Q2.
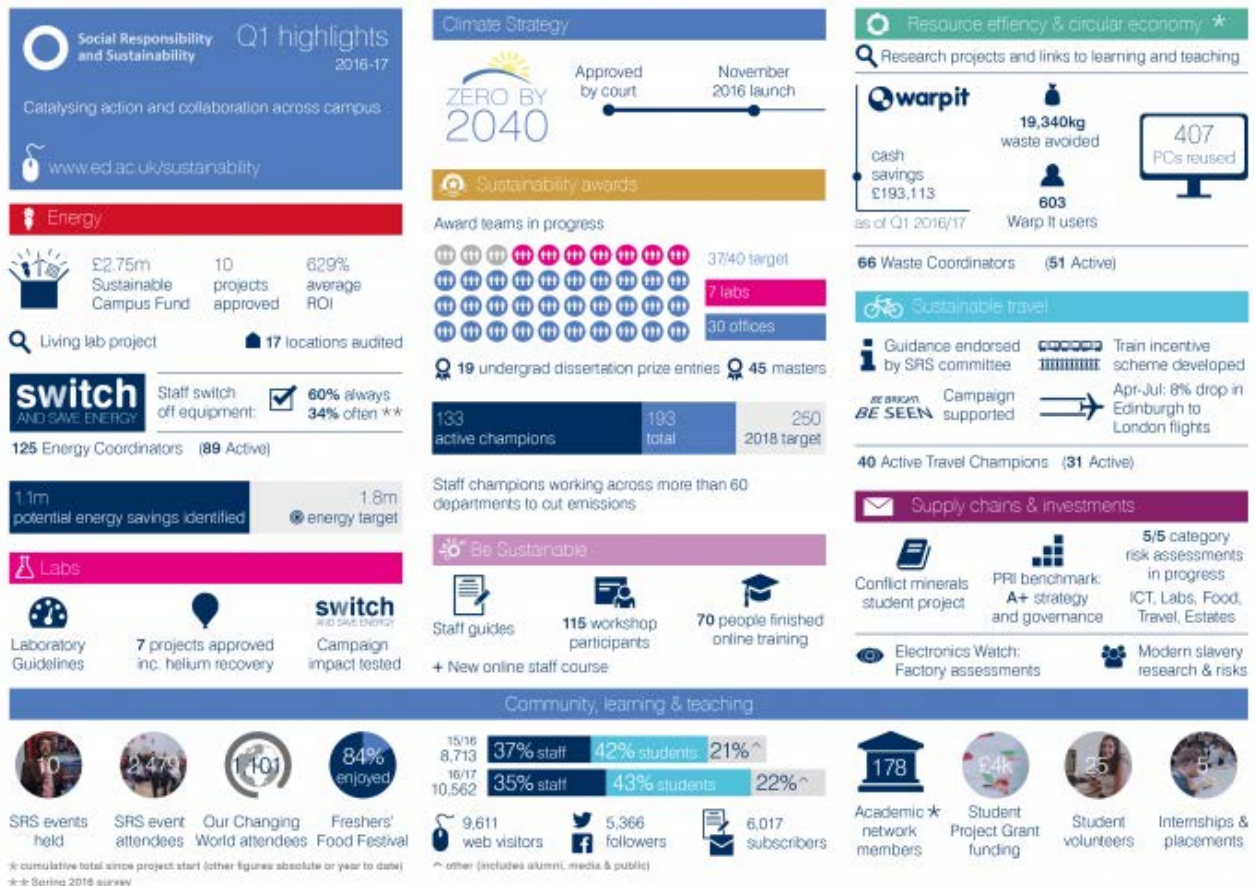
Action requested

SOAG is invited to <u>review</u> and <u>comment</u> on this paper. In addition, members are asked to consider if, within their own sphere of influence, they can encourage further participation in programme areas.

Background and context

The Department has continued to progress work against 7 priorities: carbon and energy savings; resource efficiency; supply chain SRS; responsible investment; localised advice and projects; community / public engagement and links to learning and teaching. We facilitate and manage programmes to catalyse action across the University and undertake work to support assessment and management of risks and opportunities.

We review our outcomes, outputs and inputs on a quarterly basis with monthly internal updates. The University measures performance in relation to carbon; energy; waste and recycling and other material sustainability issues. The purpose of this reporting is to be transparent and accountable on how the programmes of work facilitated and managed by the department are performing in relation to the strategic ambitions of the University.

