KNOWLEDGE AND RESPONSIBILITY

Sustainable institution 2030

CONTENTS

Introduction

UCPH has been working with sustainability since 2008. As a university with a strong tradition for research and education in the field of sustainability, it is quite natural for UCPH to lead by example and take responsibility for our own consumption of resources and for our climate and environmental impact.

UCPH is a city within the city with 9,500 employees and 37,500 students with a large climate and resource footprint. The sustainability transformation of our society and our consumption requires large-scale changes and actions. Many people believe that mankind is facing one of the biggest challenges ever. We are on a challenging and demanding journey – globally, nationally and at UCPH. At UCPH, we want to be able to say that we shouldered our part of the responsibility.

SUSTAINABILITY THEMES AND APPROACH

Ambitious – Find the way and walk the talk!

UCPH will be ambitious in our striving for a transition to a more sustainable university. Nationally and globally, we do not currently know the answers to what a sustainable world looks like, and we only know some of the proposals for how to achieve this transformation.
Solutions, initiatives and actions are to be developed in the coming years, and we must accept that we do not know all of them today. But UCPH will be ambitious and develop new solutions. We must actively use the knowledge developed by our own researchers and the outside world.

Research-based: holistic and lifecycle-based data

UCPH will use data and knowledge to prioritise initiatives and actions where they can make the greatest difference. 'If you can't measure it, you can't manage it.' But we must also recognise that knowledge is constantly being developed, and we are becoming increasingly more knowledgeable about climate, resources and sustainability issues. Precise data is often not possible. UCPH will continuously evaluate and revise data, calculation methods and approaches in line with our acquisition of more knowledge and will launch new initiatives and actions on this basis.

Our impact on climate and resources is connected with production, use and disposal. We will take responsibility for our climate and environmental impact in a holistic perspective. Products and consumption must be evaluated in a lifecycle perspective

Behaviour, participation and co-creation – staff and students

UCPH is an institution with high degrees of freedom, and involvement and participation form part of UCPH's organisational culture. Many decisions, which overall are crucial to sustainability, are made locally and on a daily basis. UCPH has an educational responsibility via our study programmes, but UCPH also has a responsibility to provide general education about sustainability. We need to build on the high level of commitment to sustainability shown

Students are to play a central role in the green transformation

by many of our students and create a framework under which this can be converted into increasingly sustainable everyday life at UCPH.

It is important for the individual's motivation and understanding of sustainability to encounter sustainable initiatives and actions in everyday life. Therefore, visible initiatives and actions are also important. One of UCPH's tasks is to highlight and facilitate an understanding of the initiatives and actions which are of the greatest importance and produce the greatest effects.

There will be changes in everyday life and in practice which may be perceived as more inconvenient for the individual person. Changes in behaviour are typically experienced as inconvenient and as entailing sacrifices until they become an integrated practice in everyday life. Local solutions to the joint major sustainability challenges require local commitment and participation – co-creation – in order to roll out joint solutions in a meaningful manner locally.

Campus as a living lab

UCPH conducts extensive research and has great expertise in a number of areas of relevance to the sustainability journey that UCPH is on. UCPH can draw on this knowledge in a meaningful way in the transition and development of initiatives and actions, and already incorporates this in the work to set new goals and targets for UCPH.
From the past decade, UCPH has a number of other examples of collaboration between researchers and students on specific activities.[1]

Converting inspiring ideas into specific implementation of new sustainable everyday solutions at UCPH is often a resource-demanding and time-consuming process. The time perspective for students is often projects and assignments of a fairly short-term duration. Conversely, research projects may operate with long time spans. The time perspective is only one element in the process. Realisability, resources and organisation are other factors that have to interact if a campus as a living lab is to make sense.

It is thus necessary to establish approaches to and a framework for the work with campus as a living lab which ensure that the collaboration generates value for both the core business and in the transition of UCPH to a more sustainable institution.

UCPH contributes to strengthening practice-oriented research and education through collaboration on specific solutions. Work must be done to develop initiatives and actions aimed at strengthening the effect of this and how it can make a positive contribution to, for example, the future graduates' profiles and the range of study programmes and further and continuing education courses offered at UCPH. It is crucial that the specific initiatives and actions are combined holistically with UCPH's activities aimed at strengthening sustainability in education and research, where this makes sense.

1   www.sustainability2030.ku.dk/actions

LAYING DOWN QUANTITATIVE & QUALITATIVE TARGETS

We cannot measure and weigh everything, but we need to lay down ambitious measurable targets that we can use as benchmarks. Specific quantitative sub-targets must be developed in the years to come.

Every other year, UCPH will prepare an overall sustainability report in which we present an update on all our goals, targets, initiatives and actions. There will be continuous annual follow-up on key figures and on the progress of initiatives and actions.
Goals, targets, initiatives and actions are expected to be evaluated in depth in 2023, and further significant action themes will be assessed. This may be done in conjunction with the expiry of UCPH's overall strategy 'Talent and collaboration'.

