

DIVESTMENT WORKING GROUP

REPORT

2018



UNIVERSITY OF
CAMBRIDGE

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OVERARCHING PRINCIPLE

The University in its investment, research, education, estate and policy decision making should take urgent and tangible action to deliver a carbon neutral future.

EXECUTIVE SUMMARY

The Divestment Working Group (the Group) are all agreed that climate change is a real and present danger. The University of Cambridge must use its position authoritatively to provide leadership in the challenging discussions that the transition to a carbon neutral future demands. The Group knows that this view is widely felt across the University. From the evidence sessions and town hall meetings that the Group held, the voices of concern about climate change were heard loud and clear both from those who opposed divestment as well as those who advocate it. The University, to achieve carbon neutrality within a certain time, needs to adopt a wide-ranging overall strategy of considered divestment including enhanced engagement with fund managers and companies. Further necessary measures include improved energy use reduction and effecting positive changes in the actions of individuals and institutions within its community as well as using its research expertise to facilitate the transition more widely.

The Group recommend that the University adopts a position of considered divestment, within a positive investment strategy and active engagement with investment managers, policy-makers and relevant sectors of industry. This recommendation includes expecting the University to subscribe to the UN Principles for Responsible Investment (UNPRI) and to participate in the Institutional Investment Group on Climate Change (IIGCC) or a significant equivalent public body.

The University should commit not to invest in the most carbon intensive tar sands and thermal coal companies, divesting from any such currently in holdings over which the University has direct control and expect others in whom it invests to adopt the same approach. We recommend a certain proportion of the asset allocation of CUEF should be made with dedicated Environmental Social and Governance (ESG) funds, perhaps 10% initially, in the expectation that the percentage will rise through a determined and deliberate move towards environmentally responsible funds in the relatively short term. It is acknowledged that it may well be that certain funds are already invested in such funds; we believe however that such explicit investment policy would convey the seriousness with which we view the challenge; 10% should be viewed as an initial minimum expectation of such funds.

It is apparent that within the Cambridge community many are unclear about how the University's Endowment Fund investments are held and may therefore have been advocating for a goal which is not straightforwardly feasible, given the current investment management model. We recommend that the Investment Office introduces greater transparency in its investment process, monitoring and reporting, with increased emphasis

on how ESG concerns are reflected in particular investment management practices and in the range of equities they hold. Such reporting should be annual to provide Council and the Investment Board the means to balance their investment return expectations with positive ESG investment; appropriate details should be made available to the Regent House and published on the University's website. To ensure increased engagement with fund managers on ESG matters and subsequent reporting, it will be necessary for additional resource to be given to the Investment Office and to create a post with responsibility for the engagement and research necessary for appropriate financial decisions to be made in the rapidly changing markets surrounding the use of fossil fuels, renewables and carbon neutrality.

We solicited advice from a number of leading environmental groups and range of energy companies, and believe that active engagement in research and in policy with a broad array of actors in government and the energy industry is an effective avenue for the University to pursue and promote a rapid transition to a carbon neutral society. The University has internationally-leading researchers carrying out research directly relevant to the challenges the world faces around climate change. This research – scientific, policy-related and social – can be found spread widely across the University but the impact and social utility of this work is reduced by its very diversity and broad distribution. We recommend that the University sets up a new, all-embracing Centre for a carbon neutral future, which can act as a coordinator for this research, and as a one-stop shop for external individuals and bodies who wish to interact with our research. It would also act as a hub through which policy, dialogue and influence can be maximised. By providing a coherent central focus the impact of everything we do will be

EXECUTIVE SUMMARY

increased. Additionally, this Centre must be charged with the task of improving communication, internal and external, so that those beyond any actual research team can comprehend the entirety and relevance of our research activities; it should also aim to catalyse new research in this area. This Centre will also be important for our staff and students, to provide an immediate focus, a place to go to learn and contribute, a place that coordinates teaching activities and also one that oversees short-term projects, in both research and related entrepreneurial activity which we propose the University should offer and fund.

Communication of the breadth of our activities is important. This includes in the policy arena where we recommend the University should take a leading role (through the proposed new Centre and other relevant bodies such as the Institute for Public Policy) in the dialogue with and contribution of advice to policy-makers e.g. around the benefits and assessment of carbon pricing. If the University is truly to show leadership in this challenging arena, we have collectively to be willing to stand up and speak out authoritatively to those who can effect the vital change in global actions that are needed.

The University, through its research, teaching and other activities, is currently a net carbon contributor. The Group was dismayed to learn in its discussions with the University's Environment and Energy Section that the budget for supporting the University's carbon reduction activities had been reduced from £2 million to £1.6 million in the 2015 planning round. Work to reduce the University's emissions is ongoing. However, the Group learned that it has been hindered by the increase in the size of the University's estate and the age of some of its buildings, 49 of which are listed, together with limited funding. The University needs to revise its ambitions with the setting of tangible targets as well as to provide necessary funding. The Group recommends that the University should commit to a carbon neutral estate by 2040. By doing this the University would be a live laboratory showcasing its research and demonstrating its leadership in this area. To achieve this, the existing Environmental Sustainability Strategy Committee should be mandated to set and oversee the implementation of necessary measures and intermediate targets and be expected to report annually directly to Council on progress. In addition, we recommend that by 2030 100% of the University's energy be taken from renewable sources, for example, through the establishment of its own solar farm. Central investment will be needed to achieve these

goals and the University should therefore consider external funding by issuing a 'Green Bond'.

The Group also recognised that these large scale targets cannot be achieved without the efforts of every member of the University. Each should consider their own actions and the impact these may have on the University's carbon footprint. To encourage this, the University should agree and implement targets for its staff and students to help them change their individual actions, for example, through the implementation of internal carbon pricing as a way to incentivise the behaviour of departments and individuals. To be effective in changing behaviours the University will require a more proactive and integrated communications strategy to keep the University's carbon neutral target at the forefront.

In summary, to achieve a carbon neutral future the Divestment Working Group recommends urgent action involving considered divestment within a positive investment strategy but also much more widely in our activities. This is vital if we are to continue to be the credible and authoritative leader our community expects the University to be.

RECOMMENDATIONS

The University's Investments

1. Direct Equity Investment

The Investment Office should be mandated to invest in a manner consistent with a carbon neutral future in any directly held equities. This should include, but is not limited to, undertaking as a matter of policy not to invest in carbon intensive tar sands or thermal coal.

2. Indirect Investment

The University should expect that no investment in thermal coal or tar sands be made by any party with whom it invests.

3. Environmental, Social and Governance (ESG)

There should be the allocation of a part of the University's indirectly held investment into dedicated environmental, social and governance (ESG) funds consistent with a carbon neutral future. We recommend that 10% of indirect investment should be placed with funds embracing ESG and rising through a determined and deliberate move towards a greater emphasis on assessable environmentally responsible funds in the relatively short term; the Investment Board to set out a timetable for this process to be reported to Council.

4. UN Principles of Responsible Investment

The University should commit to the UN Principles of Responsible Investment (UNPRI)¹.

5. Reporting to Council

The Investment Office should, as recommended by ACBELA, regularly report to Council on how environmental and social concerns are incorporated and reflected in investment management practice and include how fund managers have executed the University's investment policies.

6. Transparency and public reporting

The transparency of the investment processes of the Investment Office should be increased e.g. by the introduction of an informative website. An annual report, including information on environmental and social concerns, and the manner in which ESG is accountably reflected in the portfolio should be reported to Council. An appropriate update should be published for the Regent House and provided on the University's website.

7. Behaviours

Council should consider, at least annually, the relative weight of ESG investments in investment returns and against performance benchmarks in accordance with their fiduciary responsibilities.

8. Resource

Additional resource should be provided to the Investment

Office to permit the employment of a person to provide research engagement with fund managers and to engage with relevant researchers to provide coherent and authoritative positions on investment assets.

9. Investor engagement with industry

The University should join the Institutional Investors Group on Climate Change (IIGCC)² or an alternative equivalent grouping, as soon as possible, to ensure it lends its voice and authority in engagement with industry, even where it holds funds indirectly.

Research and Policy

10. Leadership and Coordination

The University should establish a Centre for a carbon neutral future which will bring together the disparate areas of research on energy production and use, climate, sustainability (and other associated fields as appropriate) as well as policy. Additionally the Centre should seek to collaborate with partners on appropriate campaigns to change climate policy.

11. Research and Policy Communication

A proactive communication strategy should be developed to support the promotion of research and policy work being done towards a carbon neutral future across the University and appropriate resourcing should be provided to enable maximisation of the impact of this work.

12. Dialogue and Advice

An integrated and high level dialogue should be developed, directed at policy makers and industry leaders, and coordinated by the new Centre in collaboration with the Institute for Public Policy.

¹ <https://www.unpri.org/>

² <http://www.iigcc.org/>

RECOMMENDATIONS

The University's Estate and Operations

13. The Estate

The University should commit to be carbon neutral by 2040.

14. Implementing Targets

To ensure the University achieves its 2040 goal, the Environmental Sustainability and Strategy Committee should be mandated to agree and implement the necessary targets. It should report directly to Council regularly on the determination and implementation of interim targets towards this goal.

15. Renewable Energy Sources

The University should source 100% of its energy from renewable sources by 2030.

16. Green Bond

The University should consider issuing a Green Bond to fund its environment and climate actions. For example, to fund the purchase and development of alternative renewable energy sources to supply electricity to the University's buildings in line with recommendation 15.

17. Individual Actions

The University should agree and implement targets for the University's staff and students to improve environmental actions.

18. Reporting Progress

The University should have a more proactive and integrated communication strategy that both consistently reports on and encourages the uptake of environmental initiatives across the University.

19. Sharing and Dissemination

The new Centre should be equipped with the necessary resource to seek out and create opportunities for sharing learning, disseminating information and promoting collaboration between the University's researchers and the estates' division.

BACKGROUND

In May 2015, the Working Group on Investment Responsibility (WGIR), which had been established by the Advisory Committee of Benefactions and External and Legal Affairs (ACBELA), was asked to consider whether changes should be recommended to the University's Statement on Investment Responsibility (SIR) which was published [20 July 2009](#). The report of the WGIR contained nine recommendations that focused on the University's investment policies and management and their integration with environmental, social, and governance considerations³. The recommendations were reviewed and accepted by the Council on [13 June 2016](#) and have since been substantially implemented.

There is strong, varied and continued interest in the issue of divestment from fossil fuels by the University's community, as demonstrated by the remarks made at the Discussion on [22 November 2016](#) on the topic of concern. The Council's response was published in the *Reporter*⁴. The Council also received and considered the *Grace* initiated, under Special Ordinance A (i) 5, by 140 members of the Regent House. In response the Council agreed to commission a report "specifically into the advantages and disadvantages of the policy of divestment which the *Grace* supports."⁵

In May 2017 the Council established the Divestment Working Group to consider the question of divestment from businesses involved in fossil fuel extraction. A copy of the membership and terms of reference of the Group is included with this report (*Annex A*). In particular, the Group was asked to consider:

1. the different approaches the University might take to issues associated with divestment from fossil fuel industries; and
2. how those approaches might impact upon the University's mission 'to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence'.

The Group met for the first time on 14 June 2017 and agreed a work-plan for the summer research period and the Michaelmas Term (2017). The Group also agreed that its terms of reference, membership, register of interests, meeting agendas and confirmed minutes would be made available via its website to members of the University with Raven access.

Community Consultation

The Group received background information from a variety of sources from across the University and externally; a list of this information is provided with this report (*Annex B*). The Group sought to gather evidence from relevant bodies and individuals and to conduct a consultation with staff and students. This was initially effected through a written consultation to external and internal parties in September 2017 and two University town hall

style meetings in the Michaelmas Term, open to all members of the University community. Details of the town hall meetings, together with copies of written submissions received, can be found on the Group's website⁶. It is perhaps worth noting that this was a new approach for consulting internally with staff and students. The Group felt that the meetings were positive and respectful, allowing a variety of facts and views on divestment, fossil fuels and climate change to be heard.

After the written consultation, the Group agreed that it would be desirable to conduct a series of oral evidence sessions involving a number of those who had responded to the consultation and some additional organisations. A full list of the organisations with which the group consulted is provided with this report (*Annex B*). The evidence sessions took place throughout November, December 2017 and January 2018 and a total of 25 individuals and representatives of different bodies were interviewed.

Letter to the Vice-Chancellor

By the end of the evidence gathering in Michaelmas three recommendations had already emerged, which it was felt could be acted on with relative speed ease, if accepted by the Council. In early January 2018 the Group sent a letter to the Vice-Chancellor recommending the implementation of some steps that could be taken to move forward on the issue of divestment. A copy of that letter is provided (*Annex C*). In summary the three interim recommendations were:

1. the Investment Board should work with the Investment Office to see how transparency in the latter's actions can be facilitated without compromising any issues of commercial sensitivity or requiring the disclosure of confidential matters;
2. the response to the University's letter [...] does not provide any reassurance that fund managers are acting explicitly in response to the University's Statement on Investment Responsibility. We recommend that the Investment Office take a much more proactive stance, reporting back [...] on what actions the fund managers might have taken or what ongoing dialogue is occurring as a result of the letter from the University; and
3. since the CUEF is an institutional investor, we would recommend that the University joins the Institutional Investors Group on Climate Change (IIGCC) as soon as possible, so that our voice can be added to other major institutions on this important matter.
4. The letter was put before the Council on 22 January 2018 who noted in particular the concerns regarding transparency of operating practices. The Council agreed to invite the Investment Board to consider in what ways the issues of transparency could be addressed in the immediate future. Subsequent internal actions in response to the letter are ongoing.

³ Report of the Working Group on Investment Responsibility - <http://www.admin.cam.ac.uk/reporter/2015-16/weekly/6430/Investment-Responsibility-Wkg-Grp-Report.pdf>

⁴ *Reporter*, 6450, 2016-17, p.291

⁵ *Reporter*, 6450, 2016-17, p.292

⁶ <https://www.governance.cam.ac.uk/committees/divestment-wg/Pages/consultation-meetings-MT17.aspx>. Copies of submissions from those members of the University who spoke or submitted their views for the attention of the Group are provided as a combined pdf available on the Town Hall Meeting site.

BACKGROUND

The Cambridge Context and Beyond

As stated in the executive summary, the view that climate change is a real and present danger was found to be incontrovertible across the University. In truth, this was never in dispute and therefore, the Group will not here reiterate the impact of fossil fuels or climate change on the planet. That case has already been explained by many others, not least by staff and students who submitted statements for the town hall meetings⁷; and in the report issued by the Zero Carbon Society in February 2016, *Fossil Fuel Divestment at the University of Cambridge*⁸, which set out the links between climate and extreme weather, food security and refugees (to name but three). The evidence gathered from the University (and beyond) showed that facts and opinions were not only centered on a question of whether investment in fossil fuel related business was bad for the environment. Additional issues including global poverty; inequality; new technologies; the need for carbon pricing; advances in climate understanding; and institutional responsibility were heard and discussed.

One of the points that was repeatedly heard during the Group's period of consultation and evidence gathering was that the University, with all of its history, knowledge and standing in society, has a responsibility to use its reputation and influence to take the lead on the issues of climate change and investment.