Figure 1 –Infographic for Q1 2016/17

Available online at: http://www.ed.ac.uk/files/atoms/files/q1_highlights_2017_infographic_final_17_nov_copy.pdf

Energy and Carbon

Energy Engagement and Communications

- The Climate Strategy was launched, articulating the University's long term target of net-zero by 2040 and absolute and relative targets to 2025. The launching of the strategy has also brought out interest from some new parts of the University not previously engaged.
- During the first quarter of the academic year, 13 projects were proposed to the Sustainable Campus Fund, 10 of which were approved. These had a combined payback period of 2.5 years and a combined Return on Investment of 629% and predicted annual saving of over £100,000. We recognize this may represent some of the easy wins and low hanging fruit but we are excited to see how the fund is bringing forth ideas, projects and also engagement from people wanting to be part of the solution.
- Through Switch, our Energy Engagement and Communications programme, our goal is for all staff and students to have access to information and tools to reduce their energy impact at the University. This brings both carbon and cost savings and will contribute towards the University's goal of an overall reduction in energy spend of 10 percent from business as usual over a 2 year period. Based on a bottom up compilation, opportunities which could save close to £1.1M have been identified by a working group made up of Estates, SRS, Accommodation Services and ISG staff for implementation in the next 2 years. This includes a range of projects being developed for the Sustainable Campus Fund as well as other activities.
- Some new staff signed up as Energy Coordinators working to take practical action within their areas of work and help identify Energy Savings. Winter shutdown materials were refreshed and we were delighted with the turnout at the Energy Coordinator workshop. There are currently 123 energy coordinators, expected to be 198 by 2018.
- Reviewing approach to engage students in this network and potentially for volunteer auditors to support Energy Coordinators with walk-arounds. Initial audit reports from engagement work in prioritised locations prepared with projects to progress to SCF as appropriate.
- SRS Academic Meeting to look at links with researchers on pertinent questions.

Sustainable Laboratories

- We have completed a study in the Horsfall Group regarding materials and impact on energy. While it was difficult to show correlation of materials to energy saving, it provided an excellent opportunity to engage with researchers around energy savings. We will carry out a follow up exercise with IGMM.
- Specific projects for Sustainable Campus Fund (see accompanying paper)
- Estates Development Laboratory Specific Guidance reviewed / drafted

Sustainable Travel

- While looking at our Scope 3 Travel related emissions for carbon reporting, we were delighted to see that from April to July 2016 there was an 8 percent drop in Edinburgh to London flights as more staff chose the train.
- SRS Department supported the Transport Office and others on an Autumn 'Be Bright Be Seen' campaign which received positive feedback and recognition from external stakeholders.
- Reviewing targets and implementation strategies for next steps in relation to Climate Strategy targets around business travel.

Sustainability Awards (including Be Sustainable)

- 30 teams participated in the Office Awards. 17 teams received new Office Awards with 7 of them new: 6 Gold; 4 Silver + 1 working towards Silver; 7 Bronze. 12 teams remained accredited from 2015. 16 student auditors were trained through the scheme with IEMA

accredited training. Slight drop in number of teams with some teams consolidating (MVM) and a few teams no longer participating (Estates and Procurement).

- 7 teams participated in the Lab Awards scheme. These are peer audited, with 1 of these teams new, which is a drop in participation. Priority will be on increasing uptake in 2017. A review of the existing S-Lab Framework is being undertaken with potential replacement by a new Green Impact framework. Potential for further engagement with additional schools in College of Science and Engineering.
- With Accommodation Services, a Student Residence Award programme was undertaken with 9 entries for 2016.
- Special Awards were recently launched with 6 entries currently.
- Ceremony will take place on 28th March 2017, also recognising SRS Dissertation Prizes.

Resource Efficiency and Circular Economy

- Warp-it, the Waste and Reuse Portal continues to gain momentum avoiding nearly 20,000 kg of waste with cash savings of close to £200,000 at end of quarter. Need to identify ways for lab equipment reuse to be further facilitated.
- The PC reuse project has resulted in over 400 PCs reused internally and nearly 100 items donated to local social enterprises. SRS working through next steps with IS and the Sustainable IT Committee.
- A recent SRS Academic Network Meeting on Circular Economy and Resource Efficiency looked at issues of interest to researchers around the University and opportunities to link with operational challenges.

SRS in Supply Chains: Fairness in Trade and Sustainable Procurement

- SRS supported the University's development of a Modern Slavery Statement which will include next steps and actions we will take to further transparency in supply chains and respect for and protection of human rights. Research briefing for the sector on modern slavery and universities shared on website and with EAUC. Contributed to EAUC procurement event to share our approach to both modern slavery and conflict minerals.
- Continuing to work with Procurement as well as other colleagues on assessment of SRS risks and opportunities in prioritised categories. Briefing documents for ICT, Food, Labs and Travel available online and work has started with Estates. Looking at next steps re supplier engagement strategy across categories.
- Continued liaison with Electronics Watch – shared affiliate experience on webinar, received factory reports/briefings (Czech Republic and Malaysia) and China case study.
- Collaborative EU bid on Make ICT Fair submitted in September – outcome to be announced in March. Have arranged to attend EW affiliates meeting/conference in December.
- SRS Academic Network meeting on Supply Chains planned for Q3.

