



Centre for Climate
and Energy Transformation

ANNUAL REPORT 2021



Actionable knowledge for transformation.

About CET

Climate change is one of the greatest societal challenges of our time. While we have acquired substantial knowledge about physical climate changes and their impacts on society, new knowledge is still needed on how to achieve deep, rapid and sustainable transformation of society.

Climate and energy transition is one of three priority areas at the University of Bergen (UiB). The Centre for Climate and Energy Transformation (CET) was established in 2016 by the Faculty of Social Sciences as a hub for interdisciplinary research with a basis in the social sciences in this area. CET brings together researchers from three partner institutions - the University of Bergen, NORCE Norwegian Research Centre AS and NHH Norwegian School of Economics.



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WORDS FROM THE DIRECTOR



Håvard Haarstad

CENTRE DIRECTOR



In 2022, CET will celebrate its five-year anniversary.

Although the centre came to life earlier, as a network between climate-interested researchers, it was in October 2017 that the centre was officially launched. It has been five years of hard work, but speaking for myself at least, the work has been very rewarding.

Looking back at five years of existence, we are reminded in particular of the great colleagues who we are fortunate to have had the chance to collaborate with. Master's students, visiting researchers, PhD candidates and others who stayed with us for a time, and then moved on to do great work elsewhere. It is the predicament, but perhaps partly also the good fortune of academia that people move around.

Maybe the biggest achievement a research centre can have is to give its students and colleagues capacities to be transformative wherever they go next. Emphasising this ambition, in this annual report we highlight how CETlers moved on to new jobs the past year. We also highlight an achievement in education that we are really proud of – the University's top prize for educational quality (Ugleprisen) to the Collaboratory and the course CET201 Sustainable Innovation.

Over these five years, CET has grown into an active and well-established research environment. Last year we had the first PhD defence for a candidate that started on a CET project – Kristin Kjærås, and the rest of the 'first generation' of PhDs are about to complete their theses. We are partners in a range of research projects, and our researchers are visible and engaged in science communication and public debate. Our regular seminars draw participants from across disciplines. I am confident that we have become 'mature' as a centre, thanks to the hard work from both the core group and from important contributions from the wider network.

Nevertheless, working on climate change means that any sense of achievement is temporary. In the world around us, climate action in line with the Paris Agreement does not appear to be on the horizon.

We aim to do better research and to communicate it better. We must do a better job of creating actionable knowledge for advancing climate action – in ways that respond to the urgency of the situation and the need for justice.

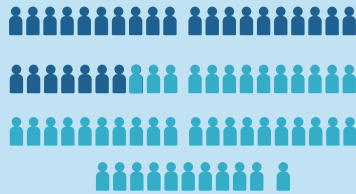
An annual report is necessarily retrospective. But it is also an opportunity to take stock of our direction, including blind spots and possibilities for improvement. Thanks to all involved, for collaborations, ideas, discussions, writings, and organising!

People

71

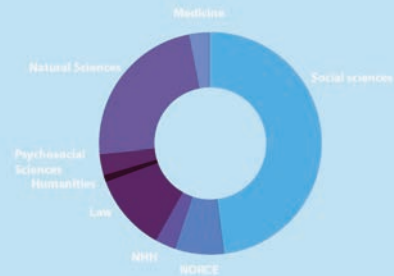
Affiliated
researchers

Gender balance



38% Female 62% male

Interdisciplinarity



7

New
researchers

Research

9

Projects
running

ROLES
CINTRAN
DEMOCLIM
CITYFREIGHT
KLIMABUDSJETT 2.0
VARCITIES
MANIFEST
ASSET
MUCS

2

Research school
partnerships

EMPOWERED
FUTURES
HYSCHOOL

Knowledge & Outreach



62

Scientific
publications



34

Engagements
in media

34

CET Lunch Seminars
& Events

Actionable knowledge

Informing policy and practice

Co-production

Strong stakeholder engagement



PEOPLE

Senior research capacity

CET continues to actively strengthen its senior research capacity. Senior researchers engage in project proposal development, supervision, and contribute to the academic environment at CET.

In 2021 CET collaborated with the Department of Information Science and Media Studies for a permanent position as an associate professor.

Silje Kristiansen accepted the position in November 2021. She will start in July 2022 and have her office at CET.

Simon Neby is employed in a permanent position in collaboration with CET and the Department of Administration and Organization Theory. In 2021 he advanced from Associate Professor to Professor.



Simon Neby
Professor



Silje Kristiansen
Associate Professor



Corbett Grainger
University of
Wisconsin-Madison
Associate Professor II
2019 - 2022



Jessica Jewell
Chalmers University
of Technology
Professor II
2020 - 2022



Kevin Anderson
University of Manchester
Professor II
2020 - 2023



Siddharth Sareen
University of Stavanger
Associate Professor II
2020 - 2023

Recruitment positions



From left: Tsimafei Kazlou, Mahir Yazar, Shayan Shokrgozar and Subina Shrestha. Devyn Remme and Ida Sekanina was not present. Photo: Janne Bjørgan

Due to externally funded project grants we could welcome several new colleagues in 2021, and in the beginning of 2022.

Four new PhD fellows started at CET:

- Shayan Shokrgozar is employed on the ASSET project. Started August 2021.

- Subina Shrestha is employed on the CITYFREIGHT project. Started September 2021.
- Tsimafei Kazlou is connected to the MANIFEST project. Started September 2021.
- Devyn Remme is employed at CET through funding from the priority area Global Challenges. Started November 2021.
- Ida Sekanina is employed on the MUCS project. Started January 2022.

We also have one new postdoctoral fellow:

- Mahir Yazar is employed on the CINTRAN project. Started October 2021.

Two research assistants were engaged fall 2021, Ronya Reitan Solberg and Sofie Jordheim working with the Beyond Oil conference. Ronya will return to CET in 2022 as a research assistant on the projects DEMOCLIM and VARCITIES.

CETlers move on

An important function of our centre is to provide our researchers with the competence to serve in positions inside and outside of academia, and we are proud to see that people from CET are moving on to important and relevant jobs.

As reported last year, our PhD candidate Stina Oseland is now director of the Climate Agency in Bergen municipality, currently working on the city's new climate strategy. In 2021 other CETlers have been recruited to the Climate Division: Katinka Wågsæther and Kjersti Hogsbro.

Kårstein Måseide, former research coordinator at CET, is now Department Director at CICERO in Oslo. He leads the research department that includes the research groups Climate system, Impacts, and Mitigation.

Tarje I. Wanvik was in December 2021 named as the new Head of the Planning Agency in Bergen

municipality. Wanvik was one of the initiators of the research group SpaceLab, which merged into CET. After completing his PhD he had a postdoc position in the TMS-funded project *European Cities*.

Eleanor Johnson, worked as a research assistant at CET working for the TMS project *European cities* and for the CET Secretariat. Now she is a researcher for the Sustainability Lab at the University of Oslo, developing their communication strategy and conducting sustainability research. At the same time, she has maintained publication collaborations with CET researchers.

Kristin Kjærås defended her PhD as part of the TMS project in November 2021, with a thesis on compact city policies in Oslo and beyond. She moved to Oslo to take up a position as special advisor for the capital's City Council Committee for Urban Development.

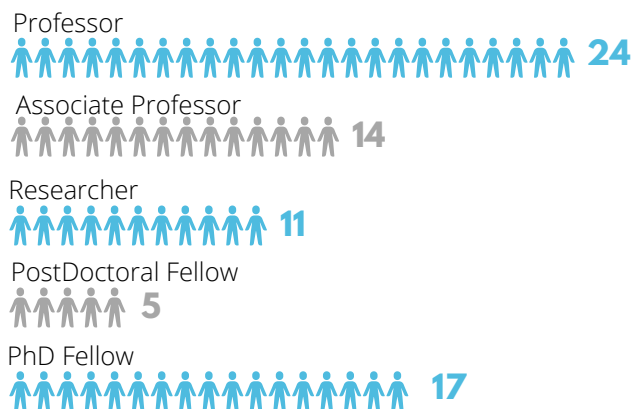
Affiliate research network

At the end of 2021, there were 71 researchers affiliated with CET. Most of the affiliates are at the University of Bergen, predominantly the Faculty of Social Sciences and Faculty of Mathematics and Natural Sciences.

The continuation of COVID-19 has made engaging with the affiliated network difficult as meetings and forums have been organized online. Luckily, we got the chance to see many of them in person at the Beyond Oil conference in October, and we are hopeful that 2022 will bring more opportunities to meet.