Overall UCPH objectives

UCPH has decided a number of overall objectives up to 2030. The objectives are ambitious and must act as clear milestones for the initiatives and actions in the coming years. If significant results are created quickly during this period, UCPH expects to raise the objectives.

The objectives comprise four significant national and global environmental sustainability challenges: climate, resources, chemistry and biodiversity.

Added to this are objectives which are of particular importance to UCPH as a university and knowledge institution: Involvement, participation and behaviour, as well as collaboration and global knowledge sharing.

UCPH will:

1 CLIMATE

- Reduce its overall climate footprint per full-time equivalent (FTE) by 50% in 2030.

2 RESOURCES AND RECYCLING

- Work for sustainable procurement, use and recycling of resources in the entire value chain that contribute to a significant reduction in UCPH's resource consumption.
- Ensure recycling of 60% of waste.
- Reduce total quantities for incineration and landfills by 50% per FTE.

3 CHEMISTRY

- Prioritise products and solutions without health and environmental contaminants in procurement, operations and construction.
- Work to reduce the use of environmentally and health hazardous sub-stances in teaching and research.

4 BIODIVERSITY

- In 2021, examine the areas in which UCPH's activities have the great-est impact on biodiversity and, on this basis, develop specific goals, targets, initiatives and actions for UCPH as an institution.

5 INVOLVEMENT, PARTICIPATION AND BEHAVIOUR

- All staff and students are to be offered good opportunities and be motiva-ted to practise sustainable behaviour in their day-to-day life at UCPH.
- All staff and students must have the opportunity to engage in specific initia-tives and actions aimed at the development of a more sustainable UCPH.

6 COLLABORATION AND GLOBAL KNOWLEDGE SHARING

- Engage nationally and globally in the sustainability work for universi-ties to achieve the best solutions and share own experiences.
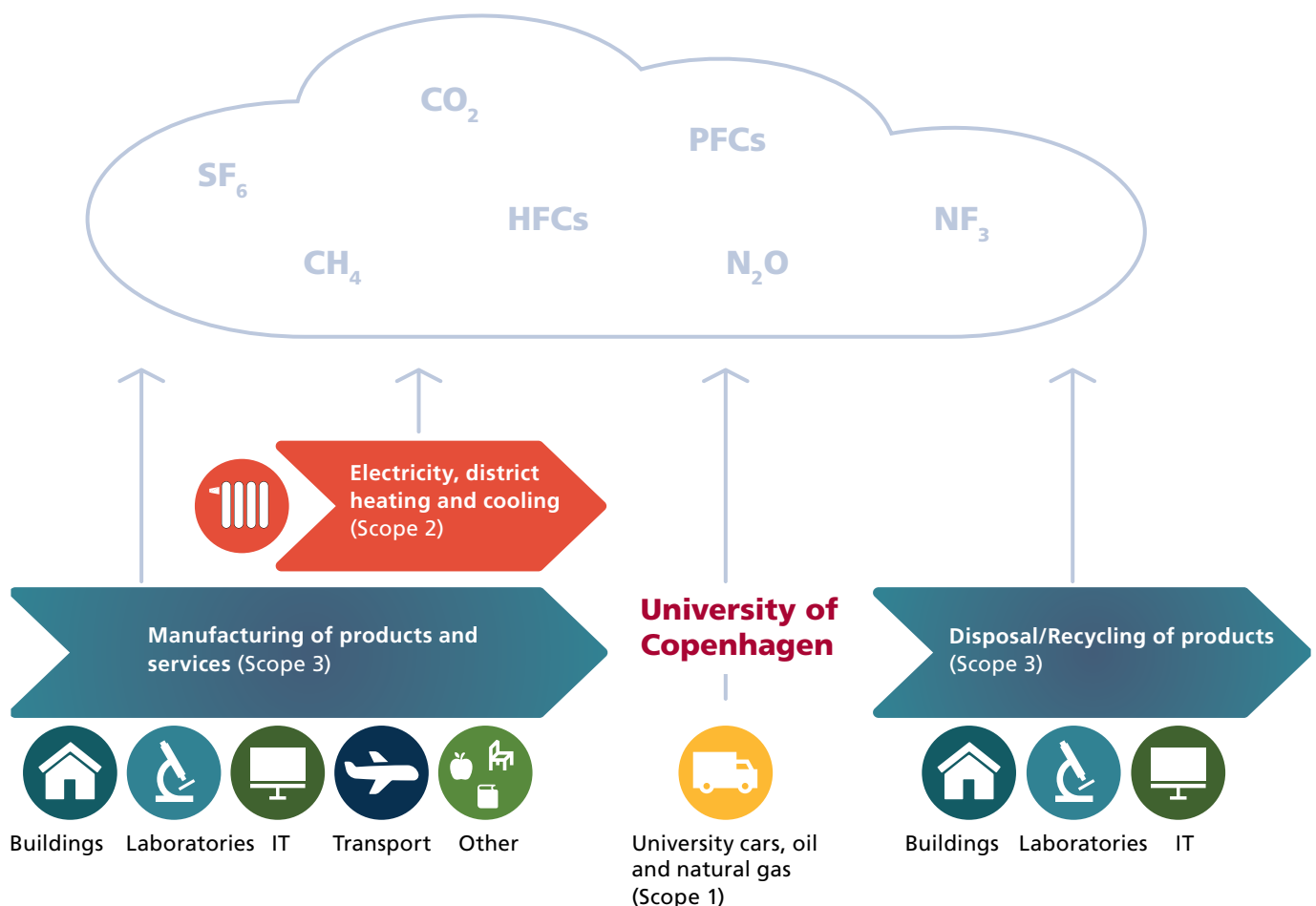- Continue to be internationally recognised for its sustainability work.