Community Engagement and Links to Learning and Teaching

- Supported development of next steps in relation to University Community Engagement Strategy. In 2017, two posts will be created (part time) to deliver the programme. SRS working with Head of External Relations (CAM) and Assistant Principal Community Relations.
- Welcome week activities carried out together with the Students' Association. Approximately 2000 new contacts in relation to SRS in Q1.
- The handover of the Our Changing World series to the Department through autumn 2017 was successful with over 1,000 participants. Other SRS department events reached nearly 2500 further participants. 25 student volunteers supported these events.
- Course linkages with student projects in MSc Science Communication (Conflict Minerals) and the Case Studies in Sustainable Development.

- Planning and promotion for the SRS Student Project Grant has been on time and effective. This year we have refined the application / instructions to ensure that they are clear for applications. We have received support in promoting the grant from the EUSA marketing team.
- Continuing to develop approach to Living Labs on campus linking academics, students and practitioners on SRS issues. Toolkit by 2018 on web with resources for staff and students to develop projects…

SRS Reporting and Benchmarking

- Work undertaken in Q1 on SRS reporting. Integration of SRS performance data and narrative in Annual Report and Accounts. Stand alone sustainability reporting will be launched with February SRS newsletter.

Annex 1 includes summary table of status across priority themes as of end of Q1.

Risk Management
The Department has recently reviewed and updated its risk register for the Planning Round Submission with mitigating measures noted. Overall risks have reduced compared with one year ago. Given the recently launched Climate Strategy it will be critical to achieve targets for 2025 with savings from programme areas in energy efficiency and sustainable travel as well as supporting the University in clarifying a strategy for renewables. New sustainable procurement duties as well as University commitments will require further efforts on ensuring SRS integration.

Equality & Diversity
Although due consideration has been given to equality and diversity as a key element of the SRS agenda, and we do not currently think than an Equality Impact Assessment is required, we will continue to monitor issues within our programmes.

Next steps/implications
We seek to continuously improve our monitoring and evaluation to ensure programmes, projects and activities are cost effective in their use of time and other resources and that there are quarterly and annual reviews of outputs and outcomes. We seek to continue to do further work on targets communicated to better reflect performance relative to the size of the target audience and improve our internal reporting to better capture lessons learned.

Consultation
This report has been based on team and programme and project specific reports. Quarterly output and outcome reports are prepared for senior management and shared with other interested stakeholders.

Further information
Prepared by: Michelle Brown, Head of SRS Programmes
Presented by: Dave Gorman, Director of SRS

Freedom of Information
This is an open paper.

Annex 1: Q1 2016/17 Summary Table

STATUS (RAG)

Green	All objectives on track or only minor deviation. Report major milestones and successes.
Amber	Some risk of some objectives not being met or being delayed- explanation of mitigating measures proposed required.
Red	Serious risk that some or all objectives will not be met or will be delayed- explanation required.

*Note that this version links to key issues as prioritised for Department and included in RAM/SES. Targets for 2019/20 currently being reviewed and Department Strategic Plan being updated.

Priority Themes	Related Department Indicators	Targets for 2019*	2016/17 Progress at end of Q1	

Carbon and Energy	- Standards for new development
	- Approach to renewables & offsets
	- Contribution to Co2 + energy targets
	- SCF performance
	- #active champions
	- Visibility of materials around campus
	- Percentage change in staff survey re energy
	- External award for Energy and Carbon
	- Sustainable Travel – reduction in Co2e BAU
		- Development standards agreed and in use
		- Renewable and offset strategy /targets agreed
		- 1.8 M savings identified for 10 Percent target
		- 675k annual savings identified through SCF by 2018
		- 300 active Energy Coordinators by 2019
		- SWITCH materials visible in every location by 2019
		- Reduction from 36% to 15% in survey respondents noting 'I forget' as reason not to switch off….
		- 150 pledges for sustainable travel and flights avoided
		External award achieved for Energy and Carbon
			- Climate Strategy approved by Court and preparations for November launch in progress.
			- £1.1M in potential savings identified (SCF and other projects). 61 % of target.
			- Sustainable Campus Fund
			  - 10 projects approved. Average ROI of over 600% 2.8 y payback.
			  - Approved projects have a combined predicted annual savings of £125,726
			- 125 Energy Coordinators. 89 Active
			- Labs Programme Research and Integration
			- Winter SWITCH off campaign.
			- Reduction in short haul flights due to train incentive apparent via Q4 travel data.
				G

