

Dear readers,

The UN Climate Change Conference began on Monday in Bonn. With around 25,000 delegates, the COP23 is the largest international conference ever organised in Germany. The aim of the summit is to establish a rulebook for the implementation of the Paris Agreement. How does climate change mitigation go hand in hand with sustainable development? What role do the oceans play in climate systems? And where does the energy transition go from here? An IASS team is in the former German capital, giving new impetus derived from sustainability research. Because time is running out. That much is clear. This is also why more and more people are discussing targeted interventions in the climate system. They did so at the Climate Engineering Conference 2017. In addition to leading climate scientists, several NGOs also attended the conference in Berlin, and this mix gave rise to enthralling debates and new insights into current climate engineering research. Our brand new website is also up and running, providing fresh insight into the IASS's research. The user-friendly design is now optimised for mobile use. See for yourself at: [www.iass-potsdam.de](http://www.iass-potsdam.de).

Greetings from autumnal Potsdam!  
Eva Söderman

Head of Press & Communications

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## NEWS FROM THE IASS



### The IASS at the UN Climate Change Conference in Bonn

From 6 to 17 November, delegates at the 23rd United Nations Climate Change Conference will be working on the rulebook for the implementation of the Paris climate goals. A large team of researchers from the Institute for Advanced Sustainability Studies is attending the conference. [Read more ...](#)



### Critical Discussions at the Climate Engineering Conference 2017

Despite the efforts of the international community and the historical agreement reached in Paris in 2015, greenhouse gases continue to be emitted in vast amounts. This has prompted increased – and often controversial – discussions about targeted interventions in the climate system. [Read more ...](#)



### IASS Website Relaunch: New Website Boasts a Modern, Fresh Design

The Institute for Advanced Sustainability Studies has completely overhauled and redesigned its website. Thanks to its new user-friendly and responsive design, the website is now optimised for mobile use. [Read more ...](#)

## NEWS FROM THE IAASS

### Climate Protection

#### New Reports Recommend Strategies to Limit Warming to below 2° Celsius

Carbon dioxide mitigation is a crucial step, but it alone cannot prevent dangerous and possibly catastrophic temperature increases. This is the conclusion of two recent studies by leading experts. [Read more ...](#)

### Participation

#### Democracy Boosts Climate Performance

Politicians tend to think in election cycles, but many of the measures aimed at mitigating climate change will only be effective over the longer term. Does this mean that democracy is incompatible with efforts to protect the climate? Quite the opposite is true, argues a political scientist at the IAASS in his new book. [Read more ...](#)

### Air Quality

#### What Would ‘Clean’ Diesel Cars Do for Air Quality in Berlin?

The EU limit values for nitrogen dioxide concentrations are regularly exceeded in Berlin. How would air quality in the German capital improve if diesel cars were to comply with the emissions standards? Researchers at the IAASS have published their findings on this issue in a new study. [Read more ...](#)

### Energy Policy

#### Policy-makers Should End Support for Large-Scale Biofuel Production and Use

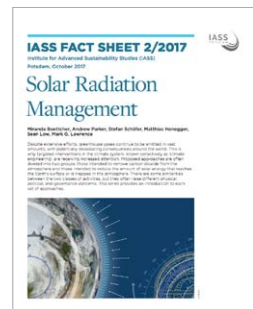
Modern biofuels can help societies to become less dependent on fossil fuels. The Intergovernmental Panel on Climate Change (IPCC) and the German government accordingly view biofuels as an important tool on the path to a more climate-friendly energy system. Yet biofuels have a patchy record of performance relative to expectations. [Read more ...](#)

### Digitalisation

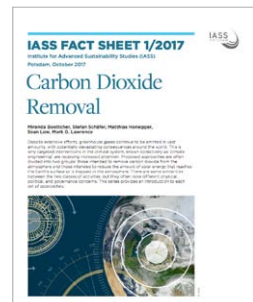
#### New UNIDO Report Explores Potential of Industry 4.0 to Accelerate Energy Transition

Can the Fourth Industrial Revolution accelerate the transition to sustainable energy? A new report launched by the United Nations Industrial Development Organization (UNIDO) explores this question. The report was produced in collaboration with the IAASS and an Indonesian think tank and provides key policy recommendations. [Read more ...](#)

## IASS PUBLICATIONS



- Boettcher, M., Parker, A., Schäfer, S., Honegger, M., Low, S., Lawrence, M. G. (2017): **Solar Radiation Management**, IAASS Fact Sheet, October 2017.



- Boettcher, M., Schäfer, S., Honegger, M., Low, S., Lawrence, M. G. (2017): **Carbon Dioxide Removal**, IAASS Fact Sheet, October 2017.