1. CLIMATE

UCPH will reduce its overall climate footprint per full-time equivalent (FTE) by 50% in 2030.

Climate impact knows no national borders, and UCPH's climate targets therefore cover all emissions regardless of where the CO2-eq[2] emissions take place globally. This lifecycle-based and holistic approach is necessary in order to take responsibility for the organisation's actual climate impact and to focus on the most important areas.

Denmark's national target of a 70% reduction in CO2-eq emissions is geographically demarcated. UCPH's target and approach will contribute to realising the national target, but goes beyond that, based on a global and holistic approach to the climate impact of UCPH's activities.

Scope 1-3 carbon footprint

UCPH bases the calculation of its climate footprint on the internationally recognised lifecycle-based approach described in the Greenhouse Gas Protocol. The CO2-eq emissions that can be attributed to an organisation can be divided into three categories (Scope 1, Scope 2 and Scope 3). The figure below illustrates the Scope 1-3 carbon footprint approach.

SF_6 CO_2 $PFCs$ $HFCs$ CH_4 N_2O NF_3

Electricity, district heating and cooling (Scope 2)

Manufacturing of products and services (Scope 3)

University of Copenhagen

Disposal/Recycling of products (Scope 3)

Buildings   Laboratories   IT   Transport   Other

University cars, oil and natural gas (Scope 1)

Buildings   Laboratories   IT

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2   CO2-eq = CO2 equivalent. In addition to CO2, a number of other gases, including methane, contribute to the greenhouse effect. The greenhouse effect from these gases is converted into CO2 equivalents for the calculation of total greenhouse gas emissions.

A lifecycle-based approach comprising all CO2-eq emissions is challenging and methodologically still under development, but it is expected to become more widely used in the future. In the years to come, rapid methodological development is expected in this field, both nationally and internationally. UCPH will monitor and contribute to the development of knowledge, and adjust its approach and reassess the calculations accordingly.

UCPH has assessed that the current best basis for an overall estimate is the use of a lifecycle input-output approach (Exiobase[3]). Based on UCPH's total procurement for 2018, UCPH has made an estimate of UCPH's total climate footprint and the most important climate action categories. 2018 has been selected as the baseline as there is no earlier data basis for a relatively nuanced calculation of UCPH's procurement. The data basis for a meaningful calculation of UCPH's total climate footprint in 1990, which is the Government's baseline for the national -70% target, does therefore not exist.

The calculation contains uncertainties, but shows that a number of UCPH's uses of areas and facilities, products and services (Scope 3) account for up to 90% of UCPH's climate footprint, and that climate action must therefore include a number of areas in addition to energy consumption (Scope 1 and Scope 2).

University cars, oil and natural gas (Scope 1)

Electricity, district heating and cooling (Scope 2)