The weekly digital CET Lunch Seminars have been the main meeting point for CET affiliates. These meetings are highly attended, and we are very thankful for our research network.

2021 brought with it the possibility to again welcome visiting researchers. Annina Thaller from the University of Graz spent three months with us in the fall. While she was here she submitted her PhD thesis and worked together with CET researchers Jesse Schrage and Jakob Grandin on their joint project TRANSFLIGHT.



TOTAL: 71

RESEARCH

Project grants 2021

CET is partner in several successful project proposals:

- *The global implications of Norway's electric car revolution* (Global Challenges, UiB), led by Håvard Haarstad, CET/UiB.
- *LOCALNET – Local Climate Change Narratives in Turkey Toward Effective Local Climate Actions* (Centre for Applied Turkey Studies), led by Mahir Yazar, CET/UiB.
- *Empowered Futures: A Global Research School Navigating the Social and Environmental Controversies of Low Carbon Energy Transitions* (RCN), led by John Andrew McNeish, NMBU.
- *HySchool – Norwegian research school on the use of hydrogen and hydrogen-based fuels as energy carriers in industry and society* (RCN), led by Trygve Skjold, UiB.
- *TRANSFLIGHT – Shaping the future of air travel* (Klima- und Energifonds), led by Alfred Posch, University of Graz.

- *EcoLogic – The Logic of Measuring, Managing and Governing Ecosystems* (RCN), led by Gisle Andersen, NORCE.

Partnerships

CET is represented in several leadership groups at UiB and other institutions:

- Noradapt – Norwegian Research Centre on Sustainable Climate Change Adaptation
- BOW – Bergen Offshore Wind Centre
- CeSam – Centre for Sustainable Area Management
- BSGS – Bergen School of Global Studies
- Arqus Alliance
- Klimanøytralt UiB
- The Norwegian Board of Technology

A full list of projects at CET is available in **Annex 4**.

Running projects



DEMOCLIM

Cities confronted by protests: Democratic governance for efficient and socially just climate transformation. Led by Hege Hofstad, OsloMet. RCN.

Highlights from the project:

- Mapping of protest movements in case cities.
- Analysis of how protest movements influence city governance.



ROLES

Digitalisation of energy infrastructure can enhance sustainable energy use. Led by Siddharth Sareen, CET/University of Stavanger. RCN.

Highlights from the project:

- How digitalisation can enable electric mobility, smart charging, renewable energy integration and energy monitoring for low-carbon energy systems.
- Analysis of ongoing digitalisation in mid-size European city-regions



CINTRAN

Carbon Intensive Regions in Transition - Unravelling the Challenges of Structural Change. Led by Lukas Hermwille Wuppertal Institute. H2020.

Highlights from the project:

- Analysis of how the rise of populist movements are linked to coal phase-out
- How can transitions in carbon-intensive regions be more just and inclusive?

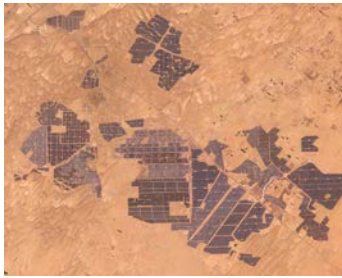


Photo: Modified Copernicus Sentinel data 2020; 2020-05-20, Sentinel-2A L1C, True color

ASSET

Accountable Solar Energy Transitions

Led by Siddharth Sareen, CET/University of Stavanger. RCN.

Highlights from the project:

- How do accountability relations affect rapid energy transition?
- Combines ethnographic methods with an explicitly comparative research design in Portugal and Rajasthan.



Photo: Jesse Schrage

KLIMABUDSJETT 2.0

How can municipalities and regions make the next generation of climate plans?

Led by Hans Jakob Walnum, Vestlandsforskning. RCN.

Highlights from the project:

- Developing Paris-compliant mitigation pathways for Norwegian municipalities.
- Workshops with users in municipalities to implement the budgets.



Photo: Colourbox.com

CITYFREIGHT

Improving the competence base for sustainable logistics operations in cities,

Led by Stein Wallace, Norwegian School of Economics (NHH). RCN.

Highlights from the project:

- Identify existing legal frameworks, identify barriers and propose changes.
- Build capacity through co-production of knowledge within relevant public and private sector organisations.



Photo: Manifest website

MANIFEST

Mapping the Future for Feasible Climate Action.

Led by Jessica Jewell, Chalmers University and CET. ERC.

Highlights from the project:

- Advance understanding of whether and under what conditions it is feasible to avoid dangerous climate change.
- Assessing socio-political and technological constraints in different countries and regions.



Ill.: White arkitektur

VARCITIES

Visionary nature-based actions for wellbeing & resilience in cities.

Led by Dionysia Kolokotsa, Telecommunication System Institute (TSI). EU Horizon 2020.

Highlights from the project:

- CET and UiB partners are researching participation and co-production of solutions.
- Understanding how to use nature-based solutions for urban climate resilience.



Photo: Colourbox.com

MUCS

Media Use in Crisis Situations: Comparing Climate Change and COVID-19

Led by Brita Ytre-Arne, UiB. RCN.

Highlights from the project:

- Collaboration between media studies, human geography and journalism studies.
- Analysing how people in Norway encounter these issues in everyday life and in the media.

CET ACCELERATOR

CET Accelerator grants 2021

CET continues to support research communication and research project development through our CET Accelerator funding.



Jesse Schrage

Project: *Climate Budgeting for climate action: charting mitigation options in Norwegian and Swedish municipalities*

Grant type: Ideas and Communication



Devyn Remme

Project: *Bussbrukernes Landsforening: Art-Science-Activism for mobility justice*

Grant type: Ideas and Communication

CET Accelerator projects completed 2021

Anand Bhopal and Emily McLean

Project: *Decarbonising Healthcare*

Grant type: Ideas and Communication

Decarbonising Healthcare (Grønt helsevesen) worked towards reducing the environmental impact of the Norwegian health care system. The project brought together researchers, policymakers, clinicians and leaders working towards reducing the carbon emissions from the sector. The work drew on existing studies and resulted in the report *A Green Transition in the Norwegian Health Sector: charting pathways to a climate-neutral sector*.

The report launch in October 2021 was covered by Nyhetsmorgen, NRK and resulted in engagement from Norwegian newspapers and media, as well popular science outlets, and it contributed to a parliamentary hearing on a climate plan for the Norwegian health sector.



Esmeralda Colombo

Project: *Climate risk and democratic energy policies*

Grant type: Ideas and Communication

During Klimafestivalen §112 Bergen 2021, CET launched a podcast series on *Climate Risk and Democratic Energy Policies: Climatenergy Talk!* It's a special three-part series, and host Esmeralda Colombo engages in conversation with researchers with the aim to communicate to the larger public on the role of science – the social and natural sciences – for depolarizing and democratizing energy policies.

Siddharth Sareen

Project: *Norwegian Energy POVerty*

Grant type: Seed funding

The project studied the intersection of domestic energy poverty and transport energy poverty, referred to as double energy vulnerability in the context of Norwegian cities. It looked at double energy vulnerability in relation to urban housing, mobility and low-carbon energy transition policies. The work gathered researchers to three workshops, and has resulted in the article *Double energy vulnerability in the Norwegian low-carbon urban transport transition* and an ERC Starting Grant application.

BEYOND OIL 2021



CET's centre leader Håvard Haarstad opening Beyond Oil 2021. Photo: Thor Brødreskift

The fourth edition of CET's Beyond Oil conference gathered 120 researchers the 20th and 21st of October.

The conference was our first attempt at a hybrid conference. As always, we were located at Litteraturhuset and covid restrictions were lifted just in time for us to be able to fill the venue with researchers – from master students to professors. At the same time, those who couldn't travel to Bergen logged in from their workplace or homes to watch and comment on keynotes and sessions.

After some lovely music by Ingrid Horvei Lyslo, CET's centre leader Håvard Haarstad opened the conference. His quote of Leonard Cohen to frame the conference is one of the many highlights to remember from Beyond Oil 2021. From there we went straight to the first keynote with Kim Nicholas and Charles Ogunbode, and the conference was underway!

With over 60 researcher presentations in the program, we also set a record with 15 sessions. The theme of this year's conference was *Prioritizing climate action*, and with sessions titles including:



Decarbonising the energy sector, Space and time dimensions and *Portrayals of public concern* to name a few, there was something for everyone.