Resource Efficiency	- Active users, money saved and waste avoided through Reuse - Active staff champions - Other indicators linked to awards, awareness and communications - Circular Economy Network active	- 1900 active users by '19, waste avoided through warp-it and 500k saved… - externally reused via third party working - 50 active coordinators - Circular Economy Innovation Hub Network active	- £46,282 saved in first quarter through Warp-it - PC Reuse Project successful with targets exceeded and working with ISG on integration 407 PCs reused internally since project inception and in-kind contribution valued at £6k to local social enterprise. - 66 Active Champions. Circular Economy Innovation Hub discussion with Business School (to link with BDE)	G
Supply Chain SRS	- Categories SPPT assessment completed - # suppliers engaged on SRS issues and % of spend covered by supplier engagement - # of positive changes in supply chains as a result of engagement (direct or via bodies such as Electronics Watch) - % of research needs and critical issues identified via SPPT addressed - % staff with purchasing responsibilities have taken steps to increase their knowledge - % relevant tenders that include modern slavery and conflict minerals requirements	- All 5 prioritised categories complete and issues raised embedded in procurement process - 50% of spend suppliers engaged - Reporting of positive changes in supply chains as result of our work - 100% research needs identified through SPPPTs addressed - 100% critical issues identified through SPPPTs addressed - 80% purchasing staff engaged reached - 100% relevant tenders include modern slavery, conflict minerals and other prioritised issues - External award recognition	- Modern Slavery preliminary risk assessment undertaken and draft statement prepared. Approved by CMG and to Court for December - ICT, Travel, Food, Laboratories Supply Chain Risks and Opportunities assessed with summary documents online. Estates Supply Chain Risks and Opportunities now in progress - Preliminary work on supplier engagement strategy - Fair ICT Funding Bid with project partners submitted valued at XXX - Electronics Watch factory assessments (Malaysia) and country risk assessment (PRC)	G
Responsible Investment	- ESG Footprint of Investments - Positive Funding Mechanism - Student learning and engagement	- Annual PRI reporting and min of 'B' on benchmarking - Tracking of portfolio – Co2e and other indicator - Student learning opportunities in place by 2019	- Community Investment Proposal by Director SRS for Investment Committee - PRI reporting for 15/16 has not yet begun - Meeting with PRI in October 16 w Finance	G
Awards and Staff Learning and Development	- staff in office, lab awards as percentage of total - effectiveness of project grants - Internal benchmarking - Staff inductions include SRS at UoE 100% - Staff L&D opportunities	- teams by 2019 % staff in office, lab awards - staff in project grants - Internal benchmarking developed trialled, - 100 % staff inductions include SRS - Staff L&D opportunities for all	- 37/40 teams. 30 office. 7 labs - Special Awards Launched. - 1 staff project grant (Global Goal Jam) - Staff L&D online course proposal to SRS C - 140 participants in Be Sustainable Online Module and 155 participants at workshops	G
Community/ Public Engagement and Links to L&T	- Student learning opportunities for SRS - Researcher & Practitioner Living Labs for Programmes - Academic Participation in Programmes - Reach of communications campaigns and events	- % of staff and % of new intake students reached through campaigns - Uni SRS Standards (NUS Erasmus) Project successful - Quintuple digital presence from 2014 baseline - Living Lab toolkit in place - 5000 people reached annual in SRS events	- Approx. 2,000 new contacts in Q1 (more students than staff) - Our Changing World series in progress - 2,479 at SRS events in first quarter - 25 student volunteers in department - 45 applicants to student dissertation prize - 178 signed up to SRS Academic Network	G
Strategy and Reporting	- SRS Reporting to required standard and on time; Items to committees get approval; Good Food Policy Implementation Plan	- SRS Strategy signed off by 2018 - Annual Report signed off by committees - 80% approval rate for items brought to Committee	- SRS Strategy Refresh project plan approved - Internal Benchmarking approach development - SRS Reporting 16/17 final data delayed with outstanding questions on energy / carbon	A**
Our People, Systems and Processes	IIP level; Staff L&D Strategies; Funding and Income; Fit for Purpose Office	Silver by 2017; 100% staff have L&D plans aligned to strategy; £100k raised by 2019 for Dept and 500k for SRS in general; Office sorted by end of 2017	- Business Development Executive Recruitment with ERI; IIP next steps in progress; annual reviews and learning and development plans all in place; need fit for purpose office.	G

**Q2 Note: Addressed and all reporting completed before end of 2016.

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Sustainability Operations Advisory Group (SOAG)