Other

Buildings

Maintenance and renovation

Canteens

IT

Laboratories

Hotels

Transport

Consumables for laboratory use

Chemicals in education and research
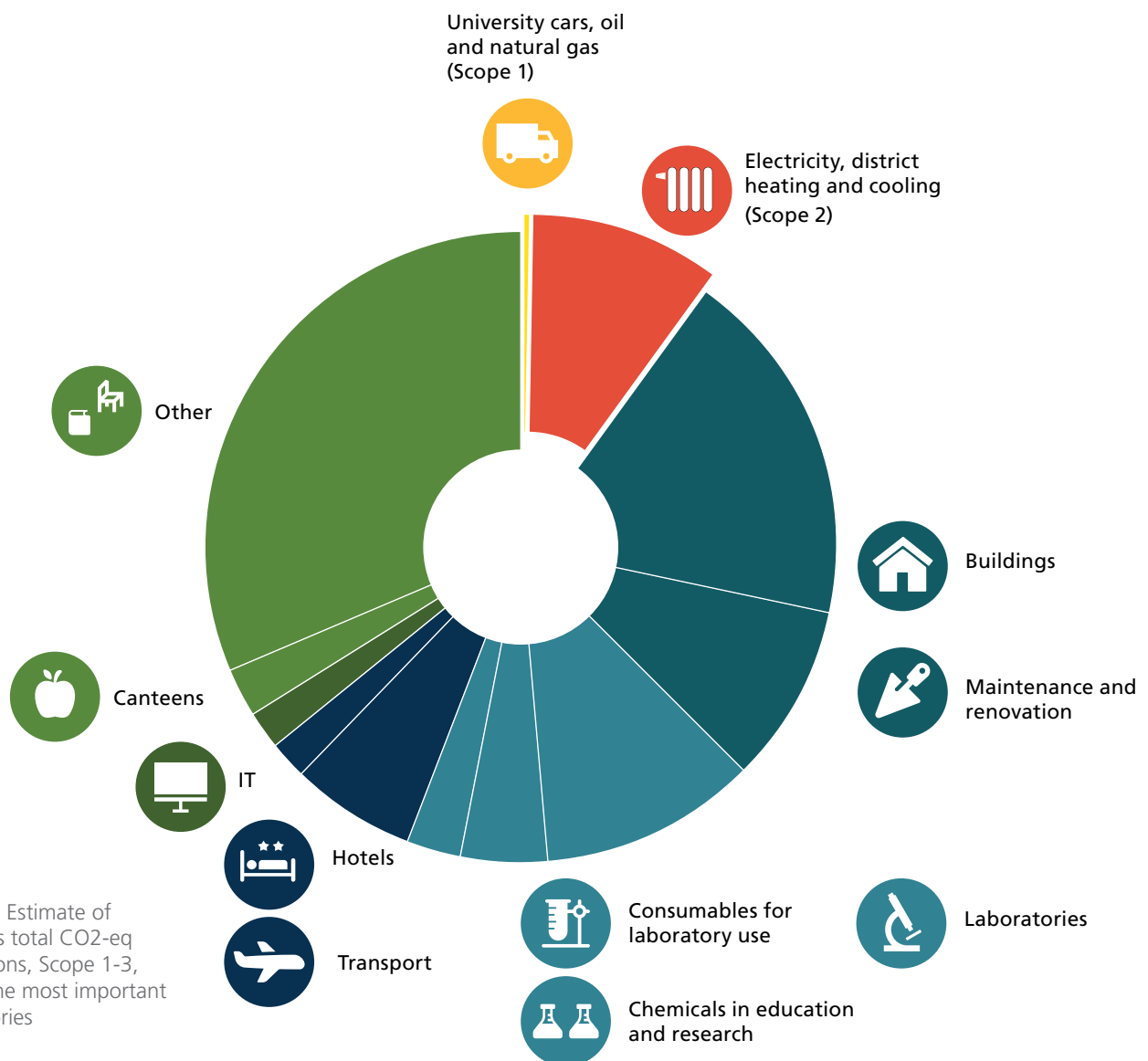
Figure: Estimate of UCPH's total CO2-eq emissions, Scope 1-3, with the most important categories

UCPH will develop initiatives and actions in the most important categories and will identify new main action areas in line with the development of initiatives and actions.

UCPH's climate footprint will be reduced through both:
- Externally – the reduction in the outside world of the products and services that UCPH buys and consumes.
- Internally – through UCPH's own internal efforts.

This is parallel to the marked reduction achieved in CO2-eq emissions connected with UCPH's energy consumption (Scope 1 and Scope 2). This is due to UCPH's own energy efficiency improvement work (internally) and the green transition in Denmark's energy supply (externally).

The reduction potential is different for the different categories, both internally at UCPH and in relation to external initiatives and actions.