The feedback from our audience has been very positive – from the program to the way we conduct our sessions with short presentations, giving ample time for discussion. It was easy to see that those at Litteraturhuset really enjoyed meeting people face to face again, and those participating digitally reported that the set-up worked well. Due to restrictions most of our keynotes participated virtually too, and several sessions were fully digital or hybrid too.

There's always something to learn, but we are very happy with how it turned out. We had a great collaboration with Litteraturhuset – who organized all the technical aspects on site, and Aprilil – who ran our digital platform. It's safe to say that Beyond Oil 2023 will be a hybrid conference!

Everyone at CET was involved in making Beyond Oil 2021 in one or many ways, from moderating keynotes and sessions, to reading abstracts and making the programme. A special thanks go to researcher Thea Gregersen who was project leader for the conference, and research assistants Ronya Solberg and Sofie Jordheim.

From top (all photos by Thor Brødreskift):

- Brooke Wilkerson (left) and Ronya Solberg are ready for registration.
- Parallell session underway! All sessions were streamed.
- Right: Camilla Houeland (UiO) and Shayan Shokrgozar (CET) in keynote session with Stuart Capstick (Cardiff) on stream.
- Left: Brooke Wilkerson (CET) moderating keynote session with Charles Ogunbode (Nottingham) and Kim Nicholas (Lund) on stream.
- Right: The Beyond Oil committee.
- Left: Well behaved audience all throughout the conference.



PUBLICATIONS

CET and its affiliates have published 62 scientific articles, been involved in 34 media publications and published several reports and policy briefs. Here we highlight some that show the scope of our research activity.



Photo: Bærekraftige liv, Landås

Lokal nabolagsorganisering - erfaringer fra Bærekraftige liv

The first CET report made looks at how Bærekraftige liv at Landås, Bergen succeeded in engaging and organising the neighbourhood in sustainability oriented activities. The goal is to give advice and tools so others can learn and start up their own communities.

Wågsæther, K., and H. Haarstad. 2021. *Lokal nabolagsorganisering - erfaringer fra Bærekraftige liv. CET-rapport 01/21. Senter for klima og energiomstilling, Universitetet i Bergen.*



Photo: Dimityr Antikin/Unsplash

National growth dynamics of wind and solar power compared to the growth required for global climate targets

Climate mitigation scenarios envision considerable growth of wind and solar power, but scholars disagree on how this growth compares with historical trends. Here we fit growth models to wind and solar trajectories to identify countries in which growth has already stabilized after the initial acceleration.

Cherp, A., Vinichenko, V., Tosun, J. et al. *National growth dynamics of wind and solar power compared to the growth required for global climate targets. Nat Energy 6, 742-754 (2021).*



Photo: From publication

Using collaborative hackathons to coproduce knowledge on local climate adaptation governance

While coproduction of knowledge is growing in popularity in social sciences, and especially climate change research, we still need to better understand how to coproduce climate knowledge. In this paper, we explore how collaborative climate hackathons coproduce local adaptation knowledge, and what this method reveals about local climate governance.

Kvamsås, H., S. Neby, H. Haarstad, M. Stiller-Reeve, and J. Schrage. 2021. "Using collaborative hackathons to coproduce knowledge on local climate adaptation governance." *Current Research in Environmental Sustainability 3*, 100023.



Photo: colourbox.com

Disentangling justice as recognition through public support for local climate adaptation policies: Insights from the Southwest US

Engaging environmental and public policy behavior and recognition justice approaches, we argue people's support for urban climate policies reveal certain vulnerable communities' lack of recognition in local adaptation decision-making processes.

Yazar, Mahir, and Abigail York. 2022. "Disentangling justice as recognition through public support for local climate adaptation policies: Insights from the Southwest US." *Urban Climate 41*, 101079.



Photo: Erik Odlin/Unsplash

Network-led advocacy for a green shipping transformation: A case study of governance networks in the Norwegian maritime sector

This article studies how the cluster organization Norwegian Centre of Expertise Maritime CleanTech and the public-private partnership named the Green Shipping Programme have developed, gained influence in policymaking, and are now taking part in governing a transition toward low- and zero-emission shipping.

Hessevik, Agnete. 2021. "Network-led advocacy for a green shipping transformation: A case study of governance networks in the Norwegian maritime sector." *Regulation & Governance*.



Photo: Colourbox.com

Hva Støre må gjøre for å lykkes med rettferdig omstilling

Climate mitigation scenarios envision considerable growth of wind and solar power, but scholars disagree on how this growth compares with historical trends. Here we fit growth models to wind and solar trajectories to identify countries in which growth has already stabilized after the initial acceleration.

Sareen, S. 2021. *Hva Støre må gjøre for å lykkes med rettferdig omstilling*, *Stavanger Aftenblad*, 11 September 2021.

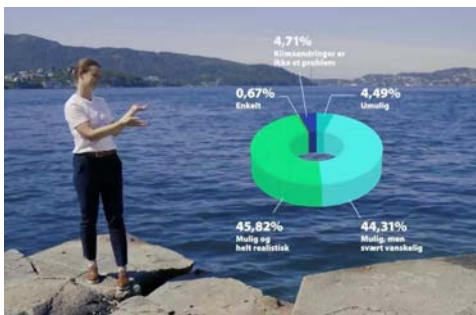


Photo: UIB

Norske klimaholdninger: Three videos on climate attitudes and worry, efficacy beliefs and psychological distance

CET researcher Thea Gregersen is part of the Climate and Environment research cluster at Norsk Medborgerpanel, and in 2021 they were granted money to a dissemination project on climate attitudes. The project resulted in three videos and an infographic designed to reach a wide audience.

Gregersen, T., Böhm, G., Elgesem, D. 2021. *Norske klimaholdninger - tre videoer om klimaholdninger og bekymring, mestring og psykologisk distanse*. Norsk medborgerpanel/DIGSSCORE 20.12.2021.



Photo: Fornyvol/Unsplash

Sustainability-oriented innovation: Improving problem definition through combined design thinking and systems mapping approaches

We designed and tested a new approach for eliciting and defining problems for SOI. Our work shows that using systems mapping in the problem definition phase of SOI helps set adequate boundaries for the problem space and increases understanding of how the system influences itself over time.

Wilkerson, Brooke, and Lars-Kristian Lunde Trellevik. 2021. "Sustainability-oriented innovation: Improving problem definition through combined design thinking and systems mapping approaches." *Thinking Skills and Creativity* 42, 100932.

EVENTS

Yet another virtual year

We started the year with well attended and successful workshops at the SDG Bergen Day Zero event in February.

Due to the digital format of the SDG conference the workshops were attended from both Bergen and beyond making it a global event.

Håvard Haarstad was invited to interview Daria Gritsenko for the 2021 Nils Klim Conversation on her background and research in the intersection between political science, environmental studies and digital humanities.

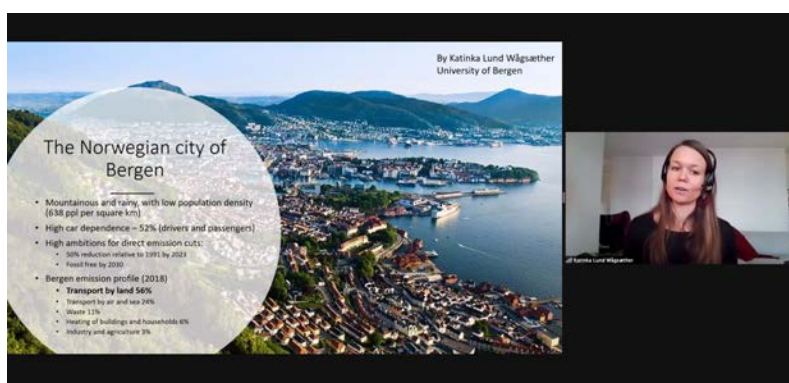
The summer and autumn was devoted to the national elections where Håvard moderated two political debates, challenging the politicians on questions concerning oil and gas extraction, urban growth, and the green transition to name a few.

Collaboratory leader and CET researcher Jakob Grandin similarly challenged academia on educational methods in light of the climate emergency in the Bergen School of Global Studies panel debate *The Emerging Climate Emergency: What Now for University Education?* together with Roger Stand, Runa Falck, and leader of Student Society Lea Andrea Igland Røys.

Our regular CET Virtual Lunch seminars continued to be highly attended all year, both from the university sector and outside. In the fall we had some hybrid seminars before another lockdown sent us back to the virtual space.

See Annex 5 for the full list of events.