Wednesday 1 February 2017

Developments within the Energy Office
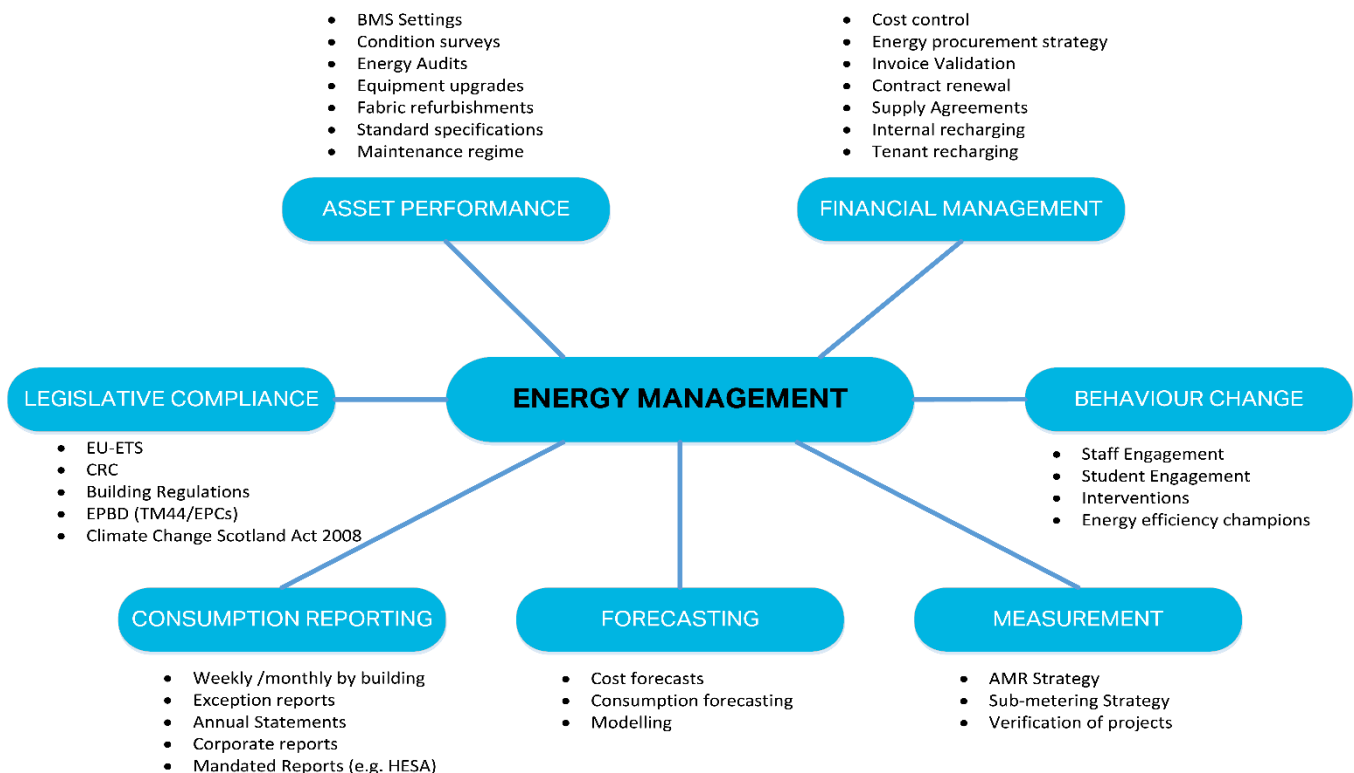
Description of Paper
The following paper is an update to SOAG on the change programme within the Estates Energy Office.

Action Requested
SOAG is invited to note this paper.

Background and Context
The role of the Energy Office is to manage the University's energy, utilities and associated carbon, ensure compliance with all internal and external requirements, manage relationships throughout the university's supply chain and participate in and lead on energy-related projects focusing on systems improvement, energy conservation, carbon reduction, energy efficiency technologies and use of renewable energy sources. The scope is illustrated below:

ASSET PERFORMANCE
- BMS Settings
- Condition surveys
- Energy Audits
- Equipment upgrades
- Fabric refurbishments
- Standard specifications
- Maintenance regime

FINANCIAL MANAGEMENT
- Cost control
- Energy procurement strategy
- Invoice Validation
- Contract renewal
- Supply Agreements
- Internal recharging
- Tenant recharging

LEGISLATIVE COMPLIANCE
- EU-ETS
- CRC
- Building Regulations
- EPBD (TM44/EPCs)
- Climate Change Scotland Act 2008

ENERGY MANAGEMENT

BEHAVIOUR CHANGE
- Staff Engagement
- Student Engagement
- Interventions
- Energy efficiency champions

CONSUMPTION REPORTING
- Weekly /monthly by building
- Exception reports
- Annual Statements
- Corporate reports
- Mandated Reports (e.g. HESA)

FORECASTING
- Cost forecasts
- Consumption forecasting
- Modelling

MEASUREMENT
- AMR Strategy
- Sub-metering Strategy
- Verification of projects

The scale of the University and the complexity of the utility supply infrastructure requires robust operational systems and governance to deliver effective energy management. The University of Edinburgh has made achievements in many areas not least the CHP networks, however, a significant change programme is underway to

deliver the systems and resources required to make a positive impact and effectively support the University Climate Strategy.

Resources

There have been significant staff changes within the Team over the last year with four out of the seven technical staff leaving the University. This has created opportunities but also operational challenges during a period when change is required in both the technical infrastructure such as metering and software platforms but also in the development of a new comprehensive energy management strategy.

With the staff changes, some interim arrangements have been necessary pending completion of the recruitment exercise; this has included outsourcing some data validation work to the Optima Bureau Service, drafting in an experienced Energy Manager on a short term contract pending the conclusion of the recruitment exercise and developing links with the Estates Finance Team.

The recruitment of two new Assistant Energy Managers has been very successful with the new appointments being in post by April 2017. In addition, additional external resources are being contracted to deliver specific work packages including the energy consolidation project, energy surveys and project management of energy projects including those funded by the Sustainable Campus Fund. Resources are being ramped up to gain momentum recognising the scale of the work being undertaken by the depleted core team to deliver better data capture, governance and reporting.

