

Footprints & Handprints

The Edinburgh University community's climate impact and how we begin reducing it.

... in Transition

Tackling Climate Change & Peak Oil



people & planet



Keynote Summary

Footprints & Handprints: the Edinburgh University community's climate impact and how we can begin reducing it brings together the collective experience of Transition Edinburgh University (TEU) over its first year. Prepared by group members and staff-interns Oliver Cooper and Ric Lander, it is the first significant research output of the group and covers key concepts, the internal working arrangement of the group, an estimation of the carbon footprint of the Edinburgh University community and proposals for future action.

Climate change, according to the scientific community, is caused largely by human activity and poses a dire threat to the ability of our planet to sustain us. **Peak oil** is the peaking of oil production and the beginning of the end of a cheap, abundant oil supply. This twin threat requires ambitious solutions if it is to be overcome. With government action slow and insufficient, the University of Edinburgh needs to respond as a community in order to overcome these challenges. The Transition model – a framework for community action originating from Kinsale in Ireland – suggests an invigorating and exciting way in which we can create a positive and prosperous future. TEU formed in October 2009 to find a way to adapt this model to fit a University community. It was instrumental in encouraging the adoption of Transition by People & Planet (UK) network in March 2009 and received funding from the Climate Challenge Fund to develop the concept further at Edinburgh, over Summer 2009. TEU is now a thriving community group embedded in the University of Edinburgh and draws great strength from being a core part of the University, the Transition movement, and the student environmental movement.

TEU has been working with **four aims**: (1) to investigate energy use and greenhouse gas emissions in our community and record achievements in reducing them; (2) to increase awareness and involvement of the 35,000-strong community in action on climate change and peak oil; (3) to take practical action to reduce energy use, cut greenhouse gas emissions, and relocalise our community; and (4) to build, publicise and transfer a set of tools to support Transition groups in similar and surrounding communities. The group believes that University staff and students must work together as a community to achieve these aims and that TEU's task is to facilitate this effort; that working collectively and non-hierarchically is the most effective way to achieve these changes; and that clear analysis, a practical approach, and a desire to educate, understand and be part of a global solution are all key themes that the group should work towards.

Over our year together as a group, TEU has developed an **open model of working** which we believe achieves our aims efficiently, empowers group members and facilitates skills development. TEU staff and community members (students and staff at the University) work together in themed working groups on areas such as travel, aiming to reduce the energy-use of travel, and residences, aiming to reduce the energy used in buildings. TEU staff and community members work together in open working spaces where possible, and come together for fortnightly plenary meetings to celebrate successes and coordinate action. The group is supported with training, materials, working spaces, and formal and informal mentoring. Much of this work has been backed up by funding from our initial Climate Challenge Fund grant. A second more ambitious bid has been submitted to the fund and TEU is awaiting a response. We have also relied on support from the University Energy & Sustainability Office and Edinburgh University People & Planet Society.

A **carbon calculation study for the University community** was carried out over the Summer of 2009, aiming to make existing data more relevant and accessible, to highlight areas where data is currently missing and to give staff and students a general picture of where their greenhouse gas emissions occur. It addresses the institutional footprint of the University *and* the “lifestyle” footprint (emissions from home-life and leisure) of its 10,000 staff and 26,000

students. It is intended to be as broad and inclusive as possible, measuring our impact from direct emissions as well as giving a picture of indirect emissions – those emitted elsewhere in order to provide us with goods and services, which is often overlooked by conventional studies. Preliminary findings suggest that the annual carbon footprint of the University community is approximately 350,000 tonnes of CO₂e emissions per year. Of this figure, only 50,000 tonnes (14%) is estimated to be directly resulting from institutional activities, with the remaining 86% attributable to staff and student lifestyles. Not including their 'institutional activities', the average community member is estimated to produce 8.3 tonnes of CO₂e emissions per year. This would comprise 2.3 tonnes CO₂e from domestic energy use, 2.2 tonnes from travel and 3.8 tonnes from goods and services – although the total is thought to be an underestimate, particularly with respect to emissions from travel activities. The study found that the University Estates and Buildings and University Accommodation Services hold useful data regarding energy use in their buildings, but found that the University lacked records for CO₂e attributable to procured goods and services.

Opportunities for action for TEU, the University, and other groups abound, including practical projects to reduce energy-use and greenhouse gas emissions, projects to broaden engagement in the transition, projects to spread the idea of Transition further afield, and proposals for further research work. Proposed projects respond to the problems highlighted by the carbon calculation study and build on schemes already running or in development include: a Green Dragons Den where inventors and entrepreneurs develop carbon-saving business ideas with the winner's being implemented; an Inter-halls Energy Saving Competition, where halls of residence compete to lower energy-use; Veggie-food days, where the carbon-saving qualities of lower-meat diets are promoted; Free-shop and share, where students and staff exchange unwanted items to reduce waste and consumption; the Big Green Makeover, where students and staff are offered supported to make homes more energy efficient; Transition TV, showcasing new and exciting transition ideas; peer-learning programmes such as Carbon Conversations, which are pre-designed courses where participants discuss emotional responses to climate change and peak oil; a green travel fair to promote low-carbon journeys and holidays; a series of high-profile speaker events in the University; and conferences engaging the city community and the wider academic community in Transition.

We also propose that **further research** is carried out to improve our picture of the community's carbon footprint and build a complete long-term plan for a green transition. The University has done some work towards recording CO₂e emissions attributable to goods and services procured and this should be commended, but bought *travel* services (flights, trains etc.), a significant contributor to the University's institutional footprint, are not yet coherently recorded. Much more work is required to give a complete picture of “lifestyle” emissions, as somewhat sweeping assumptions have been required to create estimates of emissions for domestic energy, travel and goods & services. Further research, including surveying the University population, is urgently required to establish a lifestyle carbon footprint that is more specific to the University community. Parallel to large scale quantitative studies such as these, there is a need for additional studies that provide more context to the picture of the University's ecological impact. Finally, a clear plan for the future is required, including working towards a holistic “Energy Descent Action Plan”, which gives a vision and a path for a community response to peak oil and climate change. This research can be carried out with the help of TEU staff and community members, and we also see University courses including student dissertations as excellent ways in which students can be engaged in this effort.

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introduction

What's this report about?

Amidst the dire warnings about global warming and fossil fuel scarcity coming from the scientific community, students and staff at Edinburgh are trying to respond with positive solutions. The University has cut energy usage, reduced waste, employed environmental staff, improved food procurement and relocalised electricity generation. Student and staff campaigners have forced their Governments to set ambitious targets for carbon reductions and reconsider previously stubbornly-defended policies on coal and aviation. With the targets set and the support growing now is the time for widespread grass-roots action: to realise a just green transition to a more resilient, lower carbon, lower energy future.

Transition Edinburgh University (TEU) is a group of students and staff who are seeking to catalyse a collective response of *positive* practical action to the challenges of global climate change and “peak oil” (these terms are discussed on p.7). This report serves as a record of our first steps: setting out the concepts we have grappled with; our investigation into the climate impact of the University community; and some proposals for action. It is not a complete programme of action, since a holistic strategy has not yet emerged, but neither is it just a thought-piece: some of the ideas included are already being realised (see *Opportunities*, p.46). We hope that everyone will find elements of this report applicable to their own experience, in homes, classes or offices, and that other community organisations find in our experience some inspiration and tools for action.

A brief outline of content

The report begins with a **introduction to the driving concepts** behind the TEU group (p.7): climate change, peak oil and the Transition movement. Time is taken to consider the specific environment of the University as a community, and how TEU has grown and developed over the past year.



Illustration 1: Transition conversations at a TEU meeting. Image by Ric Lander (cc-attrib-noncom-sharealike).

Part two outlines the **current frameworks and practices that TEU exercises** (p.15). Our open model of working is explored, focusing on how paid TEU staff have found ways of working that empower members of the wider group and facilitate skills development. How TEU members support each other and give guidance and direction through mentoring and collaborative working practices is also explained. How TEU applied for funding from the Climate Challenge Fund (CCF) is discussed, as well as the way TEU works in partnership with and as a part of other

organisations and networks. Finally the report lists useful technical tools the TEU staff has used in our work.

The third part presents our **carbon calculation study for the University community** (p.26), including emissions accruing from our activities within the University institution, and those from our lifestyles at home and leisure. The aims of the study are outlined, followed by a detailed description of the methods used, including adaptation of the GHG Protocol Corporate Standard and the procedure used to set the study's boundaries. The findings are introduced with a summary followed by more in-depth discussion divided between emissions from fuel consumption in buildings, travel and embodied emissions of good and services. The chapter concludes with a discussion of the validity of the data presented.

The final chapter outlines the many **opportunities for action** (p.46) we have found for TEU and other groups to take up. Included are practical projects to reduce energy-use and greenhouse gas emissions for the three main areas of impact discussed in the carbon calculation study: energy use in buildings, travel and goods and services; projects to broaden engagement in the green transition at the University of Edinburgh; projects to spread the idea of Transition further afield; and proposals for further research work.

Who wrote this report

This report has been prepared by TEU members Oliver Cooper and Ric Lander, with additional sections, data collection and support from Natalie Czaban, Sion Lanini, and Tom McGrath. All five have worked this summer as staff-interns funded by the Climate Challenge Fund with support from the University of Edinburgh Energy & Sustainability Office and Edinburgh University People & Planet. It brings together the collective experience of the group, including all its members who are too numerous to list, and the many individuals and organisations we have worked with to date.

The authors would like to give a special thanks to all the people at the University and further afield who have offered guidance and provided data as a contribution to the *Our Carbon Footprint* section, in particular Karen Bowman, Shona Buchanan, Neil Crowley, Emma Crowther, Paul Gorman, Val Jenkins, Debbie Kilgallon, Sandra Kinnear, Osbert Lancaster, Angela Lewthwaite, Mukti Mitchell, Katrina Renton, Sophie Rippinger, Fleur Rothwell. We would also like to thank our proof readers including Ben Miller, Caroline Overy, Fergus McInnes, Rosie Sullivan, and Samantha Lyle (of www.englishproofreading.co.uk).

A final special thanks must go to David Somervell whose enthusiastic support made this project happen.

Background to *Footprints and Handprints*

What is climate change and peak oil?

Climate change refers to long-term fluctuations in the global climate. In recent years there has been sustained climate change stemming from global temperature rises, and the scientific consensus is clear that most of these changes are a result of human activity. This primarily refers to the burning of fossil fuels in the rich industrialised global North, and, to a lesser extent, deforestation, agriculture and other human activities. These activities increase the levels of gases in the atmosphere (such as CO₂ and methane) that trap heat in the earth's atmosphere, creating a warming effect. We are told this process is ongoing and that future effects will be wide reaching, highly unpredictable and potentially catastrophic. Sea levels will rise, ice will melt, desertification will ensue, rainfall patterns will change, storms may become more intense, and extreme weather will become more prevalent. These changes will affect the world's poorest disproportionately, wreaking havoc on coastal regions, destroying agriculture and forestry, creating mass extinctions of species and deeply exacerbating poverty. The stresses on ecological systems will manifest themselves in our economic and social systems, with unprecedented global migrations and inflamed warfare in conflict zones likely scenarios¹.



Peak oil is the peaking of world oil supply, which many analysts believe will happen within the next few years, or could even be happening already². This is due to a steady decline in oil discovery since the 1970s, the biggest oil fields coming to the end of their productive lives and industry underinvestment. Such a decline is important because much of the modern globalised economy - our advanced systems of transport, housing, food production, healthcare, even governance itself - has been built on a reliable and cheap supply of oil. Peak oil theory shows that this supply will become scarcer and vastly more expensive in a very short period time: as demand is constantly increasing, it will outstrip dwindling supply and prices will sky-rocket, with grave consequences for economies and livelihoods.

What is the Transition movement?

The idea of Transition is that rather than panic in the face of this ecological and economic crisis, we should work positively and collectively to both reduce our contribution to the problem and make ourselves less vulnerable to the effects. This can be achieved by making a shift from an energy-intensive society to one made up of localised, reinvigorated, low-energy use communities. The principal of *energy descent* is the core around which transition is built. Energy descent describes the task of revolutionising our society from one which uses historically

1 IPCC (2007). "Climate Change 2007: Synthesis Report. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change". Published by IPCC, Geneva, Switzerland.

2 Witze (2007). "That's oil, folks..." Nature vol. 445 issue 4. 4 January 2007. By Alexandra Witze.

unprecedented amounts of energy – which as described above we know to be unsustainable – to one where energy-use per capita is low. A key element of this task is *relocalisation* – sourcing more of the goods and services we depend on from the community surrounding us, therefore using less energy and building community resilience. The task of energy descent is raised and driven by Transition groups who work at the level of local communities.

The idea began in 2005 when community groups in Kinsale, Ireland, and Totnes in Devon, England, started to think about how they could make their towns sustainable in a future without cheap importable fuel. They developed their ideas into what became known as the Transition model, and the idea has been taken up and adapted by community groups (known as *Transition Initiatives*) ranging from villages to towns, cities, campuses and islands. A network of initiatives has developed and today there are hundreds of Transition groups across the world from Britain and Ireland to as far afield as Japan, Chile, New Zealand, California and India. Their work is supported by a growing number of support bodies, including [Transition Network](http://www.transitionnetwork.org/)³, based in Totnes and supporting the *international* network, [Transition Scotland Support](http://www.transitionnetwork.org/)⁴, based in Edinburgh and supporting Scottish initiatives, and [People & Planet](http://www.peopleandplanet.org/) (UK)⁵, based in Oxford and supporting University groups. Together transition forms a diverse, radical and energetic movement for change.



Transition initiatives are simply community groups looking to respond locally to the problems of peak oil and climate change. A Transition group in a small village might encourage their neighbours to get their food from local farmers, whereas a city-wide group might be organising workshops and speaker tours and working with their council to improve cycling provision. Initiatives adapt and create within their local circumstances. But what holds transition initiatives together is a recognition of the importance of strengthening community and building capacity to

change things from the bottom-up. An awakening to the climate and energy crisis is the impetus for action, the outcomes of this transition are much broader: relocalising the community not only makes it more resilient, but also more vibrant, stronger, and happier.

What's does *Transition* mean at a University?

Despite the Transition idea beginning in communities in small towns, it is still highly applicable as Universities share characteristics with those of a small town: they are communities of between 10,000 and 40,000 people; they have their own internal bureaucracy (the institution of the University, and to a lesser extent, the Students Union and other bodies); and they have their own local economy with services and shops. However, in many ways Universities pose very different challenges, and indeed opportunities, from a small town: they have highly transient populations; their buildings may be scattered across a wide area or nucleated in separate clusters; and their bureaucracy varies from that of a local council, with a University institution tending to be more powerful and less democratic (whilst a Student Union may be the opposite). These differences create a need to apply fresh thinking to previously worked approaches in order to make a Transition model succeed in a University setting.

More encouragingly, Universities offer some exciting opportunities. The energy offered by

3 See Transition Network, <http://www.transitionnetwork.org/>.

4 See Transition Scotland Support, <http://www.transitionnetwork.org/>.

5 See People & Planet (UK), <http://peopleandplanet.org/>.

students, combined with their famed spare time, has allowed them to make up the core of many movements for change, from the anti-Vietnam war movement of the late 60s to the Camp for Climate Action in recent years. The current generation of students are leaving university clued up about climate change and looking for practical positive ways to do something about it. Most university staff and students spend their time learning, teaching and researching: a perfect environment to test and evaluate new ideas and projects. Strong foundations have been laid by previous community-led campaigns to influence university policies and activities. These include People & Planet groups UK-wide engaging their Universities and Unions to get formal staff support for environmental initiatives and the launch of Transition Universities as a [national campaign](#) in September 2009⁶. Many Universities and Unions have signed up to ambitious targets on greenhouse gas emissions reductions, including the Universities and Colleges Climate Commitment for Scotland and the [10:10 campaign](#)⁷.

If a community is a group of people held together by place or interest, then a University is a community on two accounts. This is a strong rock upon which a movement for change can be built. Universities have unique challenges and unique opportunities for adapting to a changing world and informing the path to a more resilient, low-carbon and lower energy future. We must work with our limitations and take advantage of our strengths to create a workable Transition vision for Universities.

Where did *Transition Edinburgh University* come from?

In October 2008, People & Planet Society hosted a meeting with Eva Schonveld from Transition Scotland Support and a working group was formed to see how the Transition model could be applied across the University. With other Transition groups already up and running in Edinburgh, the first discussion for the group was “what would our contribution be?” We realised that the University was both a strong community and, as discussed above, a unique environment for change.

In its first academic year this newly formed group, becoming known as TEU, successfully lobbied the University court to adopt the Universities and Colleges Climate Commitment for Scotland and to report progress annually⁸; organised visits to local food projects; supported allotment and food co-operative projects; hosted discussions on transition; and built links with local groups (see *How We Work: Working with other groups*, p.22).

In the Spring of 2009, the group began to develop a wider model for engagement. Building on the strengths of its parent society and network, People & Planet (UK), and that of Transition as a model for practical local change, a proposal for “Transition Universities” was taken to People & Planet's (UK) national conference, “The Forum”, in early March. Groups from all over the UK agreed to explore and implement the concept as the next step in its hugely successful “Go Green Universities” campaign. A local response to the idea was then developed into an application to the CCF (see *How We Work: Funding our work*, p.19) to support a feasibility study to develop the Transition model in our University community, of which this report is an outcome. The work to date is just the beginning, and TEU is looking to 2010 and beyond to see our ideas spread and our campus transformed.

6 See People & Planet “Going Greener”, <http://peopleandplanet.org/goinggreener>.

7 See 10:10, <http://www.1010uk.org/>.

8 The Universities and Colleges Climate Commitment for Scotland, www.eauc.org.uk/scotlands_principals_climate_commitment.

Excerpts from *Transition Edinburgh University's first year*

TEU's first success:

University signs up to Climate Commitment⁹

Natalie Czaban. 8th January 2009.

TEU successfully lobbied the University Court this week to go beyond simple adoption of the Universities and Colleges Climate Commitment for Scotland, to further commit to annual reporting on progress in reducing carbon emissions targets.

To date, 42 institutions have signed the Commitment, constituting over 66% of universities and colleges in Scotland. Signatories are committed to producing and publishing a 5-year Climate Change Action Plan by February 2010. Plans will include measurable targets and time-scales to achieve a significant reduction in emissions from all business operations and activities.

See a copy of the [Universities and Colleges Climate Commitment for Scotland¹⁰](#).

The People & Planet (UK) network decides to take up Transition following a proposal from the Edinburgh University group:

GREEN TRANSITION¹¹

Forum decision: Go Green

Ric Lander, Media & Comms Volunteer Edinburgh Uni P&P

The Go Green campaign has been running since 2003, and as a result loads of universities now have the building blocks in place to massively improve their environmental impacts. The Forum 09 decided that the next stage in the Go Green campaign will be to develop the idea of 'Transition Universities', combining practical projects for change with driving down universities' carbon emissions.

The idea of 'Transition' begins with the dual crisis of climate change and oil depletion. Community groups in Kinsale, Ireland, and Totnes, Devon, came together to consider these problems and came up with a framework to create more localised and low-energy-use communities - a positive and simple solution to a complex and overwhelming set of problems. By focusing on strengthening their local community through practical hands-on projects, these groups forged a path to reducing their contribution to dangerous climate change, whilst at the same time making themselves resilient to spiralling global fuel prices. This, in essence, became the Transition model. Stories of success spread from these first 'Transition Towns' across Britain and Ireland, and before long Transition initiatives were forming from the inner cities of London to the Islands of Scotland and beyond. Today support networks are growing in Totnes and Edinburgh, and groups are thriving as far afield as Japan, Chile, New Zealand, California and India.

⁹ Article taken from <http://www.transitionedinburghuni.org.uk/node/37>.

¹⁰ See EAUC, http://www.eauc.org.uk/scotlands_principals_climate_commitment.

¹¹ Article taken from <http://peopleandplanet.org/dl/activistsummer09.pdf>.

People & Planet has been pushing forward the transition to a low-carbon economy on campus for several successful years with its Go Green campaign, in the form of lobbying for institutional support for improving environmental management. As many groups have achieved the Go Green aims, the idea of using the more practical approach of driving forward this change, as outlined in the Transition model, fits in perfectly as the next step. How we might go about developing the idea of Transition Universities as P&P is still quite open. The Forum laid the foundations for this by deciding that we should focus on two objectives: reducing universities' carbon emissions and setting up practical projects such as bike co-operatives and training workshops to educate and skill up people.

Find out more: transitionnetwork.org Get involved in developing the Transition Universities campaign: gogreen@peopleandplanet.org.

Iain Macwhirter, elected with support from People & Planet Society, praises transition at his inaugural speech:

Iain Macwhirter's Address to the University¹²

10th March 2009

"...Then there is Edinburgh's wider responsibility to the community it stands in. As recession dominates public affairs it's going to be down to Universities like Edinburgh to remind society that the greatest challenge facing humanity is not saving the banks but saving the environment. Edinburgh has made excellent progress toward becoming a low carbon university - the first educational establishment in Scotland to be awarded the Carbon Trust Standard for its combined heat and power project, which has saved a million pounds a year. Saving the planet also means saving money which makes you wonder why more organisations don't do it.

"But while the University has been highly effective in its own environmental housekeeping, the challenge now for Edinburgh is to provide intellectual leadership in the wider debate on environmental change. There is no longer serious scientific dispute about the reality of anthropogenic climate change, but in the media and in politics, it's still seen as just another opinion. Politicians pay lip-service to the environment, believing privately that we'll all muddle through. We won't. There is a narrow window of opportunity for controlling carbon emissions. The creation of the Centre for Environmental Change and Sustainability is a major step forward here, as is the rest of the work done by the school of Geosciences. But it is going to require something more direct if we are to avoid an environmental disaster.

"People say that students are apathetic and apolitical, but I can confirm that on this issue they aren't. Right now we are seeing the first generation of graduates which has taken on board the full implications of climate change and is already, in the transition university concept, trying to live as if in the first days of a sustainable future. I am confident that the political establishment is going to be challenged by activists who are a lot more organised and sophisticated than the lifestyle radicals of my generation. It is to them that I owe my victory in this rectorial election, I honour their determination not to allow their planet to be destroyed simply because no one could be bothered to do anything about it."

¹² Article taken from <http://www.ed.ac.uk/news/all-news/installation-040309>.

Summer Gathering¹³

Tom Mcgrath. 5th July 2009.

Being a complete “newbie” to the People & Planet organisation, I wasn’t quite sure what to expect at the annual summer gathering held in Oxford last week. It promised to be an intense but chilled out week-long training event involving inspiring speakers, practical workshops and around 100 People & Planet members/people to share ideas and stories.

With no tent and very little camping experience I wasn’t sure how I’d fare at the Youlbury Scout Activity centre, but I was determined to have an open mind, and headed on my way with a mixture of apprehension (should I have brought wellies?), excitement (campfires!) and the feeling that I’d definitely forgotten something!

After a mammoth 8 hour train journey to Oxford, which included a picnic in on the street in Birmingham (much to the amazement of the passers by), we arrived on Sunday (28th June) and were instantly made to feel welcomed by the P&P staff.

We were given a session program for the following 4 days and the word intense was definitely applicable! The range of workshops on offer was impressive; each day had a full program from 9.30 in the morning till 9.00 at night with at least 10 different workshops to choose from.

People & Planet is the largest student network in Britain campaigning to end world poverty, defend human rights and protect the environment, and the events on offer definitely covered all the bases you would need to organise and run a student campaign based on any of these ideals.

As a group we tried to split it so we could cover all the different activities between us and although not all would be applicable, they definitely made us think about how it could be applied to our Transition project. My personal highlights were: facilitation, the politics of climate change, e-campaigning and media training (I’ve always thought I had a face for radio).

It wasn’t all about work; the evenings gave us opportunities to reflect on the days events and relax around the camp-fire with a few drinks, which was a fantastic way to end the day.

My fear about the wellies was unfounded as the weather couldn’t have been better, and I would say the same about the facilities and organisation. The staff effort is huge and P&P really tried to ensure that everybody came away with a feeling that there was much we could achieve together and there are tools that will help along the way.

It was an exciting event that, as Transition interns, we came away with a greater understanding of the task ahead, equipped with some really practical tools to make it happen and lots of contacts to help along the way.

13 Article taken from <http://www.transitionedinburghuni.org.uk/node/42>.

Beginning the Transition in style: TEU's 'Footprints and Handprints' Launch Event¹⁴

Natalie Czaban. 5th October 2009.

Edinburgh University Students Association Teviot Debating Hall was the scene of a momentous event in the University's history last night -celebrating the plans and projects of a student-staff initiative dedicated to delivering our low-carbon future and setting Edinburgh as a leader in tackling the issue of sustainability.