From top: Politician debate at Klimafestivalen, Climate and Environment Minister Sveinung Rotevatn speaking. Daria Gritsenko, the winner of the 2021 Nils Klima Award, in virtual conversation with Håvard Haarstad. Katinka Wågsæther, during a virtual Day Zero event.



CET researchers in Forsker Grand Prix



In 2021 CET could bask in the glory of CET researchers Agnete Hessevik and Thea Gregersen who were chosen to compete in Forsker Grand Prix 2021.

Forsker Grand Prix (Researcher Grand Prix) is the Norwegian championship in research dissemination. Ten PhD candidates are chosen to participate, and each has four minutes to win over judges and the audience with their research. Three of the ten go to the finals.

- It's a challenge to share the complexity of your research in four minutes without simplifying too much, but working with a manuscript in this way has given me a better understanding of my own research, says Thea Gregersen.

Thea is employed at CET and the Department of Psychosocial Science, and her research explores people's perception of climate change, and the relationship between thoughts, feelings and actions. What associations do people have when they think about 'climate change'? How do humans perceive climate change? Thea has throughout her PhD challenged herself to become a better disseminator, and Forsker Grand Prix is the ultimate scene to improve research communication.

In the weeks running up to the finale at Grand Selskapslokaler in Bergen in October 2021, the candidates were given coaching in writing manuscripts, theatre, storytelling, and presentation skills.



Thea Gregersen and Agnete Hessevik. Photo: Per Olav Sølberg

- As a participant you get individual coaching and help to develop your presentation, as well as constructive feedback along the way. Guidance on research communication in this way is something I've missed in the PhD program, says Agnete Hessevik.

Agnete is a PhD candidate at the Department of Administration and Organization Theory and is affiliated to CET through her research on energy transformation in the shipping industry.

What motivates the shipping industry to "choose green"? The answer to this and similar questions can be found in the intersection between trade and industry and politics, and Agnete's research investigates network organizations where public and private actors work together to transform shipping.

CET colleagues cheered on Thea and Agnete as physical and virtual audience.

CET's first PhD defence

In November 2021 we celebrated CET's first PhD defence.

Kristin Kjærås was the first candidate on a CET-owned project to defend her PhD. It was a strong and convincing defence, and it was duly celebrated.

Kristin's PhD thesis is titled "A Critical Geography of Compact Urbanism Urban politics of difference in Oslo". It is part of the TMS-funded project *European Cities as Actors in Climate and Energy Transformations*.

The project examines how different climate-related policies are shaped and implemented in different cities. Kristin looked at policies of urban compactness and densification - policies aiming to counteract urban sprawl and the expansion of suburban low-density development.

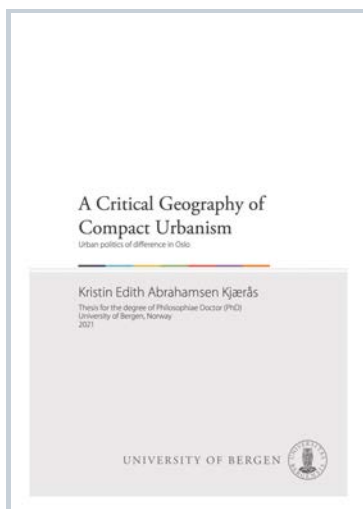
Kristin's interest has been on where alternative ideas and trajectories come from, and how actors in Oslo attempting to mobilise alternatives to draw resources from elsewhere. The thesis consisted of five papers published or under review in journals.

The opponents in the defence were Professor Colin McFarlane, Durham University, and Senior researcher Marianne Millstein, Norwegian Institute for Urban and Regional Research International Studies and Migration (NIBR).



A happy and relieved Kristin Kjærås with supervisor Håvard Haarstad. Photo: Janne Bjørgan.

The defence was followed closely by friends and colleagues in the meeting room at CET. The defence itself had to be virtual, but the support team was at least physically present next door.



Kjærås's dissertation can be read online in Bora.



Due to covid restrictions the trial lecture and public defence was carried out digitally. Photo: Janne Bjørgan

EDUCATION

Master students at CET

Fall 2020 CET welcomed a new group of master students to the centre. 11 students from 6 departments were enrolled in our Master Student Network. In February 2021 they attended the annual CET Master seminar where they presented their work to CET's researchers to receive feedback from our transdisciplinary group. A selection of their master theses is shown on the right.

In August 2021 four new students were welcomed to the centre:

- Helene Othilie Drevland Klyve, Department of Geography.
- Veera Ylipieti, Department of Geography.
- Alexander Tenvik Bergli, Department of Foreign Languages.
- Sina Storelv, Department of Psychosocial Science.

In November they were joined by Ronya Solberg, Department of Geography.

The Collaboratory

CET continues to support the UiB Collaboratory, a student-driven initiative for partnership between researchers and students to mobilize innovation in research and higher education. UiB Collaboratory won the Faculty of Social Sciences award for teaching excellence, as well as UiB's Ugleprisen.

In 2021, the Collaboratory has worked to consolidate its local projects, strengthened its contribution to various educational initiatives at UiB and developed its international partnerships. In the course CET201 Sustainable Innovation, students worked in interdisciplinary teams with cases from USF Verftet, Adepth Minerals and Bærekraftige Liv. The course was run virtually due to the COVID-19 outbreak.

27 abstracts from 15 different educational institutions across Europe and beyond were accepted for the 2021 Bergen International Student Conference (BISC) on the theme "From Crisis to Action"; around 130 people participated in the conference. The conference consisted of four plenary sessions, two workshops and a closing

Selected master theses 2021

Edvard Hviding, Department of Geography
Forus, et grått sted med en grønn historie: En casestudie av bærekraftsimplementering og interkommunalt samarbeid på Forus næringsområde, Stavanger

Kjersti Sollund Hogsbro, Department of Geography
En forbruksbasert tilnærming til klimaomstilling

Kjersti Kalberg, Department of Administration and Organization Theory
Innovasjon og utvikling i energimarkedet: En studie av markedet for solceller i Bergenregionen

Marie Louise Ljones, Department of Administration and Organization Theory
Legitimizing the International Energy Agency (IEA): An Authoritative Voice on Global Energy Policy

Devyn Remme, Department of Geography
Mind the Gap: Dynamic social inclusion and sustainable mobility in Bergen, Norway



From left: Master students Ronya Solberg, Helene O.D. Klyve, Aleksander T. Bergli, Sina Storelv and Veera Ylipieti. Photo: Janne Bjørgan

panel discussion, and eight parallel session with student presentations and discussions.

The Collaboratory has also contributed to a number of educational initiatives at UiB, e.g. the Bergen School of Global Studies and Bærekraftskollegiet. UiB Collaboratory's student-led model for interdisciplinary higher education has also been implemented internationally through the Arqus Collaboratory Programme across the 7 member universities of the Arqus European University Alliance. UiB Collaboratory was also part of the the Erasmus+ strategic partnership InternACTIONal.

UGLEPRISEN



Former student coordinator (from left) Johan Elfving and Ronya R. Solberg with leader Jakob O. Grandin, with the award. Photo: Janne Bjørgan

In fall '21 the Collaboratory went from winning the faculty of social sciences' award for excellence in higher education to winning the prestigious Ugleprisen, University of Bergen's educational award.

– It is important that we dare to think about our role as educators in new ways, said Jakob Olof Grandin, leader of The Collaboratory, in his speech.

The Collaboratory won the Uglepris for their work on student-led education in the course CET201 Sustainable Innovation and Bergen International Student Conference (BISC). Student coordinators are hired to organize and form the conference and the course.

In their statement, the award committee said: "The subject [CET201] has functioned as a laboratory for testing different pedagogical methods and how they handle questions of innovation and sustainability. On top of that, the students work interdisciplinary to develop new solutions to sustainability challenges, in close collaboration with the local business community, municipalities and society. This approach is very innovative."

One of the Collaboratory's first student coordinators, Johan Elfving, received the award together with Grandin, student coordinator Ronya Solberg and CET's leader Håvard Haarstad. The Collaboratory

Ugleprisen

- UiB's award for excellence in higher education
- Awarded by the university's Education Committee to academic environments who can document especially successful measures who increases education quality
- Two conditions are important: Results gained and cooperation between students, educators and other actors in all phases

received 100.000 NOK and were nominated to the Norwegian Ministry of Education and Research's education award.

The Collaboratory and the CET201 course is an important activity for CET. We are working to find a permanent model for the course, in collaboration with the Department of Geography and the Faculty of Social Science.