The Controls Team Manager left in October 2016. Following no candidates being appointed, a second recruitment exercise has been necessary and this will conclude during February 2017. In the interim a controls engineer has been seconded in for four months from our term controls contractor to focus on scoping technical and configuration changes to the Building Management Systems to better align building performance to business need.

The Energy & Utilities Manager will also retire at the end of March 2017.

Energy Software

Data quality is absolute to energy management and is at the core of all decisions that are made. Validating the data that is received from suppliers, data collectors and sub-meters is paramount to ensure that the information reported and acted upon is correct.

The legacy system used by the University, Optima Software, is a platform for validating and storing all of the data required to manage and then report on utility (energy and water) costs, consumption and Greenhouse Gas emissions. This encompasses a wide spectrum of activities and core functionality includes:

- Utility Bill Validation
- Energy Performance, Targeting & Benchmarking
- Metering Data Storage (Fiscal and Sub-Meters)
- Forecasting of Financial Budgets
- Recharging of Utilities to internal or external Tenants.

An evaluation of 'Optima' has been completed as part of the Energy Consolidation Project to assess capability against the University's requirements, work is ongoing to develop the legacy system, however, indications are the software will support our developing agenda. A pilot of the new 'Visualiser' reporting upgrade is underway.

Work is ongoing to improve the level of data quality within the systems and improve the reporting capability.

Infrastructure and Metering
Measurement of energy consumption is fundamental to the success of any energy management strategy. A comprehensive review has been undertaken and in November 2016 the Energy and Utility Metering Strategy was agreed, this set out:

- How data from metering devices could be collected
- Where data could be stored
- How data could be transferred to the analysis tool.

It was agreed that a metering pilot study (6 months) be undertaken using new updated hardware to evaluate the quality of the data capture and transfer. The Holyrood Campus was chosen and a detailed survey carried out to identify additional metering requirements to capture consumption to building level. Enabling work is underway and the pilot is due to commence during February 2017.

Finance
Another priority area has been to develop robust budgeting forecasting, monthly spend and recharge profiles. Monthly management and budget account meetings are now established to review and agree on how/what information should be presented by both Finance and Energy offices, this work is going well and a dedicated finance resource is being proposed through the planning round.

Next Steps
The new team will be embedded with roles clearly defined to deliver a prioritised action plan against which progress will be tracked. Initially the focus will be on the data governance and utilising the external resources to conduct survey work to pump prime reduction projects. It is hoped this work will commence in February 2017.

Work will advance in developing an Energy Management Strategy which will detail the new governance arrangements required to deliver a comprehensive and sustainable energy management programme. This Strategy will be developed jointly by Estates and SRS along with a review of the meeting structures. A draft of this Strategy will be tabled at the next SOAG meeting.

The implementation of the Energy Consolidation Project is another priority objective as the legacy metering infrastructure is nowhere near adequate to provide the level of reporting required. The technical evaluation of a pilot at Holyrood is ongoing.

Resource Implications
Resource implications for reporting have been accounted for within existing staff and operational budgets with pressures and bids detailed within the planning submission included in Departmental planning.

Risk Management
Key risks associated with energy consumption at the University include: The cost of energy consumption continues to rise, Systems supporting the reporting of energy consumption are being reviewed. There has historically been gaps within data sets.

Equality & Diversity
No implications identified.

Next Steps/Implications
To develop the Energy Management Strategy, embed new resources and governance, continue to implement the Energy Systems Consolidation Project.

Freedom of Information
This paper is open.

Grant Ferguson
Assistant Director of Estates (Head of Estates Operations)
26 January 2017

Sustainability Operations Advisory Group (SOAG)

1 February 2017

Tracking Progress: Pathways to 10 Percent and Sustainable Campus Fund

Description of paper

The purpose of this paper is to update SOAG members on progress in identifying savings opportunities for the 10 percent target and the Sustainable Campus Fund (as of end of Q1). This paper was first discussed in the November 2016 Utilities Working Group.

Action requested

SOAG members are requested to <u>note</u> the paper. Comments or suggestions for future reporting welcomed.

Background

- Estates and Department for Social Responsibility and Sustainability (SRS) have been tasked with developing a programme to identify and implement savings to University energy use to achieve a 10 percent reduction from business as usual during 2015-2017.
- Utilities Working Group has developed a programme brief which went to the Sustainable Operations Advisory Group (SOAG) in January 2016.
- The target is to be achieved from a bottom up compilation of individual projects that together make up the cumulative target.
- Working Group members have been asked for details of projects and these are included in the Project Tracker as and when information is provided.
- A Project Tracker has been developed to serve a dual purpose for both the Sustainable Campus Fund and for tracking identified projects for the wider 10 percent target.
- In April 2016, potential projects had been identified which estimated annual savings of £400k but with no indication (for most of those projects) on how they could be funded.
- In May 2016, Estates Committee approved a Sustainable Campus Fund (£2.75M over 3 years) as an internal investment vehicle that provides financing to parties within the University for implementing energy efficiency, renewable energy and other sustainability projects that generate cost and carbon savings.
- Estates and SRS are working to identify suitable projects for the Fund as well as other opportunities for savings (behaviour change, labs interventions, IT, continuation of energy efficiency in business as usual operations, and in refurbishments and developments).