*"The University of Cambridge, [on the other hand], has the power, influence and money to make a difference in this most important of Global problems."*⁹

*"Trinity College – along with the whole of the University – has a historical lead in confronting uncomfortable truths and working to make things right."*¹⁰

It is clear that the University's community feels that Cambridge, with its history of pioneering research and ideas cannot afford to remain silent on the subject. The Group has retained a view that there are many ways in which the University can reasonably and responsibly work towards solving the problems posed by climate change and itself move towards a carbon neutral future. The Group believe the issue of our investments and our investment policy is only one part of the overall responsibility of the University.

During the town hall meetings, reference was also frequently made to the University's mission statement. The Group was asked to give consideration to how our overall actions, including approaches to divestment and the fossil fuel industry, might be consistent with the mission of the University:

'to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence'.

The mission calls for the University to contribute to society, to lead in expanding knowledge and thought: in other words, to be a global thought leader. Indeed its core values expand on this under the heading of 'The University's relationship with society', stating that the University has a concern for sustainability and the relationship with the environment. This recognition of the University's role in civil society needs to be addressed, as several speakers made clear during the consultations.

In what follows we have identified ongoing and recommended actions that will ensure we fulfill the University's mission. Our recommendations throughout the report are designed to ensure our actions align with our values as summarized by the overarching principle.

For the avoidance of doubt the Group treated the question of whether to divest from fossil fuels as being entirely separate from its consideration of research which may be linked to fossil fuels. The Report has been split into sections to address three areas in particular:

- Divestment and Investment
- Research and Policy
- The University Estate and Operation

Following its wide consultation with members of the University, relevant companies, interest groups, investment firms and others, the Group presents its findings and recommendations.

⁷ <https://www.governance.cam.ac.uk/committees/divestment-wg/Pages/consultation-meetings-MT17.aspx>

⁸ Zero Carbon Society Report, February 2016, *Fossil Fuel Divestment at the University of Cambridge*

⁹ Eyre, Daisy (CUSU President) – Town Hall Meeting, 9 November 2017

¹⁰ Watanabe, Mia (Environmental Officer at Trinity College) – Town Hall Meeting, 25 October 2017

THE UNIVERSITY'S INVESTMENTS

Management of the Cambridge University Endowment Fund

The Cambridge University Endowment Fund (CUEF) is a collective investment scheme in the form of a unit trust. It was established in 2008 and is managed by the Investment Office (IO), which is a wholly owned subsidiary of the University. The unit trust is managed on the basis of total returns, with a long term objective to achieve or exceed an annual return where both the periodic distributions and value of a unit in the CUEF increase by at least 1% above the annual percentage change in the Retail Price Index (RPI), measured over the long term. Due to its long term approach the fund seeks investments where the expected returns and risks are comparable to those in the broad equity markets. It provides long term capital growth plus a monthly distribution for investors and recommends a minimum of 5 years investment due to the fluctuation of markets. In the year to June 2017 the CUEF gained a return well above its RPI-linked objective. Over the 9 years since June 2008, the fund has achieved an annualised return of over 10%.

The IO is led by the Chief Investment Officer (CIO) and consists of a team of eight others, two investment directors, two associate investment directors and an investment manager, whom are dedicated to managing the University's endowment, working with fund managers and external financial providers. The remaining three members of staff are responsible for the operational management of the office. At the time of the report being compiled the IO were seeking to employ an operations analyst. The core expertise of the office is in assessing external fund manager activity and in the identification of funds that could provide the best return for the University's investment.

The IO is responsible for the implementation of the University's Investment Strategy. In addition the IO has responsibility for the construction of the portfolio, risk management, portfolio monitoring and reporting and due diligence. The CUEF is managed in accordance with the Financial Conduct Authority (FCA) rules and other applicable laws. For the purposes of taxation the eligible investors (limited to University Departments and the Colleges) are established charities and therefore exempt from UK Income and Corporation Tax on qualifying investments. The CUEF also makes investments in other countries such as the United States, and therefore the Trustees of the CUEF require that investors comply with the requirements to be exempt from US federal tax.

During the time of the Group's evidence gathering in Michaelmas 2017 the so-called [Paradise Papers](#)¹¹ were published by the Guardian Newspaper and gave rise to a call for a Discussion on the topic of concern, 'The University's Investments'. The Paradise Papers were misleading in their portrayal of the University's financial and tax related obligations. The University issued a statement to the media which gave the University's actual position but this was not published by the newspaper

(Annex D). The statement explained that the Colleges and the University are charities and therefore their holdings in investments are tax-exempt in the UK, US and many other countries; and this means that there is normally no tax to pay and as a result tax liabilities do not apply to offshore investment.

Divestment

Divestment is one of many ways in which achieving a carbon neutral future can be met. The divestment challenges directed at investor behaviours when dealing with fossil fuel companies are broadly two-fold. The first challenge asserts that companies which benefit from the resourcing, sale and use of fuels that release CO₂, resulting in climate change, are not acting in the interest of the environment and therefore an investor should not support them by allowing its financial assets to be invested. The second proposes that those same companies are about to or have already reached a peak in oil production and sales and that therefore a shift in the energy and fossil fuel investment market will take place reducing these companies' profitability. Over time, as new low carbon technologies and energy efficient equipment and buildings increase and access to renewable energy improves, the ability to actively invest in fossil fuel related industries is expected (by some) to decrease.

A report issued by the [Zero Carbon Society](#) early in 2018, suggested that:

*"Divestment is the best way to protect the University's finances from the 'carbon bubble'. A combination of mitigation policies and falling renewable energy prices is predicted to turn fossil fuels into 'stranded assets' in coming decades."*¹²

We agree and believe that the IO does already take risks, such as stranded assets into account in its management of the University's investments. We also heard views expressed at the town hall meetings which stated that divestment would reduce the ability [of the University] to influence companies through shareholder votes.

*"Divestment [...] In the long term it would mean that the University would have no voice in corporate law or influence over any board of directors of any company involved with fossil fuels."*¹³

Given the indirect nature of much of the University's investment this is precisely the reason we recommend that the University join the IIGCC and also engage with industry through research and policy as outlined later in this report. The issues described here are larger than the University alone can resolve. We firmly believe that a diverse portfolio which considers environmental, social and governance concerns and also takes account of future risks would undoubtedly be in the University's financial interest. Thus, the Group recommends that the University adopts a position of considered divestment.

¹¹ The Paradise Papers was an investigation conducted by the Guardian and other media partners (worldwide) into a leak of 13.4m files from two offshore service providers and 19 tax havens' company registries. At the time it was reported as the world's second largest data leak.

¹² <https://files.acrobat.com/a/preview/afd298d1-ea99-443f-b611-bc9e78e886f0>

¹³ Gardiner, Robert, (Bursar at Murray Edwards College and Graduate of Cambridge) - Town Hall Meeting, 25 October 2017.

THE UNIVERSITY'S INVESTMENTS

Direct Investment

We were assured from the statement of the Chief Financial Officer (CFO) at the 5 December 2017 Discussion and previous reports from WGIR and ACBELA, that the University has no direct investment in fossil fuel companies.

*"Only a small proportion of the University's investment portfolio is [...] owned as securities and managed directly [...] of these directly managed securities, [...] at this time the University has no exposure to the most pollutive industries, such as thermal coal and tar sands, and no expectation of having any such exposure in the future. It also has negligible exposure to other fossil fuel industries."*¹⁴

The University, with regard to that proportion of its investment that is directly held, can make a commitment to divest from the most polluting industries, such as thermal coal and tar sands. This divestment decision could potentially be made about other industries in the future. The Group recommends that the University makes a commitment, with regard to any investment where it has direct influence, that its interests be channelled towards a carbon neutral future.

Recommendation

1 Direct Equity Investment

The Investment Office should be mandated to invest in a manner consistent with a carbon neutral future in any directly held equities. This should include, but is not limited to, undertaking as a matter of policy not to invest in carbon intensive tar sands or thermal coal.

Indirect Investment

As is the case for many HE institutions and charitable organisations, the University does not directly hold the vast majority of its investment portfolio, a point the Group believe should be shared more widely with the University's community. An apparent misconception of this fact has occurred, at least in part, from a lack of transparency in the way the IO is operated. Thus many of the calls for the University to divest completely from fossil fuel companies presupposed that such action was straightforwardly feasible and within the direct control of Council and the IO. In fact, the IO has relationships with third party fund managers who operate pooled funds and other investment vehicles. The Group heard that it is necessary to take time to build up these relationships. In its 9 years of operation the IO had specifically targeted managers of funds which operate a single strategy and which represent a long term investment prospect in comparison to the commercially driven 'asset gathering' investment companies which are generally well known. In other words, they pursue a very active investment policy.

When assessing an investment or divestment, in a particular fund or with a given manager, the IO typically consider participations open on a limited and discretionary basis for periods of up to 10 years. These tend to be led by fund managers that operate a smaller scale investment firm. In terms of financial sustainability and achieving a good long term return the University's investment appears to be well cared for. The third party fund is reportedly carefully managed by the external firm and both annual and quarterly reports are provided to the IO. It was reported to the Group in November 2017 that over the course of 9 years the management of the CUEF had yielded a 350% return.

The development of the investment policy is the responsibility of the University, and is overseen by the Council and the Investment Board. The leading directive appears to be the maximising of a return. The Council's fiduciary duty states that:

"the primary fiduciary responsibility [...] in investing and managing the University's endowment and other financial assets is to maximise the financial return on those resources, taking into account the amount of risk within the University's established investment policy."

This criterion on its own is very broad but it is assuaged by what follows:

"However, there are circumstances, [...] when the University may balance against its primary responsibility considerations of the ethical nature of investments."

This criterion is written into the terms that guide ACBELA when it makes decisions regarding donors or potential partner organisations that want to collaborate with the University. The use of the word balance in this criterion is essential. At all times the University must have the opportunity to weigh up (or balance) the benefits of its investment decisions against ethical concerns. Ethical concerns will change over time and therefore each generation of the University's community will need the flexibility to assess and in some cases reassess the University's position.

The Statement goes on:

*"When investing and managing the non-operational estate, holdings in spin-out companies and similar investments, including in circumstances where the investment cannot be entirely justified on financial investment grounds alone, the Council is responsible for ensuring that the investment is in the best interests of the University and that it too reflects its underlying values."*¹⁵

This criterion goes hand-in-hand with the Group's earlier assertion that its recommendations seek to ensure that the actions of the University align with its values. This statement of responsibility is the basis of the University's investment policy. Evidence

¹⁴ Report, Working Group on Investment Responsibility, (May 2016), pg. 3 - <http://www.admin.cam.ac.uk/reporter/2015-16/weekly/6430/Investment-Responsibility-Wkg-Grp-Report.pdf>

¹⁵ Reporter 6430, 2015-16, p.636 <http://www.admin.cam.ac.uk/reporter/2015-16/weekly/6430/section1.shtml#heading2-5>

THE UNIVERSITY'S INVESTMENTS

suggests that few investors have formal inclusion or exclusion policies. In global terms, the University's endowment is small (in comparison with US universities) which we have been told can limit its ability to set a specific mandate for its investment or divestment with a long term third party prospect. The resource required to monitor and if necessary exclude certain global industries is considerable. The Group heard about three possible scenarios that could potentially reduce the risk of exposure to any specific industry or sector. The University could:

1. create a bespoke index, which could move away from sectors which the University wants to avoid. This would incur a significant cost to the University;
2. build a larger investment office and operate it internally (in structure it might resemble the [USS](#)); however evidence suggests that this would be difficult in the University setting, as the example of Harvard, with its much larger endowment, illustrated¹⁶; and
3. use a larger scale 'asset gathering' fund manager, to specify a personalised ethical fund.

The above options would require additional investment and resource to be effective. A bespoke index which could be made up of investments that are chosen by the University would potentially require permanent additional resource to manage the active monitoring, buying and selling of the underlying investments to achieve a desirable return. In the higher education landscape internal investment offices lean towards the identification of good external fund managers and maintain a limited in-house staff to support those relationships and maintain smaller directly held funds. The feeling is that relatively small university endowments cannot hope to compete with much larger scale investment firms. As a charity for education and research it might not be considered appropriate to scale up an investment operation when, for example, scholarships or the refurbishment of facilities to make them greener and more efficient could be funded instead. Ultimately such options are for the Council and Investment Board to consider.

We believe that, regardless of these constraints, the University can expect that positive action be taken by fund managers to protect its investments from exposure to the most pollutive industries, as is already the case with that small portion of the University's directly held funds. The Group therefore recommends, that in line with its recommendation for considered divestment and treatment of its directly held investment, the University would expect those who invest on its behalf apply the same principle.

Recommendation

2 Indirect Investment

The University should expect that no investment in thermal coal or tar sands be made by any party with whom it invests.

The third option outlined above (to use a larger scale 'asset gatherer') takes into account that part of the investment market that has recognised investors' desire to see ethical investment options available to them. The report of the WGIR referenced the increasing importance for charities (and their trustees), as part of their fiduciary duty, to take into account environmental, social and governance (ESG) considerations where they cross with financial matters. That report noted that such considerations could include:

*"engaging in active stewardship where charities consider such activity to be an effective means of influencing fund managers or companies to consider the environmental effects of their operations for the benefit of longer term profitability."*¹⁷

The Group received further evidence that ESG funds are being normalised by asset managers when meeting with fund management companies. There is also increasing evidence that ESG funds perform as well as non-ESG funds. There is an emerging trend across the financial industry of this change in attitude and approach, as shown by the steps taken by [BlackRock](#) to implement investment stewardship priorities to engage with companies on their approach to corporate governance including the management of ESG factors¹⁸. In an open letter from the Chairman and Chief Executive Officer, Laurence Fink, to CEOs he emphasises the responsibility of businesses to ensure a good and responsibly managed return for investors:

*"Your company's strategy must articulate a path to achieve financial performance. To sustain that performance, however, you must also understand the societal impact of your business as well as the ways that broad, structural trends – from slow wage growth to rising automation to climate change – affect your potential for growth."*¹⁹

Mr Fink's analysis suggests that if a company does not engage with society on such issues it will risk losing its key stakeholder buy-in. As previously mentioned the University's influence as a stakeholder is limited partially by the size of its endowment, an issue which the Group addresses with Recommendation 9. Despite this the suggestion of changing market attitudes and industry approach cannot be ignored. The implication is that ESG funds are increasingly desirable and that the market is active in providing options to suit different types of investor.

Therefore the Group recommends that specific ESG funds be introduced to the CUEF's portfolio as a proactive measure to move the University's investments towards a carbon neutral future. We recommend an initial allocation of 10%, increasing over time by the means of a determined and deliberate investment. The Investment Board should set out a timetable for this process to be reported to Council.

¹⁶ <http://www.thecrimson.com/article/2017/1/26/hmc-layoff-staff/>

¹⁷ <http://www.admin.cam.ac.uk/reporter/2015-16/weekly/6430/Investment-Responsibility-Wkg-Grp-Report.pdf> (paragraph 18)

¹⁸ BlackRock Engagement Priorities 2017-18 <https://www.blackrock.com/corporate/en-gb/about-us/investment-stewardship/engagement-priorities>

¹⁹ Larry Fink CEO Letter <https://www.blackrock.com/corporate/en-no/investor-relations/larry-fink-ceo-letter>

THE UNIVERSITY'S INVESTMENTS

Recommendation

- 3 Environmental, Social and Governance (ESG)**
- There should be the allocation of a part of the University's indirectly held investment into dedicated environmental, social and governance (ESG) funds consistent with a carbon neutral future. We recommend that 10% of indirect investment should be placed with funds embracing ESG and rising through a determined and deliberate move towards a greater emphasis on assessable environmentally responsible funds in the relatively short term; the Investment Board to set out a timetable for this process to be reported to Council.