- Cremonese, L., Gusev, A. (2016): **Die ungewissen Klimakosten von Erdgas**. IAASS Working Paper, December 2016.

COP23

## The IASS at the UN Climate Change Conference in Bonn



The opening of the UN Climate Change Conference (COP23) in Bonn.

© BMUB/Sascha Hilgers

The Paris Agreement has been adopted and ratified by 169 states. It's now time to implement the ambitious goals of limiting global warming to well below two degrees Celsius and achieving carbon neutrality. The climate conference in Bonn aims to spur individual countries to greater efforts and prepare for a major stocktake in 2018.

The island state of Fiji is presiding over COP23, and this is turning the spotlight on the particular vulnerability of islands and poorer countries to climate change and the significance of oceans in the climate system. IASS Researchers are on site to provide information on key research topics in several events and talks.

### Towards a joint approach to climate protection and development

How can climate protection go hand in hand with sustainable development? That question is the focus of a discussion organised by the IASS together with Nepal, the Solomon Islands, the International Centre for Integrated Mountain Development, and the Pacific Centre for Environment and Sustainable Development of the University of the South Pacific on the Fiji Islands.

**“Coordinated action on sustainable development and climate change”**

7 November, 3 – 4.30 p.m., Meeting Room 4

You can find more information on the COP23 [here](#).

## **Ocean governance: the significance of oceans for the climate**

IASS researchers are meeting with their colleagues from the GEOMAR Helmholtz Centre for Ocean Research Kiel and the Leibniz Centre for Tropical Marine Research to discuss how European marine science can shape climate policy and how to put this research area on a firmer financial and structural footing.

### **“Oceans in the Earth System: Sustainable Ocean Climate and the Role of Science”**

10 November, 12.15 - 13.45 p.m., European Union Pavilion

## **The energy transition: how a broad dialogue can advance transformation**

The ENavi research project is developing a navigation system for the energy transition. Researchers can use it to predict the future impacts of economic, political, legal, and social measures on the energy transition. At COP23, researchers engaged in the ENavi project are meeting climate experts to explore how cooperation between representatives of science, politics, business, and civil society can contribute to achieving the energy transition.

### **“How can transdisciplinary research contribute to greater advance of the energy transition?”**

15 November, 10 a.m. - 12.30 p.m., Helmholtz Dome

## **The climate protection debate: from drastic technologies to creative utopias**

Climate change is having a particularly strong impact on the Arctic Region. At the same time, the melting of Arctic ice is opening up new economic avenues. IASS Scientific Director Mark Lawrence will cast light on the socio-economic consequences of climate change for the Arctic Region at COP23. In a talk beginning at 1 p.m. on Wednesday, 15 November in the Korean Pavilion, he will ask whether this change is good or bad, and for whom. On Thursday, 16 November from 12 p.m. Mark Lawrence is a guest at the “German Science Hour” in the German Pavilion, where he will talk about the pros and cons of climate engineering.

CEC17

## Critical Discussions at the Climate Engineering Conference 2017



Researchers distinguish between two forms of intervention in the global climate system. Both are referred to collectively as ‘climate engineering’: removing carbon dioxide from the atmosphere (carbon dioxide removal or CDR) and reducing the amount of solar energy that reaches the Earth’s surface or is trapped in the atmosphere (solar radiation management or SRM).

Although the proposed climate engineering technologies are still largely hypothetical, in light of their possible future deployment on a large scale, there is a need for a broad societal debate not only on their potential benefits and risks, but also on the question of whether climate engineering should be part of the reaction to climate change at all. To encourage such a debate, the IASS organised the Climate Engineering Conference 2017 (CEC17) from 9 to 12 October in Berlin.

### A forum for scientists, policymakers and civil society

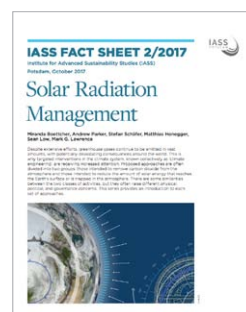
The conference gave researchers, policymakers, civil society actors, and journalists the opportunity to critically engage with current climate engineering research. Over four days, 260 delegates from more than 30 countries participated in a total of 32 sessions and five plenary discussions. Individual sessions focussed, for example, on whether the Paris Agreement goals can be achieved without climate engineering, on the question of how climate policy should deal with fake news, and on what rules should apply to research.

Right at the start of the conference, IASS Scientific Director Mark Lawrence reminded the audience that the Paris Agreement goal of limiting global warming to well below 2 degrees Celsius can only be achieved if emissions of greenhouse gases are reduced to near-zero

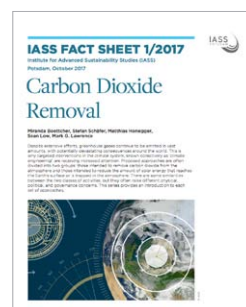
Harvard Physicist David Keith entered into the debate at CEC17.