Discussion

Progress towards 10 Percent Target

As of early November 2016[1], based on a bottom up compilation, opportunities which could save close to £1.1M have been identified for a 2 year programme covering 2016/17 and

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[1] Some information received on 1 November 2016 has been included for the purpose of this report

2017/18. It is currently understood that 2015/16 is the preparatory year with Year 1 of the programme in 2016/17 and Year 2 in 2017/18. If the timeframe extends to 3 years, then this would be estimated to increase to £1.5M.

This includes a range of projects being developed for the Sustainable Campus Fund as well as *other* activities and initiatives (funded or resourced by other means). Table 1 (below) provides a cursory breakdown of current understanding of opportunities by different pathways as per the original programme brief. It is important to note that although the opportunities may be identified in year 1 and year 2 there may be a time gap for project implementation.

SRS Engagement team is working with colleagues from Estates to try to capture all utility-related projects implemented at the University. Not all projects have yet been captured/calculated and more work needs to be done in this area. Specific opportunities (such as IT) have not yet been fully integrated. We may be under-reporting energy efficiency in refurbishments.

Table 1 Annual Cost and Savings Potential (SCF Projects and Other Opportunities)

	2016/17	2017/18	
Pathways to 10 percent	**Potential £ saving***	**Potential £ saving***	**2 Year Potential £ saving***
Large Building Projects	508,875	87,333	596,208
Small Scale General	79,948	41,210	121,158
Small Scale IT	10,950		10,950
Small Scale Labs	196,560	102,950	299,510
Behavioural change	53,381	53,381	106,762
TRIAD/Demand/STOR	52,276	104,000	156,276
Grand Total	886,915	584,002	1,290,864

While most of the opportunities are linked to energy savings, the original programme brief included opportunities based on energy management (TRIAD, Demand, STOR) which could have financial benefit but not necessarily energy or carbon savings. Savings of £52,276 for TRIAD and STOR have been included for 16/17 (based on 15/16 data)[2] with assumption that this could double when Easter Bush is covered under TRIAD management in the new EBEC. There are further opportunities for Capacity Market (would require CAPEX) which could generate income of £100K to £200K per annum from our 4 CHP plants.

It is hoped that the projects adding up to £1.8m utility cost savings may realistically be implemented by the end of 2018/19 academic year, with full savings visible the year after. However, significant savings still need to be identified in order to reach the target.

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[2] £37,272 from TRIAD and 15k from STOR

More definition is required for the cut-off period which projects should be included (since when). It has also been assumed that Easter Bush Energy Centre is included, which accounts for substantial portion of Y1 savings.

The Sustainable Campus Fund (SCF)

Approved by Estates Committee in May 2016, this is an internal investment vehicle that provides financing to parties within the University for implementing energy efficiency, renewable energy and other sustainability projects that generate cost savings. The initial assessment of opportunities found that investing £2.75M over 3 years[3] would bring estimated financial returns of £675,000 per annum by year 3 in addition to reducing our carbon.

It is worth noting that the fund is expected to help unlock and deliver the target of a 10% reduction in energy costs but other efforts are still required from around the University in order to deliver this. Even with a limited launch to date, the fund is already helping to stimulate local action, discussion and innovation in order to reduce the ongoing growth in energy costs in the longer term.