Transparency, Reporting and Behaviour

What has been made clear, both in the course of the Group's evidence gathering and from the Discussion of 5 December, is that there is a lack of information available on the management processes surrounding the University's investments. During the two town hall meetings that took place in the Michaelmas Term, the Group heard from staff and students who asked for increased and accurate information about the type of investments held by the University and other associated data:

*"Cambridge University does not seem to be very open about how it invests its money, which leads to concerns that it may be investing in the arms trade (between 2008-2011 CU did accept over 13 million from arms companies), investing in companies like Rio Tinto who have a terrible record when it comes to tacit involvement in countries internal conflicts, or companies who are involved in profit making that exploits international law. More transparency in how the university invests is an obvious first step."*²⁰

The University would benefit from improvements in its communication on how the CUEF is managed; the rules affecting the University as a charity/ HE institution and what, in the world of investment management, can be done to adhere to the University's values. Evidence gathered by the Group suggests that it is difficult to guarantee that a mandate to exclude a particular industry from indirectly held investments can be implemented by fund managers, unless a specific segregated fund or ESG fund is chosen. However, it is not impossible and can be managed through effective relationships between those with responsibility for the University's investments and external fund managers. The University has previously sought to address this concern in the open letter published in June 2016 from the then Vice-Chancellor, Professor Sir Leszek Borysiewicz and the CIO, Nick Cavalla to the intermediary fund managers. The letter stated that:

*"The University's Investment Board and Office expects its appointed investment managers to incorporate an assessment of climate change risks into their investment processes."*²¹

The IO continues to follow up with intermediary managers and, we are informed, usually receives a sympathetic response and in some cases reassurance that the intermediaries implemented environmental, social and governance guidelines for the responsible management of the fund(s). This is the type of information that should be made available to the members of the University. It may also be helpful to include a description of measures available to the IO if an intermediary fund manager were not to respond or not to provide assurances that they had implemented these guidelines.

For the Group, the questions that followed were focused on how the University, with improved transparency and reporting practices, could influence behaviours. The Group considered how the University could work to:

- improve existing reporting practices to communicate investor feedback to staff and students;
- build on the process that had already been recommended by ACBELA and approved by Council to communicate the University's concerns and investment policy to intermediary fund managers and to ensure there is sufficient communication in both directions;
- use its influence, to ensure that intermediary fund managers implement a University set mandate (or investment policy);
- rebalance profit expectations such that ethical diversification of the portfolio can be achieved without prejudicing returns;

To address these considerations the Group would like to see a more transparent approach to the University's investments and endowment management practices, overseen and supported by the Council and combined with improved reporting. This was identified in the Group's letter to the Vice-Chancellor in December 2017 and subsequently considered by the Council and thereafter the Investment Board.

The Group identified a number of ways in which transparency and reporting practices could be improved:

1. The University should introduce appropriate (so as not to compromise the fund) routine and accurate reporting which is made readily accessible to the University community. To assist with this a dedicated website for the IO should be created. The existing IO [website](#) has very little information available and is also located on an older part of the University's website network. A high level summary would be of particular benefit. It may also be beneficial to publish information about what can and cannot be reported, to help manage expectations across the University and elsewhere.

²⁰ This statement was received in response to the call for submissions to the Group's first town hall meeting. The author wished to remain anonymous.

²¹ <https://www.staff.admin.cam.ac.uk/general-news/university-investment-policy>

THE UNIVERSITY'S INVESTMENTS

2. A second action that is being discussed internally, again prompted by the Group's interim report, is to produce a high level annual report covering the sectorial and geographical distribution of funds plus the asset classes involved. A model for such a report might be that produced by the Wellcome Trust²². The Group would welcome such annual reporting, which might additionally cover a wider range of societal benefits from the University's actions.
3. The IO should also consider the introduction of 'societal benefits' reporting which reflects on how the returns generated by the fund contribute to the University, its students and staff. The Group learnt of the ways in which the returns that have been achieved by the CUEF can have a positive impact on the lives of students and staff more broadly. In one of the Group's evidence sessions it was reported that a 1% return on the CUEF investment corresponds to funding for 100 scholarships. In other words, if investment options are constrained by Council policy, there may be a direct consequence for the wider community. The value of the investment returns and the way in which a good return has been sought by the IO should be shared with the University community. Perhaps this is best termed as impact awareness.
4. There may also be a case for the introduction of a student representative to serve on an appropriate committee or board with oversight of the University's investments (noting that there is already student membership of ACBELA and Council). Any student member would be subject to the same need for discretion and on occasion confidential treatment of matters affecting all those that attend or serve on University committees (particularly with regard to reserved business).
5. All of the above suggestions should be done in tandem with the development of a communication strategy for the office to make them more visible.
6. The IO/ University should then share its improved reporting practices with other investors and intermediary managers to encourage changes in their behaviour. This could be supported by signing up to the UN Principles (recommendation 4) and also improved investor engagement with industry (recommendation 9).

The Group would therefore like to recommend:

Recommendation(s)

- 4 **UN Principles of Responsible Investment**
The University should commit to the UN Principles of Responsible Investment (UNPRI)²³.
- 5 **Reporting to Council**
The Investment Office should, as recommended by ACBELA, regularly report to Council on how environmental and social concerns are incorporated and reflected in investment management practice and include how fund managers have executed the University's investment policies.
- 6 **Transparency and public reporting**
The transparency of the investment processes of the Investment Office should be increased e.g. by the introduction of an informative website. An annual report, including information on environmental and social concerns, and the manner in which ESG is accountably reflected in the portfolio should be reported to Council. An appropriate update should be published for the Regent House and provided on the University's website.
- 7 **Behaviours**
Council should consider, at least annually, the relative weight of ESG investments in investment returns and against performance benchmarks in accordance with their fiduciary responsibilities.

Resource

The Group wishes to acknowledge the excellent work done by the IO in managing the CUEF, which has resulted in the good returns the University has seen. The IO is a small team and it has to be recognised that it takes time and resource to commit to following up with each of the external fund managers who invest on the University's behalf. An increase in reporting will certainly lead to the need for increased resource.

In examining the availability of information to the University community on the University's investments the group also noted the need for improved communication and opportunity for interdisciplinary work in the areas of research, policy and across the University's estate. This will be discussed in greater detail later in the report. Reflecting on the increase in work for the IO that would come out of agreement to its recommendations, the Group concluded that a member of staff should be recruited who could not only support reporting on the social aspects of the University's investment but who could also act as a crucial conduit for information, exchange and reporting on investment policy and practice across the University.

²² Wellcome Trust Update Presentation, 12 December 2017, <https://wellcome.ac.uk/sites/default/files/wellcome-trust-bond-investor-presentation-december-2017.pdf>

²³ <https://www.unpri.org/>

²⁴ <https://orsted.co.uk/en/About-us/Our-company/Our-green-transformation>

²⁵ <https://www.theguardian.com/business/2016/jun/09/windfarm-owner-dong-energy-floats-for-10bn>

THE UNIVERSITY'S INVESTMENTS

Recommendation

8 Resource

Additional resource should be provided to the Investment Office to permit the employment of a person to provide research engagement with fund managers and to engage with relevant researchers to provide coherent and authoritative positions on investment assets.

Investor engagement with industry

The Group studied other evidence demonstrating that some companies are changing their business models, taking climate change and environmental issues ever more seriously. For example [Ørsted](#), formerly DONG Energy, shared with the Group its experience of transitioning from coal to completely renewable forms of energy. The transition is set to complete by 2023²⁴. The Group learned that in an earlier stage of its transition, DONG Energy was floated on Europe's stock market in 2016 for £10bn²⁵ providing evidence that a company can radically change its business model and remain a viable investment. Predicting how a company may change, how successful it will be and whether it will remain a viable investment prospect is, needless to say, a difficult task. It is fair to say that the Group has received conflicting arguments in this area of investment risk.

There has been continued interest internationally in encouraging companies to take appropriate measures to address climate change and other responsible behaviours. One such was the [Task Force on Climate Related Disclosures](#), which advocated increased transparency from companies to make markets more efficient and economies resilient and stable. It released voluntary recommendations in June 2017 and since then a considerable number of companies have signed up. A list can be found on the TFCDD's [website](#). Both Royal Dutch Shell and the UK Government have signed up to the [recommendations](#).

The Group came across a number of organisations that could provide guidance for the University on responsible investments, including, as mentioned previously, the United Nations Principles for Responsible Investment ([UNPRI](#)) which provides investors with six principles to “align investors with broader objectives of society”²⁶. By signing up to the principles, investors make a public commitment to adopt and implement the principles (consistent with fiduciary responsibilities) but also to contribute to the “effectiveness and improve the content of the principles over time”²⁷. This recognises that our ethical views change over time and that it will be essential for investors to have the ability to revise guiding principles in the future, and not to be tied by a previous generation's perception. The same principle can be applied to companies. Their business model and practices may change over time, perhaps through the influence of the UNPRI or IIGCC. To exclude them (divest) irrevocably could damage both the potential for collaboration and the ability to invest in a company that develops a sustainable future for itself. In the course of the Group's evidence gathering and meetings,

various organisations and individuals (based in the UK) cited the IIGCC as a positive force for institutions that wanted to work towards a low carbon future. The IIGCC's mission “is to mobilise capital for the low carbon future by amplifying the investor voice and collaborating with business, policymakers and investors”. The University would most likely be the first, or one of the first, higher education institutions to take this step. Other higher education providers (notably in the USA) have joined commensurate groups both to be part of and provide input to solutions for challenges faced by investors in the fight against climate change. This opportunity to work with other organisations and different types of business could help the University to place itself at the forefront of policy development and change but also to learn from others how to tackle climate change and investment related issues. This could also be a way for the University's voice and reputation to take a direct lead, particularly where our indirect holdings would otherwise make it difficult. It should be remembered, if actions were taken whereby we publicly stated we were divesting from all fossil fuel companies, we would lose any possibility of acting in this way.

One of the organisations which had highlighted the benefits of joining the IIGCC and with which the Group had consulted, was the Church Commissioners for England (CCE). The CCE state that they “regard climate change as an important issue for responsible investors that may pose financial risks to our investments”²⁸. In response the CCE had implemented a number of measures by which they could both monitor progress and influence decisions made by companies in responding to the climate change and mitigating financial risk. This included the development and launch of the [Transition Pathways Initiative](#) (TPI) which is run in partnership with The Grantham Research Institute on Climate Change and the Environment at the London School of Economics²⁹. The TPI “is an asset owner-led initiative, supported by asset managers and owners [...] the initiative assesses how companies are preparing for the transition to a low-carbon economy”³⁰. Part of what the TPI does is to assess and monitor companies' management of their emissions as well as the risks and opportunities related to the low-carbon transition. The Grantham Foundation for the Protection of the Environment has helped to establish several major programmes and centres across the world including the institute at LSE and its sister institute at Imperial College: Grantham Institute for Climate Change³¹.

The Group would like to see the University increase its ability to influence and therefore recommends that:

Recommendation

9 Investor engagement with industry

The University should join the Institutional Investors Group on Climate Change (IIGCC)³² or an alternative equivalent grouping, as soon as possible, to ensure it lends its voice and authority in engagement with industry, even where it holds funds indirectly.

²⁶ <https://www.unpri.org/about/the-six-principles>

²⁷ <https://www.unpri.org/about/the-six-principles>

²⁸ <https://www.churchofengland.org/about/leadership-and-governance/church-commissioners/how-we-invest/responsible-investment/climate>

²⁹ <http://www.lse.ac.uk/GranthamInstitute/>

³⁰ <http://www.lse.ac.uk/GranthamInstitute/tpi/>

³¹ The Imperial College Grantham Institute was established in 2007 <http://www.imperial.ac.uk/grantham/about-us/>

RESEARCH AND POLICY

The Group has chosen to set out its thinking and recommendations on research and policy side by side, firstly due to the cross-over which exists between the two in a university setting, and secondly because of the opportunities that both provide for the University to take a clear lead on issues of climate change, investment responsibility and sustainability. The amount of research and policy work which takes place across the University in the areas of climate, energy, sustainability, investment responsibility and risk is already very substantial. However, these areas operate for the most part in silos which can make it difficult for the University to communicate with the world regarding all that it does to assess, monitor and also mitigate climate change; even sometimes internally there is a lack of awareness of the totality of what is going on. Part of developing world-leading and world-changing research and policy is having the ability to collate and communicate information and research in an integrated and coherent manner³³. It is clear that more needs to be done to strengthen the links between those areas and promote the work being done at Cambridge to ensure it has the ability to make an impact globally.

Leadership and Coordination

Climate, energy, sustainability, investment responsibility and risk are evidentially disciplines where there is plenty of opportunity for intersection between scientific research and policy research fields. The Group received evidence of a significant number of existing research topics and policy ideas which were repeatedly brought to the Group's attention³⁴. There exists within the University's departments, centres and institutions a plethora of knowledge and activity which contributes to furthering both research and policy for the climate change cause.

We do not intend to itemise the extent of the activities. However, a map of related research, together with a list of sustainability activity, was compiled by the Group early on in its investigations (*Annex E*) with the help of [Energy@Cambridge](#), the University's Energy Interdisciplinary Research Centre (IRC). This initiative aims to bring together the activities of over 250 academics working together in all aspects of energy-related research but, as they made clear in their evidence session, this does not necessarily incorporate all of the broader climate-related research. The more recently established [Global Challenges SRI](#) aims to help university researchers to contribute towards meeting the UN's global sustainability goals set for 2030³⁵. There are also a number of centres which cross these areas of interest, such as CISL, the Centre for Science and Policy ([CSAP](#)), the new Institute for Public Policy ([CIPP](#)³⁶) and the Centre for the Study of Existential Risk ([CSER](#)), to name but a few.

There should be an opportunity for these centres and research groups to come together. At this stage the University has no defined focus for existing relevant groups to collaborate, Should the University agree to set for itself an institutional goal of reaching a carbon neutral footprint by 2040³⁷, as reflected in recommendation 13, this could provide that point of focus.

An example of an existing interdisciplinary centre is the Centre for Research in the Arts, Social Sciences and Humanities ([CRASSH](#)), which allows 14 research disciplines to come together and share their work through events, blogs and interaction with the media. Unfortunately, there is no existing mechanism in the University by which climate, energy and sustainability research, investment responsibility and risk can cross-over and be shared widely in a similar way.

The mitigation of climate change cannot happen without changes in energy sourcing, pricing and subsidies, use and emission policy, engaging with the public and communication more broadly as well as requiring pioneering research. The University has within its existing resources and research, the means to address the issue of climate change head on. As suggested by one of the University members who attended the town hall meetings:

*"This is a community of scholars best-placed to find such solutions, and we must do so, whether or not we divest."*³⁸

The Group would therefore like to recommend the establishment of a centre to bring together these disciplines (see

³³ MIT named its Climate Committee '[Climate Change Conversation Committee](#)' whilst Yale's programme is on '[Climate Change Communication](#).' Both the original report of MIT, which spurred on MIT's Climate Action plan and Yale's focused research centre emphasised the importance of the flow of ideas, knowledge and understanding to help improve the fight against climate change.