More than one hundred and fifty people crammed in to Teviot for the 'Transition Edinburgh University' launch event. Representatives from the whole University community, including EUSA sabbaticals, fifteen graduates of the world-leading 'Carbon Management' MSc, high ranking academics and even three parliamentarians! Individuals from all academic disciplines exchanged ideas and discussed plans for action on education, food, energy, transport, equity and business.

Natalie, one of five graduates who have been working over the summer on the Transition Edinburgh University project said: "We were delighted to have such a huge turnout - with representatives from disciplines across the University. The event had a real buzz to it. It was a celebration of all the astoundingly forward-looking work on sustainability at the University ...involving hundreds of staff and students."

"We're hoping that our project can learn from and complement this existing work and bring initiatives together to deliver action research projects promoting a resilient, lower carbon, prosperous future as a diverse and united community."

Participants split into a dozen action groups to discuss the areas they most wanted to contribute to after an overview of the Transition projects planned for the coming year. Research findings on the extent of the University's carbon footprint were presented along with ideas for how to achieve the University's 10:10 commitment to cutting emissions by 10% in 2010.

Third year Business student Judy Payen, who attended the Business action working group, reported:"I was so excited to meet with people from all disciplines, especially those in areas not traditionally related to sustainability, such as Business. Everyone I talked with at the event was determined to contribute their diverse skills towards this movement for a sustainable, low-energy future. I believe Transition Edinburgh University has the potential to bring this community together in a way that makes radical and positive change possible."

The launch event kicks off a new academic year of practical projects and action planning by the Transition Edinburgh University project. Students and staff are invited to get involved - by attending the post event planning meeting at 6pm, Tuesday 6th October in Faculty Room South, David Hume Tower, George Square.

¹⁴ Article taken from <http://www.transitionedinburghuni.org.uk/node/60>.

From external publications:

The University of Edinburgh signs up to the 10:10 campaign, to reduce emissions by 10% in 2010:

Edinburgh University slashes its carbon emissions¹⁵

Severin Carrell. 8th September 2009. The Guardian.

Transition's 1st October 'Footprints and Handprints' launch event:

University of Edinburgh to undergo a green transition¹⁶

Laura McCaffrey. 30th September 2009. The Journal.

The launch of inter-halls energy competition at Pollock Halls:

'Big Switch' turns Pollock Halls green¹⁷

Julia Cobb. 11th November 2009. The Student.

15 Article from the Guardian, <http://www.guardian.co.uk/education/2009/sep/08/carbon-emissions-1010-edinburgh-university>.

16 Article from the Journal, <http://www.journal-online.co.uk/article/5820-university-of-edinburgh-to-undergo-a-green-transition>.

17 Article from the Student, <http://www.studentnewspaper.org/news/695-big-switch-turns-pollock-halls-green>.

How we work

Functioning as an open team

This part of the report will set out who the Transition Edinburgh University (TEU) is and how it functions, with a particular focus on how it maximises the contributions of TEU staff and community members working in their own time. We have included an outline of what the group is, how decisions are made, how the group is resourced, and every-day working practices such as how TEU uses the internet. It is designed to be the beginnings of a work-manual for the group and a resource for those in community groups outside our University. We hope it begins a useful conversation about how TEU works and that some of the methods and tools included will form part of a more ambitious strategy for TEU (see *Opportunities: Understanding our community*, p.86).

Aims and principals

As a group, TEU is yet to formally agree a set of aims or principals. However, the TEU staff and Funded Project working group (see *Funding our work*, p.19 in this section) have developed tentative aims and principals to inform their work over the summer. We, the authors, feel these ideas reflect our work so far and encapsulate our future aspirations.

Transition Edinburgh University: a proposal for aims and principals

Transition Edinburgh University works to achieve four aims:

- Investigate energy use and greenhouse gas emissions in our community and record achievements in reducing them.*
- Increase awareness and involvement of the 35,000-strong community in action on climate change and peak oil.*
- Take practical action to reduce energy use, cut greenhouse gas emissions, and relocalise our community.*
- Build, publicise and transfer a set of tools to support Transition groups in similar and surrounding communities.*

We believe that we can only achieve these aims by engaging the whole University community, students and staff of all departments, jobs, backgrounds and incomes - it must be the whole University in transition. Rather than confining our activities to a discrete body of students or staff, we see ourselves as a community group aspiring to involve the whole University in the process of transition. We believe that Transition can become part of, and

for, all societies, groups, departments, the local community, and the University institution itself.

We believe that the most empowering approach is to work collectively and non-hierarchically: building bonds of trust, openness, and understanding between community members and oft-disparate bodies, and removing the dependency and lack of confidence that hierarchical ways of working can breed.

We believe our approach must be analytical, to ensure the changes we make are effective; practical, to give people the power, hope and enthusiasm that comes with taking hands-on action; educational, to see our actions become part of a broader movement for change; and outward-thinking, seeking and spreading solutions that can work outside our community in a spirit of internationalism.

Agreeing actions



Illustration 4: Making decisions in a group.
Image by People & Planet (UK) (c).

Over the summer the TEU staff have worked primarily by meeting with *each other* to agree actions and using working space in the University Energy & Sustainability Office. However, with students have returning from the summer break and group membership has growing, TEU staff and the wider group have had to develop a more collaborative way of working. TEU also seeks to work collaboratively and non-hierarchically to empower community members – students and staff, core group members and the whole community – for action against the communal global challenges posed by climate change and peak oil. This section will explain how this way of working functions.

The TEU group meets fortnightly to feedback achievements of the community and to co-ordinate plans for further action. These “**Transition Planning**” meetings also host small-group discussions on topics of interest, including action-orientated working groups as needed. They serve as a space to celebrate achievement and put it in a broader context: a time for the core of the group to strengthen their bonds and plan collective action.

Outside of Transition Planning meetings, the work of the group is done in these **action-orientated working groups**. Made up of TEU staff and community members, these working groups form the main structure within which the group functions. They cover areas of work as follows:

- Food and Goods: taking action to re-localise our food supply and reduce the impact of consumption and procurement.
- Residences and buildings: taking action to reduce the energy usage of buildings in the community.

- Business: considering the contribution of business and engaging constructively with different narratives and working styles.
- Travel: taking action to reduce the impact of travel that takes place in our community.
- Diversity: taking action to engage the whole diverse University in transition, running events, and engaging with hard to reach areas of the community.
- Peer-learning: creating spaces for community members to share the problems and solutions posed by energy descent and relocalisation.
- Research: investigating, publicising and utilising information about the University community's environmental impact, energy usage, and opportunities for reduction.
- Art and Multimedia: using art and multimedia to bring the community together and inspire creative action.
- Outreach: taking action to introduce and nurture other transition groups and spread awareness of useful transition methods.
- Communication: using all forms of communication including our website, the wider internet, and the student, local and national press to spread the transition message.
- Funded Project: resourcing and overseeing the funded element of TEU (see *Funding our work*, p.19 in this section).

Working groups are open to all. They appoint individuals in positions within them (for example, group facilitator) on a meeting-by-meeting or a more permanent basis. They meet as much as several times a week, keep in touch by email or using our on-line forum (see *Useful tools and systems*, p.24 in this section), work in collaborative working spaces such as the University computer labs (see *Welfare and support*, below in this section), and report their activities online and to "Transition Planning" meetings.

Staff work within this structure to deliver the majority of their funded work through working groups, and taking no higher place in decision making than community members. TEU staff support the working groups' activities, including motivating, mentoring, and informing where appropriate, but not instructing. This approach is in part a response to our belief that grass roots collective action should create spaces where everyone feels they can input and take their initiative on an equal playing field, but also an admission that many community members TEU works with, including University staff, have a great deal more experience of these issues than TEU staff. Such methods are discussed further in the below (see *Welfare and support*, below in this section).

For this collaborative approach to function group members need to be prepared to take initiative and TEU staff need to be flexible in their working patterns and actions. For example, our current staff work with a fixed number of hours per month, but are given flexibility to decide when in the month and during each day they choose to use them.

It is difficult to make an assessment of how successful this loose structure is at this early stage, and the TEU will need to constantly evaluate its effectiveness in relation to our aims as TEU progresses.

Welfare and support

The working group structure is backed up by a number of **support mechanisms**. These help the group members understand each other, work to their strengths, ensure the health and energy of the group and its individuals' welfare, and support team and personal development:

- TEU staff offer mentoring and personal support to the group in **weekly collaborative working sessions** in a University computer lab – a relatively “neutral” working environment, compared to, for example, TEU staff inviting individual group members into office space at the University Energy & Sustainability Office. These are 'open access' with all group members invited to attend for guidance or simply enjoy a collaborative working atmosphere.
- TEU staff support each other at fortnightly one-on-one **informal mentoring** meetings organised by a TEU staff member.
- TEU **staff ensure effective communication** amongst themselves by working together on agreed days at the University Energy & Sustainability Office and by sharing progress at weekly staff team meetings.
- The Funded Project working group supports the **development of strategy**, for example, going on an away-day with TEU staff to evaluate the success of “Phase 1” of the funded project (see *Funding our work*, p.19 in this section).
- Welfare is **included in the agendas** of working group and “Transition Planning” meetings.

The group have used a variety of **training sources** including:

- The **People & Planet Summer Gathering**¹⁸ in June 2009: an intensive week of training run by People & Planet (UK) with interactive workshops on climate change, campaign planning and development, using the media, facilitation, participatory decision making, meeting-design, and evaluation techniques. The week also served as a team-building exercise for our new staff. TEU sent six group members including five staff, costing £100 each.
- **Footprint Consulting Ltd**¹⁹: expert training sessions covering the theory of engendering change (including topics such as theory of social innovation²⁰), strategic planning, and Edinburgh-specific carbon calculation advice. The five TEU staff attended at a cost of £800/day.
- Sessions provided by People & Planet (UK) and led by **Seeds for Change**²¹: covering learning styles, workshop design, and workshop delivery. In July 2009 two staff members attended for two days, costing £200. TEU is also



Illustration 5: Empowering training at the Summer Gathering, July 2009.

Image by Ric Lander (cc-attrib-noncom-sharealike).

18 See People & Planet “Summer Gathering”, <http://peopleandplanet.org/summertgathering>.

19 See Footprint Consulting Ltd., <http://www.footprintconsulting.org/>.

20 See Wikipedia, http://en.wikipedia.org/wiki/Diffusion_of_innovations.

planning future training with their partner organisation in Scotland, [Tripod](#)²².

- Group **workshops provided by Climate Challenge Fund** (CCF) in conjunction with the Sustainable Development Commission: TEU staff and group members have attended, and continue to attend, events on topics such as evaluating outcomes, community participation and behavioural change.
- **Low Carbon Communities Conference** in Birmingham, September 2009²³: Attended by two staff members, this event provided invaluable networking opportunities, as well as offering a diverse range of practical workshops on pertinent topics such as place based education and peer learning projects.
- Group members will be attending **People & Planet's Shared Planet**²⁴ weekend which offers workshops on many of the topics above as well as practical training on transition-related projects and will cost £15 each.

So far, most of TEU's use of external training has been to take advantage of training opportunities as they have arisen, and our support structures are emerging and developing, but not proven. As the group matures and grows TEU will need to solidify these systems to give group members the confidence that comes from being part of a well organised structure. Such support mechanisms will need to facilitate personal and group development, including tailored training programmes. Some proposals to achieve this are included in Opportunities (see *Opportunities: Projects that engage the whole community*, p.68).

Funding our work

The work of the TEU staff is funded by the Scottish Government's Climate Challenge Fund. Securing funding to support the initiative has allowed it to move ahead quickly and purposefully, and engage more people than might have otherwise been possible. However, gaining and administering this funding takes a considerable amount of time and dedication from group members.

In the Spring of 2009 TEU saw the opportunity presented by the fund and a working group was set up (see below) to scope an application. This working group spent around two months developing the proposal eventually submitting it to the fund in May 2009. The application, designed to fund a feasibility study to highlight opportunities for future transition work at the University, was approved by the fund in June 2009 becoming “**phase 1**” of our funded work. The grant of £18,800 gave TEU the resources to train and wage five part-time interns to fulfil objectives as follows:

1. To **engage** with each of the University colleges, departments, support services, and the community around them, to create an effective network that will identify the most effective targets for carbon reductions across the University community;
2. To **establish baseline** estimates for emissions attributable to being a member of the University community as a student, academic staff or other member of staff;
3. To design and initiate a small number of well-publicised **pilot projects**, focusing on travel

21 See Seeds for Change, <http://www.seedsforchange.org.uk/>.

22 See Tripod, <http://tripodtraining.org/>.

23 See Low Carbon Communities, <http://lowcarboncommunities.net/2009/08/13/19th-september-conference-downloads/>.

24 See People & Planet “Shared Planet”, <http://peopleandplanet.org/sharedplanet>.

and transport, local food production, reduced product miles and simple residential energy savings, aimed to share the findings of research with the University community and facilitate further action;

4. To design and **source further funding** for a comprehensive 'carbon crash programme' for the University community.

With "phase 1" of our funded project now drawing to a close the challenge for TEU has been to use the knowledge gained during "phase 1" to create an effective transition-programme to continue to effect carbon reductions in our community. To help meet this challenge, a second bid to the CCF was drawn up over the Summer of 2009²⁵. A first draft was developed building on brainstorming sessions held with community members including University support staff, academics and students. This draft was then improved with input from these and other relevant stakeholders. It was submitted to the fund in September 2009. The "**phase 2**" bid for a grant of £340,000 would allow for six full-time staff to support a 16-month programme with objectives as follows:



Illustration 6: TEU group members designed and steered the funded project. Image by Oliver Cooper (c).

1. **Measure our community's carbon footprint** and record reductions achieved.
2. **Cut "lifestyle" greenhouse gas emissions** in the Edinburgh University community.
3. **Increase awareness and involvement** of the 35,000-strong community in action on climate change and peak oil.
4. **Build, publicise and transfer** a set of tools to support Transition groups in similar and surrounding communities.

Full copies of both the "phase 1" and "phase 2" bids can be obtained from TEU²⁶. We have also indicated in the *Opportunities* (see p.46) which projects have been included in our funding bid.

The CCF was fought for by the Scottish Green Party in the 2008 budget negotiations²⁷ and is designed to build community capacity to lower greenhouse gas emissions. It exclusively supports initiatives run by community groups and as such, TEU applied through its constituted partner Edinburgh University People & Planet (see later). In this TEU follows in the footsteps of other Transition initiatives and related organisations before us, notably Portobello Energy Decent and Land Reform (PEDAL), Transition Edinburgh South, and Transition Scotland Support.

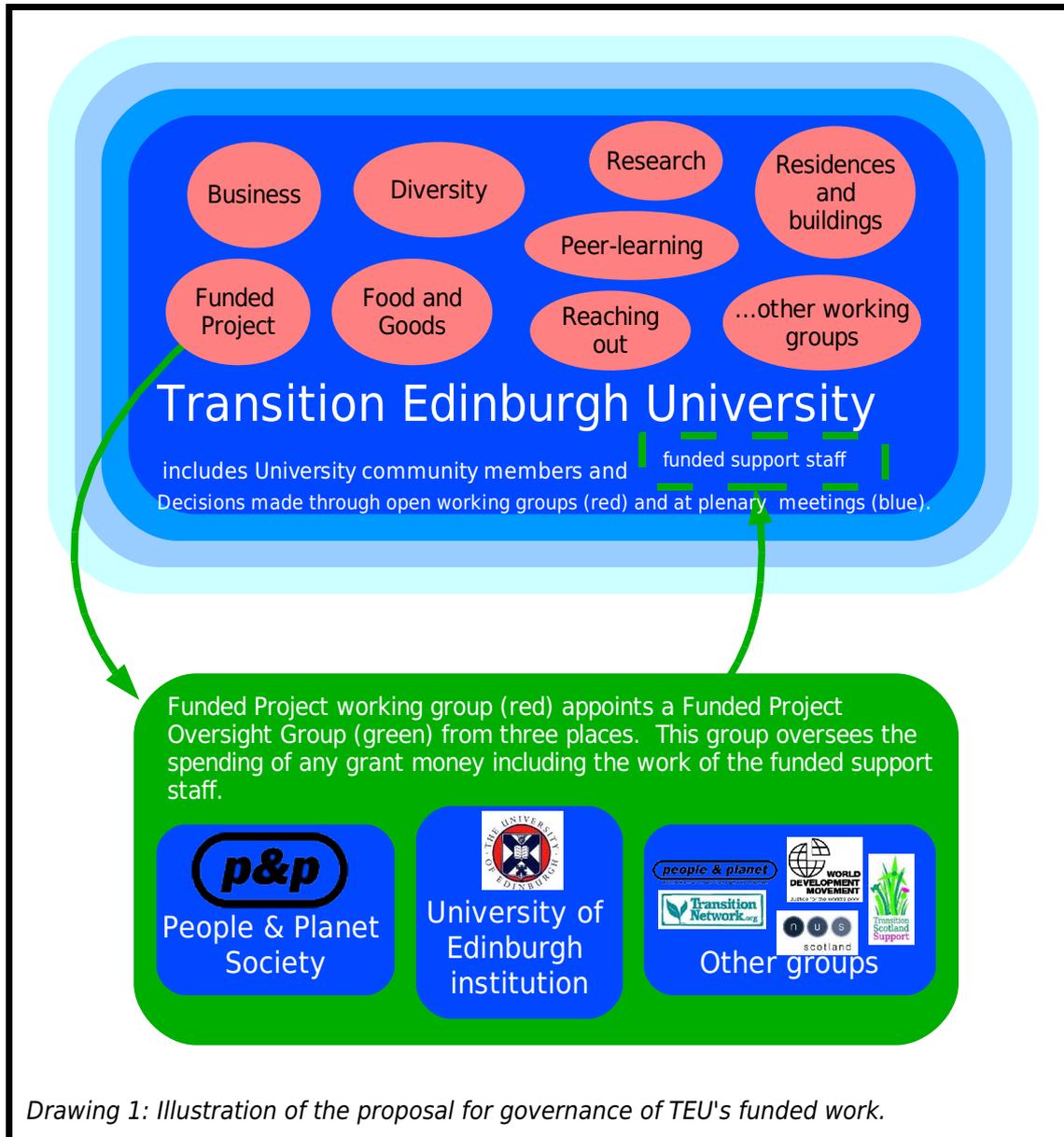
The **funded elements of TEU are guided** by a formal oversight group, the "Funded Project Oversight Group", and an informal working group, the "Funded Project" working group. The "Funded Project Oversight Group" guides and oversees the funded work on behalf of the wider TEU group and includes TEU members, to represent the needs of the group, and external

25 See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

26 Email us at info@transitionedinburghuni.org.uk.

27 See the Scottish Green Party, http://bit.ly/teu_ccfnews.

individuals with relevant experience. It currently includes members from TEU, Edinburgh University People & Planet, the University of Edinburgh Energy & Sustainability Office, the Edinburgh Climate Change Centre, and People & Planet (UK). This oversight model ensures TEU staff receive direction based on solid experience and the on-the-ground experience of the TEU group. It will support the implementation of good practice and the setting of effective short and long-term strategic goals.



Alongside our application to the CCF, TEU has also applied for **other grants** to support the cost of transport from the Energy Saving Trust's [Green Communities programme](http://www.energysavingtrust.org.uk/cafef/)²⁸, and the CCF Networking Fund, offered by the Sustainable Development Commission. Further funding sources TEU has scoped are [listed on-line](#)²⁹. Irrespective of whether we receive our CCF grant, TEU will need to be proactive in exploiting funding opportunities as they come in order to maximise our achievements in facilitating action and spreading involvement.

²⁸ Formally Community Action for Energy - See the Energy Saving Trust, <http://www.energysavingtrust.org.uk/cafef/>.

Working with other groups

The TEU group has relied heavily on the support and guidance not just of its own members but also of staff of the University and at related organisations. They give us the resources, knowledge, moral support, and access to networks that TEU needs to succeed.

The bedrock of support in TEU's initial stages came from [Edinburgh University People & Planet](#)³⁰, a student environment and social justice campaigning society dating back to 1969 with a strong history of raising awareness about, and challenging, University environmental impact. TEU began life as a People & Planet Society working group, and TEU's partnership with People & Planet Society remains strong. TEU's partnership with People & Planet Society shows its roots in the student environmental movement; solidifies a key collaboration with a Society which is enthusing the University in environmental campaigns; allows TEU to gain support and reputation from the Society's achievements and draw on its catchment of volunteers; enables TEU to use the Society's membership of the Students Association (EUSA); and assists in the channelling of funding. In this way, TEU draws strength from People & Planet Society, aligns itself with its closest ally, and has avoided "reinventing the wheel" by using a structure already in place.

Support from the [University Energy & Sustainability Office](#)³¹ has provided us with a home and a great environment in which to grow and develop ideas. The TEU staff have been based in the University Energy & Sustainability Office since June 2009, and continue to take advantage of material support including desk-space, meeting space, hardware and IT support. The Energy & Sustainability Office has also sponsored our employment within the University, removing the need for TEU to administer its own pay-systems directly. Most crucially, advice and guidance from the Sustainability Advisor, David Somervell, has started the project off half-way up the ladder with a wealth of experience and understanding of the community, accessible to us whenever TEU needs it.

TEU works inside the Energy & Sustainability Office and within the [University institution](#)³² also – a community group embedded in the loose, some might say anarchic structure of the University. By embracing the University structure members of TEU become equal partners with enthusiastic and hard-working departments and offices who are eager to work with us as part of their job. In this way TEU has driven forward programmes with Accommodation Services, the Carbon Management MSc, and the embryonic Edinburgh Climate Change Centre, to name but a few.

TEU also benefits from being part of the [People & Planet network](#)³³ – a UK-wide network of student groups taking action on social justice and environmental issues which, following leadership from People & Planet Society, is launching Transition University as a core national-campaign. Entitled "Going Greener: Transition Universities", the campaign builds on People & Planet (UK)'s successful Go Green campaign, encouraging support from University institutions for environmental action. We have received training with People & Planet (UK) and worked with them on the development of their *Going Greener* resources. By being part of People & Planet UK, (TEU) has an incredible opportunity to share its experience among a wide group of dedicated activists to build replicable models for change.

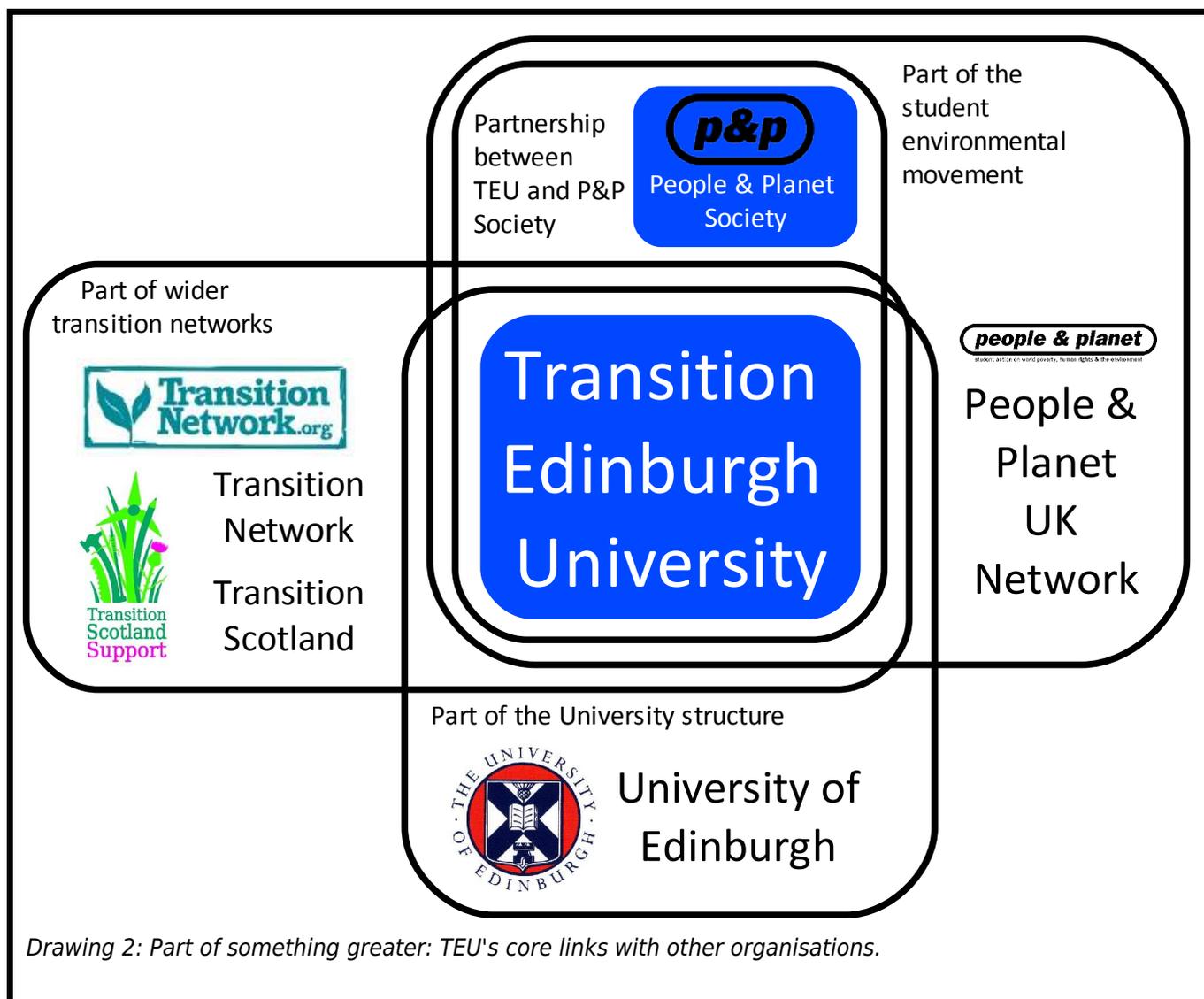
29 See <http://delicious.com/transitionedinburghuni/funding>.

