

UNIVERSITY OF COPENHAGEN



CLIMATE STRATEGY 2010
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HOPENHAGEN OR NOPENHAGEN – NO PLAN(ET) B

No matter whether the UN Climate Change Conference (COP15) in December 2009 leaves Copenhagen behind as “Hopenhagen” or “Nopenhagen” depending on the negotiations of the world leaders at the Bella Center, climate change will remain one of the greatest challenges that mankind has ever faced. When the intense “climate buzz” from the city of Copenhagen leading up to the COP15 has finally faded away, the global community will still be faced with a challenge of enormous magnitude that we will need to face and deal with.

The need for developing a global response to the threat of climate change caused by human activities was brought to the whole world when the Intergovernmental Panel on Climate Change (IPCC) published its Fourth Assessment Report in 2007. In March 2009 the University of Copenhagen in cooperation with its nine partners in the International Alliance of Research Universities (IARU) gathered more than 2,000 of the worlds leading climate scientists at a congress in Copenhagen to bring together the newest knowledge, building upon the work of the IPCC.

The conclusions of the congress were unmistakable on the current trend: the emission of greenhouse gasses near the upper boundary of the IPCC and with unabated emissions, many trends in climate will likely accelerate, leading to an increasing risk of abrupt or irreversible climate shifts. Societies and ecosystems are highly vulnerable to even modest levels of climate change, with poor nations and communities, ecosystem services and biodiversity at particularly risk. Temperature rises above 2 degrees Celsius will be difficult for contemporary societies to cope with, and are likely to cause major societal and environmental disruptions through the rest of the century and beyond.

However, basically the main messages of the congress were encouraging: society already has many tools and approaches – economic, technological, behavioural, and managerial – to deal effectively with the climate change challenge. A wide range of benefits will flow from a concerted effort to achieve effective and rapid adaptation and mitigation. These include job growth in the sustainability energy sector; reductions in the health, social, economic and environmental costs of climate change; and the repair of ecosystems and revitalisation of ecosystem services.

The message is clear: we can do it, but in order to do it a strong effort from all parts of global society is needed to meet the climate change challenge and so are national and international partnerships between institutions and sectors.

Universities provide the solid and latest knowledge that society needs to face the climate challenge. At the same time closer university cooperation with business and other parts of society is key.

With this Climate Strategy 2010 the University of Copenhagen intends to strengthen its leadership on climate change in 2010 onwards. We will do our own homework and we will enter into partnerships with all relevant parts of society in research, education, public outreach, and greening programmes. By doing this we also hope to inspire others to follow suit. There is no “Planet B” as was recently stated by the President of the European Commission, José Manuel Barroso. At the University of Copenhagen we will remain focused on “Planet A”.



Ralf Hemmingsen
Rector

1. INTRODUCTION

The vision for University of Copenhagen is to keep and strengthen its position as a leading international "Climate University" on research, education, public outreach and greening; a centre for international climate researchers and students; and key cooperation partner for business and all other relevant parts of society.

This will be secured through a visible and well-coordinated programme of research, education and public outreach activities dealing with related processes, impacts, mitigation and adaptation to climate change. Furthermore, the vision is to incorporate the University's activities related to climate change in an overall sustainability context, make full use of the strong disciplinary traditions of several faculties in order to address the key problems of sustainable development and globalization in a highly integrative manner, thereby making the University of Copenhagen a leading actor in this particular field, both in terms of research and in education.

This paper describes the strategy and imbedded activities at University of Copenhagen related to climate change from 2010 onwards. The climate strategy is part of the implementation of the University's strategy "Destination 2012"

and focuses on current and future activities at the university level, thus supplementing ongoing activities naturally imbedded at individual faculties of the University of Copenhagen. The climate strategy consists of two parts, an overall strategy and an action plan, and includes five elements:

- 1) Research programmes
- 2) Educational programmes
- 3) Public outreach programmes
- 4) The Green Campus strategy
- 5) Cooperation and networks

The climate strategy and activities are led and coordinated by a Climate Steering Committee. The Chairman of the Steering Committee is Rector Ralf Hemmingsen. Members are University Director Jørgen Honoré, Dean Per Holten-Andersen, Dean Henrik Dam, Vice-dean Katherine Richardson, Director Niels Elers Koch and Head of the Climate Office Torben Mandrup Timmermann (secretary).



2. STRATEGY

The University of Copenhagen has a special responsibility for acting on climate change challenges, which includes research, education, and cooperation with public and private partners. Therefore, a Climate Strategy has been developed. The climate strategy of University of Copenhagen includes activities at all faculties and research centres and consists of five strategic aims. These aims are further described in the Action plan.