³⁴ Town Hall statements - <https://www.governance.cam.ac.uk/committees/divestment-wg/Pages/consultation-meetings-MT17.aspx> and a list of Energy related research and sustainability activity has been provided as Annex E and E2.

³⁵ <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

³⁶ Launch - April 2018. The Institute will be conducting high-level academic and policy research, as well as expanding the portfolio of public policy education and training offered at Cambridge. (Based at the POLIS).

³⁷ The University Estate Management Division established related aims in its [Carbon Management Plan 2010- 2020](#). This naturally focused on the operation of the estate and some behaviours for the most part directed at staff. It was born out of HEFCE's proposal for a [carbon reduction target and strategy for higher education in England](#).

³⁸ Ellen Quigley (PhD Candidate), Town Hall Meeting - 25 October 2017.

RESEARCH AND POLICY

recommendation 10). This centre should also be a focal point for those students who wish to be involved with research of any sort or to learn more about what is going on in this arena. The Group would also like to recommend that a programme of summer projects/ internships be established for students at both undergraduate and postgraduate level focused on quantifying and mitigating climate change, in collaboration with the existing programmes. For the purposes of this report we have described this as a Centre for a carbon neutral future.

Example

The Cambridge Institute for Sustainability Leadership (CISL) supports the work of researchers who are part of a major research consortium to explore the implications of the Paris Agreement secured at COP21 for EU policy.

The [COP21: Results and Implications for Pathways and Policies for Low Emissions European Societies \(RIPPLES\)](#) project is interdisciplinary in its approach and aims to analyse the energy systems and economic transformations necessary to implement the commitments made at Paris by countries.

The work done by CISL for this project will focus on social implications and in particular inequality, examining the impact of climate change on different parts of the globe and the burden placed on those that have the least.

This project is funded by the EU's Horizon 2020 and the analysis undertaken by the 18 contributing institutions will go towards dialogue between participating countries on how to improve on their national commitments (Nationally Determined Contributions or NDCs) in 2020.

Energy Policy

As outlined above, there are different groups across the University looking at aspects of policy relating to the energy landscape, including a long-standing group, the Energy Policy Research Group based at the Judge Business School³⁹, covering many aspects of energy policy including regulation, markets and pricing. Another group from within the University which chose to present its research on 'the carbon bubble' at the 5 December 2017 Discussion on the University's Investments is the Centre for Environment, Energy and Natural Resource Governance (C-EEEnRG), based in Land Economy. The centre's focus is on the law and governance aspects of environmental transitions. The particular research shared at the Discussion described their analysis of future energy scenarios and the impact of policy:

*"Our analysis, based on up-to-date technology diffusion data, suggests that a low-carbon transition is already underway in the power and the transport sectors. Under these conditions, the lower demand for fossil fuels will lead to substantial production losses for the fossil fuel industry, whether stringent climate policies are adopted or not. However, the effect is highly intensified if climate policies are indeed adopted."*⁴⁰

The Group also examined scenarios for the earth's future energy mix (as well as the carbon produced by wider human activity) which had been created both by neutral think tanks and industry groupings which all indicate that fossil fuels are going to be a necessary part of human activities for years to come. This all highlights a need for a wider range of policy-related activity. This would ensure activities, such as those outlined above are coherent across the University and able to offer a strong outward-facing voice; advice to policy-makers; and adopt an advocacy role regarding the evidence the University research produces. The newly formed Institute of Public Policy (IPP) would seem to represent the logical place to drive these external actions, working with the Centre for carbon neutral future, to ensure Cambridge research in areas such as carbon-pricing, life cycle analysis and demographic shifts and requirements makes maximal impact. One of the primary foci of the IPP is around global inequality, through the recently-appointed Bennett Chair⁴¹ and this feeds directly into concerns the Group heard expressed strongly at the town hall meetings about the impact of climate change on the developing world. The Group would wish to see this activity strengthened, perhaps through additional post(s) directed towards inequality in access to energy and the impact of decarbonising the global economy on less developed parts of the world. The ideas and energy for the future of the University's climate change and sustainability policy will come from those who are students today and tomorrow.

³⁹ <https://www.eprg.group.cam.ac.uk/about-us/>

⁴⁰ Reporter 6488 p 183 Dr P. A. Salas (Darwin College and Department of Land Economy) <http://www.admin.cam.ac.uk/reporter/2017-18/weekly/6488/section10.shtml>

⁴¹ <https://www.polis.cam.ac.uk/about-us/news/professor-diane-coyle-appointed-inaugural-bennett-professor-of-public-policy>

RESEARCH AND POLICY

Recommendation

10 Leadership and Coordination

The University should establish a Centre for a carbon neutral future which will bring together the disparate areas of research on energy production and use, climate, sustainability (and other associated fields as appropriate) as well as policy. Additionally the Centre should seek to collaborate with partners on appropriate campaigns to change climate policy.

As mentioned earlier, similar centres, though often with a particular focus within the field of climate change mitigation have been established at other UK institutions funded by external foundations with an interest in an environmentally sustainable and secure future. It may therefore be possible to seek some if not all funding for this Centre outside of the University.

Communication

The number of disparate centres and groups operating, often independently, across the University are not likely to have the spare capacity or funding within their research operations to deliver comprehensive and joined up communications both internally and externally. As previously mentioned the Group heard repeatedly at the town halls and during their evidence gathering that the staff and students believe the University has a voice that can lead conversations and change. The University should capitalise on that attitude and take a proactive stance on sharing information about its research. With the help of the Centre for carbon neutral future, the University would have a conduit through which information and articles can be promoted widely. It requires dedicated central communications support to ensure that it reaches far and wide. The Group therefore recommends that:

Recommendation

11 Research and Policy Communication

A proactive communication strategy should be developed to support the promotion of research and policy work being done towards a carbon neutral future across the University and appropriate resourcing should be provided to enable maximisation of the impact of this work.

Industry Leaders

In the course of its evidence gathering, the Group met with or spoke to representatives of a number of energy source companies. These companies described their future energy mix scenario planning and also shared information about how they view and address climate change today in their business models. The message from the majority was that for the time being fossil fuels will remain part of the energy mix, but in most independent energy companies steps are being taken to diversify portfolios and move away from traditional extraction of oil and switch to more sustainable or renewable energy sources. Although it is also fair to say that the level and speed with which this is being done varies across companies considerably.

In the University there is research supported by energy companies and other organisations that use fossil fuels (and other pollutive products) in their manufacturing processes. The Group heard from a number

of members of the University's [BP Institute](#) which received no-strings attached funding to establish it about 25 years ago.

The Group heard from representatives of Ørsted, who outlined their collaboration with the University of Hull and a number of other industry and regional partners on a wind farm technology project called [Aura](#). Collaboration with industry partners channelled towards projects that address environmental and sustainability issues regionally could be just one way of addressing climate concerns which the University can and should develop. This is a separate strand of engagement from that involving the University's Investments and IO, but also strongly aligns with the University's mission.

Whilst relationships with companies, such as those described above exist, the opportunity to develop ideas together on cleaner technologies and other energy related research remains strong. It also provides a unique opportunity for the University to influence and drive technological related advances around climate and energy concerns in the medium-to-long term. The Group recommends that the new Centre should actively seek out industrial partners who are working towards a carbon neutral future, for example, a mix of energy, renewable, manufacturing and engineering (etc.) companies could be sought to leverage the University's expertise for a larger scale impact. The Strategic Partnerships Office (SPO), which falls under the remit of the Pro-Vice-Chancellor (Business and Enterprise Relations), will have a key part to play in developing these relationships in the future.

Policy makers

The UK Government, since signing the Climate Change Act in 2008, has developed a number of vehicles to help it meet the commitment to reduce carbon emissions by 2050. The UK Green Investment Bank⁴² was established in 2012 to attract private funding for investment in the private sector related to environmental preservation and improvement. More recently in September 2017 the UK Government launched a plan to accelerate growth of green finance (which we will discuss again in relation to the University's Estate later in the report). As part of its plan to accelerate the growth of green finance the government wants to develop the world's first green financial management standards. This follows on from the TFCF, which the UK government has signed up to⁴³. As outlined earlier in this section of the report, the University has a number of groups who consider and study climate and financial related concerns.

There is clearly an opportunity to develop a more integrated and involved dialogue with policy makers and industry leaders in aiming for a carbon neutral future. The Group recommends that:

Recommendation

12 Dialogue and Advice

An integrated and high level dialogue should be developed, directed at policy makers and industry leaders, and coordinated by the new Centre in collaboration with the Institute for Public Policy.

⁴² The UK Green Investment Bank is now independent of the UK Government and it is owned and operated by Macquarie as Green Investment Group - <http://greeninvestmentgroup.com/>

⁴³ <https://www.gov.uk/government/news/uk-government-launches-plan-to-accelerate-growth-of-green-finance>

RESEARCH AND POLICY

What the centre should do

- Foster increased interdisciplinary approaches to achieving a carbon neutral future;
- Take the lead in facilitating engagement with companies which are actively seeking to move towards a carbon neutral future;
- Be the first port of call, e.g. through its web page and other communications on what is being done to reach a carbon neutral future throughout the University;
- Welcome both individuals and organisations within and without the University to discover what is being done and also to contribute to achieving its goal.
- This should be done in collaboration with the University's Strategic Partnerships Office;
- Develop ways to involve undergraduate and postgraduate students actively in projects on climate research and policy. For example, it might be possible to arrange internships for students with companies and organisations, to get them at the forefront of helping to change companies' climate related behaviours;
- Support the introduction of 'green awareness' or similar induction courses for new starters/ students or existing University members on being environmentally friendly at Cambridge;
- Reimagine and enhance existing environmental and green activities which take place across the University, including those supported by the Estates Management's Environment and Energy Section;

THE UNIVERSITY'S ESTATE AND OPERATIONS

The Estate

One of the core values of the University is its 'concern for sustainability and the relationship with the environment'. This value has been used as a core driver for the University Estates' [Environmental Sustainability Vision](#) (ESV) 2015-20 which aims:

*"To reduce scope 1, 2 and 3 carbon emissions while supporting the University's plans for growth in research activity and staff and student numbers."*⁴⁴

This ambition, whilst perhaps commensurate with the expectations and resources available at the time, relies on staff and students having a core understanding of what scope 1, 2 and 3 emissions mean in a university setting, the impact that the individual has on them and what actions will affect change. The sources of the University's emissions are given on the University's [website](#) (defined by the [Greenhouse Gas Protocol](#)), and are outlined briefly below. However, there appears to be little evidence of how well these are known or understood across institutions and departments. The Group, in the course of its discussions with the Environment and Energy Section, learned of the challenges that they had faced in meeting the targets set in the early stages of the University's carbon management planning. Planning began in 2010, when the University committed to achieving a 34% reduction in energy related carbon emissions by 2020 against a 2005-6 baseline⁴⁵.

The University's scope 2 emissions are reportedly high⁴⁶, reflecting the technical and scientific research that is undertaken at the University. Records of energy consumption in buildings that date back to 2005/06 show that the development of new buildings since then represented an uplift in the University's emissions. The Environment and Energy Section (E&E) website provides advice on how laboratories and offices can save energy and also engage with the University community when it comes to addressing scope 2 emissions.

Scope 3 emissions can broadly be categorised as services that are brought into the University, and also include transport and business travel by staff. Changing the impact of scope 3 emissions relies in part on the University working with local authorities who provide, amongst other things, transport services for staff to access their workplace, water and also waste management services. It also relies on individuals thinking carefully about their travel choices. It is not as straightforward to measure these emissions and the University has little real visibility of scope 3; however, there are things that can be done to influence and promote changes in behaviour which will be covered later in this report.

The University's emissions:

Scope 1:

These are emissions that arise directly from sources that are owned or controlled by the University, for example from fuels used in our boilers or the vehicles that departments and Estate Management own;

Scope 2:

These are the emissions generated by purchased electricity consumed by the University;

Scope 3:

These emissions are a consequence of the activities of an organisation but occur from sources not owned or controlled by the organisation. This includes emissions associated with waste, water, business travel, commuting and procurement.

⁴⁴ Environmental Sustainability Vision, Policy and Strategy 2015-2020, pg. 5, https://www.environment.admin.cam.ac.uk/files/environmental_sustainability_vision_policy_and_strategy_for_web.pdf

⁴⁵ Carbon Management Plan 2010-20. <https://www.environment.admin.cam.ac.uk/what-are-we-doing/carbon/carbon-management-plan-targets>

⁴⁶ <https://www.environment.admin.cam.ac.uk/what-are-we-doing/carbon/scope-1-2-and-3-emissions>

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Manageable targets and the new Carbon Reduction Strategy (CRS)

All of this activity and ambition to reduce carbon emissions requires considerable support and resource but it also needs to be able to adapt to changes in the requirements of the University and external influences. The Energy and Carbon Reduction Project (ECRP) was established in 2011 to help achieve carbon reduction targets set out in the Carbon Management Plan 2010-20⁴⁷. To fund the work on the estate the University agreed an annual budget of £2m⁴⁸ although to the Group's dismay that figure has since been reduced to £1.6m. This had initially been due to low expenditure in the early years of the ECRP. Since 2013 staff and resources in E&E have increased and annual expenditure has also gone up. The fund is rolling and whilst E&E had built up funding to use on future projects the continued underspend had led to the reduction of the annual fund in 2015. As a result E&E will be set to overspend if it wants to continue with future carbon reduction projects. The funding had been directed at retrofitting the estate for energy efficiency and to reduce emissions. Case studies of work that has been happening around the estate can be found on the University website under the E&E section⁴⁹. An extract of the [Environmental Sustainability Report 2016](#) with key facts about the estate has been provided with this report (*Annex F*). With funding under pressure there is a concern for what the University can do to achieve a considerable reduction in its carbon emissions. E&E suggested to the Group that alternative sources of funding would need to be sought.

The Group learned through their discussions with E&E and the University's senior leaders that it had been agreed during the early part of Michaelmas 2017 to revise the CRS, which formed part of the overall ESV. The review of the Carbon Management Plan which underlies the new CRS showed that new building accounted for a 19% increase in the University's emissions in 2014/15⁵⁰. Whilst it was clearly felt that a number of initiatives under the CRS had produced real carbon savings, the University's continued growth led to the prediction that the target (to reduce emissions by 34%) would not be met by 2020.

The General Board of the Faculties, at its meeting on 14 February 2018 approved, for its part⁵¹, the revised CRS. One of the primary recommendations of the revised CRS was the decision to develop more stringent targets to reduce emissions, as part of the Science Based Targets (SBT)⁵² initiative, which will allow the University to engage with other research universities to attempt to produce a sector-specific decarbonisation pathway. This provides more evidence that joining up with institutional partners will be to our benefit. Through the evidence provided by E&E the Group felt that

it is clear that the change needed is the setting of realistic targets but also initiatives across the institution to accelerate the reduction programme. One of the challenges is funding: it costs to refit buildings and implement initiatives. Another challenge is communicating widely to ensure individuals have the necessary tools to make informed choices about their own environmental impact. The carbon reduction plan requires an unambiguous defined target and clear support from not only the most senior staff, but at all levels of the University community. Whether a head of department is taking into account the resources they require to run the department sustainably or as an individual making a choice about how they travel to work, the message of the target should be comprehensive and embody something that all members of the University can support, in whatever their capacity.