Former and present people involved in the Collaboratory. Photo: Torhild Dahl, UiB

ORGANISATION

Secretariat

In 2021 the secretariat at CET has consisted of:

- Håvard Haarstad, Director
- Nora Haukali, Research Coordinator
- Judith L. Reczek Dalsgård, Communications
- Janne Biedilæ Bjørgan, Communications

Nora Haukali started as research coordinator in May 2021, taking over from Kårstein Måseide.

Janne Biedilæ Bjørgan started in May 2021 as our temporary communications advisor, and will be with us til June 2022. Judith L. Reczek Dalsgård was on maternity leave from June 2021 until March 2022.

Håvard Haarstad was on paternity leave from November 2021 until February 2022.

CET Steering Committee

The CET steering committee consists of representatives from the partner organizations UiB, NORCE, NHH.

Steering committee 2017-2021:

- Chair: Jan Erik Askildsen, Dean Faculty of Social Sciences, UiB.
- Siri Gloppen, Dept. of Administration and Organization Theory, UiB.
- Peter Andersen, Dept. of Geography, UiB.
- Tore Furevik, Bjerknes Centre for Climate Research.
- Malin Arve, NHH.
- Ingrid Helgøy, NORCE.

From 2022 - 2025 we have a new steering committee:

- Chair: Siri Gloppen, Vice-dean for research, Faculty of Social Sciences, UiB.
- Ståle Knudsen, Dept. of Social Anthropology
- Peter Andersen, Dept. of Geography, UiB.
- Kikki Kleiven, Bjerknes Centre for Climate Research.
- Malin Arve, NHH.
- Ingrid Helgøy, NORCE.

Strategy

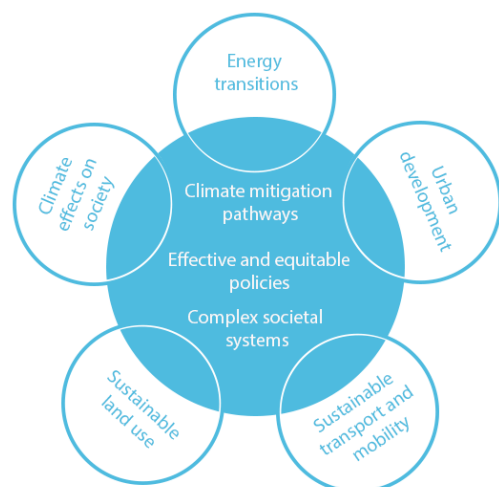
CET continues to work with the 2020-2022 strategy and the thematic priority areas shown in the diagram to the right.

In 2022 we will start working on a new strategy to further develop the goals and research of the centre.

Finances

CET receives annual allocation of NOK 6 million through the Norwegian Ministry of Education and Research. In addition, CET receives annual running costs of NOK 100,000 as well as office facilities, from the UiB Faculty of Social Sciences.

CET also receives funding from external projects as listed in annex 4.



ANNEX 1: PUBLICATIONS

CET publications

The following publications are authored or co-authored by CET affiliates, and CET is acknowledged since the project was partly owned or co-funded by CET.

Journal articles

Bhopal, Anand. 2021. "The Norwegian Oil Fund in a Warming World: What are the Interests of Future Generations?" *Ethics, Policy & Environment*.

Cherp, A., Vinichenko, V., Tosun, J., Gordon, J.A., Jewell, J. 2021. "National growth dynamics of wind and solar power compared to the growth required for global climate targets" *Nature Energy* 6: 742–754.

Geels, F.W., S. Sareen, A. Hook, B.K. Sovacool. 2021. "Navigating implementation dilemmas in technology-forcing policies: A comparative analysis of accelerated smart meter diffusion in the Netherlands, UK, Norway, and Portugal (2000-2019)." *Research Policy* 50(7), 104272.

Grandin, Jakob, and Håvard Haarstad. 2021. "Transformation as relational mobilisation: The networked geography of Addis Ababa's sustainable transport interventions" *Environment and Planning D: Society and Space* 39(2): 289-308.

Gregersen, Thea, Rouven Doran, Gisela Böhm, and Wouter Poortinga. 2021. "Outcome expectancies moderate the association between worry about climate change and personal energy-saving behaviors." *PLOS ONE* 16(5): e0252105.

Haarstad, Håvard, Hanssen, G.S., Andersen, B., Harboe, L., Ljunggren, J., Røe, P. G., Wanvik, T. I., Wulff-Wathne, M. 2021. "Nordic responses to urban challenges of the 21st century." *Nordic Journal of Urban Studies* 1(1): 4-18.

Hessevik, Agnete. 2021. "Network-led advocacy for a green shipping transformation: A case study of governance networks in the Norwegian maritime sector." *Regulation & Governance*.

Jordhus-Lier, David, Elin Børrud, Ryan Gever, Yngve Heiret, Siddharth Sareen, Eira Witsø. 2021. "Language dilemmas: six reflections." *Nordic Journal of Urban Studies* 1(2): 176-184.

Kvamsås, Hanna. 2021. "Addressing the adaptive challenges of alternative stormwater planning." *Journal of Environmental Policy & Planning* 23(6): 809-821.

Kvamsås, Hanna, Simon Neby, Håvard Haarstad, Mathew Stiller-Reeve, and Jesse Schrage. 2021. "Using collaborative hackathons to coproduce knowledge on local climate adaptation governance." *Current Research in Environmental Sustainability* 3, 100023.

Nordholm Amber, and Siddharth Sareen. 2021. "Scalar Containment of Energy Justice and Its Democratic Discontents: Solar Power and Energy Poverty Alleviation." *Frontiers in Sustainable Cities* 3.

Montes, Carlo, Nachiketa Acharya, Mathew A Stiller-Reeve, Colin Kelley, and S.M. Quamrul Hassan. 2021. "Interannual variability of monsoon onset and withdrawal in Bangladesh." *Atmospheric Science Letters* 22(11): e1069.

Rommetveit, Kjetil, Ingrid Foss Ballo, and Siddharth Sareen. 2021. "Extracting Users: Regimes of Engagement in Norwegian Smart Electricity Transition." *Science, Technology, & Human Values*.

Sareen, Siddharth. 2021. "Drivers of Scalar Biases: Environmental Justice and the Portuguese Solar Photovoltaic Rollout." *Environmental Justice*.

Sareen, Siddharth. 2021. "Energy infrastructure transitions and environmental governance." *Local Environment* 26(3): 323-328.

Sareen, Siddharth. 2021. "Legitimizing power: Solar energy rollout, sustainability metrics and transition politics." *Environment and Planning E: Nature and Space*.

Sareen, Siddharth, and Amber Joy Nordholm. 2021. "Sustainable development goal interactions for a just transition: multi-scalar solar energy rollout in Portugal." *Energy Sources, Part B: Economics, Planning, and Policy* 16(11-12): 1048-1063.

Sareen, Siddharth, Devyn Remme, and Håvard Haarstad. 2021. "E-scooter regulation: The micro-politics of market-making for micro-mobility in Bergen." *Environmental Innovation and Societal Transitions* 40: 461-473.

Sareen, Siddharth, Devyn Remme, Katinka Wågsæther, and Håvard Haarstad. 2021. "A matter of time: Explicating temporality in science and technology studies and Bergen's car-free zone development." *Energy Research & Social Science* 78.

Sareen, Siddharth, Kenneth Bo Nielsen, Patrik Oskarsson, and Devyn Remme. 2021. "The Pandemic as a Rupture that Follows Rules: Comparing Governance Responses in India, USA, Sweden and Norway." *Frontiers in Human Dynamics* 3.

Sareen, Siddharth, and Håvard Haarstad. 2021. "Decision-making and scalar biases in solar photovoltaics roll-out." *Current Opinion in Environmental Sustainability* 51: 24-29.

Sareen, Siddharth, and Håvard Haarstad. 2021. "Digitalization as a driver of transformative environmental innovation." *Environmental Innovation and Societal Transitions* 41: 93-95.

Sareen, Siddharth, and Steven A. Wolf. 2021. "Accountability and sustainability transitions." *Ecological Economics* 185, 107056.

Sovacool, Benjamin K., Andrew Hook, Siddharth Sareen, and Frank W. Geels. 2021. "Global sustainability, innovation and governance dynamics of national smart electricity meter transitions." *Global Environmental Change* 68; 102272.