30 See Edinburgh University People & Planet, <http://pandp.eusa.ed.ac.uk>.

31 See University of Edinburgh Energy & Sustainability Office, <http://www.eso.ed.ac.uk/>.

32 See the University of Edinburgh, <http://www.ed.ac.uk/>.

33 See People & Planet, <http://peopleandplanet.org/>.



Drawing 2: Part of something greater: TEU's core links with other organisations.

TEU has also benefited from active working relationships with **other organisations** including the following which we highlight here:

- [National Union of Students \(NUS\) Scotland](http://www.nus.org.uk/About-NUS/Who-We-Are/Nations/NUS-Scotland/)³⁴, representing students in Scotland, who are beginning their own “Student Footprints” project;
- [Changeworks](http://www.changeworks.org.uk/)³⁵, who advise Lothians-based organisations and individuals on improving their environmental record and have assisted us in developing ideas for reducing carbon in homes and our carbon calculation;
- [World Development Movement \(WDM\) Scotland](http://www.wdmscotland.org.uk/)³⁶, who campaign for social and environmental justice and with whom TEU has discussed future speaker event possibilities;
- [Transition Edinburgh South](http://www.transitionedinburghsouth.org.uk/)³⁷, a community group in South-Central Edinburgh working to re-localise and reduce energy usage whose members have worked with us and whose events TEU has publicised;

34 See NUS Scotland, <http://www.nus.org.uk/About-NUS/Who-We-Are/Nations/NUS-Scotland/>.

35 See Changeworks, <http://www.changeworks.org.uk/>.

36 See WDM Scotland, <http://www.wdmscotland.org.uk/>.

37 See Transition Edinburgh South, <http://www.transitionedinburghsouth.org.uk/>.

- [ENDS Carbon](#)³⁸ and [Carbon Masters](#)³⁹, “spin-off” social enterprises based at the University with whom TEU are developing our projects and forming carbon accounting systems.

We seek engagement with other groups over the coming months and are eager to expand this list. The vast majority of the programmes listed in our *Opportunities* section (see p.46) have been drawn up in collaboration with these groups and organisations, and we are excited to see such partnerships deepened such partnerships in the future.

Useful tools and systems

TEU uses a number of technologies and management tools to perform its activities. We have made a concerted effort to use open-source software wherever possible as an alternative to often expensive, large-corporately controlled packages (you can read more about why open-source free software is a good thing from [People & Planet \(UK\)](#)⁴⁰). Whilst taking advantage of all the tools available to us as a result of our staff being based within the University Energy & Sustainability Office, TEU has also endeavoured to implement systems which are free and open so that group members can participate faced with as few boundaries as possible.

Software which TEU staff have used over the summer include:

- [OpenOffice](#)⁴¹ is a free open-source home-office suite including applications for word-processing, creating and editing spreadsheets, databases, and slide-shows, and designing posters. We have found it as, if not more, functional than MS Office.
- [GIMP](#)⁴² is a free open-source drawing and image-editing package which TEU staff have used for some design work.
- [GanttProject](#)⁴³ is a free open-source application for the design of gantt-charts which the TEU staff used to design their summer work-plan. It could equally be used for complex campaign strategies – or in developing an *Energy Descent Action Plan* (see *Opportunities: Understanding our community*, p.85).
- [Mozilla Firefox](#)⁴⁴ is a free open-source web browser which TEU staff have used over the summer.
- [Mozilla Thunderbird](#)⁴⁵ is a free open-source email client which TEU staff have used over the summer.
- [Google Applications](#)⁴⁶ is a package of tools including domain management. TEU staff have used Google Aps to manage our email systems, although TEU are looking to change in light of Google's lack of ethical credentials⁴⁷.
- [Pidgin](#)⁴⁸ is a free open-source instant messaging program which TEU staff have used over

38 See ENDS Carbon, <http://www.endscarbon.com/>.

39 See Carbon Masters, <http://www.carbonmasters.co.uk/>.

40 See People & Planet “Free Software”, <http://peopleandplanet.org/floss>.

41 See OpenOffice, <http://www.openoffice.org/>.

42 See GIMP, <http://www.gimp.org/>.

43 See GanttProject, <http://www.ganttproject.biz/>.

44 See the Mozilla Foundation, <http://www.mozilla.org/>.

45 See the Mozilla Foundation, <http://www.mozilla.org/>.

46 See Google Applications, <https://www.google.com/a/>.

47 See Amnesty International 2006, http://bit.ly/teu_google.

48 See Pidgin, <http://www.pidgin.im/>.

the summer.

- [VLC](#)⁴⁹ is a highly flexible free open-source media player which TEU have used for playing videos at meetings and film nights.
- [Delicious](#)⁵⁰ is a social bookmarking tool which the TEU group uses to share links.

Space on the web which TEU is currently inhabiting:

- Our website is designed and hosted by Nearbuyme⁵¹, a social enterprise run by local Transition activists.
- We use [Nearbuyme](#) as our social-networking site⁵² providing a place where group members can share events, announcements, discussion topics and files.
- The University Estates & Buildings website hosts a [page](#)⁵³ which TEU hopes to develop in the future.
- We also have a page on [Facebook](#)⁵⁴ which operates as a “shop front” for our activities.

The TEU staff have also designed from scratch some simple **systems for running the office** and supporting the group. These include a simple accounting spreadsheet, a spreadsheet for recording hours worked, an event evaluation-form, and an data-entry system for evaluation forms. Copies of these are available on request from TEU⁵⁵.

Since the groups inception, our working-systems have been in continual development and the above list is by no-means an end-point. We are looking for future ways to develop our use of IT and communications which maximise collaboration between group members. Some of these are included in *Opportunities* (p.46).

49 See VideoLan, <http://www.videolan.org/vlc/>.

50 See Delicious, <http://delicious.com/>.

51 Contact Nearbuyme at support@nearbuyme.com.

52 See Nearbuyme, <http://www.nearbuyme.com>.

53 See University of Edinburgh Estates and Buildings, “Transition”, <http://www.eso.ed.ac.uk/Transition/>.

54 See Facebook, “Transition Edinburgh University”, <http://www.facebook.com/transitioneduni>.

55 Email us at info@transitionedinburghuni.org.uk.

Our Carbon Footprint

the climate impact of the Edinburgh University community

What is the purpose of recording and analysing the University community's carbon footprint? By building a picture of our community's carbon footprint, we can get a better understanding of our contribution to climate change; enable evidenced-based prioritization of projects that aim to reduce emissions; and chart the success of future actions. With these long-term aims in mind, the **purpose of this study** is as follows:

- To make data already held by the University more relevant and accessible to people within the community.
- To give university staff and students a broader, more holistic understanding of where their greenhouse gas emissions come from, as opposed to conducting a study that excludes emissions that are more difficult to measure.
- To identify significant gaps in the data available on emissions so that further work can rectify this.

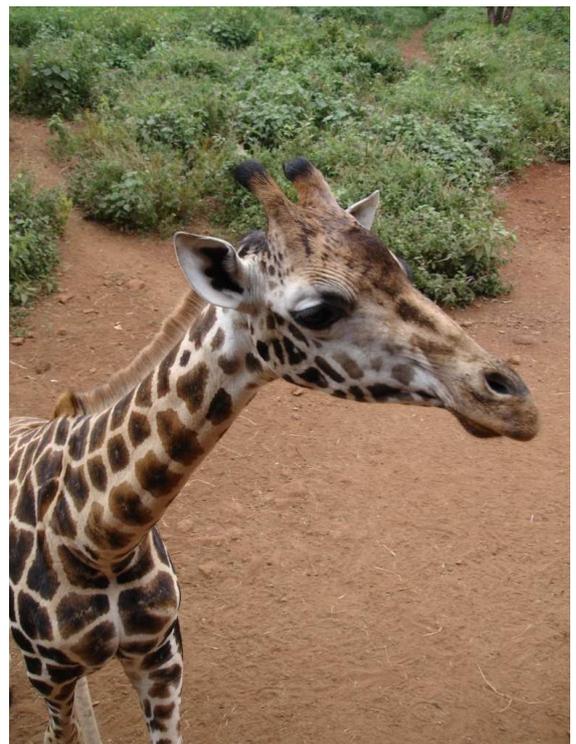


Illustration 7: That's a whole lotta CO₂!
Image by Ric Lander (cc-attrib-noncom-sharealike).

What does a tonne of CO₂ look like?

A car travelling for 3000 miles or one person's share of a return flight to North Africa create around 1 tonne of CO₂e (see *Emissions from Travel* p.41 in this section). This much gas takes up the same space as a 10m wide, 25m long and 2m deep swimming pool - that's the same weight as 10 baby elephants or a whole adult giraffe! Small surprise then that these gases are having an effect on our atmosphere! (56)

56 See Rutland Local Authority, <http://www.rutland.gov.uk/pp/gold/viewGold.asp?IDType=Page&ID=20061>.

Our method

How do we measure our climate impact?

Carbon dioxide (CO₂) is the most significant greenhouse gas in the atmosphere and human activity increasing concentrations of the gas is single largest cause of global warming. As such emissions of CO₂ *alone* is sometimes used as a measure of climate impact.

However, our study has sought to use a measure of climate impact that considers all major greenhouse gases (as listed in the United Nations Kyoto protocol⁵⁷). To do this, we have used the industry standard measure of greenhouse gas emissions, “CO₂ equivalent” (CO₂e), measured in tonnes per year. This term includes the emissions of non-CO₂ greenhouse gases converted into CO₂ according to their relative warming effect (see *Emissions conversion factors*, p.31 in this section). Where we have used the terms “carbon footprint” and “greenhouse gas” are used as a short hand for greenhouse gas emissions measured in tonnes CO₂e per year.

“A thought on responsibility”

Attributing greenhouse gas emissions to people suggests responsibility and some level of individual control or influence. This poses some important and complex questions which perhaps do not have simple quantifiable answers. For example to what extent is the consumer responsible for the embodied emissions in the product they use? Is each citizen of the UK responsible for the emissions created by the country's involvement in the war in Afghanistan? Is a student living at the Pollock Halls of Residence responsible for the emissions from heating for which they cannot control? (see Discussion on validity, p.45 in this section).

The University community has many ecological impacts beyond its greenhouse gas emissions. We do not seek to ignore these wider impacts, rather, we have chosen to focus on greenhouse gases because of the urgency of action on climate change and the considerable extent to which greenhouse gas emissions are a proxy for fossil-fuel consumption and other environmental impacts.

The GHG Protocol Corporate Standard

A number of well defined methodologies exist for companies and organizations to measure their carbon footprint. The most widely used of these is the GHG Protocol Corporate Standard⁵⁸, which is primarily intended for business use.

Defining a community's carbon footprint is different to defining a business' carbon footprint. However the GHG Protocol identifies some useful methods that we have adapted to help understand what we are including in our measurements. This has helped us to frame questions such as: what is the University community?; and what type of emissions is this community responsible for?

We cannot say that this study yet follows the protocol and nor is the protocol designed for this

57 These are Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF₆). See United Nations, “Kyoto Protocol to the United Nations Framework Convention on Climate Change”, p.19, published by the United Nations, 1998, available on-line at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

58 

kind of carbon footprint. The intention of this study has been to be exploratory in nature and, due to its limited time-frame, it has asked more questions than it has answered.

The GHG Protocol identifies two forms of boundary that need to be defined to make the quantification of emissions from an organisation meaningful. These are *Organisational Boundary* - which parts of an organization are you accounting for - and *Operational Boundary* - what activities associated with that organisation are you accounting for⁵⁹.

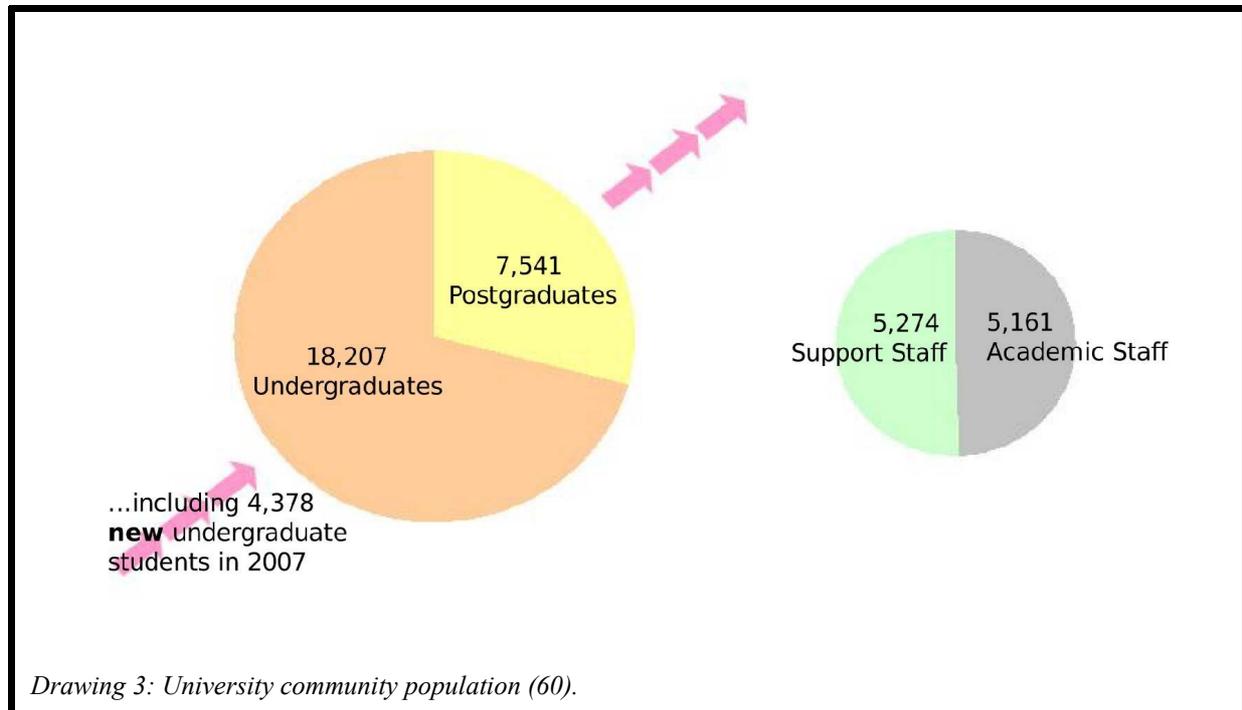
Employing these terms in the context of our community study, we must firstly define whom we are including in "the University community" and secondly what different types of emission we are attributing to them.

Defining the community's "organisational boundary"

We have defined "the University community" as: all staff and students employed by/enrolled at the University. We are using the academic year 2007-2008 as our baseline year - this was the most recent year for which data was available - and so we are referring to the headcount recorded for that year.

This population includes part-time as well as full-time staff members. We could have opted to use the full-time equivalent (FTE) figures but it was felt that given the context - i.e. looking at complete lifestyle emissions - it was more appropriate to define the community as the total headcount.

We are making the assumption that there are two separate groups within this community - the staff population and the student population.



59 See J. Ranganathan et al., "The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition," published by the Greenhouse Gas Protocol Initiative, available on-line at <http://www.ghgprotocol.org/files/ghg-protocol-revised.pdf>.

60 For data sources see University of Edinburgh, "Student headcount for academic year 07/08", University of Edinburgh, 2008, available on-line at <http://www.ed.ac.uk/about/mission-governance/annual-review>. Staff headcount as on 01/08/09: Provided by University of Edinburgh Human Resources Department.

We recognise that defining the community in these terms is reductionist in that there are many other people whose lives are inter-related with that of the University – for example family members of University employees. Understanding people as “belonging to the University community” is just one way of identifying people who clearly have complex lives interacting within many other groups and networks too. However this boundary is set so that the study can be useful in terms of what can realistically be achieved at the University.

Defining the community's "operational boundary"

The GHG Protocol defines three "scopes" of greenhouse gas emissions. These differentiate between *direct emissions* (scope 1), those where the source of emission is owned or controlled by the company, and *indirect emissions* (scopes 2 and 3) where the source is owned or controlled by another company. Scope 2 refers to indirect emissions occurring from the generation of electricity, and scope 3 to other indirect emissions.

The aim of this study was to create an overview of our community's emissions, giving us the fullest picture from which to embark on emissions reduction measures. This therefore meant not just trying to estimate scope 1 and 2 emissions but also attempting to include emissions from scope 3 sources.

The community's carbon footprint is understood to have two parallel contributors: the University's conventional carbon footprint, i.e. that of the institution itself, which it reports in the Carbon Trust Standard (scope 1 and 2 emissions only), and also the lifestyle footprint of its members. We have attempted to apply the GHG Protocol's scope categories, designed for organizations, to the domestic/lifestyle activities of the community and to the institution's activities. This categorization is outlined in the table that follows:

| | UofE Institution | UofE Lifestyle |
|---|--|---|
| | Emissions that occur as a consequence of the University institution's activities. | Emissions that occur as a consequence of activities of community members that are not associated with the University institution. |
| Scope 1 Direct emissions <p>“Activities owned or controlled by [an] organisation which release emissions straight into the atmosphere. They are direct emissions. Examples of scope 1 emissions include emissions from combustion in owned or controlled boilers, furnaces, vehicles owned or controlled; emissions from chemical production in owned or controlled process equipment.”</p> | <ul style="list-style-type: none"> • Gas use in University Buildings • Gas use in University CHP plants • Emissions from UofE vehicles • Emissions from UofE labs | <ul style="list-style-type: none"> • Gas central heating in homes • Journeys made in personally owned cars |
| Scope 2 Energy indirect <p>“Emissions being released into the atmosphere associated with consumption of purchased electricity, heat, steam and cooling. These are indirect emissions that are a consequence of [the] organisation’s activities but which occur at sources it does not own or control.”</p> | <ul style="list-style-type: none"> • Grid electricity usage in University owned buildings | <ul style="list-style-type: none"> • Electricity usage in homes |
| Scope 3 Other indirect <p>“The final category is all other activities that release emissions into the atmosphere as a consequence of [the] organisation's actions, which occur at sources that it does not own or control and which are not classed as scope 2 emissions, i.e., do not result from the purchase of electricity, heat, steam and cooling. Examples of scope 3 emissions are business travel by means not owned or controlled by [the] organisation, waste disposal, use of sold products or services.”</p> | <ul style="list-style-type: none"> • UofE Support & Academic Staff business travel in vehicles not owned by University • Emissions relating to water supply to University Buildings • Emissions relating to treatment of waste water from University Buildings • Life-cycle emissions from other goods & services used by the University (i.e. in production, distribution & disposal of product etc.) | <ul style="list-style-type: none"> • Leisure & other personal travel in non-owned vehicles (e.g. commuting) • Life-cycle emissions from our food • Life-cycle emissions from other goods & services used (including public services) |

Table 1: Outlining how we have defined the "operational boundary" of the community.⁶¹

61 For emissions scope definitions see DEFRA, “Draft guidance on how to measure and report your greenhouse gas emissions”, 05/06/2009, available on-line at <http://www.defra.gov.uk/corporate/consult/greenhouse-gas/draft-guidance.pdf>.

Representing emissions in useful categories

It is useful to understand that our actions have consequences in terms of direct and indirect emissions – and to recognise that the fullest picture of our impact on climate change includes emissions occurring "on our behalf" around the globe. However from the consumer's point of view, the most useful way of comparing emissions is to show which emissions occur as a consequence of the different services we experience.

We have chosen to estimate the emissions in these categories:

| | UofE Institution | UofE Lifestyle |
|--|---|--|
| <p>Energy</p> <p>Those emissions that are a consequence of providing heat and power in the buildings we occupy.</p> | <ul style="list-style-type: none"> • Gas use in University Buildings (scope 1) • Gas use in University CHP plants (scope 1) • Grid electricity usage in University owned buildings (scope 2) | <ul style="list-style-type: none"> • Gas central heating in homes (scope 1) • Electricity usage in homes (scope 2) |
| <p>Travel</p> <p>Those emissions that are a consequence of us travelling around (i.e. ourselves moving, not goods being brought to us).</p> | <ul style="list-style-type: none"> • Emissions from UofE vehicles (scope 1) • UofE Support & Academic Staff business travel in vehicles not owned by University (scope 3) | <ul style="list-style-type: none"> • Journeys we make in our own cars (scope 1) • Leisure & other personal travel in non-owned vehicles (e.g. commuting) (scope 3) |
| <p>Goods & Services</p> <p>Those emissions that take place to allow us to use a product.</p> | <ul style="list-style-type: none"> • Life-cycle emissions from other goods & services used by the University (i.e. in production, distribution & disposal of product etc.) (scope 3) | <ul style="list-style-type: none"> • Life-cycle emissions from our food (scope 3) • Life-cycle emissions from other goods & services that we use (including public services) (scope 3) |

Table 2: Emissions Categories. Direct emissions from labs that are non-heat or power related (i.e. specific to work undertaken there) are not included in the study.

Emissions conversion factors

Reporters of greenhouse gas emissions generally do not directly measure quantities of greenhouse gas emissions at their source, but in their use greenhouse gas emissions from different activities are calculated by multiplying an existing measure of that activity (for example energy use in kWh) with a given conversion factor for that activity (eg. Kg CO₂ emissions per kWh), to give the CO₂ emissions.

We have used the emissions factors published in July 2009 by the Department for Environment, Food and Rural Affairs (DEFRA)⁶².

Carbon Dioxide is the most significant of six Greenhouse Gases covered by the Kyoto Principle

⁶² On 30th September 2009 DEFRA updated their emissions factors based on consultation – our calculations do not use these new emissions factors. For up-to-date emissions conversion factors see <http://www.defra.gov.uk/environment/business/reporting/conversion-factors.htm>.

(see *How do we measure our climate impact?*, p.27 in this section). The latest DEFRA emissions factors also include those emissions from Methane (CH₄) and Nitrous Oxide (N₂O). Our calculations represent total emissions of these three greenhouse gases that DEFRA provides conversion factors for.

These greenhouse gases are represented in Kg CO₂e (Kg CO₂e). This is a standard measure of global warming potential and it used throughout this report. This allows us to sum-up the effect of our emissions in one number, where each Greenhouse Gas is weighted to take into account its different warming effect. For example DEFRA conversion factors show that emitting 1 Kg of methane has the equivalent global warming effect to emitting 21 Kg of CO₂.

| Fuel/Activity | Unit (converting from) | Conversion factor for total GHG (Kg CO₂e) | | | |
|---|-------------------------------|---|--|---------------------------------------|-----------------|
| Fuels | | | | | |
| Natural Gas (gross CV basis) | kWh | 0.18396 | | | |
| Grid Electricity | kWh | 0.54418 | | | |
| Fuel Oil (gross CV basis) | kWh | 0.26643 | | | |
| Domestic Coal | kWh | 0.33920 | | | |
| Road Travel | | | | | |
| Avg. Petrol Car | Vehicle-Km | 0.20570 | | | |
| Avg. Diesel Car | Vehicle-Km | 0.19830 | | | |
| Average between Petrol and Diesel Car | Vehicle-Km | 0.20200 | | | |
| Average Bus | Passenger-Km | 0.10460 | | | |
| Rail Travel | | | | | |
| Train (National Rail Services) | Passenger-Km | 0.06110 | | | |
| Train (Int. Rail Services - eurostar) | Passenger-Km | 0.01780 | | | |
| Sea Travel | | | | | |
| Ferry | Passenger-Km | 0.11610 | | | |
| Air Travel | | | | | |
| Air - Domestic (Class: Avg.) | Passenger-Km | 0.17280 | Km up-lift factor for flights ¹ | Radiative Forcing Factor ² | Total Factoring |
| Air - Short Haul International (Class: Economy) | Passenger-Km | 0.09460 | 1.09000 | 1.90000 | 0.35790 |
| Air - Long Haul International (Class: Economy) | Passenger-Km | 0.08270 | 1.09000 | 1.90000 | 0.19590 |
| Air - International Average (Class: Economy) | Passenger-Km | 0.08860 | 1.09000 | 1.90000 | 0.17130 |
| Air - Overall Average | Passenger-Km | 0.11670 | 1.09000 | 1.90000 | 0.18360 |
| Other Conversions | | | | | |
| Convert from Tonnes of Carbon to tonnes of Carbon Dioxide Emissions | | 3.5 | | | |

Table 3: Emissions Conversion Factors (63) (for a more in-depth understanding of the methodology and calculations made for the study please see Appendix b, p.89)

63 See AEA/Department for Environment, Food and Rural Affairs, "2009 Guidelines to DEFRA / DECC's GHG Conversion Factors for Company Reporting", available on-line at <http://www.defra.gov.uk/environment/business/reporting/conversion-factors.htm>.