Until 2030, CO2-eq calculations and data will be adjusted continuously in line with knowledge and methods being improved and developed. UCPH will involve relevant researchers in the work to qualify calculation methods and data.
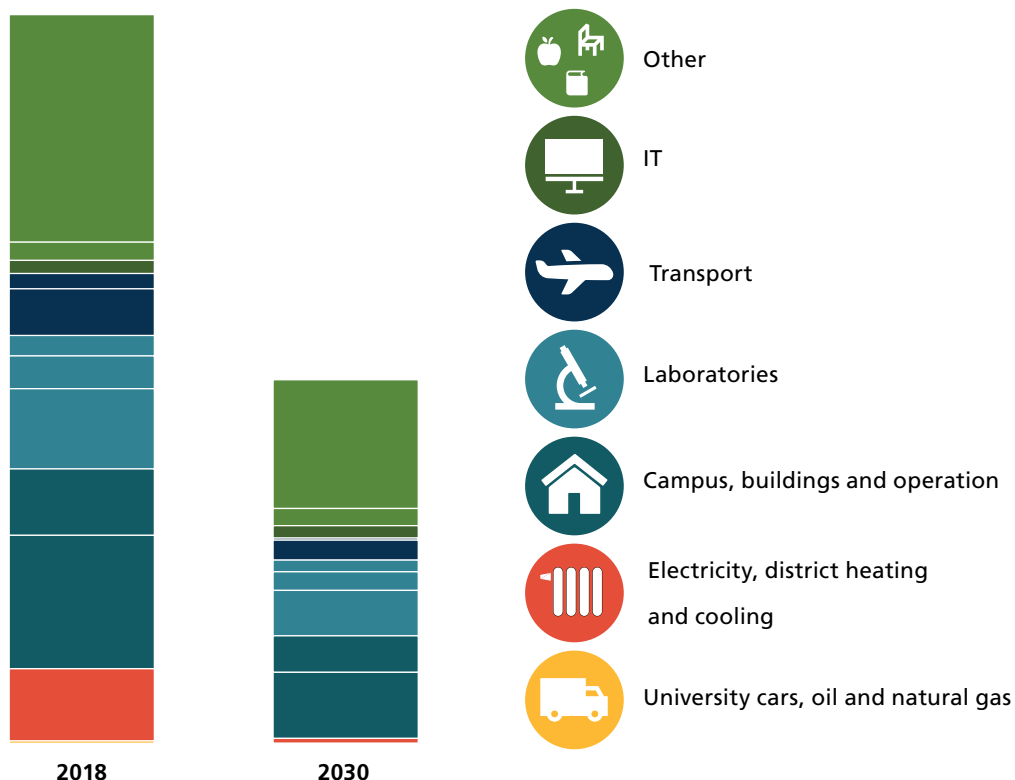

Figure: Qualified estimate of potential reductions for the main categories of UCPH's climate footprint.

2. RESOURCES AND RECYCLING

UCHP will:

- Work for sustainable procurement, use and recycling of resources in the entire value chain that contribute to a significant reduction in UCPH's resource consumption.
- Ensure recycling of 60% of waste.
- Reduce total quantities for incineration and landfills by 50% per FTE.

The world's resources are under pressure, and people are currently using much too large quantities of these resources. Development of raw materials, production and transport often have a number of derived negative impacts on nature and the environment. Better resource utilisation when we produce products, consume them and subsequently recycle them or dispose of them is therefore absolutely crucial for us to ensure a more sustainable future.

UCPH has an important role in society and should contribute to the sustainable use of resources at UCPH – from procurement, while the resources are being used at UCPH and until they are to be recycled or disposed of. This lifecycle perspective entails that resource targets must be incorporated into the entire value chain, so we can reduce UCPH's resource consumption in all stages and achieve the greatest possible effect. An overall lifecycle approach is illustrated in the model below:

| Manufacturing of products and services | Use at UCPH | Disposal and Recycling of products |
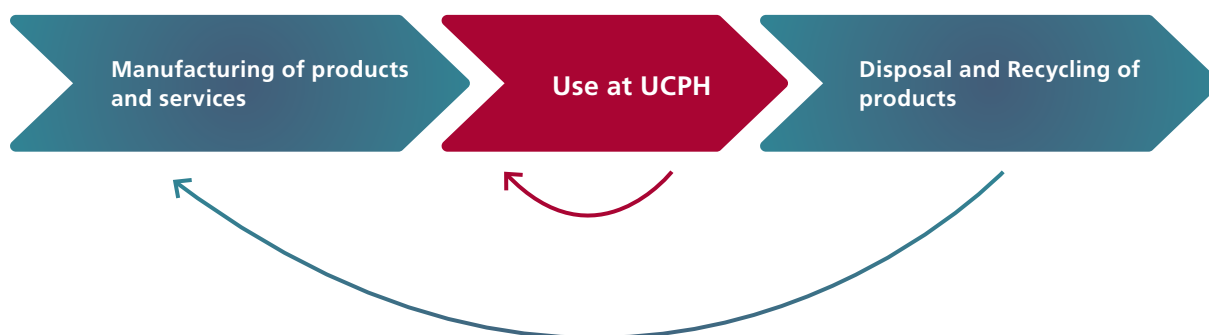
UCPH waste and recycling

On a daily basis, UCPH's 9,500 employees and 37,500 students produce significant waste volumes, which are sent for recycling, incineration, special processing or landfill deposit. In 2018, UCPH's total operations-related waste production amounted to approximately 3,800 tonnes, equal to approximately 100 kg per FTE. UCPH recycled just over one third of the waste, while just over half of the waste was sent for incineration.