- 1) **Research programmes:** The University of Copenhagen is a leading partner in national and international climate change research, conducting both disciplinary and trans-disciplinary projects in high-profile research centres as well as large cross-disciplinary projects.
- 2) **Educational programmes:** The University of Copenhagen offers first-class education in climate change across disciplines, at BSc, MSc and PhD level. Educational programmes include full-degree programmes, summer schools, ordinary courses and e-learning modules. The aim is to attract qualified national and international students.
- 3) **Public outreach programmes:** The University of Copenhagen prioritises public outreach activities in order to provide high-quality research-based input to the public and political discussions and agenda. Moreover, public outreach is an important part of the branding activities of University of Copenhagen.
- 4) **The Green Campus strategy:** The University of Copenhagen will through action strengthen its green profile and show its way towards a greener campus. This includes ambitious goals for reductions of energy consumption.
- 5) **Cooperation and networks:** The University of Copenhagen is involved in and takes action on new cooperation and networks on climate change to influence the research agenda, provide platforms for new research, and develop cross-disciplinary cooperation. Networking and cooperation should aim at strengthening research and educational programmes.



3. ACTION PLAN

3.1 RESEARCH PROGRAMMES

The University of Copenhagen has identified twelve key areas, where the university especially has strong competencies in the field of climate change research (<http://climate.ku.dk/research/>). These areas are: Earth System Science; Atmospheric Science; Global warming and the Cryosphere; Natural Resources Management; Agriculture, Environment and Food Security also in Developing Countries; The Food System; Bioenergy; Water Resources, Stability and Human Health; Biodiversity and Ecology; Human Health; Environmental Governance; and Security, Risk Analysis, Migration. Research in climate change adaptation and mitigation takes place in basic, applied and strategic research programmes. Moreover, University of Copenhagen conducts consultancy services, extension and ministerial services.

High-profile and high quality research programmes are achieved via active participation in current international development in the field, by inviting foreign scholars and by building up internationally oriented educational programs at MSc and PhD-levels. Internally, this will require that differences in scientific cultures are bridged, which is best done through the establishment of broad-based, though specific, joint research projects.

Thematic cluster becomes Sustainability Science Centre

The thematic cluster "Sustainability Science Centre: Globalization, Environment and Development", which was initiated in 2007, has been successful in supporting and stimulating cross-faculty research, education, and dissemination activities with seed-money (10 mio. DKK). This has resulted in over 50 cross-faculty research initiatives within sustainability and climate change, estimated to generate research activities for a total of over 80 mio. DKK.

Action

The thematic cluster will be transformed into a Sustainability Science Center (SSC) in 2010. The centre requires cofunding by the strategic fund of the rectorate and relevant external partners, providing funding of a total of 8-10 mio. DKK for the initial 4-year period. It is expected that the establishment of SSC will stimulate research within the field of sustainability extensively and contribute to the awareness of the six key messages of the Climate Congress "Climate Change: Global Risks, Challenges and Decisions", held in Copenhagen March 2009. Maintenance of the webpage of climate change will become a task of the coming Sustainability Science Centre (www.klima.ku.dk/sscience).

International Scientific Congress, Synthesis Report and Book on Climate Change

The University of Copenhagen hosted the International Scientific Congress on climate change under the heading "Climate Change: Global Risks, Challenges and Decisions", 10-12 March 2009 in Copenhagen, Denmark. The congress was organised in cooperation with nine other universities in the International Alliance of Research Universities (IARU). The findings of the congress and the Synthesis Report based on the congress, presented in June 2009 (www.climatecongress.ku.dk) should be seen as a supplement to the work of the Intergovernmental Panel on Climate Change (IPCC).

Action

In 2010, a book aiming at an academic audience, will be launched. The book will include more detailed scientific results from the Climate Congress and will be published by Cambridge University Press. It will be an extension and elaboration of the synthesis report. A Writing Team, led by Katherine Richardson is responsible for developing the book (www.climatecongress.ku.dk).

Establishment of large research centres

In 2009, the Faculty of Science established an **Earth System Science Center** to bring researchers from different natural sciences together in order to address questions related to the functioning of the Earth. Climate is a major focus of the Earth System Science Center, which aims to be an umbrella for the disciplinary research centres (<http://www.science.ku.dk/essc>).

