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## Featured



Nature Communications

### [Research on public support for climate policy instruments must broaden its scope](#)

[STEFFEN KALLBEKKEN](#)

The transition to net-zero emissions will be contested and could lead to political polarization and social unrest. To contribute to a transition that is accepted as legitimate while remaining effective, research on public support must evolve rapidly along several dimension. [Read more.](#)

## Publications



Environment International

### [A global review of the state of the evidence of household air pollution's contribution to ambient fine particulate matter and their related health impacts](#)

[SOURANGSU CHOWDHURY](#), Ajay Pillarisetti, Alicia Oberholzer, James Jetter, John Mitchell, Eva Cappuccilli, [BORGAR AAMAAS](#), [KRISTIN AUNAN](#), Andrea Pozzer, Donee Alexander

Household fine particulate air pollution (HAP) emitted indoors escapes outdoors and is a leading source of outdoor ambient fine particulate air pollution (AAP) in low- and middle-income countries, often being a larger contributor than well-recognized sources including road transport, industry, coal-fired power plants, brick kilns, and construction dust. This study finds that HAP is a dominant source of ambient fine particulate matter (PM<sub>2.5</sub>) globally that contributes approximately 20 % of total global PM<sub>2.5</sub> exposure. [Read more.](#)

Journal of Climate

### [The Timescales of Climate Responses to Carbon Dioxide and Aerosols](#)

[CAMILLA W. STJERN](#), Piers M. Forster, Hailing Jia, [CAROLINE JOUAN](#), Matthew R. Kasoar, [GUNNAR MYHRE](#), Dirk Olivié, Johannes Quaas, [BJØRN H. SAMSET](#), [MARIA SAND](#), Toshihiko Takemura, Apostolos Voulgarakis, and Christopher D. Wells

In this paper, the authors use six global climate models to investigate the timescales of climate responses to carbon dioxide, black carbon and sulfate, focusing on key climate quantities, such as temperature, precipitation and clouds. While there are ample model differences, the work underscores the overall similarity of the major time-varying processes and responses simulated by current global models, and hence the robustness of key features of simulated responses to historical and future anthropogenic forcing. [Read more.](#)

## **Climate change adaptation based on computable general equilibrium models – a systematic review**

**TAOYUAN WEI** and **ASBJØRN AAHEIM**

This study aims to identify the current state of the art and the gaps in the application of computable general equilibrium (CGE) models on studying climate change adaptation. [Read more.](#)

### Climate Risk Management

## **Representing storylines with causal networks to support decision making: Framework and example**

**TARO KUNIMITSU**, Marina Baldissera Pacchetti, Alessio Ciullo, **JANA SILLMAN**, Theodore G. Shepherd, Mehmet Ümit Taner, Bart van den Hurk

This paper showcases the use of causal networks in the climate storyline framework, and how this supports decision making. Climate storylines are narratives of past climate hazard events or analogous events in future climate conditions. By embedding climate storylines into causal networks, which are networks that map the causal connections between elements of a system, probabilistic elements can be incorporated into the climate storyline. [Read more.](#)

### Sustainable Production and Consumption

## **Mapping of the digital climate nudges in Nordic online grocery stores**

**NORA SVARSTAD YTREBERG**, Frode Alfnes, **BOB VAN OORT**

This paper explores how 21 Nordic online food retailers nudge their customers towards more climate-friendly food choices. We find that most retailers use several types of climate nudges. [Read more.](#)

### Local Environment

## **Sustainable sharing in local communities: exploring the role of social capital**

**TOM ERIK JULSRUD**

There are many forms of sharing occurring in local communities that can help reduce overconsumption and mitigate the continuous growth of climate emissions. This paper applies a social capital perspective to explore the relational basis for different forms of sharing in local communities, and to inform a discussion on how local sharing can be scaled up. [Read more.](#)

Maritime Transport Research

## **Carbon dioxide mitigation from public procurement with environmental conditions: The case of short-sea shipping in Norway**

**ASBJØRN TORVANGER**, *Jostein Tvedt, Inger Beate Hovi*

We investigate the potential for greenhouse gas emission cuts for the Norwegian short-sea (domestic) maritime segments of express boats, offshore support vessels, and aquaculture support vessels in comparison to ferries in Norway. Norway's experience indicates that there is a sizable potential for reducing CO<sub>2</sub> emissions for public procurement conditional on climate-friendly solutions for short-sea shipping in other shipping nations. [Read more.](#)

Cleaner and Responsible Consumption

## **'I prefer to own what I use': Exploring the role of emotions in upscaling collaborative consumption through libraries in Norway**