In addition, UCPH has a number of special waste fractions, e.g. in connection with animal husbandry, laboratory animals and construction/maintenance, which require independent focus in both calculations and actions.
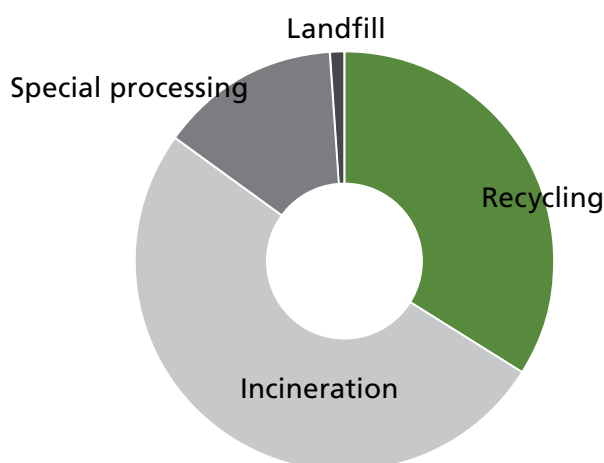
Landfill

Special processing

Recycling

Incineration

Figure: Handeling of UCPH waste in 2018

Together, the Faculty of Science and the Faculty of Health and Medical Sciences are responsible for more than three fourths of UCPH's total waste volumes. This is particularly due to the laboratory activities, which contribute to a significant proportion of the waste volumes at UCPH.

UCPH has a special potential for strengthening the recycling of bio-waste, plastics, glass, metal, cardboard, paper, equipment and fixtures and fittings. Staff and students show a will towards more sorting of waste and have a wish for better waste separation and recycling facilities that make this possible.

In future, UCPH must ensure meaningful solutions that enable staff and students to contribute actively to the increased sorting of waste at source and improved resource efficiency.

However, UCPH is greatly dependent on the available processing solutions for sorting of waste fractions at source so that the sorting of waste at source is developed in line with processing and recycling becoming possible. Work is being done nationally and in the EU to establish joint solutions in this area, and new opportunities and solutions are therefore expected in the coming years.

At the same time, there is no doubt that UCPH will be met with more stringent requirements for recycling and waste management from the EU[4], the Government[5] and the City of Copenhagen[6] with which UCPH will have to comply.

	EU	Government	City of Copenhagen
Recycling of household waste (Includes household-like commercial waste)	• 2025 -> 55% • 2030 -> 60% • 2035 -> 65%	• 2022 -> 60% recycled plastics • 2022 -> Requirement for a high rate of recycling for other waste types (% target not fixed)	2024 -> 70% incl. light commercial waste.
Other objectives		• Correlation with the EU • National harmonisation (10 fractions) • Streamlining of waste management • Strengthening of municipal supervision	

4   Circular Economy Action Plan – For a cleaner and more competitive Europe (11 March 2020)
5   Climate plan for a green waste sector and circular economy (16 June 2020) (Danish)
6   Circular Copenhagen - Ressource- and wasteplan 2024 (Danish)

In addition to ensuring sorting of waste at source and optimal recycling of materials, UCPH must reduce its use of materials and resources. This can be achieved through:

- More reuse of passive assets – where UCPH becomes better at reusing the objects/resources UCPH already has at its disposal, but which are not used enough or at all. This may be things that have been warehoused or expensive assets that can be utilised better by ensuring that they are shared.

- More repair of defective assets – where UCPH systematically ensures repair of defective objects instead of buying new ones.

Reuse of pipette containers

UCPH will also strengthen its knowledge and data basis during the target period, so that initiatives and actions can be prioritised in the most important categories and with increased documentation of the effects of the initiatives and actions. The calculation and highlighting of the results of initiatives and actions taken by departments, staff and students are important to maintain and develop the necessary active participation.

In line with results being created and processing solutions being improved nationally and internationally, the objective will be evaluated and is expected to be raised. It is expected that sub-targets will be laid down for relevant fractions as part of the specific initiatives and actions aimed at strengthening UCPH's sorting of waste at source.

A lifecycle-based approach to resources entails a merger with the climate actions taken in several areas. Shared solutions and efficiency improvements that reduce consumption/procurement ensure longer service life and increase recycling. They also contribute to both reduced climate impact and less resource consumption.

UCPH uses ressources from all over the world

3. CHEMISTRY

UCPH will:

- Prioritise products and solutions without health and environmental contaminants in procurement, operations and construction.
- Work to reduce the use of environmentally and health hazardous substances in teaching and research.

Hazardous substances and problematic products can have a significant impact on people and the environment throughout their lifecycle, from production to use and disposal. UCPH conducts research into the effects of widespread use of chemical substances. A complex, incomplete picture emerges of serious environmental and health effects, such as cancer, fertility problems and hormone-disturbing effects.
Some substances and cultivation methods used in the agricultural sector appear to have effects that result in a massive reduction in the number of insects.