Recommendation

- 13 | The Estate**
The University should commit to be carbon neutral by 2040.

Environment and Energy Section (E&E)

E&E has responsibility for working closely with staff and students to

*"share best practice, support behaviour change and strategies, [...] implement and support the University in reducing its energy use and carbon emissions."*⁵⁴

There is also a dedicated Carbon Reduction Manager in the team. The University clearly recognises, as an institution, land owner and local/ regional developer⁵⁵, its responsibility to the environment. However, the role of E&E and Estate Management in supporting the environmental and energy concerns of the University does not appear to be well known, despite there being a considerable number of activities taking place to engage with staff and students.

The Massachusetts Institute of Technology (MIT) in the report of its Climate Change Conversation Committee (June 2015) recommended that climate change education be made an institutional requirement. This was designed to increase student awareness of the "complexities of climate science [and also] how their chosen discipline might affect and be affected by a global environment that is likely to undergo significant changes in their lifetime"⁵⁶. This kind of universal approach is not found at Cambridge, although the opportunities described for students below do offer some learning opportunities.

There is a lot of activity described here and feedback from the E&E team suggests that where interactions between the team

⁴⁷ <https://www.environment.admin.cam.ac.uk/ecrp>

⁴⁸ <https://www.environment.admin.cam.ac.uk/ecrp>

⁴⁹ <https://www.environment.admin.cam.ac.uk/resource-bank/case-studies/case-studies-energy-and-carbon-reduction>

⁵⁰ The E&E section advised that the figure of 19% represents a brief analysis which used energy data to identify the impact of new buildings since the baseline (2005/6) year. The data was taken from meter readings across the Estate where metering arrangements vary considerably.

⁵¹ The CRS was approved by the General Board, 'for its part' because the Council has the ultimate decision to approve the implementation of the policy.

⁵² <http://sciencebasedtargets.org/>

⁵³ Carbon Reduction Strategy – February 2018 (Publication TBC)

⁵⁴ <https://www.environment.admin.cam.ac.uk/about-us/meet-team>

⁵⁵ North West Cambridge

⁵⁶ MIT and the Climate Challenge, June 2015, p.30 - http://web.mit.edu/vpr/climate/MIT_Climate_Change_Conversation_Report_2015.pdf

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For staff:

- **Environment and Energy Coordinators (EECs)** - a network of staff volunteers providing a local focus point for environmental and energy issues (approx. ~100 staff);
- **Greenlines** - a monthly newsletter for staff;
- **Green Impact** - awards scheme for institutions/offices;
- **Building Manager Network** - enable Building Managers to share experiences and provide guidance for practical measures to improve the performance of buildings;
- **Staff Induction** - a staff induction module available via Moodle;
- **Green Labs** - an emerging 'Green Labs' programme focused on providing environmental support, resources and advice to research staff;
- **Spotlight On** - regular events, each focused on a different aspect of environmental sustainability. The activities vary but include pop-up events, competitions, training sessions, communications, etc.;

For students:

- **The Living Laboratory for Sustainability** - offers the opportunity to use the University estate as a case study for student academic projects, dissertations or theses as well as occasional voluntary opportunities;
- **Summer Internships** - 8 weeks for 2 or 3 students (typically recent graduates) to work on real life E&E projects
- **The Carbon Challenge** - annual competition for teams to develop innovative ideas on a particular theme. This year the theme is reducing air miles.
- **Green Impact** - annual programme where small teams of staff and/or students can sign their department or college up to an online workbook and progress through simple, clear and easy criteria towards recognised environmental awards. As part of this we provide training sessions for students at the start and end of the academic year. This year the VC will present the awards at the ceremony which marks the closing of the event.
- **Cambridge Hub** - We are currently supporting this charity (which focuses on engagement with students on social and environmental issues) to train a cohort of 'change makers' with the intention that they engage across the University with conversations focused on the strategic environmental sustainability aims set out in our policy.
- **College Green Officers** - We hold termly meetings for College Green Officers where they can share ideas and experiences and we can offer advice, and have developed information and resources they can use.
- **Greenlines** - a monthly newsletter for students summarising our activities and highlighting ways for students to get involved in environmental sustainability efforts at Cambridge.
- **Freshers' Fair** - We attend the annual Freshers' Fair to talk to students about sustainability issues at their University and how they can get involved. At last year's event we had conversations with over 700 students.
- **Social media** - Facebook, Twitter and Instagram accounts
- **Student inductions** - We have developed induction materials for students which we have provided to Colleges and we know that at least 18 Colleges include environmental sustainability in their induction process for students.

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and staff/ students exist the experience is positive and well received. However, the Group felt that more could be done to enhance this; for example, there could be an opportunity through the new Centre for a carbon neutral future to join up operational management of the estate more effectively with the scientific and policy research being conducted across the University to further improve the quality and scope of both. The Green Labs initiative, for example, could sit very well with the new Centre.

All of the work on the agenda for E&E is led through the Environmental Sustainability and Strategy Committee (ESSC)⁵⁷ which reports to the Planning and Resources Committee⁵⁸ and indirectly to Council through the Estates' Strategy Committee. The Group felt that the multifaceted reporting line of the committee suggests that it does not have the essential mandate to agree and implement the required actions for the University to achieve a carbon neutral future by 2030.

Therefore the Group recommends that:

Recommendation

14 Implementing Targets

To ensure the University achieves its 2040 goal, the Environmental Sustainability and Strategy Committee should be mandated to agree and implement the necessary targets. It should report directly to Council regularly on the determination and implementation of interim targets towards this goal.

Action on Emissions

The new CRS separates the actions that the University can take on its emissions into three broad categories:

1. Institutional actions that generate financial return, or at worst, are financially neutral, for example by reducing the amount of energy we purchase (*financial and environmental benefit*);
2. Institutional actions where financial return is negative (*environmental benefit*); and
3. Institutional actions to improve information and options for individuals making decisions (*empowerment*).

There are a number of possibilities for how these institutional actions might be made into reality. The impetus to do something about the University's emissions is clearly there and the Group believes the new approach will certainly prove more effective but some radical approaches are still needed. Early on in the evidence gathering process the Group received a statement from E&E which provided an overview of the University's current use of fossil fuels. The statement concludes that in recognising the impact of fossil fuels in the estate and on the environment, from an environmental sustainability perspective the Estate

Management Division would welcome a move away from this type of energy source. For the Group it is therefore clear that the University should be seeking wherever possible to make the first and second categories described above reality. The Group examined evidence from other organisations that provided inspiration for how the University should challenge itself to take action for a carbon neutral future. This included the commitment from HSBC to target sourcing all of its energy needs from renewables⁵⁹. The Group felt that if a global company could challenge itself in this way, the University could adopt a similar approach.

Recommendation

15 Renewable Energy Sources

The University should source 100% of its energy from renewable sources by 2030.

Actions to Meet Targets

Below are some suggestions for how the University could meet its climate action targets.

Working in partnership

This links back to one of the underpinning principles of the ESV - to maximise the "positive impact of the University's environmental sustainability actions at local, national and international level through communication collaboration, partnership"⁶⁰.

This not only suggests that we need to manage our emissions through joint measures with the local authority, businesses and others but also the importance of communication and collaboration (which has already been discussed in this report albeit in a different context but applies equally here). It is clear that when it comes to the topics of climate, energy and sustainability regardless of the perspective, (whether, CUEF, Research or Estate related), we can all agree that constructive communication is essential to move forward and make significant changes. Many ideas already exist and these need to be linked and developed in concert, which could perhaps be facilitated through the new Centre. This would also complement the CRS proposal that the University join the Science Based Targets initiative.

Internal carbon recharging

As has been demonstrated by Yale University, it is possible to implement a campus-wide carbon fee that provides the means to 'charge' buildings for emissions, whether through incentivised or dis-incentivised financial measures. The University has over 300 buildings of which just under 50 are listed buildings, which could make such recharging unfair in some cases; however, there could be other ways of offsetting such 'disadvantages'. A project could be established to involve students and centres to investigate how a scheme for recharging costs might work in practice.

⁵⁷ ESSC terms of reference and membership - <https://www.environment.admin.cam.ac.uk/ESSC>

⁵⁸ As described in the terms of reference for the committee. Through the Planning and Resource Committee it also reports to the General Board of the Faculties.

⁵⁹ <http://www.hsbc.com/our-approach/sustainability/operations/hsbc-targets-100-per-cent-renewables>

⁶⁰ Environmental Sustainability Vision, Policy and Strategy 2015-2020, pg. 4, https://www.environment.admin.cam.ac.uk/files/environmental_sustainability_vision_policy_and_strategy_for_web.pdf

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Involving the University Community

The University should re-examine E&E Summer Internships and the Green Impact programme to explore how these might be enhanced, perhaps by involving external organisations. E&E should reset the challenge to the University community to think about their own carbon footprints both at the University and at home. This challenge could focus on key projects and targets which are agreed in line with the University's carbon neutral future. Local departmental challenges to meet green credentials, such as building temperature targets, could be set or re-established in some cases (such as switch off week). The University should also promote the use of improved videoconferencing facilities as opposed to long haul flights for non-essential meetings.

Supplying energy to the grid

One idea, which has in fact already taken shape on the North West Cambridge Site, is the introduction of the University's own method of renewable energy production. For example, the NWC development has built a gas fired CHP digital heating network that can also produce electricity. The network is designed to serve the houses on the site. However, it also has the potential to produce 'excess' electricity that can be fed back into the grid. The Group learned that unfortunately the National Grid is currently unable to accept this 'payback electricity' because its systems have not yet been adapted. Here then is an area where the University can develop a dialogue with policy leaders for improved national services that provide the means for organisations such as our own to contribute both as energy producers and footprint reducers.

Green Bonds

As mentioned in the research policy portion of this report 'green finance' initiatives have already started to take shape in the UK. Another type of environmentally focused financial initiative is a green bond, which is a tax exempt bond that can be issued by the state for the development or re-development of environmentally friendly sites/ conservation. This suggestion was also made to the Group during the first of the town hall meetings:

*"the University of Cambridge has a better credit rating than most countries; interest rates are historically low, making borrowing extremely cheap; and the Uni falls near the bottom of the league tables among its UK peers in terms of energy consumption/CO2 emissions, spending well over £30 million each year on its buildings' energy costs alone. Cambridge could create the largest green bond issuance in UK history (£400 million or more) and retrofit the University and Colleges' ~600 buildings with the proceeds; an issuance of this size could itself shift the burgeoning UK green bond market. That's in addition to the potential to cut the University's energy costs and emissions, by a substantial margin no less. This is an enormous opportunity to fix quite a large number of problems at once, in other words. It is the smart thing to do, and it is also the right thing to do."*⁶¹

Green bonds can also be used for the development of 'brown-field sites' or sites that are considered underutilized and can be redeveloped for positive environmentally friendly purposes. Some examples:

- Renewable energy development (such as solar farms)
- Energy efficient buildings – improved infrastructure/ retrofit buildings
- Pollution prevention programmes
- Environmental sustainable management of natural resources

If the University were to consider the purchase/ development of a solar farm or the development of other forms of energy production, such as the one on the NWC site mentioned above, it could perhaps apply for a green bond to fund the cost. That could then be paid back through the generation of energy from the solar farm which would be distributed locally.

Recommendation

16 Green Bond

The University should consider issuing a Green Bond to fund its environment and climate actions. For example, to fund the purchase and development of alternative renewable energy sources to supply electricity to the University's buildings in line with recommendation 15.

As depicted by the examples listed above and outlined in the description of the University's scope 3 emissions, the actions of individuals have a significant part to play in reducing emissions. Whilst there are clearly a number of significant projects in place around the University to encourage staff and students to think critically about the impact that they have on the environment, there is either a lack of compelling targets for individuals to action or the drive behind existing measures has waned⁶².

Recommendation

17 Individual Actions

The University should agree and implement targets for the University's staff and students to improve environmental actions.

⁶¹ Quigley, Ellen (PhD Candidate), Town Hall Meeting – 25 October 2017

⁶² The Cambridge Green Challenge initiative was established in 2015 and encourages staff and students to build a more sustainable University. <https://www.environment.admin.cam.ac.uk/cambridge-green-challenge> . A project such as this could be re-designed to encourage staff and students to become involved in achieving a carbon neutral future.

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Communication

Reporting Progress

The Group felt that little was said by members of the University community on the impact made by the University's environmental initiatives. This concern has also been addressed in the revised CRS as one of the 8 pillars which underpin the new strategy. Pillar three: Better Information identifies the need to improve the data the University has and how that is communicated to staff and students. It notes, in particular, the importance of capturing scope 3 emissions and procurement and business travel activities. The University will need reliable data to inform future offsetting, which could be a requirement where net carbon neutrality is the expectation. This also suggests that increased support from the University's Office of External Affairs and Communications would be of benefit. Therefore:

Recommendation

18 Reporting Progress

The University should have a more proactive and integrated communication strategy that both consistently reports on and encourages the uptake of environmental initiatives across the University.

Sharing and Disseminating

There is another aspect of communication which should also be considered and that is who has the responsibility for linking the University Estates' environmental activities with research activities and how the two can help each other. We have already seen evidence that the E&E team provide opportunities for students to use the Estate as a 'living laboratory'. The Group also received evidence that there are technolo-

gies being developed within the research groups of the University that could provide the means to support its carbon reduction (carbon neutral future) aims. This report is accompanied by a selection of case studies that illustrate some of the work being conducted by research groups across the University that will ultimately contribute to a carbon neutral future. The case study of The Use Less Group includes a reference to the software developed by a member of the research group which delivers a holistic analysis of global or national resource use and its environmental consequences. The Group were informed that this type of technology could be applied on a local level to, for example, a University estate. The responsibility for communicating these kind of opportunities between research groups and E&E could perhaps sit within the new Centre.

Recommendation

19 Sharing and Dissemination

The new Centre should be equipped with the necessary resource to seek out and create opportunities for sharing learning, disseminating information and promoting collaboration between the University's researchers and the estates' division.