Our findings

Summary of our findings

We have estimated the annual carbon footprint of the University community to be approximately 350,000 tonnes of CO₂e. Of this only 50,000 tonnes (14%) come from University controlled sources, the rest is attributable to the lifestyles of university staff and students. The total University “lifestyle-only” carbon footprint (i.e. not including University emissions) equates to 8.3 tonnes CO₂e per person. The average lifestyle-only student footprint was 6.9 tonnes CO₂e compared to the average staff member's 10.9 tonnes CO₂e. However by far the largest portion of this difference is accounted for under the purchase of goods and services (based on income), where it may not be relevant to compare staff and students as staff are more likely to be making purchases on behalf of dependants.

Our study has shown that significant emissions occur from a great variety of sources: our livelihoods are deeply dependent on many processes that emit CO₂ and other greenhouse gases. The study shows that no single change or innovation will fix our problems and that it is worth focussing our efforts on many different activities.

Using the same methodology the average UK citizen would report a lifestyle-only carbon footprint of 10 tonnes CO₂e. However, before we celebrate the virtues of low-carbon student living in Edinburgh, we must suggest that perhaps the least conclusive part of the study is that relating to leisure travel - indeed the figures we have used are simply Scottish national averages. It is here, if anywhere, that students are likely to “pile-on-the-tonnes” in terms of their carbon footprints. Therefore more than anything, this study is an urgent call for more research to be undertaken in this and other areas so that a greater understanding of our own impact to be established.

Recrunch our numbers yourself

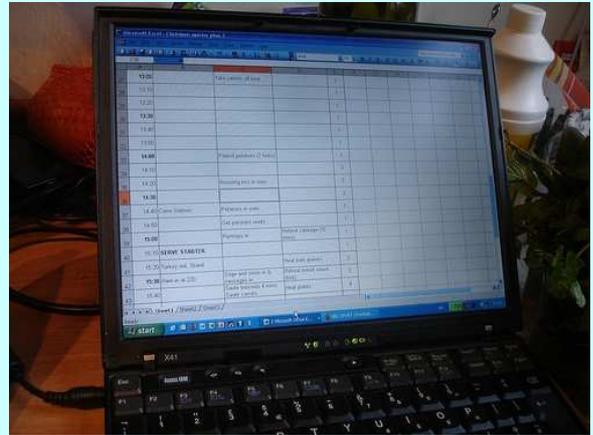


Illustration 8: Image by mrlerone
(cc-attrib-noncom-sharealike from
<http://www.flickr.com/photos/mrlerone/2147320982/>)

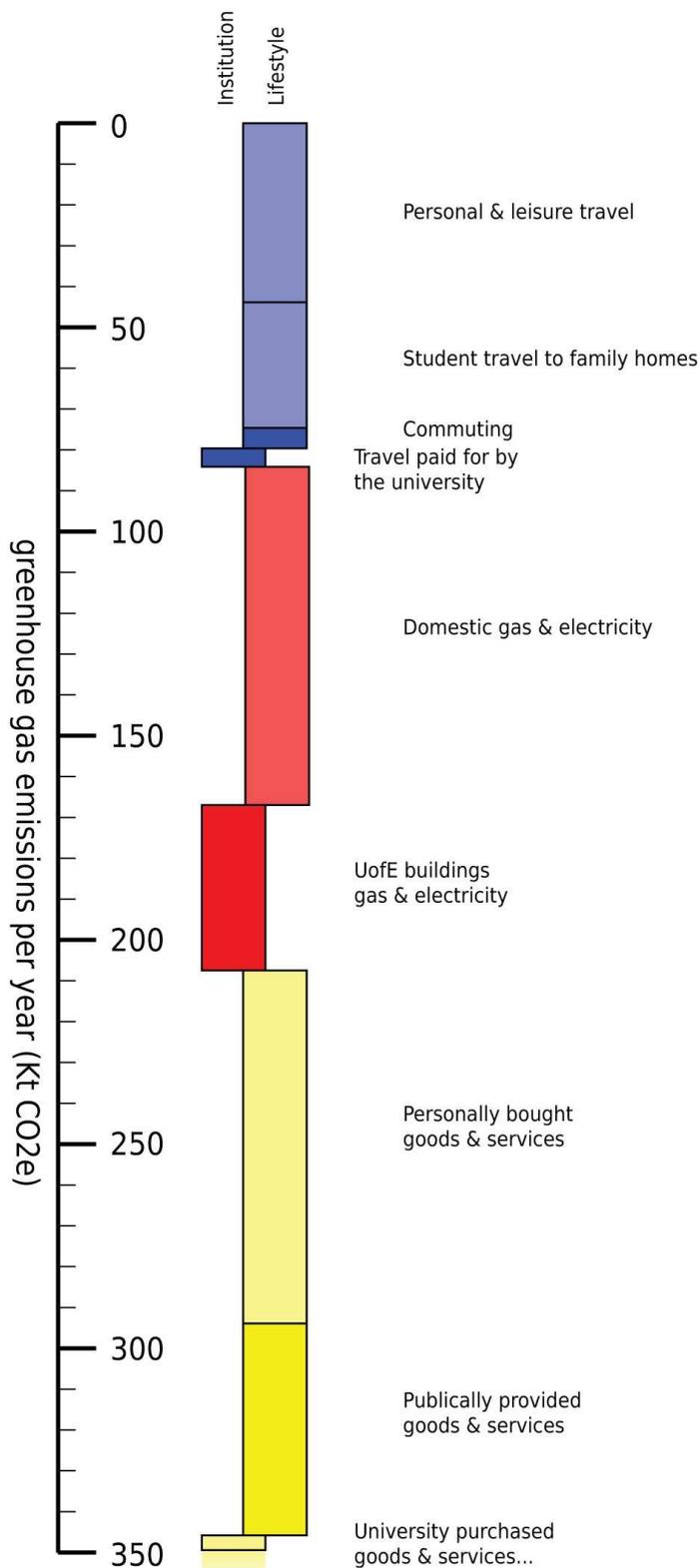
If you'd like to see our calculations in an editable format, you can download our “Footprints & Handprints Carbon Spreadsheet” from our website www.transitionedinburghuni.org.uk or by emailing research@transitionedinburghuni.org.uk

| Contributor | Total GHG Footprint (t CO ₂ e /year) | Number of people in group | % of institution footprint | % of total community footprint | GHG per person (t CO ₂ e /year) |
|--|---|---------------------------|----------------------------|--------------------------------|--|
| Student domestic gas & electricity | 57,304 | 25,748 | | 16.4% | 2.2 |
| University buildings gas & electricity | 40,011 | 36,183 | 82.1% | 11.5% | 1.1 |
| Staff domestic gas & electricity | 25,810 | 10,435 | | 7.4% | 2.5 |
| Accommodation/buildings total | 123,125 | 36,183 | | 35.3% | 3.4 |
| Personal & leisure travel | 44,044 | 36,183 | | 12.6% | 1.2 |
| Int. student travel to family homes | 25,855 | 7,502 | | 7.4% | 3.4 |
| UK student travel to family homes | 4,853 | 18,246 | | 1.4% | 0.3 |
| Travel paid for by university | 5,216 | 5,016 | 10.7% | 1.5% | 1 |
| Staff commuting | 3,267 | 10,435 | | 0.9% | 0.3 |
| Student commuting | 1,648 | 25,748 | | 0.5% | 0.1 |
| Travel total | 84,884 | 36,183 | | 24.3% | 2.3 |
| Purchased goods & services | 86,150 | 36,183 | | 24.7% | 2.4 |
| Public goods & services | 51,352 | 36,183 | | 14.7% | 1.4 |
| Approx. for university purchases | 3,500 | 36,183 | 7.2% | 1.0% | 0.1 |
| Goods & services total | 141,002 | 36,183 | | 40.4% | 3.9 |

| | | | | | |
|---|----------------|---------------|--|---------------|------------|
| Total lifestyle footprint | 300,283 | 36,183 | | 86.0% | 8.3 |
| Total University institution footprint | 48,727 | 36,183 | | 14.0% | 1.3 |
| Total University community footprint | 349,011 | 36,183 | | 100.0% | 9.6 |

Table 4: Estimated University community carbon footprint (64).

64 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "5.0 Footprint Tables".



Drawing 4: Greenhouse gas emissions of Edinburgh University community. The chart shows both the institutional and lifestyle footprints of the community. The deeper colours indicate data from more reliable/valid sources.

Emissions from energy use in buildings

35% of the total community carbon footprint was attributed to gas & electricity use in buildings. We were able to obtain some concrete data regarding energy use in University-owned accommodation and buildings. The emissions calculations from this are outlined here.

Pollock Halls of Residence

During the time in the year in 2007/2008 when students were resident, Pollock Halls of Residence emitted 20% less energy per occupant than the average UK home.⁶⁵ This may be due to a number of factors, in particular the use of a combined heat and power plant⁶⁶ but also perhaps due to the arrangement and size of rooms. It should also be noted that this is impressive considering Pollock Halls provides a number of facilities not provided in your average home such as a bar, shop and squash court. If students lived at Pollock Halls of Residence year round, their emissions from gas and electricity would add up to 2 tonnes CO₂e per person over the entire year⁶⁷ compared to a national average of 2.5 tonnes CO₂e per year.⁶⁸

University-owned flats

University-owned flats are split into two categories: those for 1st year students and those for students in further years of study. The first year accommodation had a lower carbon footprint than the rest - 1.8 tonnes CO₂e per person per year compared with 2.7 tonnes CO₂e for those in further years of study. This may be because first year accommodation tends to be in more modern, purpose built blocks though it may also be due to the occupation periods for first year students.

Greenhouse gas emissions for each property are shown below. These are actual readings so will be dependent on both the behaviour of occupants and the quality of the building itself.

65 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "1.1 Pollock, Cell L20".

66 See EAUC, "Edinburgh's CHP", http://www.eauc.org.uk/file_uploads/district_energy_article_dec06_.pdf.

67 Or even less than this as they are absent for summer months when gas usage would be lower. See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "1.1 Pollock, Cell K20".

68 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "1.5 Staff Accom., Cell S8".

| Location | Type | No. of occupants in sample | GHG emissions per person (t CO2e) |
|---|--------------------|-----------------------------------|--|
| Blackwood Crescent | 1st year | 25 | 3 |
| Causewayside | 1st year | 21 | 2.4 |
| Sciennes | 1st year | 288 | 1.4 |
| Darroch Court | 1st year | 149 | 1.7 |
| Morgan Court | 1st year | 83 | 2.2 |
| New Arthur Place | 1st year | 75 | 1.8 |
| Robertson's Close | 1st year | 195 | 1.3 |
| East Newington Place | 1st year | 82 | 1.8 |
| Hermit's Croft | 1st year | 119 | 1.6 |
| South Clerk Street | 1st year | 91 | 1.6 |
| Warrender Park Crescent | 1st year | 127 | 2.3 |
| Warrender Park Road | 1st year | 95 | 2.4 |
| College Wynd | 1st year | 71 | 1.4 |
| Kincaids Court | 1st year | 234 | 1.8 |
| Nicolson Street | 1st year | 39 | 2.7 |
| South College Street | 1st year | 53 | 2.1 |
| Total 1st year Uni accommodation | 1st year | 1747 | 1.8 |
| Blacket Avenue | Other years | 108 | 2.2 |
| Bristo Place | Other years | 28 | 3.4 |
| Buccleuch Place | Other years | 51 | 3.5 |
| Buccleuch Street | Other years | 24 | 3.1 |
| Davie Street | Other years | 21 | 2.7 |
| Guthrie Street | Other years | 21 | 2.4 |
| Nicolson Street | Other years | 26 | 3.7 |
| Summerhall Square | Other years | 17 | 2.8 |
| Teviot Place | Other years | 22 | 2.1 |
| West Nicolson Street | Other years | 58 | 2.1 |
| West Richmond Street | Other years | 35 | 2.5 |
| Roseneath Terrace | Other years | 4 | 2.4 |
| College Wynd | Other years | 10 | 2.9 |
| Total other Uni accomodation | Other years | 432 | 2.7 |

Table 5: Greenhouse gas emissions in academic year 08/09 from University-owned flats (69)

⁶⁹ See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "1.4 Comp. Uni Flats".

Other student accommodation

At this stage it was not possible to obtain information regarding private student accommodation (rented or owned etc.). This portion makes up 76% of the student population⁷⁰. Therefore it is essential that some further research investigates the emissions occurring from energy use in student homes.

For the time being we have used the per person figure from university-owned flats as a proxy for this category. However there are some significant differences between university and private accommodation. Some of the key differences are:

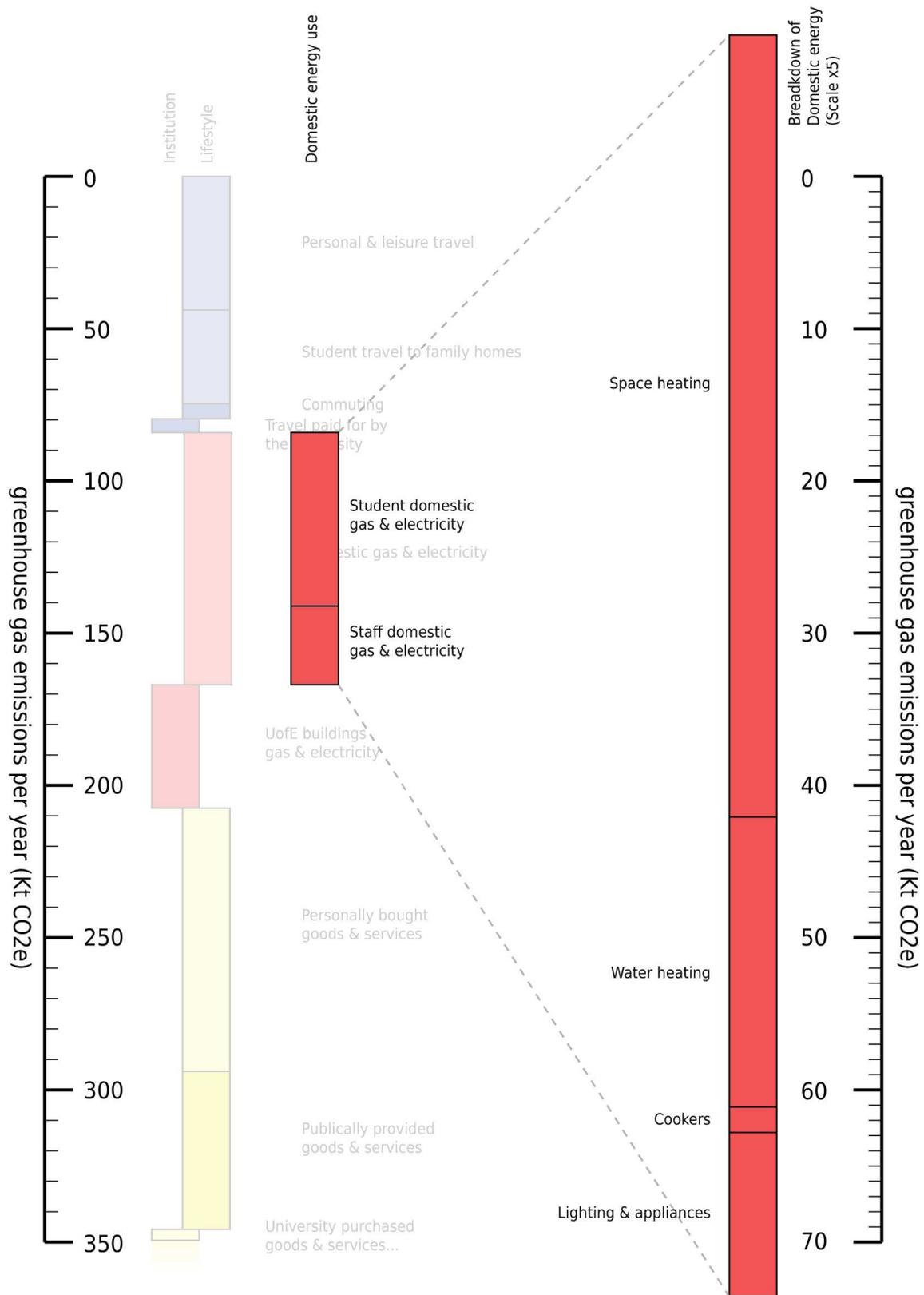
- Many of the Accommodation Services' flats were built more recently than the tenements that are likely make up a large proportion of private accommodation and may therefore be more heat-efficient.
- Accommodation Services' flats include a proportion of heating delivered as heat-with-rent - i.e. the occupant does not pay per kWh used, which is likely to effect their behaviour.
- Accommodation Services' flats do not contain gas central heating. All heat and power is delivered from electricity, which causes greater greenhouse gas emissions per kWh than gas.

Staff accommodation

With Staff Accommodation it was again not possible to source data specific to the group's members. We have instead calculated a per person domestic energy use figure from DEFRA data for the local authority area of Edinburgh. This figure is very close to the national average, at 2.5 tonnes CO₂e per person per year⁷¹.

70 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "1.0 Accommodation, Cell D8".

71 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "1.5 Staff Accommm., Cell S7".



Drawing 5: Showing likely breakdown of domestic energy use (72).

72 See UK Government Statistics 2001, <http://www.statistics.gov.uk/STATBASE/ssdataset.asp?vlnk=7287>.

University Buildings

Emissions from gas and electricity in university buildings far outweigh the embodied emissions associated with providing water to and dealing with sewerage from those buildings: water provision and sewerage account for about 1% of the total⁷³. However the heating of that water will account for a significant portion of the gas/electricity use.

The greenhouse gas emissions from gas and electricity in University buildings totalled 40,000 tonnes per year, which equates to 1.1 tonne per University community member⁷⁴. If we use the University's methodology and consider that students only occupy university buildings for 10% of the time that a full-time staff member does, (and also consider that many staff are part time), we can estimate that greenhouse gas emissions from energy use in university buildings stand at 4 tonnes per FTE occupant per year.

Emissions from travel

Travel was shown to make up 24% of the total community carbon footprint, however much of the data for travel emissions was based on national averages and therefore this part of the footprint could potentially be much greater than estimated.

Leisure and personal travel

The largest proportion of the travel carbon footprint was attributed to personal/leisure travel – that is holidays, day trips, shopping trips, visiting friends, escorting friends and family, etc. This was based on the Scottish national average at 1.2 tonnes per person⁷⁵. This figure was considered separately from journeys made by students to visit their family homes (deemed to be additional to any leisure travel).

It is clear that holiday travel in flights has the potential to dwarf this figure. For example a return flight to Cairo would total this 1.2 tonne figure *on its own* (as would two return flights to Madrid)⁷⁶. We would recommend that a survey is undertaken to make more accurate estimations of personal flights taken by the staff and student populations.

In addition to the national average for leisure travel, we have assumed that students make further journeys to their family homes. We have estimated that international students may take 2 return journeys per year and UK students may take 4 return journeys per year, though in reality the distance travelled is likely to influence how often someone visits their family home. In conjunction with these large assumptions, we have used data regarding student home counties and countries to estimate that international students emit on average 3.4 tonnes per year to travel to family homes, while UK students emit on average 0.3 tonnes⁷⁷. This is another

73 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "4.0 University Buildings".

74 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "4.0 University Buildings, Cell I7".

75 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "2.3 Leisure Travel, Cell E14".

76 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "2.2 Int Students Home, Cell I38 and I15".

77 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "2.0 Transport, Cells

area of study that would greatly benefit from a survey.

Commuting

The University Travel Survey 2007 estimates the carbon footprint from staff and student commuting each year to be 0.07 tonnes CO₂e per student and 0.41 tonnes per staff member⁷⁸. These figures increased only insignificantly when a conversion factor was applied so that they also represented CH₄ and N₂O greenhouse gas emissions, aligning with the rest of the study⁷⁹.

Travel paid for by the University

The total estimated carbon footprint from travel paid for by the University was 5,216 tonnes CO₂e in during the year 07/08. 95% of this was due to air travel, 2.2% rail travel and 2.6% was travel in university-owned vehicles⁸⁰. The figures for air and rail travel are based on projections from the 73% of travel (by spend) that is booked through contracts with university travel agents⁸¹.

| Travel mode and destination | Estimated no. of journeys | Estimated total GHG emissions (t CO ₂ e) | % of total institution travel emissions |
|--------------------------------------|---------------------------|---|---|
| Air travel | 6,995 | 4,969 | 95.2% |
| To the UK | 3,589 | 1,437 | 27.5% |
| To Europe | 2,099 | 918 | 17.6% |
| To the rest of the World | 1,307 | 2,614 | 50.1% |
| Rail travel | 2,258 | 115 | 2.2% |
| To the UK | 2,140 | 105 | 2.0% |
| To Europe | 118 | 10 | 0.2% |
| Travel in university vehicles | - | 133 | 2.6% |
| Total | - | 5,216 | 100.0% |

Table 6: Breakdown of greenhouse gas emissions from travel taken on behalf of the University.

H4 and H5"

78 See E. Crowther & D. McGuigan, "University of Edinburgh Travel Survey 2007", p.11, available on-line at <http://www.transport.ed.ac.uk/pdfs/Final%20Staff%20and%20Student%20Travel%20Survey%20Report%202007.pdf>.

79 Conversion factor was 1.0097. See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "0.1 Factors Cell E19".

80 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "2.4 Business Travel".

81 This may be a biased sample: are people more likely to book flights though the agents than trains?

Emissions from goods and services

The remainder of the carbon footprint is made up of emissions from creating⁸² the goods and services that staff and students use – from coke cans to computers, health care to public administration and defence. Products all have emissions associated with different parts of their life-cycle, for example, gathering of raw materials, manufacturing, and disposal⁸³. Services also produce greenhouse gas emissions, for example, the heating in your doctor's surgery.

It is very difficult to accurately gauge these emissions and attribute them to the consumer. However, we have attempted to do so by using data from the Carbon Trust relating to UK-wide consumption⁸⁴. We have attributed the public services (health, education, public administration and defence) equally to each person in the UK, adding these up to 1.4 tonnes CO₂e per person⁸⁵.

The other goods and services are (generally) bought goods and services – therefore the amount emitted varies depending on how much a person buys and how careful or able they are to buy goods and services with low or no embodied greenhouse gases. For the purposes of this study we assumed that people would spend their money on equally greenhouse gas intensive goods. We focussed on the variable that is how much a person spends as the best proxy for their greenhouse gas emissions from purchases⁸⁶.

For students we used figures for the average student in Scotland's expenditure (£6339 in 2007/08)⁸⁷ and this gives them very low emissions from bought goods & services of 1.1 tonnes CO₂e⁸⁸. For staff we assumed they spend all of their pay each year and used University of Edinburgh pay brackets to show a range of carbon footprints from bought goods & services between 2.4 and 12.3 tonnes CO₂e, with a mean of 5.5 tonnes⁸⁹. These calculations should definitely be taken with a pinch of salt: they contain many, very large assumptions and, importantly, do not take into account the fact that staff members will be very likely to be supporting other family members etc.

82 By "creating", in terms of physical goods we mean gathering raw materials, manufacturing, distribution and disposal of the product. In terms of services we mean emissions from the processes that allow that service to take place.

83 The product's "use" life-cycle stage would be accounted for under domestic/university energy usage.

84 See The Carbon Trust, "The carbon emissions generated in all that we consume" Published January 2006, available on-line at <http://www.carbontrust.co.uk/Publications/publicationdetail.htm?productid=CTC603&metaNoCache=1>.