SCF - Performance as of 31 October

- 13 projects[4] have been proposed to the Utilities Working Group, 10 of which were approved.
- Combined payback period is 2.5 years (vs. 3.1 in fund proposal – as detailed in 3-year Finance model).
- Combined ROI is 629% (vs. 420% in 3-Year Finance model).
- Approved projects have a combined predicted annual savings of £125,726 (vs. £287,400 planned in Year 1 of the 3-Year Finance model). Note: 41% of funds have been assigned.
- While it appears that the fund is currently performing better than expected to date, this may be the case of "low hanging fruit".
- Together with projects currently in conception and development stages, the whole portfolio of SCF projects has a combined payback of 2.8 years and ROI of 495%.
- There are many lighting projects in this category and the financial projections and funding principles for these are subject to confirmation. The total cost of those projects is currently estimated to be £648,656, which includes an indicative price of some lighting projects which may increase.
- There are other (hypothetical) projects also included in our fund model currently marked as "potential", which have a payback of 4.1 years and ROI of 276%.
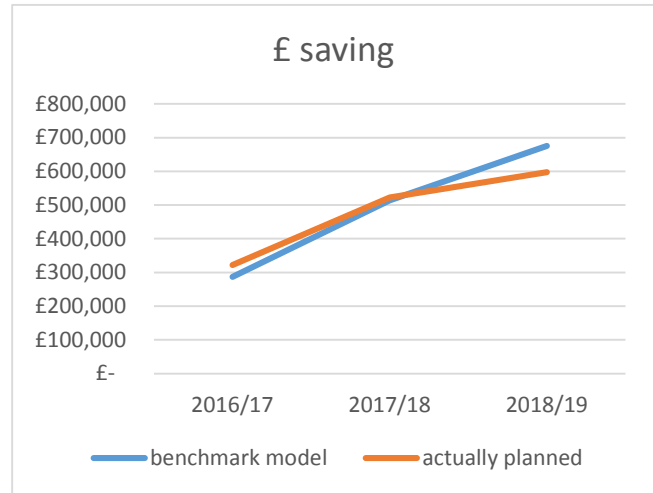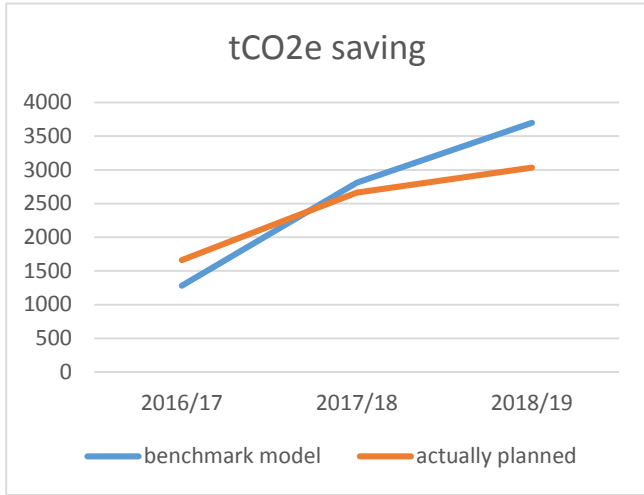
Comparison with 3-year Finance model

- All of the above projects (including all "potential", "conception", and "development") add up to £2.1m[5], similarly to the 3-year Finance model used at the early forecast stage in early 2016, which is included here as our benchmark.

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[3] At recent SOAG meeting it was noted that this should not be communicated as a 3 year programme but would seek to replenish.

[4] After consolidating smaller projects.

[5] Projects in 3-year model did not include VAT, whereas projects proposed to SCF are inclusive of VAT, therefore more than £2.1m will be available

- Forecasted performance in Year 1 is ahead of our benchmark on financial and carbon returns but based on information available could be expected to fall in Year 2 and 3.
- The 2 graphs below show current performance assumptions (October 2016) against our benchmark model (May 2016). The 'actually planned' includes those which are deemed to be more realistic of the potential projects based on information currently available.

tCO2e saving — benchmark model / actually planned (2016/17, 2017/18, 2018/19)

£ saving — benchmark model / actually planned (2016/17, 2017/18, 2018/19)

Current issues:

- Financial viability of lighting projects. It is unlikely that many of the lighting projects will meet the minimum 8-year payback. However, approach on lighting projects now agreed with paybacks between 6 and 10 years. Specific projects to be reviewed in February Utilities Working Group.
- Some improvements predicted during the fund proposal may be unnecessary after further feasibility assessment. For example, some assumptions for boiler upgrades were included, but most buildings do not require modernisation of boilers, due to CHP connections.
- Some of the simple thermal efficiency projects suggested tend to have attractive paybacks, however difficulties with obtaining reliable heat data makes it problematic to correctly estimate such projects.
- The model had £76k worth of spend on BEMS review, with a combined payback of one year. Estates is already developing a strategy in this area and therefore projects may not need to be funded through SCF.

Given the fund criteria, there is a need to prioritise best performing projects in the future in order to achieve original targets set. At the same time, there is also recognition that flexibility may be needed for some projects (i.e. Helium Recovery) that meet some, but not all of the criteria.

Proposed areas of focus for higher yield projects
- Ensure implementation of a workable approach to lighting projects
- Lab and ICT areas have highest saving to cost ratio (2.5 yr. vs. 3.2 yr. payback on average). As such it is recommended to direct more focus to ICT and labs projects.

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- 6 of the 10 proposed SCF projects are lab-based and are often relatively simpler, however only 6 out of 17 buildings reviewed for engagement team walk-around audits and project development were lab buildings. It is therefore recommended to conduct audits in other lab buildings.
- Opportunities on ICT need to be developed. This could include for example, ventilation policies and uniformity; server provisions and thin client models.

Equality & Diversity
Due consideration has been given to equality and diversity as a key element of the SRS agenda.

Further information
For further information on assumptions in relation to 10 percent and SCF see Project Tracker Excel Workbook.

Paper prepared by Chris Litwiniuk, Caro Overy and Michelle Brown with input from colleagues in SRS and Estates for Utilities Working Group in November 2016.

Paper presented to SOAG by: Dave Gorman, Director of SRS

Freedom of Information This is an open paper.