GLOSSARY

Abbreviation	Phrase/ Word	Explanation
ACBELA	Advisory Committee on Benefactions, External and Legal Affairs	The University's advisory body on donations and other related activities.
AURA	The University of Hull	Multidisciplinary excellence, knowledge and innovation for the offshore wind industry. It was set up in 2015 to enable collaboration between key stakeholders from the Humber region, nationally and globally.
CCE	Church Commissioners for England	Managers of the investment fund for the Church of England.
C-EEenRG	Centre for Environment, Energy and Natural Resource Governance	A centre of the University, its core mission is to conduct integrative research on the governance of environmental transitions.
CFO	Chief Financial Officer	The University's most senior Financial Officer.
CIO	Chief Investment Officer	Head of the Investment Office.
CIPP	Cambridge Institute for Public Policy	CIPP launching in April 2018, will be conducting high-level academic and policy research, as well as expanding the portfolio of public policy education and training offered at the University of Cambridge.
CISL	Cambridge Institute for Sustainability Leadership	An institution within the University which conducts research and analysis across complex and connected issues to challenge, inform and support leaders from business and policy to deliver change towards sustainability.
COP21	Conference of Parties 21	The 21st Conference of members of the United Nations, specifically looking at sustainability and environment in 2015.
CRASSH	Centre for Research in the Arts, Social Sciences and Humanities	An interdisciplinary research institution at Cambridge.
CRS	Carbon Reduction Strategy	The University's current strategy to meet carbon reduction targets.
CSAP	Centre for Science and Policy	An institute of the University with the mission to improve public policy through the more effective use of evidence and expertise.
CSER	Centre for the Study of Existential Risk	Interdisciplinary Research Centre at Cambridge dedicated to the study and mitigation of existential risks that could lead to human extinction or civilisation collapse.
CUEF	Cambridge University Endowment Fund	The CUEF is a unitised fund consisting of a diversified portfolio of financial assets including equities and real property. Investors, University Departments/ Institutions and Colleges, can purchase a number of units within the fund (depending on the number available at the time of purchase). There are just three key parties, the Trustees (the Council), the Investment Office and the investors (limited to University Departments and the Colleges). It is a collective investment scheme in the form of a unit trust.
E&E	Environment and Energy Section	The University's Environment and Energy team support staff and students in achieving a positive impact through outstanding environmental sustainability performance.
ECRP	Energy and Carbon Reduction Project	The project that manages the funds available at the University for the implementation of the CRS.
ESG	Environmental Social and Governance	Refers to three central factors in measuring the sustainability and ethical impact of an investment. ESG Funds are deliberately focused on sustainable and often 'green' investments.

GLOSSARY

Abbreviation	Phrase/ Word	Explanation
ESSC	Environmental Sustainability Strategy Committee	The University's committee to consider environmental and sustainability issues.
ESV	Environmental Sustainability Vision	The ESV for 2015 - 2020 set out part of the plan to tackle the reduction of the University's emissions (as described in the Carbon Management Plan 2010 - 2020).
FCA	Financial Conduct Authority	The FCA is the conduct regulator for 56000 financial services firms and financial markets in the UK and prudential regulator for over 24000 of those firms.
IIGCC	Institutional Investors Group on Climate Change	The IIGCC is a forum for investors to collaborate on climate change. It's mission is to mobilise capital for the low carbon future by amplifying the investor voice and collaborating with business, policymakers and investors.
IO	Investment Office	A subsidiary of the University with responsibility for the implementation of the University's investment policy.
NWC	North West Cambridge	Now known as Eddington, this is a large new development by the University creating new housing for its own employees as well as private accommodation.
SBT	Science Based Targets	The Science Based Targets initiative champions science-based target setting as a powerful way of boosting companies' competitive advantage in the transition to the low-carbon economy. It is a collaboration between CDP, World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and the United Nations Global Compact (UNGC) and one of the We Mean Business Coalition commitments.
SPO	Strategic Partnership Office	The Strategic Partnerships Office works across the University to facilitate and create strategic collaboration and to negotiate strategic partnership agreements.
TCFD	Task Force on Climate-related Financial Disclosures	The TCFD develops voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to investors, lenders, insurers, and other stakeholders.
TPI	Transition Pathways Initiative	The TPI is an asset owner led initiative, supported by asset managers and owners with over £5.6.5 trillion assets under management. It assesses how companies are preparing for the transition to a low-carbon economy. It is run by the Grantham Institute at the London School of Economics.
UNPRI	United Nations Principles for Responsible Investment	The UNPRI is a world leading proponent of responsible investment. It devised 6 principles for responsible investment and supports its international network of investor signatories in incorporating these factors into their investment and ownership decisions.
WGIR	Working Group on Investment Responsibility	A working group of ACBELA established in June 2015 to consider whether any changes to the Statement of Investment Responsibility should be recommended to Council.
	Unitised Fund	A unitised fund is an investment vehicle whereby the contributions of a number of unitholders are pooled and the sum is then used to purchase assets such as shares and property.
	Green Bonds	Green Bonds were created to fund projects that have positive environmental and/or climate benefits.

ACKNOWLEDGEMENT

The Group would like to acknowledge
the contribution of:

the staff and students who attended and/ or spoke at the town hall meetings;
all who submitted facts and opinions to the Working Group for consideration (see Annex B);
all who responded to the written consultation (see Annex B);
all who attended evidence session interviews (see Annex B);
all who provided the case studies: The Use Less Group, Carbon Capture and Storage; the
North West Cambridge Site;
the Investment Office;
the Estate Management Division;
the Environment and Energy Section;
the Research Strategy and Research Operations Offices;
the Legal Services Office;
the Pro-Vice-Chancellor for Business and Enterprise Relations;
the Office for External Affairs and Communications;
Cambridge Institute for Sustainability Leadership;
Energy@Cambridge;
the Reporter Team; and
the staff at the Sidgwick Site/ Lady Mitchell Hall.

Terms of reference and membership of the working group to consider questions relating to divestment

1. Background

1.1. On 11 January 2017¹, the Council submitted the following Grace to the Regent House:

'That the Regent House, as the governing body of the University, resolves that none of the University's Endowment Funds should be invested directly or indirectly in companies whose business is wholly or substantially concerned with the extraction of fossil fuels, and requires the Council to publish a Report to the University within twelve months setting out how this is to be achieved.'

1.2. At the same time, the Council noted that the Grace could not operate as a mandate in respect of the exercise of Council members' fiduciary responsibility for the University's investment practice. In light of this and recognising the strong feeling among the signatories to the Grace, the Council proposed to commission a report '*specifically into the advantages and disadvantages of the policy of divestment which the Grace supports*'.

1.3. The Council agreed to establish a working group (the *Group*) to produce this report. This paper proposes the Group's terms of reference and membership.

2. Terms of Reference

2.1. In establishing the Group, the Council is mindful of the report from the ACBELA² working group on investment responsibility, the recommendations of which it accepted on 13 June 2016. That working group, under the chairmanship of Mr John Shakeshaft, was asked to consider whether any changes should be recommended to the University's Statement of Investment Responsibility³. Its report focused on the University's investment policies and management and their integration with environmental, social and governance considerations. The report made nine recommendations, now substantially implemented and reviewed.

2.2. The Council does not wish to ask for a repeat of this careful and detailed work on the University's investment practices. Instead, noting the continued interest among some in the University in divestment from businesses involved in fossil fuel extraction, as demonstrated by Grace 1 of 2017 and the Discussion on 2 November 2016 of the Topic of Concern⁴, the Council asks the Group to consider the question of divestment from such businesses more broadly. In particular, the Council asks the Group to consider:

- (i) the different approaches the University might take to issues associated with divestment from fossil fuel industries; and

¹ <http://www.admin.cam.ac.uk/reporter/2016-17/weekly/6450/section1.shtml#heading2-7>

² Advisory Committee of Benefactions and External and Legal Affairs (ACBELA)

³ The full terms of reference of the ACBELA working group can be found at <http://www.admin.cam.ac.uk/reporter/2014-15/weekly/6387/section1.shtml>

⁴ That the Regent House, as governing body of the University, consider the report of the ACBELA Working Group on Investment Responsibility published in June 2016, and in particular consider a policy of divestment from fossil fuels; <http://www.admin.cam.ac.uk/reporter/2016-17/weekly/6446/section10.shtml#heading2-21>

FINAL

- (ii) how those approaches might impact upon the University's mission 'to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence'.

2.3. The Council asks the Group:

- (i) to consult widely across the collegiate University;
- (ii) to invite individuals and representatives of the Group's choosing (including those from outside the collegiate University, if the Group so wishes) to meet with, and/or provide written comments to, the Group;
- (iii) to aim to produce its final report, which will include recommendations, within 12 months but, if that is not possible, to provide a preliminary report to the Council within that timeframe; and
- (iv) to produce the final report for the Council in a form that may be distributed to the Regent House, if the Council so decides.

3. Membership

3.1. The membership is as follows:

Category	Name	College	M/F
(i) Chair	Professor Dame Athene Donald	CHU	F
(ii) an external member of Council	Mr John Shakeshaft	T	M
(iii) a Council member	Ms Jocelyn Wyburd	CL	F
(iv) two signatories to the Grace	Professor Ash Amin	CHR	M
(v)	Dr Berry Groisman	SID	M
(vi) two student representatives	Ms Umang Khandelwal	N	F
(vii)	Ms Alice Guillaume (<i>until 1 Mar 2018</i>)	N	F
(viii) two academics in relevant fields	Dr Jerome Neufeld	CTH	M
(ix)	Professor Simon Redfern	JE	M
(x) a Head of House	Lord Chris Smith	PEM	M

The Group may co-opt others and/or call upon expert advice as it considers necessary.

22 May 2017

NB: This list includes names of companies and other organisations, as well as internal institutes/ centres of the University that were consulted with, either directly through written request and interviews, or though publically available information.

External	
Name/ Title	Website
Aura Project (University of Hull)	https://aurawindenergy.com/faqs
BHP Billiton	https://www.bhp.com/
BlackRock	https://www.blackrock.com/uk
BMO Global Asset Management	https://www.bmo.com/gam
BP	https://www.bp.com/
Church Commissioners Responsible Investment	https://www.churchofengland.org/about/leadership-and-governance/church-commissioners
Climate Change Collaboration	
Divestment from Fossil Fuel Industry (Glasgow)	https://www.gla.ac.uk/news/archiveofnews/2014/october/headline_364008_en.html
Fossil Fuel Investment Policy Statement 2015 (Edinburgh)	https://www.ed.ac.uk/about/sustainability/themes/responsible-investment/reviews/fossil-fuels
Grantham Foundation	http://www.granthamfoundation.org/grantees.html
Grantham Institute (Imperial College)	http://www.imperial.ac.uk/grantham/
Grantham Research Institute on Climate Change and the Environment (LSE)	http://www.lse.ac.uk/GranthamInstitute/about/about-the-institute/
Harvard Management Company (Harvard University)	http://www.hmc.harvard.edu/
Institutional Investors Group on Climate Change	http://www.iigcc.org/
MIT - Climate Change Conversation Report	https://sustainability.mit.edu/report/mit-climate-change-conversation-committee
National Union of Students	https://www.nus.org.uk/
Norwegian Sovereign Wealth Fund Statement	https://www.nbim.no/
On Fossil Fuel Divestment 2016 (Columbia)	http://news.columbia.edu/coal
Orsted (formerly DONG Energy)	https://orsted.co.uk/en/About-us
Oxford Endowment Management (Oxford)	http://ouem.co.uk/
People and Planet	https://peopleandplanet.org/
Positive Investment Cambridge	https://positiveinvestment.wordpress.com/
Rathbone Greenbank	https://www.rathbonegreenbank.com/
Royal Dutch Shell	https://www.shell.co.uk/
Sainsbury Family Charitable Trusts	http://www.sfct.org.uk/
Stanford Investment Office (Stanford)	https://news.stanford.edu/2016/04/25/stanford-climate-change-statement-board-trustees/
Task Force on Climate Related Financial Disclosures (TCFD)	https://www.fsb-tcf.org/
Trusted Sources	http://www.trustedsources.co.uk/
UC Investments (University of California)	https://www.ucop.edu/investment-office/index.html

Name/ Title	Website
UK Green Investment Bank (now independent of the UK Government)	http://greeninvestmentgroup.com/
UNFCCC - Paris Agreement	http://unfccc.int/paris_agreement/items/9485.php
United Nations Principles of Responsible Investment	https://www.unpri.org/
Wellcome Trust	https://wellcome.ac.uk/
Yale Investment Office (Yale)	http://investments.yale.edu/

Internal	
Name/ Title	Website
Advisory Committee on Benefactions, External and Legal Affairs (ACBELA)	https://www.strategic-partnerships.admin.cam.ac.uk/strategic-agreements
BP Institute - University of Cambridge	http://www.cam.ac.uk/research/news/bp-institute-for-multiphase-flow
Cambridge Admissions Office	https://www.cao.cam.ac.uk/
Cambridge Centre for Climate Change Mitigation Research	https://www.4cmr.group.cam.ac.uk/
Cambridge Centre for Science and Policy	http://www.csap.cam.ac.uk/
Cambridge Enterprise	https://www.enterprise.cam.ac.uk/
Cambridge Institute for Sustainability Leadership	https://www.cisl.cam.ac.uk/
Cambridge University Development and Alumni Relations Office (CUDAR)	https://www.philanthropy.cam.ac.uk/
Cambridge University Graduate Union	https://www.gradunion.cam.ac.uk/
Cambridge University Students Union	https://www.cusu.co.uk/
Centre for Environment, Energy and Natural Resources (C-EEnRG)	https://www.ceenrg.landecon.cam.ac.uk/
Centre for Research in the Arts, Social Sciences and Humanities (CRASSH)	http://www.crassh.cam.ac.uk/programmes/centre
Centre for the Study of Existential Risk	https://www.cser.ac.uk/
Energy@Cambridge Interdisciplinary Research Centre	https://www.energy.cam.ac.uk/
Environment and Energy Section	https://www.environment.admin.cam.ac.uk/
Estates Management Division	https://www.em.admin.cam.ac.uk/
Global Challenges Strategic Research Initiative	https://www.gci.cam.ac.uk/
Institute for Public Policy	https://www.policyinstitute.polis.cam.ac.uk/
Investment Office	http://www.admin.cam.ac.uk/offices/investment/
Judge Business School	https://www.jbs.cam.ac.uk/home/
North West Cambridge Development	http://www.nwcambridge.co.uk/
Office of External Affairs and Communications	https://www.communications.cam.ac.uk/
Pro-Vice-Chancellor's Office	https://www.v-c.admin.cam.ac.uk/pro-vice-chancellors
Regent House	https://www.governance.cam.ac.uk/governance/key-bodies/rh-senate/pages/regent-house-membership-and-rights.aspx
Research Strategy and Operations Office	https://www.research-strategy.admin.cam.ac.uk/
The Reporter	https://www.reporter.admin.cam.ac.uk/
Zero Carbon Society	http://zerocarbonsoc.soc.srcf.net/



UNIVERSITY OF
CAMBRIDGE

Department of Physics

Professor A M Donald DBE, FRS
Deputy Vice Chancellor
Professor of Experimental Physics

Professor Stephen Toope
Vice Chancellor
Old Schools
Cambridge CB2 1TN

5-1-18

Dear Stephen

The Divestment WG will continue its work during the Lent Term, but some very clear messages have already emerged. These mainly relate to investments in general, rather than anything specific about divestment, but they obviously relate closely to the question of divestment. Firstly, we are disturbed by the seeming lack of transparency in the way the Investment Office works. Their methods are likely to be opaque to the community – for instance whether or not it is even possible for the University to ‘divest’ – and this in itself will not, and does not, promote trust. We would recommend the Investment Board should work with the Investment Office to see how transparency in the latter’s actions can be facilitated without compromising any issues of commercial sensitivity or requiring the disclosure of confidential matters.