Use of harmful chemicals will be minimised

Chemicals and problematic substances form part of the production and are found in the products and materials with which we surround ourselves. For many standard product areas, products and solutions have been developed that avoid problematic substances, and today there are a number of environmental labels or certification schemes that must be prioritised. In connection with construction and maintenance, products and solutions have now been developed that avoid known problematic substances and materials. These products and solutions must be prioritised.

The laboratories use a wide range of chemicals and substances which are hazardous to the environment and health, but which are crucial to the research work. Work has long been done to substitute hazardous substances and materials for less hazardous substances and materials. Such substitution options do not necessarily exist in a number of cases, but, where possible, there will be a strengthening of the ongoing work on substitution for alternative, less problematic substances, reduction of waste volumes and assessment of alternatives.

This is a task for the core business, preferably in collaboration with the occupational health and safety organisation, so that the initiatives and actions produce not only positive effects on the working environment, but also on the environment. UCPH will be using hazardous chemicals and substances – also in the long term – and it is important that they are disposed of correctly.

Chemicals in construction will be reduced

UCPH has well-functioning solutions which ensure collection and correct disposal of chemicals, but work must constantly be done to ensure continuous improvement of sustainable and safe disposal.

In parallel with climate and resource initiatives, UCPH must incorporate requirements for products and solutions that contribute to reducing unwanted chemicals and substances throughout the value chain – production, use and disposal.

4. BIODIVERSITY

In 2021, UCPH will examine the areas in which UCPH's activities have the greatest impact on biodiversity and, on this basis, develop specific goals, targets, initiatives and actions for UCPH as an institution.

Global and national biodiversity is under threat, which UCPH's researchers contribute to documenting. In a lifecycle perspective, UCPH's consumption and activities have an impact on both local and global biodiversity. Through the procurement of products or services which are produced in ways that harm biodiversity, UCPH has an impact on diversity. For example, it can be argued that a more vegetarian diet will reduce the need for agricultural land areas for feed purposes.

In Copenhagen, UCPH has a number of significant green areas that can contribute to urban biodiversity and, not least, open green spaces for staff, students and citizens of Copenhagen. UCPH's campuses outside Copenhagen, in particular Tåstrup Campus, Pometet and Skovskolen, comprise large areas with a main focus in several areas being on maintaining and strengthening biodiversity, for example through the preservation of old fruit varieties.

Landbohøjskolen Garden at Frederiksberg Campus

Drawing on UCPH's wide area of expertise in biodiversity, it is expected that specific prioritised goals, targets, initiatives and actions can be developed for UCPH. Goals may comprise strengthened biodiversity and natural surroundings in the urban campus areas, for example inspired by 'Vild Campus'[7] and 'Vild med Vilje', but also focus on biodiversity linked to the activities on the campus areas outside Copenhagen. Finally, goals and targets must be developed that contribute to strengthening biodiversity in relation to UCPH's procurement and consumption.

It is assessed that there may be clear interactions with initiatives developed to realise other goals and targets, as reduced resource consumption and climate footprint will contribute to limiting the continuously increasing human use of natural areas globally.

Activities at UCPH affects global biodiversity

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7   www.science.ku.dk/vildcampus

5. INVOLVEMENT, PARTICIPATION AND BEHAVIOUR

UCPH's goal is that:

- All staff and students are to be offered good opportunities and be motivated to practise sustainable behaviour in their day-to-day life at UCPH.
- All staff and students must have the opportunity to engage in specific initiatives and actions aimed at the development of a more sustainable UCPH.

To ensure that UCPH can become a sustainable university, sustainability awareness must be anchored in the organisational culture. We need to establish an organisation that can serve as a platform for the joint involvement of employees and students in the transition to a sustainable university and that give them a basic understanding of the importance of our sustainable behaviour. Through UCPH's previous Green Action energy-conscious behavioural action plan (2009-2014) with 250 local green ambassadors, UCPH has good experience with involving local initiatives and campaigns.

Experience shows that local participation and anchoring result in an increased sense of ownership of the sustainability initiatives and actions, which are also easier to adjust so they are perceived as effective and meaningful locally. At the same time, the sustainability organisation constitutes a hub for communicating and highlighting UCPH's sustainability initiatives and actions and raising awareness among UCPH's students.

Key data must highlight sustainability for the individual unit and, if possible, for the individual employee, so the sustainability consequences of decisions and behaviour become tangible. Key data may, for example, comprise climate footprints for air travel, building use, procurement etc.