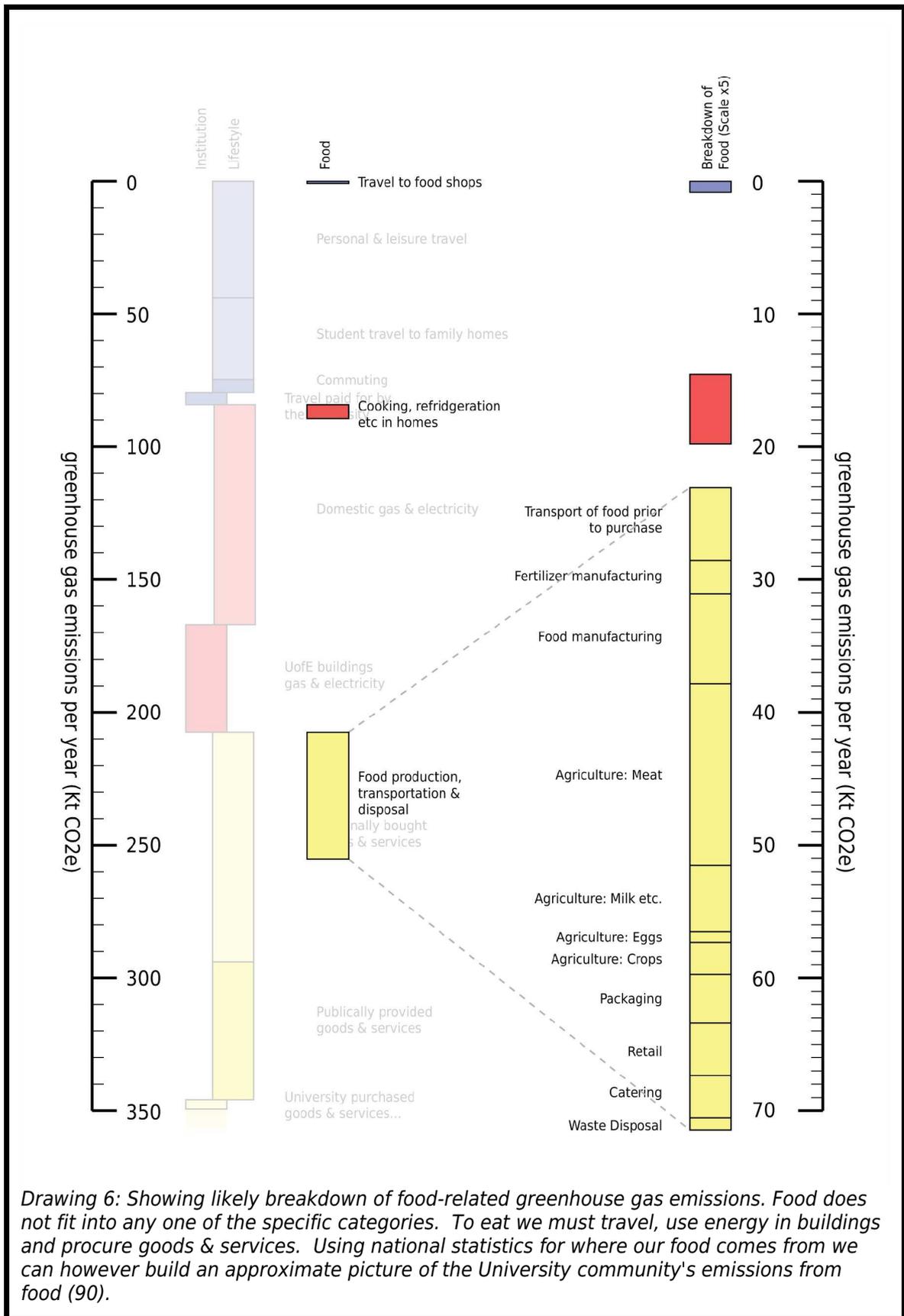
85 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "3.0 Goods and Services A, Cell F23".

86 This is based on the methodology of the Resurgence Carbon Calculator, designed by Mukti Mitchell. See Resurgence, <http://www.resurgence.org/resources/carbon-calculator.html>.

87 See C. Warhurst et al., "Higher and Further Education Students: Income, Expenditure and Debt in Scotland 2007-08" p.56, Published by University of Strathclyde, University of Glasgow, Aston University, available on-line at <http://www.scotland.gov.uk/Resource/Doc/277087/0083207.pdf>.

88 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "3.1 Goods & Services B, Cell F23".

89 See "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk, "3.1 Goods & Services B".



90 Source for proportions (not absolute values), see O. Lancaster, "Food Route Map - Annex", published by Footprint Consulting Ltd, Environmental and Resource Economics Limited, and Alan Speedie Associates, July 2009, available on-line at <http://www.footprintconsulting.org/resources> (Food Route Map, Annex). Source for overall food footprint figure, see The Carbon Trust, "The carbon emissions generated in all that we consume" p. 19, Published January 2006.

Discussion on validity

Conducting this study has been enlightening as it has forced a greater awareness of issues around responsibility for, and control of, greenhouse gas emissions. A study such as this one is necessarily very reductionist: it forces one to set (artificial) boundaries between groups, individuals, and emission types. A study of such scale necessarily ignores human characteristics and circumstances. Importantly, it neglects to take into account the responsibilities each person has towards other people: for example those "giving and taking" relationships children, parents and spouses have with their families.

The root issue is that we cannot simply and neatly divide the world up into individual responsibilities and actions: or at least to do so will always only frame the individual in one way. This is a limitation we must accept and be aware of. When dealing with the interactions of humans there are no definitive answers: as their relationships develop over time, it is difficult to make comparisons between snapshots of their lives.

On the whole this study has attempted to withhold from framing individual responsibilities in favour of showing the "consequences" of the actions of a group ("the University community"). However the same issues of defining the boundaries of that group come into play - the study cannot take into account the complex interactions between University community and "the world beyond".

The purpose of showing University institution emissions alongside lifestyle emissions is to pose questions: What emissions do we have personal control over? What emissions do different groups of people have control over? Who controls or influences the University institution's emissions (see *A thought on responsibility*, p.27 in this section)?

The answers to these questions are not always as simple as they first seem. This is why a core part of Transition Edinburgh University's (TEU) work is about communication around sustainability at the University. It is through networking and developing an understanding of the different roles that each person plays at the University, that individuals can become empowered to create change.

One way to make the study less simplistic would be to attempt to write the narrative of the University's emissions: how did we get to this point in time. **Recommendations for further work** (see *Opportunities: Understanding our community*, p.81), **details of source data and its validity** (see *Appendices*, p.89), **and some useful references** (see *Appendices*, p.89) **including example carbon calculators are included later in this document.**

Opportunities

Ideas for how to begin the green transition at Edinburgh University

This part of the report is a collection of ideas developed by the Transition Edinburgh University (TEU) staff since the beginning of our funded project. Here you will find brief proposals for projects moving towards a *green transition* in Edinburgh University and its surrounding community, many of which are also more widely adaptable. For each idea we include a description of each scheme, how it has progressed at Edinburgh, an estimation of its potential impacts including carbon reductions, and some examples of similar projects already up-and-running. It is divided into six sections as follows:

- **Reducing the energy use of buildings** ...page 47
- **Reducing the energy use of travel** ...page 52
- **Reducing energy use from goods and services** ...page 57
- **Bringing the community together to take action** ...page 67
- **Reaching out beyond our campus** ...page 76
- **Understanding our community** ...page 81

The chapter is a collection of ideas rather than a holistic strategy and is not intended to offer a comprehensive programme of action: such a piece of work would be another piece of work, our "Energy Descent Action Plan" (see *Opportunities: Understanding our community*, p.85). Many of the opportunities presented here are borrowed and adapted from schemes run in other places, and many have also been developed in close partnership with local organisations, to whom we owe many thanks. Much progress has already been made here and these ideas offer a way to build on the success of diverse projects and schemes past and present. We have highlighted gaps in activity and as yet under-utilised routes to success - offering some great places to start for TEU, and indeed the University community and organisations further afield. A green, just, transition at the University of Edinburgh cannot be achieved by TEU alone: the whole community of needs to act together. In this vein, we hope everyone can find something here to take to their own groups in their homes, classes, and offices at the University of Edinburgh and to the world beyond.

Reducing the energy use of buildings

We have identified a number of projects to reduce the energy use of buildings used by the University community. These include University-owned buildings, University-owned residences and private residences. Direct environmental impacts in this area include pollution from fuel and electricity usage, including heating, lighting, water, cooking, and use of appliances. Energy use in this area accounts for an estimated 123,000 tonnes of carbon per year, 35% of the community's carbon footprint, of which roughly third is from University buildings and two thirds is from homes (for more detail see *Our Carbon Footprint: Our findings*, p.37). Indirect impacts include environmental destruction and social impacts in the countries where such fuels are mined (for example fuels sources from the Niger Delta⁹¹).

Inter-halls energy saving competition

Halls of residence are most student's first experience of university life and as such represent a momentous opportunity to encourage radical changes in attitude and behaviour. The *inter-house energy saving competition*, about to begin at Pollock Halls, aims to encourage energy reductions and intra-hall cohesion by offering prizes for residents of buildings who make the greatest energy savings. This requires building-by-building metering and the support of wardens, Housing Assistants and students living in the respective residences. An innovative and broad-reaching engagement and publicity campaign is necessary to secure the mass-student buy-in to make the competition a success. The competition will align many of its prizes with other sustainability related initiatives to maximise impact.

Potential to cut CO₂



Up to 1,100 tonnes CO₂e⁹², high, as the proportion of emissions from energy use in private residence is high (see *Our Carbon Footprint: Emissions from energy use in buildings*, p.37).

Other benefits



Includes decreased ecological impact, financial saving to University Accommodation Services from reduced fuel bills, community building practical activity, and increased community understanding of energy saving.

Status at Edinburgh



Funding applied for in CCF Phase 2⁹³, launching in late November 2009.

Case study

The University of St. Andrews has run an [inter-hall energy saving competition](#) annually since 2006⁹⁴.

91 See Amnesty International, "Petroleum, Pollution and Poverty in the Niger Delta", available on-line at http://bit.ly/teu_nigerdelta.

92 See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

93 See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

94 See St. Andrews Union, "Sustainability" http://www.yourunion.net/content/4401/advice_campaigns/sustainability/.

Key contacts

Sion Lanini, TEU member⁹⁵, Sandra Kinnear⁹⁶, University Accommodation Services.

Home Energy Makeovers

There are many opportunities for people taking action in their own homes to reduce their energy consumption, but many people still feel overwhelmed by too much information and unsupported in their actions. Working with [Changeworks](#)⁹⁷, we propose a programme of making carbon cutting in residences a face to face activity: small teams of volunteers could visit student and staff homes and work with these residents to make improvements that save money and cut greenhouse gas emissions. The teams would help householders distinguish between what can be achieved as a tenant and what requires negotiation and collaboration with the landlord of the property. Teams would provide support with both interventions and will also provide information and advice to students on how best to choose energy efficient, low-carbon homes in subsequent years. We could also train volunteers to carry out [National Home Energy Ratings](#)⁹⁸ (NHER) surveys and work with NUS Scotland in their [Student Footprints](#) initiative⁹⁹. A green home makeover scheme would be publicised off-line in key places on campus and online with podcasts and videos. Participants would also have access to the wider support and community structures, including socials, training events and feedback sessions.

Potential to cut CO₂



Estimated up to 500 tonnes CO₂e¹⁰⁰, high, as the proportion of emissions from energy use in private residence is high (see *Our Carbon Footprint: Emissions from energy use in buildings*, p.37).

Other benefits



Includes decreased ecological impact, financial saving to community members from reduced fuel bills, community building practical activity, and increased community understanding of energy saving.

Status at Edinburgh



Funding applied for in Climate Challenge Fund (CCF) Phase 2¹⁰¹, pilot scheme "Big Green Makeover" launching in late November 2009.

Case study

Groundwork Leicester and Leicestershire's Green Doctor initiative¹⁰².

Key contacts

Sion Lanini, TEU member¹⁰³.

95 Email sion@transitionedinburghuni.org.uk.

96 Email sandra.kinnear@ed.ac.uk.

97 See Changeworks, www.changeworks.org.uk.

98 See National Home Energy Ratings, <http://www.nher.co.uk/>.

99 See NUS, <http://www.nus.org.uk/en/student-life/Ethical-Living/Reduce-the-carbon-footprints-of-your-community/>.

100 See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

101 See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

102 See Groundwork Leicester and Leicestershire, <http://www.gwill.org.uk/greendoc>.

103 Email sion@transitionedinburghuni.org.uk.

Green homes league

Whilst a lack of knowledge and guidance is a barrier for some energy-saving measures in residences, more ambitious and infrastructural action needs to engage a broader range of stakeholders. Most students and many staff live in private rented accommodation where the power to make the most ambitious efficiency improvements is held with private landlords and letting agents. This can leave residents with high bills or freezing homes. With the introduction of Energy Performance Certificates (EPCs) in 2008 it is now possible for prospective residents to find out how energy efficient a property is before signing the lease.

We propose a programme encouraging residents to obtain EPCs and compiling them to create scores per agency or landlord. These could then be used to give “green homes” awards to companies and housing associations who perform well, or results could be compiled into a league table of performance. If well publicised, such a league could help spread information about what type of housing will be most efficient and have the lowest environmental impact. This would encourage letting agencies to improve residences, for example by installing insulation etcetera, in an effort to improve their image, in turn reducing resident's bills, keeping flats warmer, and reducing the community's environmental impact. Success would depend on good data collection and a high profile campaign with good press coverage.

Potential to cut CO₂



Estimated to be high due to the high proportion of greenhouse gas emissions from private residences (see *Our Carbon Footprint: Emissions from energy use in buildings*, p.37).

Other benefits



Includes decreased ecological impact, financial saving to community members from reduced fuel bills, and raised public awareness of energy saving.

Status at Edinburgh



Supportive motion tabled at forthcoming Students Association (EUSA) Annual General Meeting.

Case study

None available but links are proven between energy efficiency and property values¹⁰⁴.

Key contacts

Thomas Graham, EUSA President¹⁰⁵, TEU Buildings & Residences working group¹⁰⁶.

Business School to market “Switch and Save” campaign

The University's “Switch and Save” campaign has had some success encouraging energy reductions in University buildings, but has the potential to do more. Much of the focus required is around social marketing – ingraining sensible energy-saving activity in staff and students. We propose that the Business School could use Switch and Save as a marketing project case study in order to develop more effective ways of changing behaviour. To make a big impact, ideas spawned would have to make a considerable contribution beyond gains already made.



¹⁰⁴See Rand, <http://www.rand.org/news/press/2009/09/21/>.

¹⁰⁵Email president@eusa.org.uk.

¹⁰⁶Email info@transitionedinburghuni.org.uk.

Potential to cut CO₂



Estimated to be moderate due to the moderate proportion greenhouse gas emissions from energy use in University buildings (see *Our Carbon Footprint: Emissions from energy use in buildings*, p.37).

Other benefits



Includes decreased ecological impact, financial saving to the University from reduced fuel bills, community building practical activity, and raised public awareness of energy saving.

Status at Edinburgh



Just an idea.

Case study

University of Edinburgh [Switch and Save](#) campaign¹⁰⁷.

Key contacts

Shona Buchanan, Assistant Utilities Manager, University Energy & Sustainability Office¹⁰⁸.

Climate Champions

Engendering change requires action right down to the smallest social units in the community: classes, offices, societies, research groups, homes, groups of friends. We see a network of advocates in the University, supporting the work of [energy reps](#) already in place¹⁰⁹, as essential for spurring action at this level. To succeed, these advocates, or “climate champions”, would need training from the University and a support network. This may require external funding or support from the University to really take off.

Potential to cut CO₂



Estimated to be moderate due to the moderate proportion greenhouse gas emissions from energy use in University buildings (see *Our Carbon Footprint: Emissions from energy use in buildings*, p.37).

Other benefits



Includes decreased ecological impact, financial saving to the University from reduced fuel bills, community building practical activity, and increased community understanding of energy saving.

Status at Edinburgh



Just an idea.

Case study

University of North Carolina [Sustainability Office Internships](#)¹¹⁰.

¹⁰⁷See <http://www.eso.ed.ac.uk/Energy/>.

¹⁰⁸Email shona.buchanan@ed.ac.uk.

¹⁰⁹See University of Edinburgh Energy & Sustainability Office, <http://www.eso.ed.ac.uk/Energy/>.

¹¹⁰See University of North Carolina, <http://uncsustainability.blogspot.com/2009/08/sustainability-office-internships.html>.

Key contacts

David Somervell, University Sustainability Advisor¹¹¹.

¹¹¹Email david.somervell@ed.ac.uk.

Reducing the energy use of travel

We have identified a number of projects which could reduce the emissions in the community resulting from travel. Impacts in this area are dominated by aviation emissions, accruing from both leisure and business travel, by students and staff. Other sources include those from motor-vehicles and a small portion from public transport. Total greenhouse gas emissions from travel are estimated at 85,000 tonnes CO₂e, 24% of the community's carbon footprint. The vast majority of these emissions come from leisure and personal travel with the remainder coming from travel taken on behalf of the University and commuting, and 95% of total travel emissions come from flying (see *Our Carbon Footprint: Our findings*, p.41). Other impacts include emissions of other pollutants (NO_x, water vapour, particulate matter, sulfur oxides and others), environmental destruction at fuel-source¹¹², road maintenance, and the delayed investment and delivery of public and carbon-free transport.

Reduce flying and promote alternatives

Of all the activities that take place within the University community, flying by far the single most environmentally damaging, accounting for 23% of all emissions. A return flight to New York creates 1.4 tonnes CO₂e, and this figure doesn't even account for the negative effects of climate-forcing from emissions released at high altitude. We need to find ways of encouraging alternative, low-impact forms of long-distance communication and leisure. As our current data are of low-certainty, there is also an acute need to find out the true extent of flying in the community: who is flying, why, and what alternatives are available to them.

We believe that a programme of research and engagement is required to get to grips with flying including the following elements:

- Surveying frequency and distance of flights taken, including from University departments and student and staff leisure. (*)
- Promoting low-impact travel, including public transport, local destinations, activities, and volunteering opportunities. This could be at a “green travel fair” or in a series of videos broadcasts on-line. (*)
- Motivating students and staff to pledge to reduce or stop flying. (*)
- Encouraging use of video conferencing (see *Greener travel project*, below in this section) as an alternative to personal attendance of overseas meetings and conferences.
- Encouraging the University and EUSA to stop funding conference, field trip and business travel taken using domestic flights. (†)

Activities in this area will face difficulty in asking people to make tough choices about their own activities which they may consider vital to their work. However, we believe that promoting positive alternatives and adopting a non-judgemental approach can go some way to relieve this friction.

¹¹²See Amnesty International, “Petroleum, Pollution and Poverty in the Niger Delta”, available on-line at http://bit.ly/teu_nigerdelta.

Potential to cut CO₂



Estimated at over 1,000 tonnes CO₂e¹¹³, high, due to the high proportion of greenhouse gas emissions from flying (see *Our Carbon Footprint: Emissions from travel*, p.41).

Other benefits



Includes lowered ecological impact, including at fuel source, increased public awareness of ecological impact.

Status at Edinburgh



Funding applied for marked elements in CCF Phase 2¹¹⁴ (*), supportive motion tabled at forthcoming EUSA Annual General Meeting (†).

Case study

BBC Worldwide has comprehensive policy laying down rules for staff on use of flights¹¹⁵.

Key contacts

TEU¹¹⁶.

Encourage uptake of video conferencing

Video conferencing facilities provide a way for meetings to be held remotely, considerably reducing the climate impact of such communications without losing the benefits of face-to-face interaction. The University has three such facilities and we believe this technology has great potential to reduce the community's energy usage and environmental impact.

We recommend that academic and support staff are made more aware of video conferencing facilities through general promotion, including training opportunities and demonstration sessions. A pilot academic conference could take place using video conference technology and incorporating virtual worlds technology. The success of such technology could also be charted against greenhouse gas emissions saved.

Potential to cut CO₂



Estimated to be high if it reduces flying, due to the high proportion of greenhouse gas emissions from flying (see *Our Carbon Footprint: Emissions from travel*, p.41).

Other benefits



Includes lowered ecological impact, including at fuel source.

Status at Edinburgh



Just an idea.

Case study

The University offers [video conferencing facilities](#)¹¹⁷.

113See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

114See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

115See BBC Worldwide, <http://www.bbcworldwide.com/>.

116Email us at info@transitionedinburghuni.org.uk.

117See University of Edinburgh Information Services, <http://www.ucs.ed.ac.uk/nsd/vidconf/>.

Key contacts

University JANET Video Conferencing Service¹¹⁸, TEU¹¹⁹.

Bicycle and Walking User Groups

Cycling and walking are zero-carbon at point of use. If used as alternatives to driving they could deliver significant carbon reductions. They also offer health benefits, through decreasing local pollution (for example, particulate-matter) and encouraging exercise. Building on the existing work of the University Transport Office, we propose that cycling and walking be encouraged through setting up more “Bicycle User Groups” and “Walking Users Groups”. These could include workshops for both staff and students, route mapping, personal support and bike repair and maintenance. Funds could also be sought to offer subsidised bicycles to community members.

Potential to cut CO₂



Estimated to be low, as the proportion of emissions from commuting is currently low (see *Our Carbon Footprint: Emissions from travel*, p.41).

Other benefits



Includes improved health from increased exercise, community building practical action, and increased community understanding of the local environment.

Status at Edinburgh



Funding applied for in CCF Phase 2¹²⁰.

Case study

[Bicycle User Groups](#)¹²¹ and [Walking User Groups](#)¹²² already exist at the University.

Key contacts

Sion Lanini, TEU member¹²³, Emma Crowther, University Transport and Parking Manager¹²⁴.

Improve cycle paths

Cycle path-coverage between key University sites is patchy. Whilst some council funding has been announced to improve particular routes¹²⁵, much more could be done. This effort could be promoted by volunteers mapping routes, highlighting gaps in coverage and taking practical action to repair paths.

¹¹⁸Email JVCS@ed.ac.uk.

¹¹⁹Email us at info@transitionedinburghuni.org.uk.

¹²⁰See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

¹²¹See University of Edinburgh Transport Office, http://www.transport.ed.ac.uk/Cycling/bicycle_users_group.shtm.

¹²²See University of Edinburgh Transport Office, <http://www.transport.ed.ac.uk/Walking/index.shtm>.

¹²³Email sion@transitionedinburghuni.org.uk.

¹²⁴Email emma.crowther@ed.ac.uk.

¹²⁵See *the Student*: <http://www.studentnewspaper.org/news/453-new-cycle-lane-from-george-square-to-kb>.

Potential to cut CO₂



Estimated to be low, as the proportion of emissions from commuting is currently low (see *Our Carbon Footprint: Emissions from travel*, p.41).

Other benefits



Includes improved health from increased exercise, community building practical activity, and increased community understanding of the local environment.

Status at Edinburgh



Just an idea.

Case study

[Sustrans Volunteer Rangers](#) monitor and improve cycle paths in Kent¹²⁶.

Key contacts

[SPOKES](#)¹²⁷, Emma Crowther, University Transport and Parking Manager¹²⁸.

Promote lift-sharing

Greenhouse gas emissions from domestic journeys could have virtually zero marginal emissions if they were taking up space in vehicles already making such trips – hence the benefits of promoting lift-sharing. The University already promotes an on-line life-sharing forum but it is not very well used. We propose promotion and expansion of this simple idea.

Potential to cut CO₂



Estimated to be low, as the proportion of emissions from car-travel is currently low (see *Our Carbon Footprint: Emissions from travel*, p.41).

Other benefits



Includes reduced ecological impact from reduced car-use and financial benefit to community members.

Status at Edinburgh



Just an idea.

Case study

The University's promoted lift-sharing with [Liftshare.com](#)¹²⁹.

Key contacts

Emma Crowther, University Transport and Parking Manager¹³⁰.

¹²⁶See Sustrans, <http://www.sustrans.org.uk/about-sustrans/volunteer-for-us/volunteer-rangers-in-kent>.

¹²⁷See SPOKES, <http://www.spokes.org.uk/>.

¹²⁸Email emma.crowther@ed.ac.uk.

¹²⁹See Liftshare, <https://www.liftshare.com/v3/pages/default.asp?sid=1563&sid2=1407&sid3=1398&skin=7&lang=EN&country=GB>.

¹³⁰Email emma.crowther@ed.ac.uk.