Wanvik, Tarje, and Håvard Haarstad. 2021. «Populism, Instability and Rupture in Sustainability Transformations." *Annals of the American Association of Geographers* 111(7): 2096-2111.

Wilkerson, Brooke, and Lars-Kristian Lunde Trellevik. 2021. "Sustainability-oriented innovation: Improving problem definition through combined design thinking and systems mapping approaches." *Thinking Skills and Creativity* 42, 100932.

Wilkerson, Brooke, Eduard Romanenko, and David N. Barton. 2022. "Modeling reverse auction-based subsidies and stormwater fee policies for Low Impact Development (LID) adoption: a system dynamics analysis." *Sustainable Cities and Society* 79, 103602.

Yazar, Mahir, and Abigail York. 2022. "Disentangling justice as recognition through public support for local climate adaptation policies: Insights from the Southwest US." *Urban Climate* 41, 101079.

Books and Book Chapters

Bisello, Adriano, Daniele Vettorato, Håvard Haarstad, and Judith Borsboom-van Beurden, eds. 2021. *Smart and Sustainable Planning for Cities and Regions: Results of SSPCR 2019*. Bolzano, IT: Springer International Publishing.

Sareen, Siddharth. 2021. "Scalar biases in solar photovoltaic uptake: Socio-materiality, regulatory inertia and politics" in *Dilemmas of Energy Transitions in the Global South: Balancing Urgency and Justice*, eds. Ankit Kumar, Johanna Höffken, Auke Pols. London: Routledge.

Policy briefs and reports

Bhopal, Anand, Sara Soraya Eriksen, Sofie Haugan Shrivastava, Leo Larsen, Emily McLean. 2021. Grønn omstilling i norsk helsesektor: Med kurs mot en klimanøytral sektor. <https://www.gronthelsevesen.org/>

Wågsæther, Katinka, and Håvard Haarstad. 2021. Lokal nabolagsorganisering - erfaringer fra Bærekraftige liv. CET-rapport 01/21. Senter for klima og energiomstilling, Universitetet i Bergen.

ANNEX 2: MEDIA OUTREACH

CET media outreach

The following is an overview of media and public outreach by CET affiliates.

Bhopal A, Eriksen SS. 2021. Helsearbeidere slår alarm: Den norske helsesektoren trenger en klimaplan, *Forskersonen.no*, 11 August 2021.

Dale, R. F., Korsvoll, N. H., Sareen, S. 2021. Urovekkende tendenser i Danmark, *Khrono*, 30 June 2021.

Duarte, K., Andersen, I. V. 2021. Kode rød for klimajournalistikken, *Aftenposten*, 16 December 2021.

Fløttum, K. 2021. De unge vil mer enn å skolestreike, *Bergens Tidende*, 6 June 2021.

Gregersen, T. J. 2021. Unge bekymrer seg for klimaet/Slik vinner Nora (21) over middelaldrende klimaskeptikere, *NTB* (published in 13 newspapers), 28 February 2021.

Gregersen, T. J. 2021. Teknologioptimisme, *Energi og Klima: Norsk klimastiftelses nettmagasin*, 20 April 2021.

Gregersen, T. J. 2021. TV interview: Norske tilstander: -Jeg er klimaoptimist, *TV2 Nyhetskanalen*, 22 April 2021.

Gregersen, T. J. 2021. Ett miljøtiltak ble for tungvint for Marie (38), *NTB* (Published in 12 newspapers), 11 May 2021.

Gregersen, T. J. 2021. Eldre folk er mindre bekymret for klimaendringene nå enn før pandemien, *Forskning.no*, 19 July 2021.

Gregersen, T. J. 2021. Nordmenn er blant verdens mest klimaskeptiske folk. Spesielt én årsak trekker ekspertene fram, *Framtida.no*, 16 August 2021.

Gregersen, T. J. 2021. Radio interview: Miljøpartiet De Grønne klarte akkurat ikke å komme over sperregrensa i årets valg. Men hva slags preg har grønne partier satt på politikken i andre land i Europa?, *Studio 2 - P2*, 15 September 2021.

Gregersen, T. J. 2021. Bekymring er bra for klimaet, *Psykologisk.no*, 12 October 2021.

Gregersen, T. J. 2021. #Klimakvarteret: Fra flyreiser til oljeproduksjon, *#Klimakvarteret*, 15 October 2021.

Gregersen, T. J. 2021. Radio interview: Unge er mer bekymret for klima enn eldre, *NRK Nyhetsmorgen Radio/TV*, 27 October 2021.

Gregersen, T. J. 2021. Radio interview: God morgon Hordaland: Unge mest bekymret for klima, *NRK P1 Hordaland*, 27 October 2021.

Gregersen, T. J. 2021. Oljenæringens fremtid, *Energi og Klima: Norsk klimastiftelses nettmagasin*, 28 October 2021.

Gregersen, T. J. 2021. Klimaendringene – en fjern trussel?, *Energi og Klima: Norsk klimastiftelses nettmagasin*, 7 December 2021.

Gregersen, T. J. 2021. Klimaskepsis (Oppdatert 2021), *Energi og Klima: Norsk klimastiftelses nettmagasin* 2021.

Gregersen, T. J. 2021. Bekymring for klimaendringer (Oppdatert 2021), *Energi og Klima: Norsk klimastiftelses nettmagasin* 2021.

Gregersen, T. J. 2021. Bilparken – bare nullutslippsbiler fra 2025? (Oppdatert 2021), *Energi og Klima: Norsk klimastiftelses nettmagasin* 2021.

Gregersen, T. J. 2021. Olje- og gassutvinning i Lofoten og Vesterålen (Oppdatert 2021), *Energi og Klima : Norsk klimastiftelses nettmagasin* 2021.

Gregersen, T., Böhm, G., Elgesem, D. 2021. Norske klimaholdninger - tre videoer om klimaholdninger og bekymring, mestring og psykologisk distanse. *Norsk medborgerpanel/DIGSSCORE* 20 December 2021.

Gregersen, T. J., Böhm, G. 2021. Koronapandemi og muligheter til å forhindre klimaendringer, *Energi og Klima: Norsk klimastiftelses nettmagasin*, 29 April 2021.

Gregersen, T. H, Larsen, N. M. 2021. Flyreiser og effekt på klimaendringene, *Energi og Klima: Norsk klimastiftelses nettmagasin*, 8 November 2021.

Gregersen, T. J., Selseng, T. 2021. Mer storm, skred og flom: Hvem har ansvar for å sikre oss mot konsekvensene av klimaendringer?, *Energi og Klima: Norsk klimastiftelses nettmagasin*, 12 January 2021.

Gregersen, T. J., Skiple, J. K. 2021 Holdninger til hydrogen som drivstoff: Ja til grønt, nei til grått, *Energi og Klima: Norsk klimastiftelses nettmagasin*, 11 February 2021.

Haarstad, H. 2021. Kjernekraft som løsning på klimaproblemet. *TV2 Nyhetskanalen*, 8. juni.

Kvamsås, H. 2021. Climate activists in all arenas! *Webinar*: <https://www.bergenglobal.no/events/climate-activists-in-all-arenas/>

Kvamsås, H. 2021 Korleis planlegge blå-grøne overvassløysingar for framtida?, *Kommunalteknikk*.

Rommetveit, K., Sareen, S., Ballo I. F. 2021. Kraftbransjens tillitsproblem, *Dagens Næringsliv*, 22 October 2021.

Sareen, S. 2021. Hva Støre må gjøre for å lykkes med rettferdig omstilling, *Stavanger Aftenblad*, 11 September 2021.

Sareen, S. 2021. Det nødvendige akademiske ansvar i møte med klimakrisen, *Stavanger Aftenblad*, 5 November 2021.

Tjønndal, A., Shah, F. M., Erdal, M. B., Solheim, M. C. W., Korsvoll, N. H., Sareen, S. 2021. Mangfold i Forsknings-Norge, *Khrono*, 2021, 11 February 2021.

Ursin, L. H, Gregersen, T. J. 2021. Ekspertintervjuet: Har koronaen gitt oss klimahåp?, *Energi og Klima <2°C*, 29 April 2021.

ANNEX 3: PUBLICATIONS

Other publications

The following publications are authored or co-authored by CET affiliates and are of relevance to CET, but where CET did not directly fund or contribute to the project/publications.

Journal articles

Andersen, Gisle, Kjersti Fløttum, Guillaume Carbou, and Anje M. Gjesdal. 2021. "People's Conceptions and Valuations of Nature in the Context of Climate Change." *Environmental Values*.