Besides this, University of Copenhagen hosts the following larger research centres, where high-level research with focus on aspects of climate change takes place:

Centre for Ice and Climate is a centre of excellence at the Niels Bohr Institute, University of Copenhagen. The centre's main activities are drilling of ice cores through the Greenland ice sheet and analysis of ice cores with the objective of understanding the governing processes of past and future climate (www.iceandclimate.nbi.ku.dk/) Professor Dorthe Dahl-Jensen has further received 20 mio. DKK from the European Research Council Advanced Grants to research the water under the ice sheet on Greenland.

The **Danish Centre for Macroecology, Evolution and Climate** is a centre of excellence, which seeks to discover, describe and explain temporal and spatial patterns of biological variation and how this relates to climate in the past, present and future. The centre will start 1st of January 2010 (<http://macroecology.ku.dk/>).

Copenhagen Center for Atmospheric Research (CCAR) conducts research related to the interaction between atmospheric chemistry and climate (<http://chem.ku.dk/research/ccarl>).

The **Waterworlds** research project, is funded by a European Research Council Advanced Grant on 23 mio. DKK to professor Kirsten Hastrup, Department of Anthropology. Waterworlds focuses on natural environmental disasters and social resilience in anthropological perspective. The ambition is to study local, social responses to environmental disasters related to water.

The **Danish Centre for Regional Change in the Earth System (CRES)** is a climate research centre regarding protection of Danish coasts against coastal erosion and rising sea levels. CRES will have the important tasks of acquiring more fundamental knowledge about future climate conditions, and supplying regions and municipalities with new knowledge that can help them deal with climate change. The Faculty of Life Sciences and the Niels Bohr Institute are partners.

University of Copenhagen is part of two **VKR Centres of Excellence**, which conduct cross-disciplinary research within the field of climate change: 1) Centre on Biological Effects of Climate Change - CLIMAITE (<http://www.climaite.dk/index.htm>), and 2) Centre for catchment hydrology - HOBE (<http://www.hobecenter.dk>).

Action

It is the aim to continue and expand the success of centres of excellence in future calls for funds.

International climate research programme

In October the Challenge Programme **Climate Change Agriculture and Food Security** (CCAFS) (www.ccafs.cgiar.org) was inaugurated at the Faculty of Life Sciences of the University of Copenhagen, the host institution of CCAFS. The CCAFS is a new 10-year research initiative launched by the Consultative Group on International Agricultural Research (CGIAR) and the Earth System Science Partnership (ESSP). CCAFS seeks to overcome the threats to agriculture and food security in a changing climate, exploring new ways of helping vulnerable rural communities adjust to global changes in climate.

Climate honorary professors

University of Copenhagen has appointed 17 prominent, foreign, climate researchers to be honorary professors as part of the university's primary focus on climate research and climate change. The honorary professors are appointed for five years. The 17 professors cover a broad reach of climate research; from law issues to health sciences and from atmospheric research to the challenge of transpor-

tation. Climate change is not an isolated research area, but a general and global problem, which needs co-operation between many subject areas. The professors visit the university in turn, where they among other things will give Climate Lectures.

3.2 EDUCATIONAL PROGRAMMES

The demand for educational programmes within climate change is growing and it is expected that the successful Climate Congress, March 2009, as well as upcoming climate change events will make the University of Copenhagen known as a university of green visions, sustainability and climate change. Education in climate is an integral part of many educational programmes and the university already offers a range of relevant courses within sustainability and climate change. In the coming years, the university will expand its portfolio of climate change and sustainability related educational programmes.

Actions

Launch of new MSc programme in Climate Change: Impacts, Mitigation and Adaptation

To capture the demand for a coherent educational climate change programme, University of Copenhagen will launch a new MSc in Climate Change: "Climate Change: Impacts, Mitigation and Adaptation" in 2010. The MSc will be in English and will have an expected minimum uptake of 40 national and international students. The programme will be hosted by the Faculty of Science, developed in conjunction with the faculties of Life Sciences, Social Sciences, Law, and Humanities and managed within the framework of the Earth System Science Center.

Summer schools

The University of Copenhagen annually offers summer schools within the area of climate change, and often in collaboration with other universities within IARU (<http://klima.ku.dk/sommerskoler>). The University of Copenhagen currently works on expanding summer school activities and aims at creating a summer school campus with courses for national and international students, as well as continuing education courses.

Continuation of the EnvEuro MSc programme

EnvEuro is a two-year Master in Environmental Science, offered by the University of Copenhagen and three other leading European universities. The MSc is focused on soil, water and biodiversity and features an introduction to environmental science, six different specialisations, and finally a Masters thesis in environmental science (<http://www.enveuro.eu/>).