Sustainability at UCPH's Spring Festival

Sustainable **settings**:
Services and operation

Sustainable **behaviour and culture**
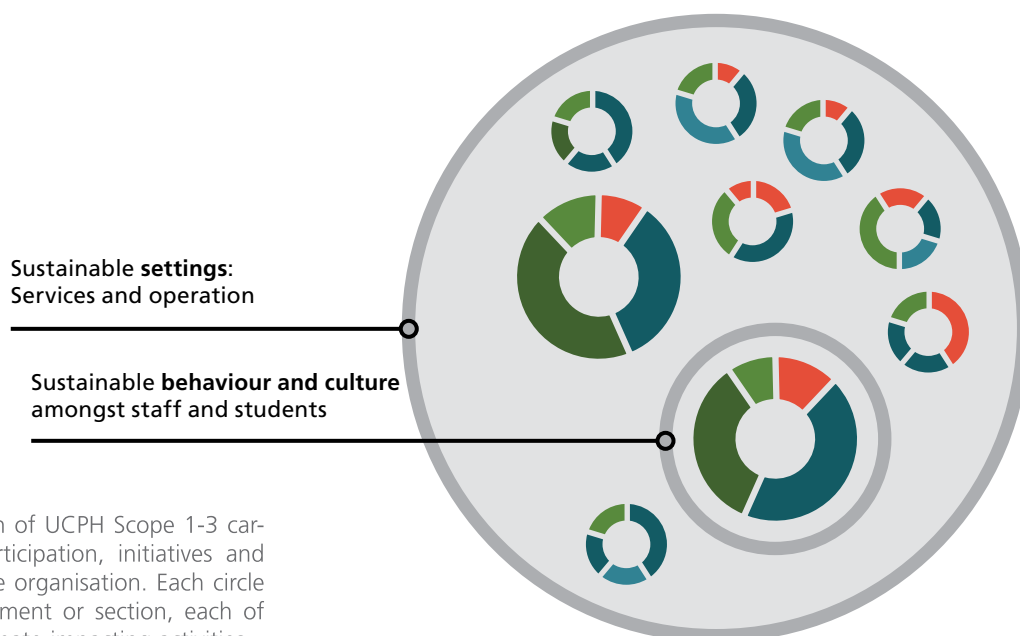amongst staff and students

Illustration of total reduction of UCPH Scope 1-3 carbon footprint requiring participation, initiatives and actions at many levels in the organisation. Each circle diagram illustrates a department or section, each of which has its own mix of climate-impacting activities.

Green benefits of digitalisation

The potential benefits of digitalisation must be exploited to support the green transition and re-source reductions internally, including in relation to working with behavioural changes at UCPH.

The marked increase in the use of virtual platforms for collaborations and meetings in connection with the COVID-19 pandemic is a good example of this and has been an effective alternative to the impossibility of air travel.

6. COLLABORATION AND GLOBAL KNOWLEDGE SHARING

UCPH will:

• Engage nationally and globally in the sustainability work for universities to achieve the best solutions and share own experiences.
• Continue to be internationally recognised for its sustainability work.

An active ongoing dialogue and collaboration with relevant stakeholders internally and externally is a natural part of all the action areas.

Internal collaboration and dialogue are essential to creating a sense of ownership of the sustainability initiatives and actions at all levels in the organisation. Communication and collaboration must be experienced as meaningful and accessible, and consumption and environmental impacts must be made visible in ways that contribute to changed behaviour. Knowing that the entire organisation is taking ownership of the sustainability tasks and awareness of the concrete results achieved will make the individual employee and student feel that it is meaningful to contribute.

UCPH will seek out and gain good experience nationally and internationally, so UCPH can implement the most important and best solutions developed by others. At the same time, UCPH will contribute to ensuring increased focus in the university world on addressing sustainability and the special role held by the universities in this context. UCPH already has good opportunities to communicate and share its sustainability initiatives and actions in a number of national and international cooperation forums. Especially the IARU[8]-collaboration is a strong platform for communicating internationally and sharing experiences with universities worldwide.

IARU Sustainability Conference 2014 at UCPH

In Denmark, the focus on sustainability has grown significantly among Danish universities, and the basis for collaboration is extensive. UCPH will work to strengthen this collaboration so Danish universities can support each other and can work together to remain among the internationally leading universities on the green agenda.

8   International Alliance of Research Universities

Action areas

UCPH's goals and targets are realised through an overall sustainability programme based on a number of action areas. The programme creates a framework and space for departments, staff and students to engage in the transition to a more sustainable institution and the realisation of UCPH's goals and targets.

Action areas, sub-targets and specific initiatives and actions must be developed in collaboration with the relevant parts of the organisation and will be adjusted and revised in the period leading up to 2030 in line with results being achieved, experience gained and new knowledge developed.

1. Campus, buildings and operation

2. Laboratories

3. IT

4. Transport

5. Sustainable procurement

6. Waste sorting and recycling

7. Sustainable institutes & ambassadours

8. Communication

UCPH Targets 2030

- **Climate**
- **Resources**
- **Chemistry**
- **Biodiversity**
- **Involvement, participation and behaviour**
- **Collaboration and global knowledge sharing**