Campaign for Tram-line Three

Public transport in Edinburgh is popular but slow and often over-crowded. Previous consideration of this problem led to a high-profile campaign to re-introduce [trams to the city](#)¹³¹. Successful as this campaign was, tram lines one and two currently being constructed are of little benefit to students and staff because they do not by the main University neighbourhoods. There have been calls for a third tram-line to be built linking the city centre with the Royal Infirmary at Little France, passing near George Square and Kings Buildings, but reviving the campaign for more trams could be difficult at a time when residents' current experience of them is the inconvenience caused by their construction. The opportunity to push such a scheme may have to wait until the lines one and two are open and running smoothly.

Potential to cut CO₂



Although the proportion of greenhouse gas emissions from commuting is low (see *Our Carbon Footprint: Emissions from travel*, p.41)., a successful campaign would reduce emissions in more than just the University community.

Other benefits



Includes reduced ecological impact, increased community understanding of ecological impact, and improved health from reduced local pollution.

Status at Edinburgh



Dormant campaign.

Case study

[Campaign for Tramline 3](#)¹³² exists but lies dormant.

Key contacts

None known, contact TEU¹³³.

¹³¹See Edinburgh Trams, <http://www.edinburghtrams.com/>.

¹³²See Facebook, "Campaign for Tramline 3", <http://ed.facebook.com/group.php?gid=2205108323>.

¹³³Email us at info@transitionedinburghuni.org.uk.

Reducing energy use from goods and services

Whilst goods and services may not produce many greenhouse gas emissions at point-of-use, their embodied emissions – those accruing from extraction of raw materials, production, supply and transport – are so high that in total they produce more greenhouse gases than both buildings-use and travel: estimated at 40% of the community's total, or 141,000 tonnes per year (for more detail see *Our Carbon Footprint: Our findings*, p.43). All this CO₂e has a measurable impact on the global climate. Goods and services used in the Edinburgh University community also affect the workers in their supply chains, cause local pollution from activities such as mining and processing, and have an environmental impact upon disposal. To reduce these negative effects we need to reconnect with the supply chain. Our proposals to do so include hands-on recycling schemes, working with local food producers and community food growing. Projects that tackle service provision are limited, but it is hoped that more ideas will be developed in this area.



Illustration 10: Collecting items for People & Planet Society's Freeshop, May 2009. Image by Ric Lander (cc-attrib-noncom-sharealike).

"Free Shop and Share"

Reusing and recycling reduces both consumption and waste, cutting the environmental impacts associated with landfill. Swap-shop schemes seek to find a home for unwanted goods instead of wasting them. Edinburgh has a number of such schemes already in operation, including:

- "[Freegle](#)": succeeding the city's Freecycle group, Freegle is an on-line forum for people to offer and claim unwanted goods;
- The Forrest Café's free shop: people can leave and pick up unwanted items in a an area at the front of the café;
- People & Planet Society's Freeshop and Share scheme: in conjunction with the University Accommodation Services and Waste Aware Edinburgh, bags of unwanted items were collected from those leaving student residences in May (2009) and offered back to the community in September.

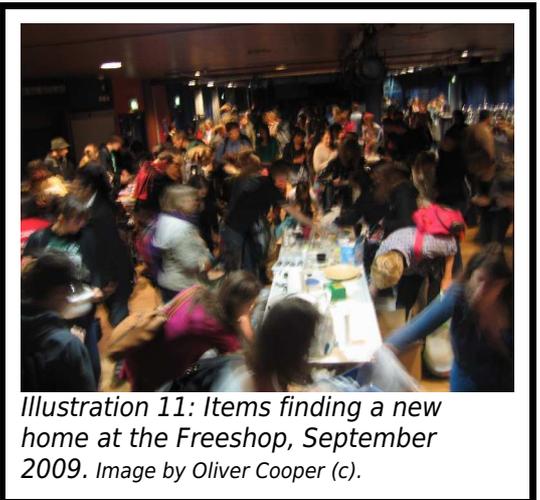


Illustration 11: Items finding a new home at the Freeshop, September 2009. Image by Oliver Cooper (c).

We propose that these projects are extended, promoted, and connected. This could take the form of a more permanent free shop established on campus through regular sessions in a central location or at a permanent space. Existing on-line forums can also be linked in and promoted. Such a scheme would promote the sharing of goods as well as exchanging skills and services.

Potential to cut CO₂



Moderate, as emissions from new product purchases and waste disposal form a moderate proportion of the University community's emissions (see *Our Carbon Footprint: Emissions from goods and services*, p.43).

Other benefits



Includes ecological benefits of reduced consumption and waste, financial benefit to community members, increases community resilience, community building practical activity.

Status at Edinburgh



Funding applied for in CCF Phase 2¹³⁴.

Case study

[Freegle Edinburgh](#)¹³⁵ facilitate on-line sharing and People & Planet Society's Freeshop [collected](#)¹³⁶ and [distributed](#)¹³⁷ unwanted items over the summer of 2009.

Key contacts

Ruth Cape¹³⁸ and Sandra Kinnear, University Accommodation Services¹³⁹, helped run the campus Freeshop.

Computer recycling

Three-quarters of students own their own computer and many of the remaining quarter are looking to buy one¹⁴⁰. However, unwanted computers are often thrown away and scrapped, contributing to a major environmental problem in countries in the global South¹⁴¹. Producing and running IT equipment and systems also produces significant greenhouse gas emissions, which are predicted to grow in the future¹⁴². IT recycling could form part of a wider free-shop scheme, but the technological expertise required to rebuild computers from unwanted components requires specific skills. We propose that a University computer recycling scheme could collect and recycle used IT equipment: reducing waste, saving students money, and offering practical recycling experience to volunteers.

¹³⁴See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

¹³⁵See Freegle Edinburgh, <http://www.ilovefreegle.org/>.

¹³⁶See Edinburgh University People & Planet, http://bit.ly/teu_freeshop1.

¹³⁷See Edinburgh University People & Planet, http://bit.ly/teu_freeshop2.

¹³⁸Email ruthcape@msn.com.

¹³⁹Email sandra.kinnear@ed.ac.uk.

¹⁴⁰Data from freshers surveyed in 2003, p.7, <http://homepages.ed.ac.uk/jhaywood/papers/surveyresults2003.pdf>.

¹⁴¹See Greenpeace, <http://www.greenpeace.org/raw/content/international/press/reports/recycling-of-electronic-waste.pdf>.

¹⁴²See Computing.co.uk: <http://www.computing.co.uk/computing/news/2209448/carbon-emissions-set-rocket>.

Potential to cut CO₂



Low, as the proportion of University community emissions from electronics production and waste is low (see *Our Carbon Footprint: Emissions from good and services*, p.43).

Other benefits



Reduced ecological impact of electronics production and electronic waste, increases community resilience by skill-sharing, community building practical activity.

Status at Edinburgh



Just an idea.

Case study

University of York runs a [computer recycling scheme](#)¹⁴³.

Key contacts

None known, contact TEU¹⁴⁴.



Vegetarian food days

Meat-eating may account for as much as 10% of the carbon footprint of the University community (see *Our Carbon Footprint: Our findings*, p.43). Therefore, encouraging more vegetarian and vegan eating is a simple way to lower greenhouse gas emissions. There is already a [Vegetarian Society](#)¹⁴⁵ on campus raising awareness about the benefits of vegetarian eating. The social stigma against such an action is high, but we believe presenting vegetarian meals as positive, desirable options could help to normalise “low-meat” diets, making such diets popular beyond devout vegetarians.

We propose that students and staff and eventually the whole University could take part in meat-free or vegetarian food days, where vegetarian and vegan food is promoted campus-wide. This would be coupled with information about the environmental impact of meat and vegetarian cooking ideas

and workshops. The Pollock Halls dining room and campus cafés could be encouraged to offer more (or only) meat-free options on such days and make general improvements to the quality and quantity of meat-free food.

¹⁴³See University of York, <http://www-users.york.ac.uk/~elec37/>.

¹⁴⁴Email us at info@transitionedinburghuni.org.uk.

¹⁴⁵See Vegetarian Society, <http://www.vegsoced.webs.com/>

Potential to cut CO₂



High, as the proportion of emissions from meat production are high (see *Our Carbon Footprint: Emissions from good and services*, p.43).

Other benefits



Reduced ecological impact, health benefits of lowered meat consumption, increased public awareness of environmental impact of food.

Status at Edinburgh



Funding applied for in CCF Phase 2¹⁴⁶.

Case studies

Ghent, Belgium, promotes Veggie Thursdays in Public buildings: “[DonderDagVeggieDag](#)”¹⁴⁷.

Key contacts

TEU Food & Purchasing working group¹⁴⁸.

People & Planet's ethical procurement campaign

People & Planet Society have won campaigns to make Edinburgh a Fair Trade University¹⁴⁹ and to improve workers rights in the production of EUSA clothing¹⁵⁰. In November 2009, People & Planet groups across the UK will launch an ethical procurement campaign entitled “Buy Right”, aiming to reduce the environmental impact and improve worker conditions along the whole production chain of products purchased by the University. They will offer support in the form of campaign guidance, research, conference events and workshops.

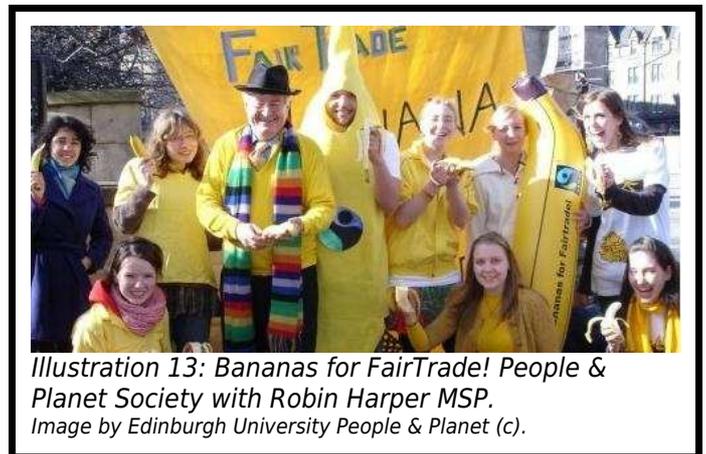


Illustration 13: Bananas for FairTrade! People & Planet Society with Robin Harper MSP.
Image by Edinburgh University People & Planet (c).

We propose that students and staff at Edinburgh take part in this campaign, with a specific focus on procurement solutions for EUSA and the University that are low-carbon and promote “climate justice”.

146See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

147See BBC News, <http://news.bbc.co.uk/1/hi/world/europe/8046970.stm> and Stad Ghent <http://www.gent.be/donderdagveggiedag>.

148Email info@transitionedinburghuni.org.uk.

149See University Procurement Office, http://www.pps.ed.ac.uk/about/green/fair_trade/index.htm.

150See EUSA, <http://209.85.229.132/search?q=cache:VJFuxBjepQIj:pandp.eusa.ed.ac.uk/campaigns/fairtrade/FTMotion.doc+eusa+fruit+of+the+loom&cd=1&hl=en&ct=clnk&gl=uk&client=firefox-a>.

Potential to cut CO₂



Low, as the proportion of emissions from University procurement is low (see *Our Carbon Footprint: Emissions from good and services*, p.43).

Other benefits



Includes improvements in worker conditions and reduced ecological impact of procurement down the supply chain, increased public awareness of environmental and social impact of goods and service provision.

Status at Edinburgh



Forthcoming national campaign likely to be run in Edinburgh by People & Planet Society.

Case study

People & Planet UK-wide campaign, "[Buy Right](#)"¹⁵¹.

Key contacts

TEU Food and Purchasing group¹⁵², [People & Planet](#) (UK)¹⁵³.

Allotment Society

Growing food educates us about food-sourcing, brings the community together through practical action and could even encourage less meat-eating by promoting locally-grown vegetables. Students at Edinburgh have been maintaining an allotment at Kings Buildings for about five-years and have recently formed an "Allotment and Permaculture Society". We propose that their work be publicised and joined up with other-food related activities on campus.



Illustration 14: A student allotment project at the University of York.
Image by Helen Jones (c).

Potential to cut CO₂



Although growing food locally can reduce greenhouse gas emissions by reducing the distance which food has to travel, the proportion of emissions from the shipping of food is low¹⁵⁴.

Other benefits



Includes reduced ecological impact of food supply, health benefits of improved food, improved community understanding of food supply, increases community resilience, and community building practical activity.

Status at Edinburgh



Up and running, but help required.

¹⁵¹See People & Planet, "Buy Right" <http://peopleandplanet.org/buyright>.

¹⁵²Email info@transitionedinburghuni.org.uk.

¹⁵³Email reclaimededucation@peopleandplanet.org.

¹⁵⁴See *Our Carbon Footprint: Emissions from good and services*, p.43, and Footprint Consulting, "Low Carbon Route Maps", available on-line at <http://www.footprintconsulting.org/resources>.

Case study

An Allotment Society is already running on campus.

Key contacts

Mike Starkey¹⁵⁵, TEU Food and Purchasing working group¹⁵⁶.

Work with Edinburgh Community Backgreens Association (ECBA)

ECBA work with communities in central Edinburgh to tidy up neglected back green spaces behind tenement blocks and turn them into productive community spaces for growing food and recreation. They are currently carrying out "Backgreen Blitzes", regenerating back-greens with volunteers, and a "Carbon-weight watchers" programme, a series of practical workshops demonstrating how to reduce carbon-emissions. We propose that students and staff at Edinburgh support these schemes, and that TEU considers the potential for working with ECBA in regenerating University-owned green spaces.



Potential to cut CO₂



Reductions in greenhouse gas emissions from this project could come from local food growing, but the proportion of emissions from the shipping of food is low¹⁵⁷.

Other benefits



Includes reduced ecological impact of food supply, health benefits of green-space, increases community resilience, improved community understanding of food supply, and community building practical activity.

Status at Edinburgh



Up and running, but help required.

Case study

TEU has visited [ECBA](#) projects¹⁵⁸ before and some are well advanced.

Key contacts

ECBA¹⁵⁹, TEU Food and Purchasing working group¹⁶⁰.

Edinburgh Abundance Project

155Email michaeldude16@gmail.com.

156Email info@transitionedinburghuni.org.uk.

157See *Our Carbon Footprint: Emissions from good and services*, p.43, and Footprint Consulting, "Low Carbon Route Maps", available on-line at <http://www.footprintconsulting.org/resources>.

158See Edinburgh Community Backgreens Association, <http://www.ecba.org.uk/>.

159Email info@ecba.org.uk.

160Email info@transitionedinburghuni.org.uk.

There is a huge amount of fruit growing wild and in neglected gardens, with a significant amount being left to rot. In response to this, a group of residents mainly based in South Edinburgh set up a scheme to collect these unwanted apples and make use of them: the “Edinburgh Abundance Project”. They harvest the food and redistribute it to local charities to highlight the social and health benefits of growing local, seasonal, and organic food. We propose that surveys of produce already growing on University-owned and neighbouring land be made as a contribution to this project and that volunteering opportunities be promoted to students and staff.

Potential to cut CO₂



Although growing food locally can reduce greenhouse gas emissions by reducing the distance which food has to travel, the proportion of emissions from the shipping of food is low¹⁶¹.

Other benefits



Includes reduced ecological impact of food supply, health benefits of improved food, improved community understanding of food supply, increases community resilience, and community building practical activity.

Status at Edinburgh



Up and running, but help required.

Case study

[Abundance Edinburgh](#)¹⁶² is already up and running.

Key contacts

Rob Kyle¹⁶³, TEU Food and Purchasing working group¹⁶⁴.

Kitchen Canny

Food waste not only creates a landfill problem but also represents unnecessary food production. Since food production represents an estimated 14% of greenhouse gas emissions (see *Our Carbon Footprint: Emissions from goods and services*, p.43), reducing food waste has a measurable impact on our contribution to climate change. Changeworks run a “Kitchen Canny” campaign, working with individual households to investigate how to help people reduce their kitchen waste. We propose that Edinburgh follows this campaign and looks to build on its successes.

¹⁶¹See *Our Carbon Footprint: Emissions from good and services*, p.43, and Footprint Consulting, "Low Carbon Route Maps", available on-line at <http://www.footprintconsulting.org/resources>.

¹⁶²See Abundance Edinburgh, <http://www.abundanceedinburgh.com/>.

¹⁶³Email info@abundanceedinburgh.com.

¹⁶⁴Email info@transitionedinburghuni.org.uk.

Potential to cut CO₂



Moderate, as the proportion of emissions from food production and waste in the University community is moderate (see *Our Carbon Footprint: Emissions from good and services*, p.43).

Other benefits



Includes reduced ecological impact of waste, increased public awareness of ecological impact of waste.

Status at Edinburgh



Pilot scheme underway.

Case study

Changeworks are running a "[Kitchen Canny](#)" pilot scheme¹⁶⁵.

Key contacts

TEU Food and Purchasing group¹⁶⁶, Changeworks¹⁶⁷.

Ecological products co-op

The Edinburgh University Co-operative Society promotes the benefits of co-operative organisation and democratising business through practical projects. They have founded the "Hearty Squirrel" food co-op, selling ethically sourced food to its student members. Through this they promote local, organic, and fairly-traded produce. We propose that this co-op is promoted more widely among the student and staff body, and that the idea of co-operative community purchasing be expanded into other areas of goods beyond food.

Potential to cut CO₂



Moderate, as the proportion of emissions from substitutable non-ecological good and services production in the University community is moderate (see *Our Carbon Footprint: Emissions from good and services*, p.43).

Other benefits



Includes lowered ecological impact, increased community resilience, and promotion of social justice.

Status at Edinburgh University



Up and running, but help required.

Case study

The University [Co-Op Society](#)¹⁶⁸ is already up and running.

Key contacts

Karen Tostee, Edinburgh University Co-operative Society¹⁶⁹.

¹⁶⁵See Changeworks, <http://www.changeworks.org.uk/kitchencanny/>.

¹⁶⁶Email info@transitionedinburghuni.org.uk.

¹⁶⁷Email ask@changeworks.org.uk.

¹⁶⁸See Edinburgh University Co-operative Society, <http://eucs.wikidot.com/>.

¹⁶⁹Email info.eucs@gmail.com.

Ditch Dirty Development campaign

According to our research, “banking and other services” represent 4% of UK emissions. However, this figure is probably a gross underestimation due to the carbon-intensity of banks' project investments, such as the development of the oil extraction industry in the Athabasca tar-sands¹⁷⁰. People & Planet UK's “Ditch Dirty Development” campaign seeks to reduce the carbon-emissions embodied in banking by encouraging banks to support the development of green technologies rather than fossil fuels. This will help communities adapt to living without fossil fuels, as peak oil theory predicts we must, and also reduce the greenhouse gas emissions associated with financial services. We propose that students and staff at Edinburgh support People & Planet's work on this campaign.

Potential to cut CO₂



Although the proportion of greenhouse gas emissions from banking is low (see *Our Carbon Footprint: Emissions from good and services*, p.43), a successful campaign would reduce emissions across the whole of the UK.

Other benefits



Includes increased public awareness of ecological impact, lowered ecological impact, including at fuel source, and promotion of social justice.

Status at Edinburgh



Up and running, but help required.

Case study

People & Planet (UK) [Ditch Dirty Development](#) campaign¹⁷¹ is already under-way.

Key contacts

Edinburgh University People & Planet¹⁷², People & Planet (UK)¹⁷³.

University farm

From the moment of “peak oil” oil supplies will become scarcer and more expensive (see *Introduction: What is climate change and peak oil?*, p.7). This is predicted to happen within ten years, and with transport costs increasing as a result, local food-sourcing will become a necessity. The University community should take steps to prepare by encouraging local food-sourcing as a positive way of reconnecting students and staff with food production. There are many models for community-led food growing and we propose that the University finds ways to grow its own food in the area, forming part of a wider effort to create a centre of excellence in low-impact “peak oil-safe” and “climate-safe” communities. This might take the form of a series of allotments in prominent and accessible areas all over the campus, or a “University farm”, working with student and staff volunteers within the University to grow food on-site, and integrating its lessons into the formal curriculum.

¹⁷⁰See WWF: http://assets.wwf.org.uk/downloads/scraping_barrell.pdf.

¹⁷¹See People & Planet (UK), “Ditch Dirty Development”, <http://peopleandplanet.org/ditchdirtydevelopment>.

¹⁷²Email edinbpandp@riseup.net.

¹⁷³Email ditchdirtydevelopment@peopleandplanet.org.

Potential to cut CO₂



Reductions in greenhouse gas emissions from this project could come from local food growing, but the proportion of emissions from the shipping of food is low¹⁷⁴.

Other benefits



Includes community bonding practical action, increased community understanding of the local environment, increased community understanding of ecological impact, lowered ecological impact, and increased community resilience.

Status at Edinburgh



Just an idea.

Case study

Large-scale local community growing is discussed in the Transition Handbook¹⁷⁵.

Key contacts

TEU Food and Purchasing working group¹⁷⁶.

¹⁷⁴See *Our Carbon Footprint: Emissions from good and services*, p.43, and Footprint Consulting, "Low Carbon Route Maps", available on-line at <http://www.footprintconsulting.org/resources>.

¹⁷⁵See Transition Handbook by Rob Hopkins: <http://transitionculture.org/shop/the-transition-handbook/>.

¹⁷⁶Email info@transitionedinburghuni.org.uk.

Bringing the community together to take action

In order to spur people into action TEU needs to make its projects highly visible, and use them to raise broad awareness of climate change and peak oil within the University. With greater understanding of the issues, this community will become better informed and more motivated to take positive action.

Awareness raising needs to be built on offering positive responses to the problems at hand: these are our practical programmes (beginning at p.47). However, TEU also needs to spread understanding through education and encourage the community to create their own solutions. This will help build a strong group of volunteers to run the programmes, and a wider body of interest to take up and spread action and enthusiasm into the community.

National Go Green Week, 8-12th February

For a number of years campus green groups, supported by People & Planet (UK), have been running “[Go Green Week](#)” simultaneously in February¹⁷⁷ to drive forward environmental action and raise awareness about related issues. We propose a Go Green week at Edinburgh, run jointly with University departments, student societies, and TEU, to showcase environmental action at the University. Events could include awareness raising talks and a green film festival, plus practical action opportunities, to promote engagement in climate change and peak oil.

Potential to cut CO₂



No direct impact, but high indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes community bonding practical action, increased community understanding of the local environment, increased community understanding of ecological impact, increased public awareness of ecological impact, increased community resilience, and promotion of social justice.

Status at Edinburgh



Funding applied for in CCF Phase 2¹⁷⁸.

Case study

Edinburgh University ran a “[Green Week](#)”¹⁷⁹ in October 2008 and a full evaluation is available¹⁸⁰.

¹⁷⁷See People & Planet, “Go Green Week”, <http://peopleandplanet.org/gogreenweek>.

¹⁷⁸See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

¹⁷⁹See University of Edinburgh, “Green Week”, <http://www.eso.ed.ac.uk/greenweek/>.

¹⁸⁰See University of Edinburgh, “Go Green Week Evaluation”, http://bit.ly/teu_gogreen07.

Key contacts

TEU¹⁸¹, People & Planet (UK)¹⁸², David Somervell, University Sustainability Advisor¹⁸³.

Peer-to-peer training sessions

We believe an excellent way to empower people with skills and knowledge is to give them space to teach themselves. Encouraging peer-learning, as opposed to top-down models gives people confidence and stays true to our ethos of non-hierarchy (see *How We Work*, p.16). Peer-to-peer training sessions on campus would give students and staff a space to share skills, knowledge and experience between themselves in a supportive environment. We propose that the TEU group, in collaboration with other groups on campus, runs a series of such events, where community members would be invited to lead and take part in sessions on topics of interest.



Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes increased community understanding of the local environment, increased community understanding of ecological impact, and increased community resilience through skill-sharing.

Status at Edinburgh



Funding applied for in CCF Phase 2¹⁸⁴.

Case study

[People & Planet's Scotland Regional Gathering](#) in November 2009 opened up space for peer learning¹⁸⁵.

Key contacts

Natalie Czaban, TEU member¹⁸⁶.

181Email us at info@transitionedinburghuni.org.uk.

182Email climate@peopleandplanet.org.

183Email david.somervell@ed.ac.uk.

184See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

185See One World Society, <http://www.st-andrews.ac.uk/~oneworld/wiki/scotland-people-and-planet-gathering>.

186Email natalie@transitionedinburghuni.org.uk.

“Our Global Challenges” speaker events

To raise awareness about climate change and peak oil and to appeal to those with an academic interest, TEU's educational events need to have intellectual appeal. Based in a University, TEU is well placed to offer expert speaker events. We propose a series of high-profile events titled “Our Global Challenges”. There is the potential to collaborate with the University, the Edinburgh Climate Change Centre, EUSA, and World Development Movement Scotland. We could also run a tie-in photography exhibition including the “Hard Rain” exhibition¹⁸⁷ and community photography about sustainability. Such events, which can form part of Go Green Week (see *Projects that engage the whole community*, p.67 in this section), can promote other projects, publicise sustainability work at the University more widely, create space for discussion of the wider issues, and engage new individuals.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes increased public awareness of ecological impact and promotion of social justice.