Betti, Marianna, and Therese Landås. 2021. "Balancing the cultural outcomes and challenges in training the seafarer in the interconnection of the SDGs, safe and efficient operations at sea" in *University of Bergen and International Association of Universities publication on SDG 14*. https://www.iau-aiu.net/IMG/pdf/uib-iau_highered-sdg14_2021.pdf

Bhopal, Anand, and Ole F. Norheim. 2021. "Priority setting and net zero healthcare: how much health can a tonne of carbon buy?" *BMJ*.

Bhopal Anand, and Sofie Haugan Shrivastava. 2021. "Klimakrisen: Helsevesenet må ta ansvar." *Tidsskriftet Den norske legeforening*.

Bhopal, Anand, Haileselassie Medhin, Kristine Bærøe, and Ole F. Norheim. 2021. "Climate change and health in Ethiopia: To what extent have the health dimensions of climate change been integrated into the Climate-Resilient Green Economy?" *World Medical & Health Policy*.

Crainic, Teodor G., Mario Guajardo and Debjit Roy, and Stein Wallace. 2021. "Editorial to the Special Issue on Transportation and Logistics with Autonomous Technologies." *International Transactions in Operational Research*: 1619-1625.

Doran, Rouven, Ståle Pallesen, Gisela Böhm, and Charles Adedayo Ogunbode. 2021. "When and why do people experience flight shame?" *Annals of Tourism Research*.

Dugan, Anna, Jakob Mayer, Annina Thaller, Gabriel Bachner, and Karl W. Steininger. 2021. "Developing policy packages for low-carbon passenger transport: A mixed methods analysis of trade-offs and synergies." *Ecological Economics* 193, 107304.

Fløttum, Kjersti, Øyvind Gjerstad, and Jon Kåre Skiple. 2021. "Climate change and lifestyle: people's expressed motivations to adopt or not adopt a climate-friendly way of life." *ASP* 79: 75-94.

Fløttum, Kjersti, Øyvind Gjerstad, and Anje Müller Gjesdal. 2021. "Natur og menneske i et språklig klimaperspektiv." *Oslo Studies in Language* 12(1): 39-60.

Gjerstad, Øyvind, and Kjersti Fløttum. 2021. "Climate change lifestyle narratives among Norwegian citizens: A linguistic analysis of survey discourse." *European Policy Analysis* 7(Suppl. 2): 386-404.

Gu, Yewen, and Stein Wallace. 2021. "Operational benefits of autonomous vessels in logistics: A case of autonomous water-taxi in Bergen." Online in *Transportation Research Part E: Logistics and Transportation Review* 154, 102456.

Harbers Imke, Michaël Tatham, Louise Tillin, and Christina Isabel Zube. 2021. "Thirty years of Regional and Federal Studies." *Regional & Federal Studies* 31(1): 1-23.

Hisken H., Mauri L., Atanga G., Lucas M., van Wingerden K., Skjold T., Quillatre P., Dutertre A., Marteau T., Pekalski A., Jenney L., Allason D., Johnson M., Leprette E., Jamois D., Hébrard, J. & Proust, C. 2021. "Assessing the influence of real releases on explosions: Selected results from large-scale experiments." *Journal of Loss Prevention in the Process Industries* 72, 104561.

ANNEX 3: PUBLICATIONS

Lucas, M., Atanga, G., Hisken, H., Mauri, L. & Skjold, T. 2021. "Simulating vented hydrogen deflagrations: Improved modelling in the CFD tool FLACS-Hydrogen." *International Journal of Hydrogen Energy* 46: 12464-12473.

Merk, Christine, Åsta Dyrnes Nordø, Giske Andersen, Ole Martin Lægreid, and Endre Tvinnereim. 2022. "Don't send us your waste gases: Public attitudes toward international carbon dioxide transportation and storage in Europe." *Energy Research & Social Science* 87, 102450.

Ogunbode, Charles Adedayo, Ståle Pallesen, Gisela Böhm et al. "Negative emotions about climate change are related to insomnia symptoms and mental health: Cross-sectional evidence from 25 countries." *Current Psychology*: 1-10.

Tatham, Michaël, and Michael W. Bauer. 2021. "Hungry for power? Regional elites and the architecture of government." *Governance* 34(3): 621-642.

Tatham, Michaël, Liesbet Hooghe, and Gary Marks. 2021. "The territorial architecture of government." *Governance* 34(3): 607-620.

Thaller, Annina, Alfred Posch, Anna Dugan, and Karl Steininger. 2021. "How to design policy packages for sustainable transport: balancing disruptiveness and implementability." *Transportation Research Part D: Transport & Environment* 91, 102714.

Thaller, Annina, Anna Schreuer, Anna, and Alfred Posch. 2021. "Flying High in Academia — Willingness of University Staff to Perform Low-Carbon Behavior Change in Business Travel." *Frontiers in Sustainability* 2, 790807.

Xiaoping Jiang, Ruibin Bai, Stein Wallace, Graham Kendall, and Dario Landa-Silva. 2021. "Soft Clustering-based Scenario Bundling for a Progressive Hedging Heuristic in Stochastic Service Network Design." *Online Computers & OR* 128.

Yazar, Mahir, and Abigail York. 2021. "Urban Climate Governance under the Central Government Shadow: Evidence from Istanbul." *Journal of Urban Affairs*: 1-17.

Yazar, Mahir, Abigail York, and Georgios Kyriakopoulos. 2021. "Heat Exposure and the Climate Change Beliefs in a Desert City: The case of Phoenix Metropolitan Area." *Urban Climate* 36, 100769.

Zhang, Dongqing, Stein Wallace, Zhaoxia Guo, Yucheng Dong, and Michal Kaut. 2021. "On scenario construction for stochastic shortest path problems in real road networks." Online in *Transportation Research Part E: Logistics and Transportation Review* 152, 102410.

Books and Book Chapters

Andersen, Gisle, Åsta Dyrnes Nordø, and Endre Tvinnereim. 2022. "Trends in Norwegian views on fossil fuel export" in *Public Responses to Fossil Fuel Export: Exporting Energy and Emissions in a Time of Transition*, eds. Hilary Boudet and Shawn Hazboun. Oxford, UK: Elsevier.

Callanan, Mark, and Michaël Tatham. 2021. "Regional and local government and the European Union" in *A Research Agenda for Regional and Local Government*, Cheltenham, eds. Mark Callanan and John Loughlin. UK: Edward Elgar.

Tatham, Michaël. 2021. "Subnational Entities and Cities in Multilevel Governance" in *A Research Agenda for Multilevel Governance*, eds. Arthur Benz, Jörg Broschek, and Markus Lederer. Cheltenham, UK: Edward Elgar.

Policy briefs and reports

Hesselman, Marlies, Sergio Tirado Herrero, et.al. 2021. Policy Brief No. 4 New narratives and actors for citizen-led energy poverty dialogues. file:///eir.uib.no/home5/nha047/Downloads/WG3-Policy-Brief_Sept-2020.pdf

Fløttum, Kjersti, Trine Dahl, and Jana Paulina Scheurer. 2021. RAPPORT – CLIMLIFE-SKOLEUNDERSØKELSE OM DE UNGES PERSPEKTIV PÅ KLIMA OG LEVEMÅTE. Bergen: Institutt for fremmedspråk, Universitetet i Bergen 2021. https://www.uib.no/sites/w3.uib.no/files/attachments/rapport_climlife_skoleundersokelse_20210624_5.pdf

ANNEX 4: PROJECTS

CET Projects

The following projects are fully or partly owned by CET. Total budget shown in the far right column is the total budget for the project.