Secondly, we were surprised to find that the letter to fund managers being used in the wake of the original ACBELA Report does not seem to be being used as a very sharp instrument. Indeed, although the letter is clearly sent to all the fund managers, the CIO did not seem to feel an explicit requirement on him to do anything further; nor was he taking further action as far as we could judge. Whether a fund manager responded or not did not appear to be being monitored, nor was there any collation of responses. The WG feel this is not in the spirit of the original ACBELA recommendation; we are disappointed by the Investment’s Office lack of follow-through on their letter. The statement made at the 5th December discussion by the Chief Financial Officer merely states that, in surveying fund managers on their response to the University’s letter, ‘It is clear from responses that there is widespread support for the University’s approach’. This does not provide any reassurance that fund managers are acting explicitly in response to the University’s Statement on Investment Responsibility. We recommend that the Investment Office take a much more proactive stance, reporting back (to Council, the Investment Board or to you as deemed appropriate) on what actions the fund managers might have taken or what ongoing dialogue is occurring as a result of the letter from the University. The other statements made at the December 5th 2017 Discussion make the unease in our community about these two points very clear and we hope Council will be minded to act upon our recommendations.

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Finally, we would like to raise a point the WG has already discussed with Anthony Odgers. Since the CUEF is an institutional investor, we would recommend that the University joins the Institutional Investors Group on Climate Change (IIGOC) as soon as possible, so that our voice can be added to other major institutions on this important matter. As well as putting our voice behind those campaigning towards a transition towards a carbon-neutral economy, this would also confirm the seriousness with which the University views this matter.

Our full report will be submitted in due course, but in the interim we believe these are actions that should be taken by the University as soon as practicable and without waiting for our more extensive and detailed conclusions.

Best wishes



Athene M Donald, DBE FRS

Paradise Papers University Response

The University supplied the following responses to the press regarding the Paradise Papers

- Statement on investments

A spokesperson said on behalf of the Colleges and University: "The Colleges and the University are charities and therefore their holdings in investments are tax-exempt in the UK, US and many other countries. This means there is normally no tax to pay.

The fund arrangement, through which the University and Colleges invest, is standard for collective investments of this type. The fund is managed by a highly reputable investment advisor and, as is normal, the adviser makes the decisions about specific investments to be made by the fund.

A divestment working group was set up by University council in May 2017 to consider the question of divestment from businesses involved in fossil fuel industries. The university has sought views from a wide range of organisations and individuals. In addition to written submissions it has held Town Hall meetings open to staff and students from across the University."

- Additional information on divestment

"The University's investment approach was reviewed last year. Following the review the University then rejected full divestment in favour of a policy of 'active engagement' with fund managers. The resulting report made clear that the University had no directly held exposure to the most pollutive industries, such as thermal coal and tar sands, and no expectation of having any such exposure in the future. In relation to investments managed externally, there were only negligible holdings in these more polluting fossil fuel industries.

More information on the divestment working group can be found here:

<https://www.governance.cam.ac.uk/committees/divestment-wg/Pages/default.aspx> "

- Divestment

"A Divestment Working Group was set up by the University of Cambridge Council in May 2017 to consider the issues around divestment within the broad context of how the University should be moving to reduce its carbon footprint. As part of this, the Group held Town Hall meetings at the University to provide an opportunity for all concerned about these issues to voice their opinions in a respectful manner.

The student members of the Working Group were fully involved in designing these sessions, which aimed to capture as wide a cross section of views as possible.

So in addition to all attendees being invited to speak and ask questions during open discussions at the end of the meetings, those who could not attend were invited to submit their views in writing. We firmly believe these Town Halls offered a new departure for the University in terms of open consultation.

In addition to these sessions, the University has sought views from a wide range of organisations and individuals including environmental groups.

There has been a good level of response, which will be considered along with oral evidence from the Town Hall meetings."

Energy Research across the University of Cambridge

A map of what research the University is doing that relates to energy (particularly fossil fuels and renewables), including energy storage and energy policy, and where in the University (and with whom) this takes place...

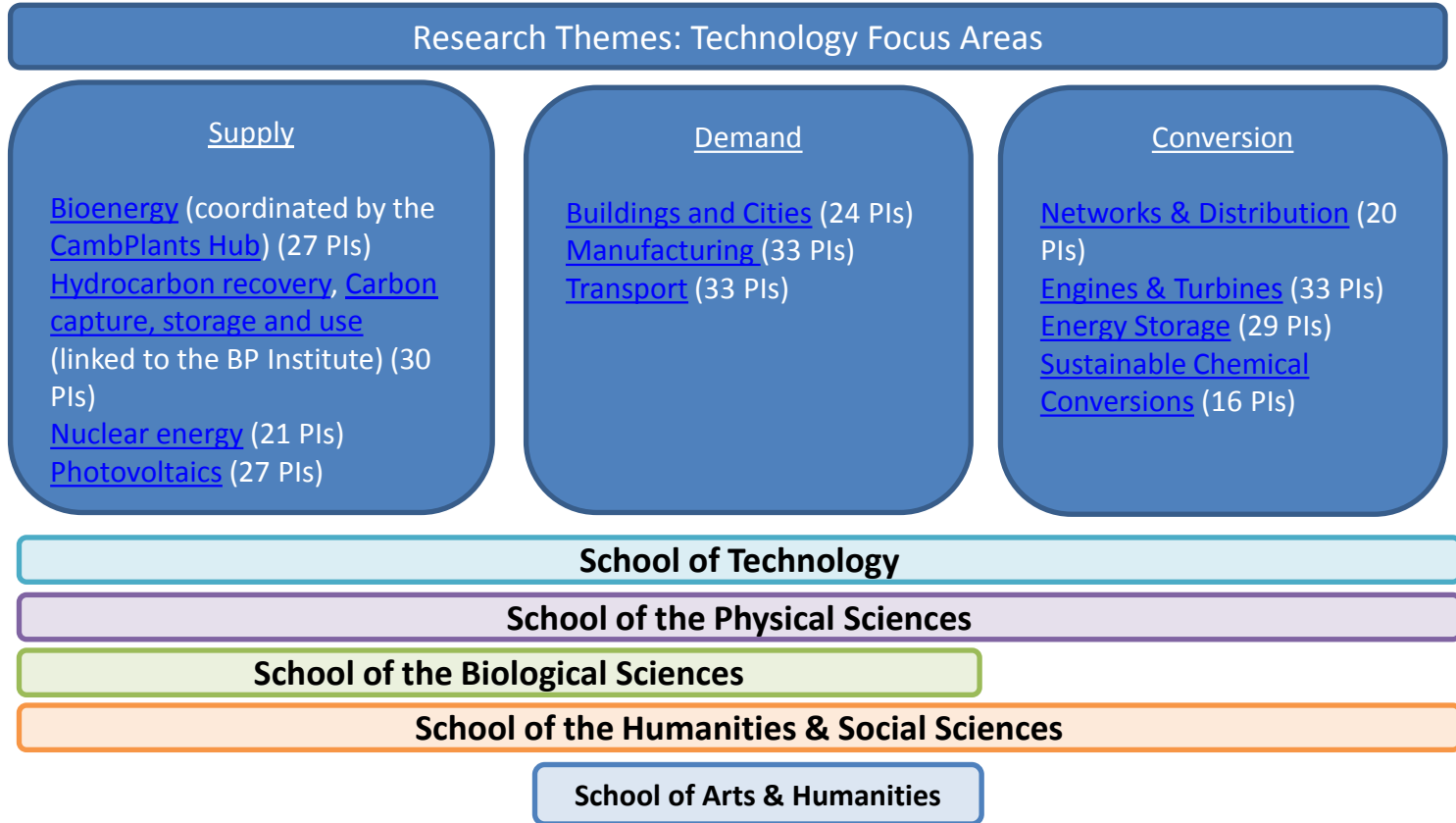
[Energy](#)

Strategic Research Initiative (SRI)

Energy@Cambridge is a University of Cambridge Strategic Research Initiative, that brings together the activities of over 250 academics working in all aspects of energy-related research.

Energy SRI: Involvement in 'Research Themes: Technology Focus Areas' by School

Further information about each of the technology focus areas can be found by following the hyperlinks below or on the following pages.



There is overlap in the numbers of PIs given above, i.e. some may be represented in more than one area!

Supply

Bioenergy – research includes approaches to the use of algae for applications in the biotechnology and bioenergy industry (e.g. biodiesel); the use of parts of food and material crops that are normally discarded as waste; investigating ways of using algae as an energy source in biophotovoltaic panels; gasification and combustion of biomass fuels with a focus on power generation and CO₂ capture; and photosynthetic and biomimetic hydrogen production and CO₂ reduction.

Lead: Professor Alison Smith, Department of Plant Sciences (Life Scientific interview Jan 2017 - <http://www.bbc.co.uk/programmes/b08bz18y>).

Hydrocarbon Recovery, Carbon Capture, Storage & Use – research includes new techniques for upstream exploration of fossil fuel resources and enhanced oil recovery techniques; modelling of oil recovery processes; development of new approaches to remote monitoring of oil-water flow patterns; exploitation of novel surface chemistry to maximise oil output from reservoirs; and physical solutions to oil recovery such as the optimisation of controlled hydraulic fracturing for ‘tight gas’ reservoirs.

Lead: Professor Andy Woods, BP Institute & Department of Earth Sciences

Nuclear Energy – research includes reactor waste and disposal of waste; integration with energy and energy-related networks; new reactor systems for electricity and heat production (technical and policy/finance-related research); nuclear policy and energy security; and radiation damage and new materials.

Lead: Dr Ian Farnan, Department of Earth Sciences

Photovoltaics – research includes the physics of charge photogeneration; plasmonically enhanced solar cells; dye-sensitized solar cells to improve solar cell efficiency; research to improve efficient silicon production and solar cell design; investigation of nanostructured hybrid solar cells for mobile applications; research of semi-transparent solar cells for windows; and algae as an energy source in biophotovoltaic panels.

Lead: Professor Judith Driscoll, Department of Materials Science and Metallurgy

Conversion

Networks and Distribution – research includes power electronics (nanoscale materials and device design for energy conversion, integrated and discrete semiconductor devices, smart sensors and integrated circuits for power switching and control); superconductivity (superconductors for lossless power transmission, fault-current limiters and energy-storage applications and device applications of superconductors); and electricity networks, including regulation. See <http://www.eprg.group.cam.ac.uk/>

Lead: Professor Gehan Amaratunga, Department of Engineering

Engines & Turbines – research includes internal combustion engine research (including modelling and optimisation of alternative fuel next generation IC engines which may be fuelled by biofuels and other low energy hydrocarbons); sensors for air pollution measurement and control; gas turbines for electrical power and aeronautical applications; and wind turbine research (including the design and construction of superconducting turbines for wind, wave and tidal power).

Lead: Professor Simone Hochgreb, Department of Engineering

Energy Storage – research includes fuel cells (solid oxide fuel cells, solid state and polymer electrolytes, micro-fuel cells and hydrogen for fuel cell applications); batteries and supercapacitors (rechargeable Lithium-Ion batteries, NMR studies of lithium ion batteries and supercapacitors, and advanced lithium sulphur batteries); thermal storage; gas storage materials and batteries and smart grid research (e.g the stability of the grid and impact of storage technologies and their control, and the application of power control electronics and strategies to maximise the impact of battery technology).

Lead: Dr Clare Grey, Department of Chemistry

Sustainable Chemical Conversions – research includes micro fuel cells for the exploitation of alternative fuel sources and chemicals production; reducing the carbon footprint of chemical process technology and sustainable generation of energy by gasification and combustion in fluidised bed reactors.

Lead: Professor Adrian Fisher, Department of Chemical Engineering and Biotechnology

Demand

Buildings and Cities – research includes smart buildings (new/retrofit low carbon buildings, low energy lighting and reduced energy consumption for buildings); natural building materials (material design and research for large-scale buildings, efficient structures using natural materials and improved material properties through chemical and biochemical modification of plant-based materials); development of novel materials surface treatments, low carbon cements and concrete for infrastructure and construction; and sustainable cities (energy demand reduction through integrated design and development of novel technologies, embodied energy in buildings, retrofits and insulation).

Lead: Professor Koen Steemers, Department of Architecture

Manufacturing – research includes carbon footprint reduction, energy efficient industrial processes, recycling and industrial sustainability.

Lead: Professor Derek Fray, Department of Materials Science and Metallurgy

Transport – research includes electric vehicles (including batteries and fuel cells development), aviation (gas turbine aerodynamics and high temperature materials research); system modelling (smart networks for urban transport monitoring systems, modelling transport in cities, energy use and emissions, energy demand under different policy scenarios and modelling of future travel demand and the environmental impacts of aviation).

Lead: Professor David Cebon, Department of Engineering

Energy SRI: Involvement in ‘Cross-Cutting Themes’ by School

Further information about each of the cross-cutting themes can be found via the hyperlinks below.

Cross-Cutting Themes

- [Materials and Chemistry](#) (82 PIs)
- [Energy Efficiency](#) (60 PIs)
- [Policy, Economics and Risk](#) (34 PIs)

- School of Technology
- School of the Physical Sciences
- School of Arts & Humanities
- School of the Humanities & Social Sciences

There is overlap in the numbers of PIs given above, i.e. some may be represented in more than one area!

- [Smart Systems & Device Design](#) (44 PIs)
- [Resource Dynamics](#) (15 PIs)
- [Users, Consumers & Social Frameworks](#) (24 PIs)

- School of Technology
- School of the Physical Sciences
- School of the Humanities & Social Sciences
- School of the Biological Sciences
- School of Arts & Humanities

Energy Policy Research

ENERGY SRI GRAND CHALLENGES

1. Carbon Reduction in Chemical Technology
2. [In Search of 'Good' Energy Policy](#)
3. Materials for Energy Efficient ICT

[In Search of 'Good' Energy Policy](#)

Cross-disciplinary research community, coordinating committee chaired by Professor Michael Pollitt. Also linked to the '[Platform on International Energy Governance](#)', which is a multi-institution platform led by Cambridge.

Coordination Committee

Name	Institution
Michael Pollitt	Judge Business School
Jonathan Chaplin	Kirby Laing Institute for Christian Ethics and Divinity
Kong Chyong	Judge Business School
Laura Diaz Anadon	Politics and International Studies
Rob Doubleday	Centre for Science and Policy
Leslie-Anne Duvic-Paoli	Law
Richard Fraser	Social Anthropology
Lynn Gladden	Chemical Engineering
David Good	Psychology
Tim Lewens	History and Philosophy of Science
Kun-Chin Lin	Politics and International Studies
David Newbery	Economics
Jim Platts	Engineering
David Reiner	Judge Business School
Robert Ritz	Judge Business School
Sandy Skelton	Engineering
Jorge Vinuales	Land Economy & Law
Paul Warde	History
Bob White	Faraday Institute and Earth Sciences

Other Areas of Energy Research

Centre for Advanced Materials for Integrated Energy Systems (CAM-IES): <http://www.energy.cam.ac.uk/cam-ies>

£2.1m EPSRC networking centre in partnership between Cambridge, Newcastle, Queen Mary and UCL. The Centre's research programmes will develop advanced materials for energy storage, specifically solid-state batteries, coatings for high voltage electrode battery materials and flow batteries, and also energy conversion, specifically solid-oxide fuel cells, CO₂ gas separation membranes, hybrid thin film photovoltaics and large-area thermoelectrics.