Status at Edinburgh



Funding applied for in CCF Phase 2¹⁸⁸.

Case study

Adair Turner, Chair of the UK Government's independent Climate Change advice committee [spoke in McEwan Hall](#) in February 2009¹⁸⁹.

Key contacts

TEU¹⁹⁰, David Somervell, University Sustainability Advisor¹⁹¹.

Green Dragons Den

Projects which work with the University's drive for achievement and enterprise will bring about pioneering ideas for carbon savings. The BBC's popular “Dragon's Den” show¹⁹² invites inventors and entrepreneurs to pitch their investment opportunities to five “dragons” – successful businesspersons – who choose the schemes with the most potential, which they then invest in. This idea has been taken up by green groups at other Universities, and we see a *Green Dragons' Den* competition being a real driver of innovation in Edinburgh.

The proposed project would invite participants across the whole of the University community, staff and students, to present a business plan to a panel of experts in the area of sustainability and carbon saving. These plans would then be judged in terms of their potential for carbon savings and promotion of sustainable practices, with the winner gaining access to practical and financial support from Business School colleagues and TEU group members, as well as opportunities for professional advancement within the University – for example a professional

¹⁸⁷See the Hard Rain Project, <http://www.hardrainproject.com/exhibition.htm>.

¹⁸⁸See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

¹⁸⁹See The Scotsman, <http://news.scotsman.com/thescotsmansciencepages/Credit-crunch-could-offer-opportunities.4957229.jp>.

¹⁹⁰Email us at info@transitionedinburghuni.org.uk.

¹⁹¹Email david.somervell@ed.ac.uk.

¹⁹²See BBC Online: <http://www.bbc.co.uk/dragonsden/>.

mentorship from an advanced academic in their field.

The best ideas would be made public and nurtured to fruition. The competition would also build connections and forge working relationships between proactive green entrepreneurs.

Potential to cut CO₂



Estimated to be high, up to 500 tonnes CO₂e¹⁹³, although it is unclear where this cut will come from.

Other benefits



Includes community bonding practical action, increased community understanding of the local environment and ecological impact, increased public awareness of ecological impact, and increased community resilience.

Status at Edinburgh



Funding applied for in CCF Phase 2¹⁹⁴, and currently being planned.

Case study

People & Planet (UK) [Going Greener campaign guide](#) highlights Green Dragon's Den¹⁹⁵.

Key contacts

Sion Lanini, TEU member¹⁹⁶, TEU Business working group¹⁹⁷.

10:10 campaign

The University and EUSA have signed up to the 10:10 campaign – pledging to cut their greenhouse gas emissions by 10% by the end of 2010. The campaign, spearheaded by the Guardian and Sun newspapers, seeks widespread public engagement in carbon cuts and counts football clubs and TV chefs among its supporters. We propose building support for commitments already made, and encouraging communities neighbouring the University to sign-up, with an ultimate goal of bringing the whole city on board. This would require a wide public



Illustration 17: 10:10 had a glitzy media launch in the Autumn of '09. Image by RSA (cc-attrib from http://www.flickr.com/photos/the_rsa/3886952782)

193See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

194See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

195See People & Planet, “Going Greener Action Guide”, <http://peopleandplanet.org/dl/goinggreener/actionguide.pdf>, p.23.

196Email sion@transitionedinburghuni.org.uk.

197Email info@transitionedinburghuni.org.uk.

engagement campaign, talking to students, staff and others on the street and engaging them in collective projects such as those outlined in this document. The University and EUSA can also be held to account to see if their actions meet their words.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes increased public awareness of ecological impact, and reduced ecological impact.

Status at Edinburgh



Institutional buy-in but little awareness from students and staff.

Case study

The campaign has a [website](#)¹⁹⁸ and the University's support has been discussed in [The Guardian](#)¹⁹⁹.

Key contacts

Thomas Graham, EUSA President²⁰⁰, David Somervell, University Sustainability Advisor²⁰¹.

Peer learning programmes

Whilst we believe that climate change is a challenge for the community to tackle collectively, solutions to lifestyle adaptation need to work at the level of households and individuals. Moreover, genuine attitudinal transformation often only occurs through networks of friends, families and colleagues.

World Wide Fund for Nature's (WWF) pioneering "[Natural Change](#)"²⁰² programme demonstrated remarkable success in changing lifestyle patterns by taking the approach that sustainability and the planetary crisis have to be experienced at an affective, not just intellectual level.

A number of courses looking at lifestyle adaptation have been developed which create a space where people can consider their environmental impact and find ways that they can reduce it. We have identified three particular programmes: [Carbon Reduction Action Groups](#) (CRAGs)²⁰³, in which small groups meet to discuss carbon reduction targets; [Carbon Conversations](#)²⁰⁴, a structured course which explores the underlying issues around over-consumption etc.; and [Climate Solidarity](#)²⁰⁵, which involves academics in creative education and individual action.

Carbon Conversations

There is often a discrepancy between the messages of low-carbon living transmitted through mass-media and the unique circumstances in which people find themselves trying to make

¹⁹⁸See 10:10, <http://1010uk.org>.

¹⁹⁹See The Guardian, http://bit.ly/teu_guard1010.

²⁰⁰Email president@eusa.org.uk.

²⁰¹Email david.somervell@ed.ac.uk.

²⁰²See Natural Change, <http://www.naturalchange.org.uk>.

²⁰³See Carbon Rationing, <http://www.carbonrationing.org.uk>.

²⁰⁴See Cambridge Carbon Footprint, <http://cambridgecarbonfootprint.org/>.

²⁰⁵See COIN, <http://www.coinet.org.uk>.

positive choices to reduce their carbon footprint. This makes cutting carbon confusing and more difficult in “real life”. Carbon Conversations is a 6-session course based on psychotherapy working practices that goes beyond a purely quantitative approach and examines how efforts to reduce greenhouse gas emissions individually and collectively are affected by qualitative concepts such as identity, status and consumer habits. Courses held in Cambridge over the past few years have had fantastic success, with participants reducing their greenhouse gas emissions by an average of one tonne within the first year of completing the course.

Carbon Conversations offers a slightly different approach to CRAGs (see below) by concentrating more on the psychological influences on our desires and choices. We have worked with [Cambridge Carbon Footprint](#)²⁰⁶ who have offered, pending funding, to train facilitators. We hope that traditionally “hard to reach” members of the community who have no prior interest in sustainability issues but are interested in holistic systems, such as anthropology or sociology departments, will be particularly encouraged to participate.

Carbon Rationing Action Groups

[Carbon Rationing Action Groups](#) (CRAGs)²⁰⁷ are a pre-existing programme in which groups of people support each other to take action on cutting carbon. CRAGs' successes stem from the empowerment that participants gain from calculating their own carbon footprint and using available resources, such as smart meters and the knowledge of the wider group to work out ways to cut it. It is an action based, practical approach in which participants report back to each other on a regular basis on their successes and challenges. Unlike Carbon Conversations (see above), CRAGs has no fixed length and groups can go on meeting as long as they find it useful. Development into subgroups or changing themes is likewise possible.

Each CRAG is unique and determines its own dynamic. TEU would utilise the adaptability of the model to facilitate the creation of a number of different groups to attract different types of participants, from those highly motivated to go completely carbon neutral to people who feel obliged to do something and would like a little instruction and guidance from their peers.

Climate Outreach and Information Network Partnership with Campus Unions

The [Carbon Outreach and Information Network](#) (COIN)²⁰⁸ has established an excellent record of promoting action on cutting greenhouse gas emissions through their Climate Action Groups (CAGs). Their innovative new project looks to apply this approach to trade unions, with the same focus on examining the effect that values and collective identity have on action taken. By promoting action in the work place, this approach will encourage staff to see sustainability as part of their working lives and complementary to long standing Union traditions of collective action in response to social and economic change.

A partnership with COIN would promote links between staff, unions and the University. COIN could, pending funding (see *How We Work: Funding our work*, p.19) provide training to University staff members who will then be qualified to give peer to peer presentations on Climate Change and collective action to trade union members. Each presentation would focus on a specific target; such as commuting greenhouse gas emissions, insulation in homes, local food, green tariff electricity change-over and car maintenance and use. Action groups will be the outcome of each targeted presentation and TEU could provide support, follow up work and dissemination of successful outcomes. This would develop a system which works for the Edinburgh University community, but also shares lessons learnt with the other further education institutions and their surrounding communities through EAUC and People & Planet (UK).

206See Cambridge Carbon Footprint, <http://cambridgecarbonfootprint.org/>.

207See Carbon Rationing, <http://www.carbonrationing.org.uk>.

208See COIN, <http://www.coinet.org.uk>.

We propose trialling these course and measuring their success against one-another. With funding support, they could be facilitated by setting up initial meetings, connecting interested people and providing resources and a support structure with coordinated social and training dates. These 'Exploring Behavioural Change' programmes will help participants work through the emotional and psychological aspects involved in changing to a low-carbon lifestyle and give them access to a supportive environment for empowerment and growth. The different make-up of each programme means they give different target audiences access points to engage with the issues of climate change and peak oil, and take positive action as a result. We could also promote these programmes through University channels and seek to pass on some of the ideas included into the formal curriculum.

Potential to cut CO₂



Estimated up to 900 tonnes CO₂e²⁰⁹ from behaviour changes of participants.

Other benefits



Includes increased community understanding of ecological impact, reduced ecological impact, increased community resilience, financial benefit to community members, and promotion of social justice.

Status at Edinburgh



Funding applied for in CCF Phase 2²¹⁰, being planned.

Case study

All three listed programmes have been run previously, [CRAGs](#)²¹¹; [Carbon Conversations](#)²¹², and [Climate Solidarity](#)²¹³.

Key contacts

Natalie Czaban, TEU member²¹⁴.

Transition TV

Through art and multimedia we can express ideas too subtle or exciting for words. Films and pictures help us tell stories with depth and give us a fun way to convey complex issues. There are many ways in which these media could be useful in broadening the Transition movement at Edinburgh and we would like to see these ideas developed in multiple directions. One proposal is that videos demonstrating practical projects (for example, the *Greener Travel* project, p.52) be filmed and edited for screening on campus by community members working within TEU, and that a "Transition TV" channel to be launched on-line.

209See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

210See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

211See Carbon Rationing, <http://www.carbonrationing.org.uk>.

212See Cambridge Carbon Footprint, <http://cambridgecarbonfootprint.org/>.

213See COIN, <http://www.coinet.org.uk>.

214Email natalie@transitionedinburghuni.org.uk.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes community bonding practical action and increased public awareness of ecological impact and the local environment.

Status at Edinburgh



Funding applied for in CCF Phase 2²¹⁵.

Case study

“[People & Planet TV](http://peopleandplanet.blip.tv/)” at Blip.tv²¹⁶.

Key contacts

TEU Media working group²¹⁷.

Student societies supported to reduce environmental impact

Student societies and clubs are supported by the [EUSA](http://www.eusa.ed.ac.uk/)²¹⁸ and the [Sports Union](http://www.eusu.ed.ac.uk/) (EUSU)²¹⁹. As well as providing practical support, they ensure student groups abide by certain standards including financial oversight, access, diversity, and openness. Environmental impact has received an elevated status in University and the Student Association policy in recent years and there is a need to prepare societies for a changing legislative and economic environments brought by climate change and peak oil. As such, we believe it would be entirely appropriate for student groups to be given guidance, training, support and oversight on environmental issues such as using sustainable transport, reducing waste, and low-impact sourcing of food, goods and services. This would equip student groups with the knowledge and skills to function in a low-carbon world.

Potential to cut CO₂



Low, as the proportion of student greenhouse gas emissions that take place as part of society-led activities is small (see *Our Carbon Footprint*, p.34).

Other benefits



Includes community bonding practical action, increased community understanding of ecological impact, lowered ecological impact, and increased community resilience.

Status at Edinburgh



Just an idea.

Case study

None available.

215See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

216See <http://peopleandplanet.blip.tv/>.

217Email media@transitionedinburghuni.org.uk.

218See Edinburgh University Students Association, <http://www.eusa.ed.ac.uk/>.

219See Edinburgh University Sports Union, <http://www.eusu.ed.ac.uk/>.

Key contacts

TEU²²⁰, EUSA Vice President Societies and Activities²²¹.

University ecology tours

The University estate has been managed to encourage biodiversity²²² and reduce environmental impact²²³ in a number of ways and for a number of years, but overall awareness among the community about these activities is low. University Landscape Officer, John Turpin, and University Sustainability Advisor David Somervell could be encouraged to offer students, staff and visitors “ecology tours” showcasing areas of the University managed for biodiversity, the University's combined heat and power (CHP) plants, and other ecological initiatives.

Potential to cut CO₂



No direct impact, but some indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes increased community understanding of the local environment.

Status at Edinburgh



Just an idea.

Case study

None available.

Key contacts

David Somervell, University Sustainability Advisor²²⁴ and University Landscape Officer, John Turpin²²⁵.

220Email us at info@transitionedinburghuni.org.uk.

221Email vpsa@eusa.ed.ac.uk.

222See University of Edinburgh Estates & Buildings, <http://www.estates.ed.ac.uk/Works/Landscape/biodiversity.htm>.

223See University of Edinburgh Energy & Sustainability Office, <http://www.eso.ed.ac.uk/>.

224Email david.somervell@ed.ac.uk.

225Email john.turpin@ed.ac.uk.

Projects to reach out beyond our campus

Climate change and peak oil are global issues, solutions to which require a global approach: we cannot succeed if we act as if in isolation. Progress made at the University in making energy-use reductions and building community bonds can be multiplied many times over by reaching out beyond our campus. There are a wealth of channels through which TEU can spread its work, by visiting local community hubs in Edinburgh, joining up with People & Planet groups in Scotland, or by attending UK-wide transition events. We can also set out on specific engagements, such as those included in this section. By reaching out in this way, TEU will benefit from being part of a broader movement, and also see the impact of our ideas spread and grow.

Themed public reports

To capture and spread our ideas, TEU needs to ensure they are well recorded and publicised. We propose that TEU follow this current report with a series of public reports around different themes. These can be packaged into accessible forms for web, video and podcast formats, and publicised widely to the student, local and national media.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes increased public awareness and understanding of ecological impact, supports other projects.

Status at Edinburgh



Funding applied for in CCF Phase 2²²⁶.

Case study

This report!

Key contacts

TEU²²⁷.

²²⁶See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

²²⁷Email us at info@transitionedinburghuni.org.uk.

“Universities in Transition” conference

Interest in the improving environmental performance and more specifically, the Transition movement, is growing at many Universities, aided by the launch of People & Planet (UK)'s “[Going Greener: Transition Universities](#)” campaign²²⁸, NUS Scotland's [Student Footprints](#) project²²⁹, and the “[Degrees Cooler](#)” project²³⁰ in England. There is much to be gained from these schemes and our own sharing ideas and working together, but no specific space yet exists to do so. To kick start this collaboration, we propose that TEU run a “Universities in Transition” conference, showcasing progress, facilitating knowledge and experience-sharing, and building bridges between related initiatives.



Illustration 18: TEU's launch event in October 2009 brought students and staff at the University together. Could TEU do the same for Scotland? Image by Oliver Cooper (c).

Potential to cut greenhouse gas



No direct impact, but significant indirect impact through promotion of practical carbon-cutting work in other communities.

Other benefits



Includes increased understanding of ecological impact and increased community resilience.

Status at Edinburgh



Funding applied for in CCF Phase 2²³¹, support offered from People & Planet (UK).

Case study

Transition Scotland ran a [nation-wide gathering](#) in Summer 2008²³² and People & Planet (UK) [hosted a discussion](#) between staff involved in reducing the impact of Higher Education²³³.

Key contacts

TEU Outreach working group²³⁴, People & Planet (UK)²³⁵.

²²⁸See People & Planet, “Going Greener”, <http://peopleandplanet.org/goinggreener>.

²²⁹See Student Footprints Project, <http://www.nus.org.uk/en/student-life/Ethical-Living/Reduce-the-carbon-footprints-of-your-community/>.

²³⁰See Greener Living Fund, <http://www.greenerlivingfund.org.uk/projects/degrees-cooler/>.

²³¹See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

²³²See Youtube, “Transition Scotland Support”, http://www.youtube.com/watch?v=60slJAVAC3U&feature=player_embedded.

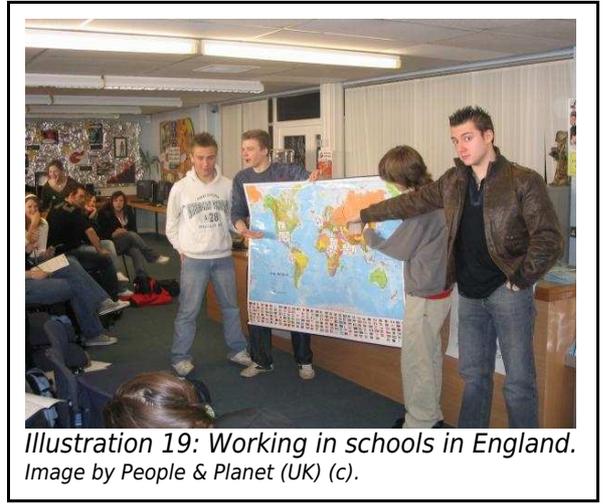
²³³See EAUC, http://www.eauc.org.uk/going_greener_people_planet_30th_january_09.

²³⁴Email outreach@transitionedinburghuni.org.uk.

²³⁵Email climate@peopleandplanet.org.

Working with local schools

Many local schools in Edinburgh have achieved EcoSchool and FairTrade status²³⁶ and schools have been proactive in taking part in local environmental initiatives. We propose that TEU pro-actively offers local schools workshops on Transition and specific projects. This could work within People & Planet UK's [Go Green Schools](#) campaign²³⁷, and seek to encourage new groups in these schools.



Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting work in other communities.

Other benefits



Includes increased understanding of ecological impact and increased community resilience.

Status at Edinburgh



Just an idea.

Case study

People & Planet UK's [Go Green Schools](#) campaign has been running for several years²³⁸.

Key contacts

TEU Outreach working group²³⁹.

City outreach event

The University is an important institution and centre of community in Edinburgh. It has for many centuries been an important driver of change in Scotland and has the potential to facilitate significant progress on issues such as climate change. To harness this power and build active links between the University and the surrounding Edinburgh city community, we propose an event focusing on the wider contribution of the University community to action on climate change and peak oil: facilitating the sharing of skills, knowledge and experience.

²³⁶See City of Edinburgh Council,

http://www.edinburgh.gov.uk/internet/environment/sustainable_development/fairtrade/CEC_edinburgh_fairtrade_schools.

²³⁷See People & Planet, "Go Green Schools", <http://peopleandplanet.org/gogreen/6ffe>.

²³⁸See People & Planet, "Go Green Schools", <http://peopleandplanet.org/gogreen/6ffe>.

²³⁹Email outreach@transitionedinburghuni.org.uk.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting work in the Edinburgh community.

Other benefits



Includes increased understanding of ecological impact and increased community resilience.

Status at Edinburgh



Funding applied for in CCF Phase 2²⁴⁰.

Case study

[Painting Edinburgh Green](#) in October 2009 brought Transition groups in the city together²⁴¹.

Key contacts

TEU Outreach working group²⁴², Eva Schonveld, Transition Edinburgh²⁴³.

“Catalogue of ideas” web-tool

This report includes an extensive volume of transition project ideas, all of which are replicable beyond Edinburgh and many of which are borrowed from other groups. However, the suitability of each project will vary from group to group and from community to community. As such, producing a *definitive* guide of how a green transition might practically be achieved is impossible. Instead, if other groups are to flourish, TEU needs to support them by offering ideas and frameworks, rather than a prescriptive set of answers.

To help facilitate this information sharing, we propose that TEU build a web-based tool which allows groups to submit project case-studies and best practice. This will come together as a “catalogue of ideas” that anyone or any group can use to choose appropriate projects to run in their community. People & Planet (UK) and other support organisation could help publicise it.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting work in other communities.

Other benefits



Includes increased understanding of ecological impact, increased community resilience, and supports other projects.

Status at Edinburgh



Funding applied for in CCF Phase 2²⁴⁴, support offered from People & Planet (UK).

Case study

[Super use](#) is a pictorial catalogue of recycling ideas²⁴⁵.

240See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

241See Transition Edinburgh South, “Painting Edinburgh Green” <http://www.transitionedinburghsouth.org.uk/taxonomy/term/29>.

242Email outreach@transitionedinburghuni.org.uk.

243Email eva@transitionsotland.org.

244See “Transition Edinburgh University Phase 2 CCF Application”, available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

245See Superuse, <http://www.superuse.org/>.

Key contacts

TEU Outreach working group²⁴⁶.

²⁴⁶Email outreach@transitionedinburghuni.org.uk.

Understanding our community

Understanding problems is the first step to solving them. TEU keeps its commitment to this approach through the publication of this report, but this report is just the beginning. It offers a tentative estimate of our carbon footprint and a number of identified ways to reduce it. There are holes in our carbon footprinting methodology and much more work is required to fully understand the community's energy-use and its full ecological impact. We also need to produce a clear vision for what a low-carbon, re-localised University community could look like, as part of a sustainable city, country, and planet. These tasks inform and put into context the more practical work of the hands-on projects (see p.47) and provide a driver for sustained action.

Measuring progress on carbon-emission reductions

One of the key overall aims of continuing research is to facilitate monitoring and evaluation of the TEU's projects. There are three variables by which to test TEU's progress towards creating a low carbon community:

- i. Measure the reductions in greenhouse gas emissions achieved by TEU against the current institution and community lifestyle carbon footprints.
- ii. Measure the level of the TEU's engagement with the University community.
- iii. Measure the level of outreach/support achieved by TEU to other groups/communities.

Whilst all three of these elements are important in improving understanding our impact, this section of the report will detail the first measure, that of greenhouse gas emissions reductions (i). This is not because it is more important than measuring progress on the other two, but more because TEU have already made useful partnerships to contribute to work in this area which are yet to emerge for monitoring of engagement (ii) and outreach (iii) work. As such we are in a better position to propose a plan of action to further such work.

Continuing greenhouse gas emissions research needs to have two parallel long-term goals:

- A.** To measure the reductions achieved by *specific practical projects and peer-learning courses* being run by TEU against a baseline greenhouse gas estimate.
- B.** To measure the *overall reductions in greenhouse gas emissions* being achieved by the 36,000 strong community, year on year.

Many of the initial tasks for these two goals will overlap. We propose that some initial steps toward these long-term goals could be categorised as follows:

Completing and confirming the initial baseline (contributes to goals A and B)

Before January TEU should **develop “mini surveys”** to corroborate or correct the assumptions made in the current lifestyle footprint estimations (see *Our Carbon Footprint: Methods* p.27).

The priorities for filling gaps in our emissions data are as follows (in descending order of priority):

- 1.** Measure emissions from leisure flights and other personal travel (staff and students). This should incorporate travel by students to their family homes.
- 2.** Measure emissions from energy use in private rented accommodation of staff and

students

3. Measure emissions from purchased goods & services. These scope 3 emissions (see *Our Carbon Footprint: Methods* p.27) will be more difficult to record, but potentially a survey could focus on a few key goods such as food (vegetarianism etc.) and perhaps electronics/ computers.

These surveys can also collect information regarding attitudes of students and staff towards making lifestyle and institutional changes towards sustainability and therefore help inform the projects, gauging where they might encounter more or less enthusiasm and resistance.

Interacting with the working-groups (contributes to goals A)

Specific objectives here are to:

- Provide information on which of the working groups' projects will do the most to reduce greenhouse gas emissions (and can be *shown* to reduce emissions).
- 1. Develop bespoke measures of the groups' or projects' success with respect to emissions reduction (and other goals). These measures will be marked against the baseline discussed above and will be specific to the kind of work the group is doing.

For example, there are programmes of research which can take place within workings groups, such as the Residencies and Buildings working group:

- We could **collect actual meter readings** (gas & electricity) and numbers of occupants of private houses from before and after their involvement by surveying the households involved. The before-readings will help define the baseline, while the after-readings will show if the project was a success.
- Intrinsic to the **Pollock Energy Saving Competition** will be the collection of emissions data measured against last years baseline figures. Other aspects of this group's work will probably require surveys.

In the Food and Goods working group:

- Projects relating to food emissions won't be able to provide any direct "readings", so **questionnaires or pledges** will need to be designed to suit the specific circumstances.
- Allotment workers could be asked to record **how much food they grow and distribute**, though the largest benefit from this group is likely to be the value-changes amongst those who participate and skills learned, factors which are much harder to evaluate.