**MÓNICA GUILLEN-ROYO**

The generalisation of collaborative consumption as a practice embedded in everyday practices such as cooking, cleaning, repairing, commuting, and exercising can reduce material and resource use, but has not yet achieved its full potential in Western societies. This article contributes to an emerging literature focusing on emotions as an integral part of practices and investigates how they might promote or hamper the scaling up collaborative consumption. [Read more.](#)

Nature

## **National contributions to climate change due to historical emissions of carbon dioxide, methane, and nitrous oxide since 1850**

*Matthew W. Jones, **GLEN PETERS**, Thomas Gasser, ROBBIE M. ANDREW, Clemens Schwingshackl, Johannes Gütschow, Richard A. Houghton, Pierre Friendlingstein, Julia Pongratz and Corinne Le Quéré*

Anthropogenic emissions of carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) have made significant contributions to global warming since the pre-industrial period and are therefore targeted in international climate policy. There is substantial interest in tracking and apportioning national contributions to climate change and informing equitable commitments to decarbonisation. Here, the authors introduce a new dataset of national contributions to global warming caused by historical emissions of carbon dioxide, methane, and nitrous oxide during the years 1851–2021, which are consistent with the latest findings of the IPCC. [Read more.](#)

## **The Effects on Energy Markets of Achieving a 1.5 °C Scenario**

Lars Lindholt and [TAOYUAN WEI](#)

Net zero emission scenarios are aligned with the criteria for the Paris Agreement to keep global warming below 1.5 °C. By soft-linking an energy model with a macroeconomic model, we create a similar pathway to the net zero emission scenario from the International Energy Agency (IEA) to 2050 both of demand for fossil fuels and total CO<sub>2</sub> emissions. [Read more.](#)

### Quantitative Finance

## **Optimal asset allocation for commodity sovereign wealth funds**

Alfonso A. Irarrazabal, [LIN MA](#) & Juan Carlos Parra-Alvarez

Using data from the Norwegian Petroleum Fund, we find that the optimal demand for equity should decrease gradually from 60% to 40% over the next 60 years. However, the solution is particularly sensitive to the correlation between oil and stock price changes. We also estimate wealth-equivalent welfare losses, relative to the optimal rule, when following alternative suboptimal investment rules. [Read more.](#)

### Environmental Research Letters

## **Much of zero emissions commitment occurs before reaching net zero emissions**

Charles D Koven, [BENJAMIN M. SANDERSON](#), and Abigail L S Swann

This article explores the response of the Earth's coupled climate and carbon system to an idealized sequential addition and removal of CO<sub>2</sub> to the atmosphere, following a symmetric and continuous emissions pathway, in contrast to the discontinuous emissions pathways that have largely informed our understanding of the climate response to net zero and net negative emissions to date. [Read more.](#)

### Sustainability

## **Testing Food Waste Reduction Targets: Integrating Transition Scenarios with Macro-Valuation in an Urban Living Lab**

Daniel Black, [TAOYUAN WEI](#), Eleanor Eaton, Alistair Hunt, Joy Carey, Ulrich Schmutz, Bingzi He and Ian Roderick

Bristol, one of the United Kingdom's (UK) nine Core Cities, is seeking to achieve Zero Waste City status by 2049. This study combines macro-

economic valuation with transition pathway mapping and adapted participatory scenario planning to stress test the city's ambitious food waste targets. [Read more.](#)

Communications Earth and Environment

## [Atmospheric concentrations of black carbon are substantially higher in spring than summer in the Arctic](#)

Zsófia Jurányi, Marco Zanatta, [MARIANNE T. LUND](#), [BJØRN H. SAMSET](#), [RAGNHILD B. SKEIE](#), Sangeeta Sharma, Manfred Wendisch & Andreas Herber

A key driving factor behind rapid Arctic climate change is black carbon, the atmospheric aerosol that most efficiently absorbs sunlight. Our knowledge about black carbon in the Arctic is scarce, mainly limited to long-term measurements of a few ground stations and snap-shots by aircraft observations. Here, we combine observations from aircraft campaigns performed over nine years, and present vertically resolved average black carbon properties. [Read more.](#)

Earth System Dynamics

## [The deployment length of solar radiation modification: an interplay of mitigation, net-negative emissions and climate uncertainty](#)

Susanne Baur, Alexander Nauels, Zebedee Nicholls, [BENJAMIN M. SANDERSON](#), and Carl-Friedrich Schleussner

This article shows that keeping temperature at 1.5C using Solar Radiation Modification (SRM) would require “at least” a century of deployment unless climate action goes beyond current NDCs, irrespective of the carbon removal capacity which is developed later. [Read more.](#)

Environmental Research

## [Impact of heat on all-cause and cause-specific mortality: A multi-city study in Texas](#)

Chunyu Guo, Kevin Lanza, Dongying Li, Yuyu Zhou, [KRISTIN AUNAN](#), Becky P. Y. Loo, Jason Kai Wei Lee, Bin Luo, Xiaoli Duan, Wangjian Zhang, Zhengjun Zhang, Shao Lin, Kai Zhang