E-learning course in Climate Change Impacts, Adaptation and Mitigation

The University of Copenhagen, Faculty of life sciences has launched a new interdisciplinary 15 ECTS E-learning course: "Climate Change Impacts, Adaptation and Mitigation". The course is offered by the University of Copenhagen in close cooperation with the Danish Meteorological Institute, UC Berkeley and Australian National University. Focus of the course is climate change impacts and the human response to climate change. The course is developed by a team of teachers who are international experts within their respective disciplines, including four members of the Intergovernmental Panel of Climate Change (IPCC). Through distance learning the course can be followed from everywhere in the world and it is open for MSc students and continuing education students with a relevant BSc background in natural science, social science and economics (www.climate-change.dk).

Global Environmental Governance (GEG)

The University of Copenhagen has developed a cross-faculty specialization in Global Environmental Governance (GEG) as a joint initiative by the faculties of Life Sciences, Social Sciences, Law, and Science.

3.3 COOPERATION AND NETWORKS

3.3.1 International cooperation and networks

The International Alliance of Research Universities

The University of Copenhagen is member of the International Alliance of Research Universities (IARU). IARU consists of ten of the world's leading research universities – Australian National University; ETH Zurich; National University of Singapore; Peking University; University of California, Berkeley; University of Cambridge; University of Copenhagen; University of Oxford; The University of Tokyo; and Yale University. The IARU will combine its educational objectives with top quality and shared research that addresses many of the major issues that confront us wherever we live on this planet. It will bring new opportunities for research, teaching and learning that is truly global in scope. IARU activities include scientific congresses, research collaborations, joint international summer schools, joint efforts on greening universities etc, often with a focus on climate change and its challenges in a broad perspective (<http://www.iaruni.org>).

International Climate Change Information Programme

The University of Copenhagen is a founding partner of the International Climate Change Information Programme (ICCIP), which will be launched in November 2009. The aim of ICCIP is to promote education, information and training on matters related to climate change worldwide. It will fill in a perceived gap for an international programme which goes over and above the current activities and focuses on educational aspects of climate change, matters which have in the past been largely overlooked. ICCIP is a university-driven programme, seated at Hamburg University of Applied Sciences, which will involve cooperation with universities, government agencies, ministries and other organisations active in the field. Partner universities are active in climate change education. ICCIP will be running in the coming 5 years (<http://www.iccip.net/>).

Copenhagen Global Change Initiative (COGCI)

Through this initiative the University of Copenhagen has carried out PhD training of both national and foreign students in Earth System Science related topics since 1999. The COGCI PhD school is an integrated part of the ESSC (www.cogci.dk).

3.3.2 National cooperation and networks

The Coordination Unit for Research in Climate Change Adaptation (KFT)

The Coordination Unit for Research in Climate Change Adaptation (in Danish: Koordineringssenhed for Forskning i klimaTilpasning - KFT) is a joint endeavour by the National Environmental Research Institute at the Aarhus University, Denmark's Meteorological Institute, the Geological Survey of Denmark and Greenland (GEUS), University of Copenhagen and the Technical University of Denmark (www.klima.au.dk/dk/om-klimaaudk/kft). The coordination unit aims to collate and transfer knowledge within all Danish (and international) research areas that work on the issue of climate change adaptation, and to help coordinate information access at the science-policy interface. The main objectives of the Coordination Unit for Research in Climate Change Adaptation are to:

- coordinate national-level research activities on adaptation to climate change
- facilitate research synergies and identify knowledge gaps
- support transfer of knowledge
- collate authoritative data on climate change and impacts
- foster national and international networks

Cooperation with business

Increased cooperation with business on climate change and sustainable development is a priority for the University of Copenhagen. The IARU international scientific congress on climate change in March resulted in a positive partnership with a number of Danish companies. The University of Copenhagen will, within this strategy, explore the possibilities to continue these partnerships and establish new partnerships with business.

Action

The University of Copenhagen will establish a team to explore further the possibilities of increased cooperation with business and contact a number of companies to secure partnerships on climate change and sustainable development.