Within the Travel working group:

- Travel projects may be evaluated through the **number of pledges** obtained. These could be followed up with surveys.

Development of a Edinburgh University community carbon calculator (contributes to goals B)

Over the course of compiling this report it has become clear that calculating greenhouse gas emissions of an individual is highly community specific. Despite this, due to lack of data specific to the locality, there has been considerable reliance on UK-average datasets (see *Our Carbon Footprint: Methods* p.27). Carbon calculators already existing could be used to fill this gap but

more valuable data could be obtained if such a questionnaire was tailored to the University and different groups within it, such as staff, postgraduates, etc.

We propose the development of a calculator tailored to the community for individuals and households, on a website and in paper form. This will be a long term project, and will be designed to reach as wide a section of the community as possible. Such a project should have well-defined greenhouse gas accounting boundaries, while still aiming not to completely miss out important Scope 3 (indirect) emissions, and its usage would replace the need for baseline estimations. In this regard it must make clear where it is being accurate and where it is making assumptions. It needs to be informed by the questions asked in the surveys (see above) and could intelligently identify different groups within the community so it is able to ask as few questions as possible to maximum effect.

Such a project would help discover the true carbon footprint of the community by contributing missing data, helping to track progress of carbon-cutting in the community, and encouraging collective action on environmental impact by providing evidence of progress.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes increased understanding of ecological impact, increased community resilience, and supports other projects..

Status at Edinburgh



Funding applied for in CCF Phase 2²⁴⁷, currently being developed by TEU Research working group in conjunction with [Carbon Masters](#)²⁴⁸.

Case study

This report, various tailored [carbon-calculators](#) are available²⁴⁹.

Key contacts

TEU Research working group²⁵⁰.

²⁴⁷See "Transition Edinburgh University Phase 2 CCF Application", available on-line at <http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

²⁴⁸See Carbon Masters, <http://www.carbonmasters.co.uk/>.

²⁴⁹See Delicious, http://delicious.com/transitionedinburghuni/carbon_calculator.

²⁵⁰Email info@transitionedinburghuni.org.uk.

Student-led monitoring and evaluation

Transition activities are a learning process, and in learning how to achieve a transition to a low-carbon community TEU needs to record and monitor to be able to evaluate progress. A university community is in an advantageous position to do this because research and learning constitute the core of the community. Using this position will enhance TEU's ability to cut carbon and reduce environmental impact, and will also benefit students and academics by providing a local case study of a sustainability problem. Involvement in Transition will further improve internal communication and understanding of how the University functions.



We propose that students be encouraged to write assignments, dissertations and theses focusing on the environmental impact of the University and the surrounding community, and tracking the success of interventions (such as those included in this document). There are also potential collaborations with specific degree programmes and courses.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting projects (listed previously).

Other benefits



Includes increased understanding of ecological impact, increased community resilience, and supports other projects.

Status at Edinburgh



Funding applied for in CCF Phase 2²⁵¹, currently being developed by TEU Research working group.

Case study

The [Masters course in Participation in Policy and Planning](#) has provided similar opportunities²⁵².

Key contacts

TEU Research working group²⁵³.

²⁵¹See "Transition Edinburgh University Phase 2 CCF Application", available on-line at

<http://www.transitionedinburghuni.org.uk> or from info@transitionedinburghuni.org.uk.

²⁵²See University of Edinburgh, <http://www.drps.ed.ac.uk/09-10/course.php?code=P00716>.

²⁵³Email info@transitionedinburghuni.org.uk.

Energy Descent Action Plan

If we are to achieve re-localisation and drastic greenhouse gas emissions cuts over the next decade, we need to present a clear vision as to what our community will look like in a low-energy world, and construct a step-by-step plan outlining how to get there.

An “Energy Descent Action Plan” (EDAP) is a key concept in the [Transition movement](#)²⁵⁴, but one has never been created for a University community before.

We propose creating such a plan for the Edinburgh University community, building on partnerships already being made, using practical ideas, and responding to carbon calculation research such as that included in this report (see *Our Carbon Footprint*, p.26).

As a preliminary step, TEU could broaden involvement in the University's internal sustainability strategy. TEU could then progress into setting up a working group to develop a full community EDAP including “lifestyle” as well as institutional activities (see *Our Carbon Footprint: Methods*, p.27) in pro-active engagement with the community.

Community involvement in the development and implementation of these plans will help nurture better understanding of the problems. By developing such plans openly, TEU can maximise involvement in and understanding of the problems and solutions.

The finalised EDAP and University sustainability strategies can then be used to encourage buy-in from the community and commitment from key organisations such as the University, EUSA, Edinburgh City Council, and Scottish Government.

Potential to cut CO₂



No direct impact, but significant indirect impact through promotion of practical carbon-cutting work generally (listed previously).

Other benefits



Includes community bonding practical action, increased community understanding of local environment and ecological impact, increased public awareness of ecological impact, increased community resilience, and supports other projects.

Status at Edinburgh



Just an idea.

Case study

Kinsale in Ireland produced the [first EDAP](#) in 2005²⁵⁵.

Key contacts

TEU²⁵⁶, David Somervell, University Sustainability Advisor²⁵⁷.

²⁵⁴See Transition Network, <http://www.transitiontowns.org/TransitionNetwork/12Steps>.

²⁵⁵See Transition Culture, <http://transitionculture.org/wp-content/uploads/KinsaleEnergyDescentActionPlan.pdf>.

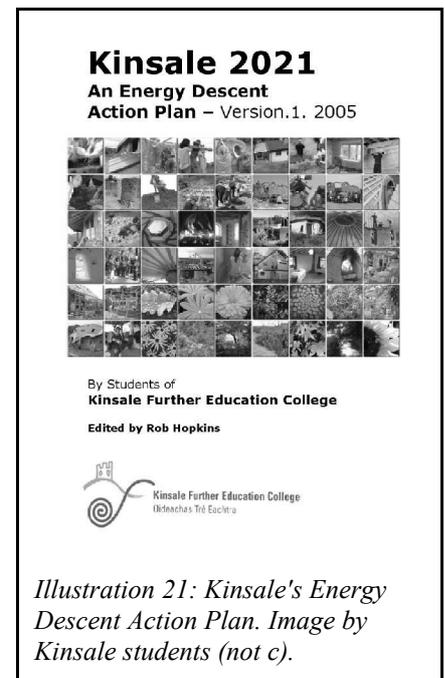


Illustration 21: Kinsale's Energy Descent Action Plan. Image by Kinsale students (not c).

TEU Work Plan

In order to make progress TEU needs a vision to work towards and a strategy to achieve it. *This* report is designed to begin this work by helping inform vision and strategy, laying some of the groundwork for creating a coherent plan.

We propose that TEU produce a strategic plan for the next few years of its work, developing proposals included in this document, setting a vision and establishing a work place for community-led energy descent in the near future. This could be done through a working group within TEU called, for example “vision”. This task is an urgent priority for TEU. As a project, it is intertwined with that of the Energy Descent Action Plan and as such, both pieces of work could be produced side by side, or one could inform the other.

Potential to cut CO₂



None directly but facilitates the smooth running of other listed projects.

Other benefits



Includes supporting other projects.

Status at Edinburgh



Work is tabled to begin in December 2009.

Case study

None available.

Key contacts

TEU²⁵⁸, Ric Lander, TEU member²⁵⁹.

²⁵⁶Email us at info@transitionedinburghuni.org.uk.

²⁵⁷Email david.somervell@ed.ac.uk.

²⁵⁸Email us at info@transitionedinburghuni.org.uk.

²⁵⁹Email ric@transitionedinburghuni.org.uk.

Appendix

Appendix a. List of terms used

Carbon footprint – the total CO₂e produced in a year by an organisation, community, or individual (see *Our Carbon Footprint: Our methods*, p.27).

Carbon Masters – a carbon management “spin off” social enterprise from the University of Edinburgh (see *How We Work: Working with other groups*, p.22).

Changeworks – a social enterprise in Edinburgh advising Lothians-based organisations and individuals on how to improve their environmental record (see *How We Work: Working with other groups*, p.22).

Climate Challenge Fund (CCF) – the Scottish Government which currently funds the funded elements of Transition Edinburgh University.

Climate impact – the impact humans are having on the global climate, measured as a carbon footprint (see *Our Carbon Footprint: Our methods*, p.27).

CO₂e – Carbon dioxide equivalent, a measure of greenhouse gas emissions (see *Our Carbon Footprint: Our methods*, p.27).

Community – the groups of people we live with or share work or interests with. In this report, the community in question is the students and staff at the University of Edinburgh (see *Introduction: What does transition mean at a university?*, p.8).

Department for Environment, Food and Rural Affairs (DEFRA) – UK Government Department responsible for, among other things, regulation of environmental damage.

Ecological impact – the effect human activity has on the ecological systems.

Edinburgh University People & Planet – People & Planet Society is a student campaigning group at the University of Edinburgh which takes action on human rights, world poverty and the environment which kick-started TEU (see *How We Work: Working with other groups*, p.22).

Edinburgh University Students Association (EUSA) – the student's union at the University of Edinburgh, formally responsible with representing students (see *How We Work: Working with other groups*, p.22)..

Embodied emissions – greenhouse gas emissions which are produced in the totality of a product of service's life cycle.

ENDS Carbon – a carbon management social enterprise based at the University of Edinburgh (see *How We Work: Working with other groups*, p.22).

Energy & Sustainability Office – The office within the University of Edinburgh which monitors and reduces the University institution's energy use and ecological impact (see *How We Work:*

Working with other groups, p.22).

Energy Descent Action Plan (EDAP) – A document which sets out how a community will reduce its energy usage (see *Opportunities: Understanding our community*, p.85).

Greenhouse Gas – gases which insulate the earth. Emissions of these gases from human activity are causing climate change (see *Introduction: What is climate change and peak oil?*, p.7).

National Union of Students (NUS) Scotland – the federation of Scottish student unions representing students in Scotland (see *How We Work: Working with other groups*, p.22).

People & Planet (UK) – a 150+ group strong UK-wide network of People & Planet groups (see *How We Work: Working with other groups*, p.22).

People & Planet Society – see *Edinburgh University People & Planet*.

Relocalisation – The process of a community building internal resilience through increasing the proportion of goods and services which are locally produced (see *Introduction: What is the Transition movement?*, p.7).

Students Association – see EUSA.

The University – see *University of Edinburgh*.

Transition – a just transition towards a relocalised, low-energy community that responds collectively to peak oil and climate change (See *Introduction: What is the Transition movement?*, p.7).

Transition Edinburgh South – a community group in South-Central Edinburgh working to re-localise and reduce energy usage (see *How We Work: Working with other groups*, p.22).

Transition Edinburgh University (TEU) – A community group within the University responding to climate change and peak oil through collective local practical action. (see *Introduction: Where did Transition Edinburgh University come from?*, p.9).

University community – the students, staff, and surrounding individuals that study and work at the University of Edinburgh (see *Introduction: What does transition mean at a university?*, p.22).

University of Edinburgh – the University of Edinburgh in Scotland, UK (see *How We Work: Working with other groups*, p.22).

We – Oliver Cooper and Ric Lander, the authors, and members of Transition Edinburgh University (see *Introduction: Who wrote this report*, p.6).

World Development Movement (WDM) Scotland – an organisation campaigning for global social and environmental justice (see *How We Work: Working with other groups*, p.22).

Appendix b. Carbon Footprinting data sources: notes, validity and reliability

Energy

| Activity | Source | Source Time period | Notes | Validity/specificity with respect to population? | Reliable source? Replicable next year? Recommendations... |
|--|--|---|---|---|---|
| Gas use in University Buildings & CHP plants (scope 1) | '080918 Utilities Report 2008 Preparation Figures V2.xls' provided by Shona Buchanan, Assistant Energy Manager, Energy & Sustainability Office, University of Edinburgh 11 Infirmary Street, Edinburgh, EH1 1NP on 14/07/2009. Shona.Buchanan@ed.ac.uk | Data for 1990/91 to 2007/08. Year 07/08 used. | The University's Combined Heat & Power plants are fuelled by gas, therefore part of the energy generated from this gas sees its end use as electricity in University buildings. Gas figures do not include Accommodation Services sites, Chancellors Building, Advanced Computer Facility and University Nursery. Figure is for 'Gas and Oil', however Oil is a back-up fuel only so all usage assumed to be Natural Gas. | Actual meter readings for university buildings. | Yes. Will become easier if we can access and use Optima (automated meter reading & database system). |
| Grid electricity use in University owned buildings (scope 2) | As above. | As above. | Electricity figures do not include Accommodation Services sites, Cancer Research UK Building, Chancellors Building and Advanced Computer Facility. | As above. | As above. |
| Gas, oil, solid fuel use in staff homes (scope 1) & electricity use in staff homes (scope 2) | DEFRA Emissions of CO ₂ for local authority areas - 2005 & 2006 data http://www.defra.gov.uk/evidence/statistics/environment/globalatmos/globalghg.htm | Data for 2005 & 2006. Year 2006 used. | Records CO ₂ emissions, not CO ₂ e. Data used: Domestic Electricity, Domestic Gas, Domestic Oil, Domestic Solid fuel, Domestic House and Garden Oil for Local Authority area 'City of Edinburgh' for 2006. | Only specific to Edinburgh population, not to Staff. So assumes that Staff consume domestic fuels as "average" citizens of Edinburgh. | New data should be released by DEFRA and is reliable but clearly changes made in staff houses will not be reflected. More specific data needed. |
| | City of Edinburgh population data from: http://www.gro-scotland.gov.uk/statistics/publications-and-data/settlements-and-localities/mid-2006-population-estimates-for-settlements-in-scotland/index.html | Mid-2006 | Total Domestic CO ₂ e emissions for Edinburgh divided by this population to give per person figure, then multiplied by number of staff. | | |

| | | | | | |
|--|--|--|---|---|--|
| Energy use in Student Accommodation - Pollock halls of residence (scopes 1 & 2) | '2008 - 2009 Utility Bills.xls' provided by Val Jenkins, Accommodation Managers Assistant Accommodation Services - Flats Division on 28/07/09. vjenkins@miscorp.ed.ac.uk | Data for 2004/05 onwards. Year 07/08 used. | Grid Electricity bought & Gas bought for conventional heating ('Pollock South') & for Combined Heat & Power Plant. | Actual meter readings for entire Pollock site. Includes Pollock site except Masson House, so assumes it is appropriate to include buildings such as the reception centre etc. in student usage. | Can be repeated and improved upon. As of this year, it will be possible to do house-by-house analysis, and compare against previous year. Use the data that is being collected for inter-house energy saving competition. Energy use at the JMC should be shared equally between students...etc. |
| | Pollock Halls population data from: 'property list showing use, size of flats and numbers housed' provided by Sandra Kinnear, Accommodation Manager, Accommodation Services. sandra.kinnear@ed.ac.uk | As at June 2009. | Utilities bills data did not include Masson House so the number of students at Masson House were deducted from the total for Pollock, for the purposes of calculating per person usage. Pollock is inhabited by students in these months: ½ of September, October, November, December, January, February, ½ of March, ½ of April, May. | | |
| Energy usage in Student Accommodation - University owned flats (scopes 1 & 2) | 'Meter Readings May 2009.xls' provided by Katrina Renton, Clerical Assistant, Flats Division, Accommodation Services, on 28/07/09. katrina.renton@ed.ac.uk | Academic year 2008/09. | A number of anomalies appeared to exist in the meter readings (e.g. negative annual usage for some flats). Where this was the case, the whole property was ignored for the purpose of the study. The same spreadsheet also provided number of bed-spaces per flat so a per person figure could be calculated (based on the assumption that all rooms were occupied) This university accommodation does not have Gas central heating - all heat and power provided by electricity only. Some of which provided as heat-with-rent (i.e. usage not paid for directly by occupant). | Actual meter readings for university-owned flats. | Yes. We could suggest improvements to the data collection process - e.g. more frequent readings? |
| Energy usage in Student Accommodation - Other (e.g. private/agency rented, owner occupied, etc) (scopes 1 & 2) | No data specific data source so assumed to be equal to per person figure for University Owned Flats (above). | | The assumption that privately rented/owned etc. is equivalent to University owned flats is problematic as most accommodation is likely to (a) have Gas central heating and (b) not provide any heat-with-rent arrangement. | | Surveying of student population required. Possibility of receiving data from utilities companies? |

Travel

| Activity | Source | Source Time period | Notes | Validity/specificity with respect to population? | Reliable source? Replicable next year? Recommendations... |
|--|--|---|---|--|---|
| Students Commuting (scope 1 or 3) | UoE Transport Survey 2007 | 2007 | See Survey's appendix 4 for conversion factors used. | Specific to staff and student populations. Provides some insight into patterns relating to the different university sites. | High level of reliability, but is the survey conducted every year? |
| Staff Commuting (scope 1 or 3) | UoE Transport Survey 2007 | 2007 | As above. | As above. | As above. |
| Travel to home town (international students) (scope 3) | List of students 08/09 students 'country of domicile on entry' provided by Paul Gorman Systems Support Officer IT & Legacy Systems Support, EUCLID, paul.gorman@ed.ac.uk , via UofE Registry | 2008/09 | Estimate assumes 2 return trips per year per student. | | Based on assumption so same method won't be useful if repeated next year. |
| Travel to home town (UK students) (scope 1 or 3) | List of 08/09 students 'county of domicile on entry' provided by Paul Gorman Systems Support Officer IT & Legacy Systems Support, EUCLID, paul.gorman@ed.ac.uk , via UofE Registry | 2008/09 | Estimate assumes 4 return trips per year per student. | | Based on assumption so same method won't be useful if repeated next year. |
| Leisure/Personal Travel (scope 1 or 3) | Scottish Transport Statistics no. 27, 2008 Edition < http://www.scotland.gov.uk/Publications/2008/12/22091243/170 > | | | Not specific to university population. | Needs to be surveyed. |
| Travel in university vehicles (scope 1) | Carbon Trust Standard submission 07/08 | | | Yes. | |
| Business travel paid for by the University (scope 3) | Spreadsheets provided by HRG, Key Travel and Ben Lawries to Neil Crowley, Procurement Officer, neil.crowley@ed.ac.uk | 07-08 academic year except for Ben Lawries (01/04/07 to 31/03/08) | This data from travel agents accounts for 73% of travel spend, the rest is accounted through claims to e-expenses (IBIS database) | Reasonable. | Reasonable but more coherent and accurate approach needed. |

Goods and services

| Activity | Source | Time period | Notes | Validity/specificity with respect to population? | Reliable source? Replicable next year? Recommendations... |
|------------------------|--|---|---|---|---|
| Water supply | '080918 Utilities Report 2008 Preparation Figures V2.xls' provided by Shona Buchanan, Assistant Energy Manager, Energy & Sustainability Office, University of Edinburgh 11 Infirmity Street, Edinburgh, EH1 1NP on 14/07/2009. Shona.Buchanan@ed.ac.uk | Data for 1990/91 to 2007/08. Year 07/08 used. | Does not include: all Accommodation Services sites, Teviot Row House and University Nursery. | | |
| Sewage processing | As above. | As above. | Does not include: all Accommodation Services sites, Teviot Row House and University Nursery. | | |
| Other Goods & Services | UK Emissions: "The carbon emissions generated in all that we consume", The Carbon Trust, January 2006. Available: http://www.carbontrust.co.uk/Publications/publicationdetail.htm?productid=CTC603&metaNoCache=1 | | Figures from report for UK total. We converted them from Mt Carbon to CO2e Emissions. Divided by total UK population to give per person figure. | | |
| | No. of staff per paygrade: provided on 11/08/09 in email from Debbie Kilgallon, HR Systems Assistant, deborah.kilgallon@ed.ac.uk | | | | |
| | Gross pay per bracket: http://www.humanresources.ed.ac.uk/pay/payscales/UE01_to_UE10_Oct08.pdf | | | | |
| | Average Student in Scotland's Expenditure: http://www.scotland.gov.uk/Resource/Doc/277087/0083207.pdf , p. 56. | 07/08 | | The figures are for the average student in Scotland and therefore may not reflect the student demographic at the University of Edinburgh. | |

For some additional sources please see see "Footprints & Handprints Carbon Spreadsheet", available on-line at <http://www.transitionedinburghuni.org.uk> or from research@transitionedinburghuni.org.uk.

Other sources that were not used in this study but which may be useful:

| Activity | Source | Source Time period | Notes |
|---------------|---|--------------------|--|
| Accommodation | HEED Database http://www.energysavingtrust.org.uk/heedonline/ Email: info@transitionedinburghuni.org.uk for our login details. Access given to us by: Cate Lyon: Cate.Lyon@est.org.uk through Sitar Ramsay, Changeworks: sitar.ramsay@se.energysavingscotland.org.uk | | Energy Saving Trust Database of results of Home Energy Checks etc. Can provide statistics for whole of Edinburgh or for ward areas. Useful for providing overview statistics for ward / city on number of homes in different categories for: property type, tenure, property age, loft insulation installed, external wall type, glazing type, main heating fuel, main heating type. |
| Accommodation | List of student and staff term-time addresses provided by Paul Gorman Systems Support Officer IT & Legacy Systems Support, EUCLID, paul.gorman@ed.ac.uk , via UofE Registry | 2008/09 | May be useful for ensuring a non-biased survey regarding home energy use. |

Appendix c. Carbon Footprinting further reading

T. Garnett, "Cooking up a storm: food, greenhouse gas emissions and our changing climate", Food Climate Research Network, Centre for Environmental Strategy, University of Surrey, September 2008.

Available: http://www.fcrn.org.uk/frcnPubs/publications/PDFs/CuaS_web.pdf

M. Keeping & J. Whelan, "Cities, Commerce & Carbon: The Role of Property",

Available: <http://www.gvagrimley.co.uk/documents/research/06057%20Research%20Green%20Cities%20Report%20Final.pdf>

D. Mackay, Sustainable Energy – without the hot air. Cambridge: UIT Cambridge, 2008.

Available: <http://www.withouthotair.com/Contents.html>

J. Ranganathan et al., "The Greenhouse Gas Protocol, A Corporate Accounting and Reporting Standard, Revised Edition," The Greenhouse Gas Protocol Initiative.

Available: <http://www.ghgprotocol.org/files/ghg-protocol-revised.pdf>

"Low Carbon Route Maps", Footprint Consulting Ltd, Environmental and Resource Economics Limited, Alan Speedie Associates, July 2009.

Available: <http://www.footprintconsulting.org/resources>

"The carbon emissions generated in all that we consume", The Carbon Trust, January 2006.

Available: <http://www.carbontrust.co.uk/Publications/publicationdetail.htm?productid=CTC603&metaNoCache=1>

"The environment in your pocket 2008", DEFRA, December 2008.

Available: <http://www.defra.gov.uk/evidence/statistics/environment/eiyp/pdf/eiyp2008.pdf>

"Draft guidance on how to measure and report your greenhouse gas emissions", DEFRA, 05/06/2009.

Available: <http://www.defra.gov.uk/corporate/consult/greenhouse-gas/draft-guidance.pdf>

Carbon calculators and online tools

For the most up-to-date list of online sources for all our work, including a list of online carbon calculators, please see the TEU Bookmarks Page [<http://delicious.com/transitionedinburghuni>].

Sourcemap.org [<http://www.sourcemap.org/beta/stage/>]. Open source mapping of where things come from and what their embodied carbon footprint is. You can use the tool to create your own source map for any product.

Resurgence Carbon Calculator [<http://www.resurgence.org/resources/carbon-calculator.html>].

Green Communities Footprint Calculator [<http://www.greencommunitiescc.org.uk/>]. A community calculator

ActOnCO2 - UK Government Personal Carbon Calculator [<http://carboncalculator.direct.gov.uk/index.html>]. Does not include radiative forcing on flights!

Living Witness Carbon Calculator [http://www.livingwitness.org.uk/home_files/Personal%20GHG%20calculator.pdf]

Stop Climate Chaos - Leeds, Carbon Calculator [<http://www.leedstidal.org/sccleeds/calculator.php>]. Travel and Domestic Energy only

"Carbon Footprint" Carbon Calculator [<http://www.carbonfootprint.com/calculator.aspx>]. Indirect emissions calculated under "secondary" tab. However there is no explanation of how these are calculated.

Climate Friendly Calculator [<https://climatefriendly.com/personal>].



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Web Edition 1.01 (final).

18th November 2009

Published by:

Transition Edinburgh University
c/o Energy & Sustainability Office
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Supported by People & Planet (<http://peopleandplanet.org/>)
and Edinburgh University (<http://www.eso.ed.ac.uk/>).

*An accompanying news release is available on request.
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