Our study found that high temperatures can significantly impact all-cause mortality in Texas, and effect estimates differ by metropolitan statistical areas, age group, and cause of death. Our findings generate critical information on the impact of heat on mortality in Texas, providing insights for policymakers on resource allocation and strategic intervention to reduce heat-related health effects. [Read more.](#)

Hämostaseologie

## **Air pollution impacts on in-hospital case-fatality rate of ischemic stroke patients**

*K Keller, S H Rastguye Haghi, O Hahad, I Schmidtman, [SOURANGSU CHOWDHURY](#), J Lelieveld, T Münzel, L Hobohm*

The air pollution constituents O<sub>3</sub>, benzene, NO, SO<sub>2</sub> and PM<sub>2.5</sub> were associated with increased stroke mortality, based on our analysis of more than 1,500,000 hospitalizations of patients with ischemic stroke in Germany between 2015 and 2019. [Read more.](#)

Nature Geoscience

## **Surface warming and wetting due to methane's long-wave radiative effects muted by short-wave absorption**

*Robert J. Allen, Xueying Zhao, Cynthia A. Randles, Ryan J. Kramer, [BJØRN H. SAMSET](#) & Christopher J. Smith*

Although greenhouse gases absorb primarily long-wave radiation, they also absorb short-wave radiation. Recent studies have highlighted the importance of methane short-wave absorption, which enhances its stratospherically adjusted radiative forcing by up to ~ 15%. The corresponding climate impacts, however, have been only indirectly evaluated and thus remain largely unquantified. Here we present a systematic, unambiguous analysis using one model and separate simulations with and without methane short-wave absorption. [Read more.](#)

JGR Atmospheres

## **The Representation of Sea Salt Aerosols and Their Role in Polar Climate Within CMIP6**

*Rémy Lapere, Jennie L. Thomas, Louis Marelle, Annica M. L. Ekman, Markus M. Frey, [MARIANNE TRONSTAD LUND](#), Risto Makkonen, Ananth Ranjithkumar, Matthew E. Salter, [BJØRN HALLVARD SAMSET](#), Michael Schults, Larisa Sogacheva, Xin Yang, Paul Zieger*

The oceans are a source of sea salt particles to the atmosphere. These particles in turn influence climate through interactions with clouds and solar radiation. As sea ice shrinks in the Arctic, sea salt aerosols become more and more relevant for polar climate. A new study conducted within the EU project CRiceS shows that the representation of sea salt aerosols in global climate models is still highly uncertain and should be improved for better climate projections. [Read more.](#)

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**Other material**



Climate Change in Central Asia, chapter in book:

## **Climate Change: A Growing Threat for Central Asia** **ANNE SOPHIE DALOZ**

Central Asia is highly vulnerable to climate change owing to a set of critical interactions between the region's socio-economic and environmental contexts. This chapter presents an overview of the physical impacts of climate change in Central Asia using the most recent literature, including the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). [Read more.](#)

Climate Change in Central Asia, chapter in book:

## **A Gendered Approach to Understanding Climate Change Impacts in Rural Kyrgyzstan** **KARINA STANDAL, ANNE SOPHIE DALOZ & Elena Kim**

This chapter explores climate change impacts and the related experiences and realities of local women in rural Kyrgyzstan by combining research on the physical impacts of climate change in the Central Asian region with an analysis of ethnographic accounts of local people's farming and energy-use practices. [Read more.](#)

Public Participation in Transport in Times of Change, Vol. 18, chapter in book:

## **Governing Urban Transport Packages in Norway: Understanding Conditions for Public Participation** **ANDERS TØNNESEN, Julie Runde Krogstad and Petter Christiansen**

Urban transport plays a key role in reducing climate gas emissions. However, public policies are developed and implemented in an increasingly complex, fragmented, and multilevelled society. This chapter focuses on how interactive political leadership can address challenges related to spatial justice, network cooperation, and communication to increase legitimate and robust policies. [Read more.](#)

Consumption, Sustainability and Everyday Life, chapter in book:

## **Household Energy Practices in Low-Energy Buildings: A Qualitative Study of Klosterenga Ecological Housing Cooperative**

**KARINA STANDAL**, *Harold L. Wilhite and Solvår Wågø*

This chapter examines household energy practices in the ecological housing cooperative Klosterenga in Oslo, Norway. Although the ecological profile of Klosterenga inspired some of the residents to change behavioural habits such as limiting their car use or consumption patterns, the findings of this article show that expectations of smart technology as a primary solution towards energy efficiency and residents being rational consumers using this technology to save costs do not hold. [Read more.](#)

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