Funder /Project title	Project owner	CET partner(s)	Project period	Total budget (NOK)
Akademiaavtalen, Equinor/UiB				1 050 000
Prof. II - Applied Economics in Climate Change and Energy Transformation	UiB - CET	Corbett Grainger	2019-2022	1 050 000
Globale samfunnsutfordringer, UiB				2 680 000
PhD Position: The global implications of Norway's electric car revolution	UiB - CET	Devyn Remme, Håvard Haarstad, Kjetil Rommetveit, Siddharth Sareen	2021-2025	
EU - H2020				131 148 740
CINTRAN - Carbon Intensive Regions in Transitions - Unravelling the Challenges of Structural Change	Wuppertal Institut für Klima, Umwelt, Energie gGmbH	Mahir Yazar, Håvard Haarstad, Jessica Jewell, Endre Tvinnereim	2020-2024	29 994 050
VARCITIES - Visionary nature-based actions for health, wellbeing & resilience in cities	Telecommunication System Institute	Håvard Haarstad	2020-2025	101 154 690
EU - ERC				15 000 000
MANIFEST - MechANisms and actors of Feasible Energy Transformation	Chalmers University of Technology	Jessica Jewell	2021-2026	15 000 000
EU - JPI Climate				10 000 000
ROLES - Responsive Organising for Low Emission Societies	UiS, UiB - CET	Siddharth Sareen	2020-2023	10 000 000
RCN - Research Council of Norway				55 697 000
CITYFREIGHT - Freight Logistics in Smart Cities	NHH	Stein Wallace, Håvard Haarstad, Endre Tvinnereim, Sigrid Eskeland Schütz, Rafael Rosales, Subina Shrestha	2020-2024	18 558 000
DEMOCLIM - Cities confronted by protests: Democratic governance for efficient and socially just climate transformation	OSLOMET - NIBR	Håvard Haarstad	2020 - 2023	13 219 000
MUCS - Media use in crisis situations: Resolving information Paradoxes, Comparing Climate Change and the COVID-19 Pandemic	UiB - Department of InfoMedia	Håvard Haarstad, Ida Sekanina	2021 - 2025	12 420 000
ASSET - Accountable Solar Energy TransitionS	UiS	Siddharth Sareen, Shayan Shokrgozar	2021 - 2024	114 000 000
BalansHub CET	UiB - CET	Judith Dalsgård	2021-2022	100 000
UiB - Climate and Energy				3 000 000
HySociety - Hydrogen som energibærer i samfunnet: risikobilde, risikoforståelse og offentlig aksept	UiB	Håvard Haarstad	2021 - 2024	3 000 000
Regionalt forskningsfond				3 000 000
Klimabudsjett 2.0	Vestlandsforskning	Jesse Schrage	2021 - 2024	3 000 000
Centre for Applied Turkey Studies (CATS) Network				374 842
LOCALNET - Local Climate Change Narratives in Turkey Toward Effective Local Climate Actions	UiB - CET	Mahir Yazar	2022	374 842
Klima- und Energifonds				2 958 976
TRANSFLIGHT - Shaping the future of air travel	University of Graz	Jakob Grandin, Jesse Schrage	2022-2024	2 958 976
Grand total				224 909 558
Funder /Project title	Project owner	CET partner(s)	Project period	Total budget (NOK)
CET Accelerator, UiB				180 000
BUDGETS - Climate Budgeting for climate action: charting mitigation options in Norwegian and Swedish municipalities	UiB Department of Geography	Jesse Schrage	2021-2022	80 000
BLF - Bussbrukernes Landsforening: Art-Science-Activism for mobility justice	UiB Department of Geography	Devyn Remme	2021-2022	100 000
Total				180 000

ANNEX 5: EVENTS

CET events

Date	Title	Name	Institution	Type
7.1.	What does a publishable paper look like?	Håvard Haarstad	CET	CET virtual lunch
3.2.	Hackathons, coproduction and local climate adaptation governance	Hanna Kvamsås, Simon Neby	CET/NORCE	CET virtual lunch
9.2.	Sustainable logistics in Norwegian cities - the Cityfreight project	Håvard Haarstad, Rafael Rosales La Torraca	CET	Webinar
10.2.	DAY ZERO: Just urban mobility transitions: Co-creation workshop	Siddharth Sareen	CET	Workshop at SDG conference
10.2.	DAY ZERO: Questioning co-production of knowledge	Katinka Wågsæther, Coleen Vogel, Smiso Bhengu, Scott Bremer	CET, University of Witwatersrand in Johannesburg, Municipality of eThekweni (Durban), University of Bergen	Workshop at SDG conference
17.2.	From the southern tip of Africa: Wrestling with the challenges of climate risk management	Anna Steynor, Christopher Jack	Climate system analysis group, University of Cape Town	CET virtual lunch
23.2.	CET Master seminar	Master students, supervisors and CET researchers	CET	Master seminar
24.2.	Post hoc, ergo propter hoc? Rethinking temporality, attribution, and additionality in landscape-scale carbon finance	Connor Joseph Cavanagh	Department of Geography at UiB	CET virtual lunch
17.3.	A matter of time: Explicating temporality in Bergen's car-free zone development	Siddharth Sareen, Devyn Helen Avhild Remme	CET	CET virtual lunch
24.3.	Sustainability-oriented innovation: Improving problem definition through combined design thinking and group model building approaches	Brooke Wilkerson	CET	CET virtual lunch
14.4.	The New Climate Activism	Jen Allan	Cardiff University	CET virtual lunch
21.4.	Place-based experimentation in sustainability transitions: insights from urban Australia	Lars Coenen	Mohn Centre for Innovation and Regional Development at HVL	CET virtual lunch
28.4.	Climate Impact Assessment and the Energy Transition: Managing the Supply Side of Fossil Fuels	Daria Shapovalova	Aberdeen University Centre for Energy Law	CET virtual lunch
5.5.	Mathematical models for policy-making and the illusion of accuracy	Arnald Puy Maeso	Centre for the Study of the Sciences and the Humanities at UiB	CET virtual lunch
12.5.	Norwegian attitudes to climate 2021	Thea Gregersen	CET	CET virtual lunch
26.5.	Populism, Instability, and Rupture in Sustainability Transformations	Tarje Wanvik	CET/NORCE	CET virtual lunch
2.6.	Media use in crisis situations – comparing climate change and the pandemic	Brita Ytre-Arna	Department of Information Science and Media Studies at UiB	CET virtual lunch
2.6.	Politikerdebatten - Klimafestivalen 112	Håvard Haarstad (moderator)	CET	Public debate/streaming
25.8.	The role of public authorities: Steering urban freight transport	Karin Fosshem	University of Oslo	CET virtual lunch
1.9.	Local carbon budgets as a tool for sustainability transitions: Three emerging narratives of change and governance	Sanna Gunnarsson	KTH Royal Institute of Technology in Stockholm	CET virtual lunch

Date	Title	Name	Institution	Type
8.9.	The Consumer as Responsible Energy Citizen – The Discussion on Political Consumerism, and a Practical Approach	Thor Øivind Jensen	Department of administration and organisation theory at UiB	CET virtual lunch
22.9.	Lokal nabolagsorganisering - erfaringer fra Bærekraftige liv	Katinka Lund Wågsæther	CET	CET virtual lunch
16.9.	The Emerging Climate Emergency: What Now for University Education?	Runa Falck, Jakob Grandin, Roger Strand, Lea Andrea Igland Røys, Håvard Haarstad	BSGS and CET	Webinar (panel-debate)
6.10.	Launch of Grønt Helsevesen report	Anand Bhopal, Emily McLean	Grønt Helsevesen, Bergen Global, BCEPS	Report launch
7.10.	CET Master Lunch	Master students and CET researchers	CET	Seminar
20-21.10	Beyond oil conference	Beyond oil conference	CET	Conference
27.10.	CET Lunch with guest researcher Annina Thaller	Annina Thaller	Karl-Franzens-Universität Graz	CET virtual lunch
3.11.	The Bus Riders Union: Integrating social and environmental agendas through art-science-activism	Devyn Remme	CET	CET virtual lunch
10.11.	The Descent of Coal? India's solar energy ambitions and its governance in Rajasthan	Shayan Shokrgozar	CET	CET lunch
16.11.	Trial lecture and public defense of doctoral thesis: A Critical Geography of Compact Urbanism	Kristin Edith Abrahamsen Kjærås	CET	PhD defense
17.11.	How fast can technologies grow?	Jessica Jewell	CET	CET lunch
24.11.	Political Economy, Resource Rents and Climate Risk	Corbett Grainger	CET	CET lunch
1.12.	Researcher at COP26: Experiences and Contributions	Camilla Borrevik, Anand Bhopal	Division of Research and Innovation at UiB, Bergen Centre for Ethics and Priority Setting at UiB	CET virtual lunch
8.12.	Pandemic disruptions and everyday life: Consumption and sustainability during (and after) Covid-19	Arve Hansen	University of Oslo	CET virtual lunch

Centre partners



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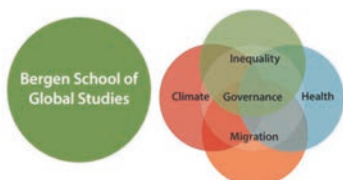
Collaborative partners



Bergen Offshore Wind Centre



CITY OF BERGEN





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