Uniclimate cooperation

Uniclimate is a climate cooperation forum established by the three largest universities in Denmark; University of Copenhagen, Aarhus University and the Technical University of Denmark (DTU). The aim is to coordinate climate initiatives, activities, and research between three universities in relation to the upcoming COP 15 in Copenhagen in December 2009. Examples of activities coordinated within Uniclimate are:

- The Energy- and Climate workshop series, 2008-2009, DTU
- Summer schools which include courses from all three universities, beginning summer 2009

Green Network

The Green Network is a student organisation at the University of Copenhagen, and speaks on behalf of the university's four green student unions: Union of Natural Resource Students, Green Agenda, and Danish Society for Nature Conservation at University of Copenhagen, and the Students Council. The students actively engage in making the University of Copenhagen greener and more sustainable to meet future challenges. Since its start in June 2007 the network has organized sustainable intro-weeks at

the Faculty of Life Science, several debating sessions, a national seminar about sustainability at university level, published many political papers and features in magazines and newspaper. The goal is that Copenhagen University in the near future will be a leading university within sustainability science, education in sustainability at BSc, MSc and PhD-level, community outreach, and not least in everyday life at university (www.2.bio.ku.dk/ign/English).

Action

The University of Copenhagen will continue to participate actively in international and national cooperation and networks regarding climate change.

3.4 GREEN CAMPUS STRATEGY

The University of Copenhagen is striving to become one of the greenest campus areas in Europe. The campus includes a large experimental farming area in Taastrup and an Arboretum at Hørsholm, which acts as sinks for CO₂, which contributes positively to the carbon balance of the university. The university makes up for a substantial part of Copenhagen, taking up a total of one million square meters of building. The university has established its energy consumption (green account) in cooperation with its IARU partners. The university's board has laid down a policy on how to reduce energy consumption and CO₂ emissions.

Actions

An essential part of the Green Campus strategy (www.climate.ku.dk/green_campus) is to reduce the energy consumption and CO₂ emissions by 20% by 2013. Other initiatives include:

- Identification and realization of energy reducing projects
- Green behaviour by students and staff, e.g. a campus wide energy conservation campaign, e.g. "Green Action", a campaign for energy-efficient behaviour.

- Sustainable campus; new buildings, renovation and maintenance, e.g. Green Lighthouse (www.greenlighthouse.ku.dk)
- Green purchasing and green IT
- Engagement and collaboration with internal and external partners
- Global cooperation, through IARU and International Sustainable Campus Network (ISCN)
- Actions for CO₂-reductions of travelling, transport, and food consumption

3.5 PUBLIC OUTREACH PROGRAMMES

Copenhagen Climate Lectures -> University of Copenhagen 'Globalization & Sustainability Lectures

In January 2008, University of Copenhagen launched the Copenhagen Climate Lecture series. Here, students and the public are given direct access to some of the most influential politicians, researchers, business representatives, and NGO's in the climate debate. The lectures are held in the University's Ceremonial Hall on Frue Plads. The purpose of the series is to present a broad overview of the many aspects within the climate change debate by influential people, who deal with climate change issues on a daily basis. The series is part of the run-up to the COP15 in December in Copenhagen 2009, and will continue until then (www.climate.ku.dk/climate_lectures).

Action

Based on the success of the Copenhagen Climate Lectures, initiatives have been taken to start up a new lecture series to start in 2010. The idea is to invite great persons from all over the world to stimulate debate and contribute to our perceptions of the interplay between man, nature and society, including possible solutions for sustainable development in a globalised world. Examples of possible lecturers are: Sir Nicholas

Stern, Madeleine Albright, Muhammad Yunus, Wangari Maathai, Georges Monbiot, Bishop Desmond Tutu, Al Gore, Dr. Angela Merkel, Inge Genefke, and Per Pindstrup-Andersen. The Globalization & Sustainability Lectures are expected to inspire to an innovative environment for research and education, and, at the same time, strengthen the profile of University of Copenhagen as an internationally leading university with focus on sustainable development.

ILT – Green Urban Structures

The University of Copenhagen is exploring the possibilities of joining the "ILT – Green Urban Structures" initiative, developed by SHL Architects and the concept and communication company Cumuli. The vision of the initiative is to gather and brand all innovative Danish forces on green technology, knowhow and knowledge.

Action

In order to further promote the University of Copenhagen as a leading international university on sustainability and climate change, it is envisaged to use Green Lighthouse and involve the university's leading researchers on sustainable and climate friendly cities in this initiative. This includes promotion activities at the EXPO 2010 in Shanghai from May to November 2010.

KU – Yale student cooperation

The University of Copenhagen and Yale University invites students to participate in a groundbreaking collaborative project on climate change during COP15. Teams of students from all over the world will suggest ways that they and their universities can minimize harmful impacts and seek solutions.

Action

A web-portal hosted by Yale University will assist in tracking the goals and achievements of participating universities. The aim is to present the results at COP 16.