BP Institute for Multiphase Flow <http://www.bpi.cam.ac.uk/>

Established in 2000 and funded by BP, the Institute spans 6 University departments. Research focuses on fundamental problems in multiphase flow and is highly interdisciplinary. Renewables: [Natural Ventilation and Building Physics \(led by Prof A Woods and Dr C Gladstone\)](#)

Energy Policy Research Group <http://www.eprg.group.cam.ac.uk/>

The Energy Policy Research Group is based at the Judge Business School. The EPRG received £2.38m from the UK Research Councils in 2005 under the 'Towards a Sustainable Energy Economy' programme. Professor David Newbery is the Director of the Energy Policy Research Group. The core research discipline is economics, within a framework that encourages collaboration across the following research areas: regulation and markets; technology and innovation; governance and politics and climate change policy.

Maxwell Centre <http://www.maxwell.cam.ac.uk/our-vision>

- Winton Programme for Physics of Sustainability (<http://www.winton.phy.cam.ac.uk/>)
- Efficient energy usage (<http://www.maxwell.cam.ac.uk/research-and-impact/efficient-energy-usage>)
- Energy generation (<http://www.maxwell.cam.ac.uk/research-and-impact/energy-generation>)
- Energy storage (<http://www.maxwell.cam.ac.uk/research-and-impact/energy-storage-research>)

Information about existing groups/activity relating to sustainability across the University and where these groups report.

- [Cambridge Forum for Sustainability and the Environment](#), founded Jan 2013 (~20 members). Aims to stimulate cross-disciplinary conversations about some of the planet's most pressing global sustainability challenges. Chaired by Professor Lord Martin Rees (Emeritus Professor of Cosmology and Astrophysics, Institute of Astronomy and Fellow of Trinity College), with Professor Paul Linden (DAMTP) as the Director. Meet once a month between October and June and expert witnesses are invited to explore different aspects of selected topics. The Forum aims to generate research questions. A series of reports have been published. Easter Term 2016 focused on energy resilience (<http://www.cfse.cam.ac.uk/topic-3-resilience/Energy-resilience>). Other topics have included sustainable cities, land use change and health and wellbeing.
- The [Cambridge Green Challenge](#).
- There is an [Energy and Carbon Reduction Project \(ECRP\)](#), established in 2011 to help achieve the carbon reduction target set out in the [University's Carbon Management Plan 2010-2020](#) (commits the University to achieving a 24% reduction in energy-related carbon emissions by 2020, against a 2005/06 baseline) and its [Environmental Sustainability Vision, Policy and Strategy](#) (provided as document 7(b)). The ECRP has an annual budget of £2m to fund projects that help to reduce energy use and carbon emissions across the University estate.
- Renewable energy: <http://www.environment.admin.cam.ac.uk/news/focus-renewable-energy>
- Environment and Energy section of Estate Management – [What are we doing pages](#).
- [Cambridge Institute for Sustainability Leadership](#). Institution within the School of Technology, with a Management Board and Advisory Board. Works with leaders from business and policy to deliver change towards sustainability, and build leadership capacity to tackle critical global challenges, through business action, executive education and Masters' level programmes. (e.g. Low Carbon transformation <http://www.cisl.cam.ac.uk/business-action/low-carbon-transformation> and eliminating fossil fuel subsidies <http://www.cisl.cam.ac.uk/business-action/low-carbon-transformation/eliminating-fossil-fuel-subsidies>).

Governance and Management

- The Environmental Sustainability Vision, Policy and Strategy states that a Pro-Vice-Chancellor has responsibility for environmental sustainability and carbon emissions. In practice, this responsibility currently falls to Professor Ian Leslie, as the University's Senior Adviser to the Vice-Chancellor with special responsibility for Environmental Sustainability.
- The [Environmental Sustainability Strategy Committee](#) (reports to the General Board and Council), chaired by the Vice-Chancellor's Deputy (Professor Ian Leslie). Established in 2015. Indirect reporting lines also to the Planning and Resources Committee and the Estates Strategy Committee.
- Implementation of the Environmental Policy is coordinated and undertaken by the Environment and Energy section within Estate Management.
- Reports on KPIs presented to the ESSC, and an annual report made to GB and Council (<http://www.environment.admin.cam.ac.uk/Annual-Report>) (provided as document 7(c)).

At a glance in 2015/16



336 buildings,
49 are listed

Over 30
energy and carbon
reduction projects
undertaken, estimated
to **save 870 tonnes**
of carbon per annum



70%
of waste recycled
or composted

1,867,298 kWh
generated via onsite renewables




23 Living Lab
projects
undertaken


22
'Spotlight on'
roadshow events,
engaging an estimated
643 staff

652,807m²
gross internal floor area of the estate

43
Green Impact teams




5 Finalists in the
Green Gown
Awards 2016



18,306
students

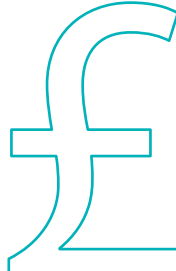


10,289
staff FTE

103
members
of the Environment and
Energy Coordinators Network



£ 926,273,000
total University income

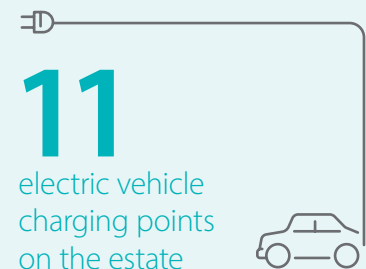


75%
of staff regularly commuting
to work by sustainable
modes of travel



8,500
cycle spaces on the estate

11
electric vehicle
charging points
on the estate



The Use Less Group <http://www.uselessgroup.org/>

Professor Julian M Allwood FREng

Since 1990, mitigation of greenhouse gases in the UK (starting from 794 MtCO_{2e}) has arisen from four actions:

- switching electricity production from coal to gas (-158 MtCO_{2e});
- reducing the release of methane from landfill sites (-46 MtCO_{2e});
- deploying wind and solar power instead of building new gas powered electricity generation (-40 MtCO_{2e});
- shutting UK industry and importing goods that used to be made here (-129 MtCO_{2e}).

The first two actions are nearly complete (only 82 MtCO_{2e} remain) and the fourth obviously has no effect on global emissions but is an accounting trick. We will continue to implement more renewable energy generation. However, renewables are constrained by total area requirements which have already restricted the growth of onshore land and solar farms, so future growth is likely to focus on offshore wind farms. If we continue to expand offshore wind farms at the maximum rate at which we've expanded all renewables in the past 15 years, this will lead to an increase in mitigation of (-5 MtCO_{2e}) per year.

We are commissioning new nuclear power at a slow rate and have yet to commit to even the first deployment of Carbon Capture and Storage attached to power generation. It is therefore risky to assume that either of these options will be operating at scale by the 2050 target date of the Climate Change Act. Therefore, we are about to face the reality that at least in the short term, a low carbon future must be a low energy future.

Since 1990 our emissions from transport and heating have not changed. We drive cars that weigh twenty times the passengers within them, heat our homes to ever higher temperatures, and yearly expand our collective appetite for flying. It is clear that it is physically possible to live well with much less energy consumed by these activities.

However, industrial energy-use is dominated by the production of bulk-materials (in particular steel, cement, plastic, aluminium and paper) and is extremely efficient. Making a real reduction in industrial emissions (rather than just shifting it elsewhere) therefore depends on changing our patterns of production and use so that each new building, vehicle, appliance or other large physical product uses half as much material for twice as long.

The Use Less Group has since 2007 explored this strategy of material efficiency. We have:

- filed several patents for new processes that reduce manufacturing scrap
- invented laser un-photocopying to allow direct re-use of paper
- demonstrated that commercial construction in the UK uses nearly double the amount of material required by our already conservative safety standards and identified how this might be reduced
- developed software that delivers holistic analysis of global or national resource use and its environmental consequences
- worked across the steel industry to explore adding more value to less new steel
- informed national and international policy processes, leading to new activities by the Intergovernmental Panel on Climate Change and the International Energy Agency

Carbon Capture and Storage at Cambridge

Most studies of how to cost-effectively reduce greenhouse gas emissions in the UK and globally require Carbon Capture and Storage (CCS) technologies. For example, the UK's Committee on Climate Change finds that without CCS, the cost of meeting the UK's 2050 targets would be twice as high as if CCS were to be included. In addition, decarbonising some industries, such as steel and cement, are currently very difficult without the technology.

Some key challenges face the deployment of CCS, and research at the University of Cambridge is helping to resolve some of these issues. One significant challenge is cost, with the capture of CO₂ representing the largest share. Research at the Engineering and Chemical Engineering Departments has been conducted into alternative capture technologies with improved efficiencies to reduce costs. These include pre-combustion technologies such as chemical looping, using solid fuels that produce pure CO₂ as a by-product, with energy penalties as low as 5-8%.

Another major uncertainty is the security with which CO₂ is stored in porous geological reservoirs. Research in Cambridge on geological storage spans the Departments of Chemical Engineering, Applied Mathematics and Theoretical Physics, Earth Sciences and the BP Institute, and has addressed some of the concerns through a series of projects including:

- 1) Sleipner: Since 1996, a consortium of companies led by Statoil have separated and stored ~ 1 million tons CO₂/year in the Sleipner West field in the North Sea. Cambridge researchers have analysed biennial seismic surveys which demonstrate the CO₂ is securely stored and have determined and understood its flow over the past two decades.
- 2) Geological analogues: Natural CO₂ produced by degassing of magmas has been trapped and retained in geological formations for millions of years. These attest to the feasibility of long-term storage and also act as natural experiments to investigate the long-term behaviour of CO₂ in geological reservoirs. Cambridge researchers have been investigating one such atypical leaky natural system in Utah supported by NERC, DECC and Shell.

Public communication of CCS is also vital for commercial deployment. Research has been conducted at Judge Business School into the communication of CCS, with the findings that CCS technologies are currently not sufficiently well known or understood by the public and that the information provided is predominantly technological and the institutions actively providing information on CCS (predominantly corporations and Government) are those that tend to be less trusted. Research is also conducted into the economics of CCS and the benefits of flexibility provided by CCS to the power system, which is needed given the dramatic increase in renewables.

Part of the reason that CCS proves to be such a cost-effective option in most analytical studies is not just its application to the power sector, but the roles it can play in more challenging segments such as industrial processes (chemicals, steel, and cement) and heating. Moreover, the target set out in the Paris Agreement in December 2015 to reach 2°C and the aspiration for 1.5°C will be particularly challenging. Given the inertia in terms of deploying new infrastructure, these targets may be unattainable unless countries move rapidly towards net-zero emissions, which in turn is driving interest in 'negative emissions technologies' (NETs). One leading NET is Bioenergy with CCS (BECCS), but even if direct air capture (DAC) proves feasible, there will still be the need to understand the implications of storing billions of tons of CO₂ underground. There is new research at Cambridge focused on the political economy of deploying these NETs.

Overall, research at Cambridge covers all these areas of CO₂ capture, storage, and systems & policy as part of the UK CCS Research Centre and various other projects supported by the UK research councils and industry.

An exemplar of sustainability

Eddington is a new community in Cambridge, setting the standard in sustainable living, delivered by the University of Cambridge. This visionary urban area will provide new homes, learning spaces, amenities and green spaces, creating a vibrant environment for people to live, learn, and socialise in.

In creating a new place, the University's vision for Eddington is to develop a long-lasting and sustainable place. Eddington is an exemplar sustainable community and is setting a new standard in sustainable community living, with innovative and unique infrastructure has been integrated across the development to help residents lead more sustainable lives.

This includes:

- The UK's largest underground waste and recycling system. This removes the need for individual wheelie bins per property and the street-blight that they can cause on bin-collection day. Local authorities are alerted to collect the bins when they are 80% full, meaning only nearly full bins are emptied, vastly the use of the waste collection lorry and the carbon emissions linked to that.
- The UK's largest water recycling network, with Sustainable Urban Drainage System (SuDS) across the development. Swales and green fingers, combined with blue roofs, mean rainwater is collected in man-made lagoons. This is then treated and used for non-potable water by residents. This will cut water consumption to 80 litres per person per day (compared to Cambridge average of 150 litres per person per day).
- A District Heating Network and central Energy Centre which provides hot water to all buildings. This minimises the environmental impact with reduced CO2 emissions through energy efficiencies.
- Extensive use of PVs across all buildings will mean electricity generated on site is either used to power the Energy Centre or sold back to the National Grid.
- Buildings are designed and built to high levels of sustainability with all homes built to the Code for Sustainable Homes Level 5 and non-residential buildings achieving BREEAM Excellent. The buildings are well-insulated, include double or triple glazing, consideration for natural ventilation, and have expansive windows for natural daylight.
- Encourage sustainable travel, including a 900m dedicated pedestrian and cycle highway, a subsidised bus service, a car-share scheme, plus extensive cycle training and loan schemes for residents.
- A third of the site will remain as green open spaces, with measures to encourage birds and bats to roost across the development.

Energy Centre chimney at the centre of Eddington



The Ridgeway connects Eddington to existing neighbourhoods



The Lakes form an essential part of the Sustainable Urban Drainage System



Energy centre plant connects to the district heating network



Innovative underground waste system



Swale enables the surface water to drain to the lakes as part of the Sustainable Urban Drainage System



DIVESTMENT WORKING GROUP REPORT 2018

The University in its investment, research, education, estate and policy decision making should take urgent and tangible action to deliver a carbon neutral future.

UNIVERSITY AND STAKEHOLDER CONSULTATION

Facilitated extensively through 2 University-wide town hall meetings, written submissions and 25 evidence sessions. Gathering information and evidence from relevant bodies and individuals.



INTERIM RECOMMENDATIONS

3 interim recommendations sent to the Vice-Chancellor in early January 2018:

- transparency in the Investment Office's actions;
- proactive stance regarding the ongoing dialogue with fund managers; and
- University to join the Institutional Investors Group on Climate Change (IIGCC)

Reviewed by Council in February 2018.



RECOMMENDATIONS: UNIVERSITY'S INVESTMENTS

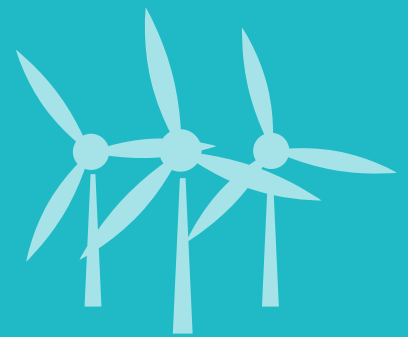
Considered Divestment

- All direct investment consistent with a carbon neutral future
- No investment in thermal coal or tar sands by any party with whom it invests
- Positive Investment – starting at 10% of indirect investment in ESG Funds
- Transparency and public reporting
- Additional personnel to support engagement with fund managers
- Lend its voice – investor engagement with industry



RECOMMENDATIONS: RESEARCH AND POLICY

- New interdisciplinary Centre – for a carbon neutral future
- Proactive communication strategy and maximise the impact of the University's research and policy work
- Develop a dialogue with policy makers and industry leaders



RECOMMENDATIONS: ESTATE AND OPERATIONS

- Carbon Neutral by 2040
- 100% of energy from renewables by 2030
- Green Bond to fund environment and climate target
- Targets for the University's staff and students' individual actions
- Integrated communications strategy for environmental initiatives



[READ THE FULL REPORT](#)