© IASS/Dirk Enters

Further information:



■ Boettcher, M., Parker, A., Schäfer, S., Honegger, M., Low, S., Lawrence, M. G. (2017): **Solar Radiation Management**, IASS Fact Sheet, October 2017.



■ Boettcher, M., Schäfer, S., Honegger, M., Low, S., Lawrence, M. G. (2017): **Carbon Dioxide Removal**, IASS Fact Sheet, October 2017.

within the next few decades. He suggested, however, that this was “highly unlikely” given the current emissions trajectory. Some participants argued that climate engineering measures are therefore a justifiable complement to mitigation. Harvard physicist David Keith spoke of his planned field experiment to assess the effect of injecting aerosol particles into the atmosphere.

### The need for binding rules for research

For Lili Fuhr from the Heinrich Böll Foundation, however, geoengineering is not an option, since it reflects a perspective of “control and fear rather than care”. In her view, it is vital that we stick to the pathways suggested by the Paris Agreement rather than resorting to potentially dangerous climate engineering technologies. Mark Lawrence pointed to the urgent need for internationally binding rules for climate engineering research: “At the IASS we are elaborating concepts for the governance of climate engineering and also advise political actors on how they can develop corresponding measures.”

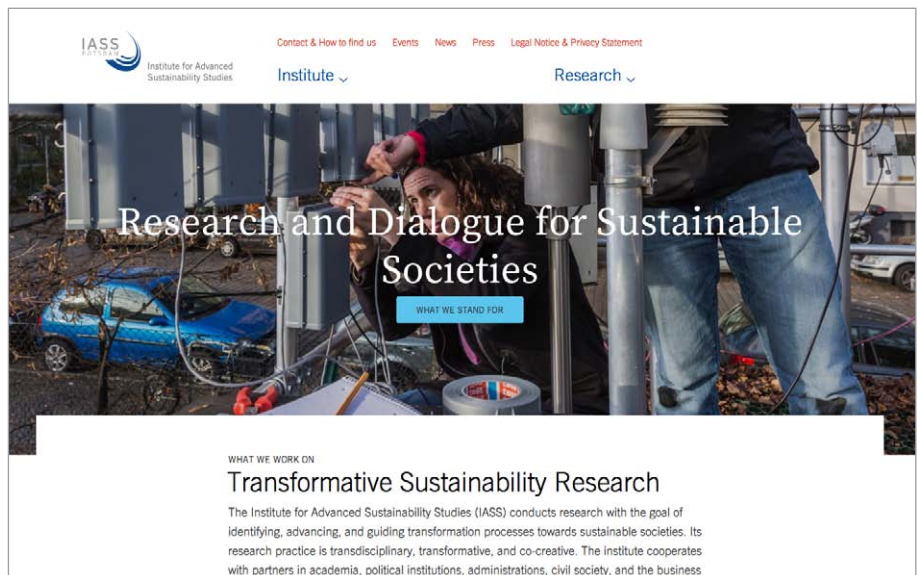
CEC17 featured many of the leading voices in the field of climate engineering; they chaired sessions, participated in panel discussions, and gave talks. It also succeeded in attracting representatives from various non-governmental organisations, including Friends of the Earth, ETC Group, the Global Forest Coalition, and the Environmental Defence Fund. A range of representatives from intergovernmental fora also attended, including the United Nations Executive Office of the Secretary General (UN EOSG), the Secretariat of the Convention on Biological Diversity (SCBD), and the World Meteorological Organisation (WMO).



■ A film about CEC17 can be found [here](#).

Institute

## IASS Website Relaunch: New Website Boasts a Modern, Fresh Design



The new homepage of the IASS at [www.iass-potsdam.de/en](http://www.iass-potsdam.de/en).

© IASS

The new website of the Institute for Advanced Sustainability Studies (IASS) makes even greater use of images than the former website and is targeted not only at researchers but also at policymakers, the media, the business community, and civil society as well as interested members of the general public.

### Discovering IASS research via a jigsaw

The research carried out at the institute takes centre stage, and visitors are invited to explore the wide range of topics covered by the IASS using an interactive graphic jigsaw. There they can find out what projects address which topics and questions. Most of the over 40 projects IASS researchers are currently working on fit thematically into several different research areas. The networked structure of the website thus reflects the institute’s approach to research: comprehensive, interdisciplinary, and collaborative.

### Giving our researchers a face

The approximately 120 researchers and fellows at the institute are featured on their own profile pages with their research topics and projects, skills, publications, and social media profiles. That puts not just one but many human faces to IASS research and also makes it easier to find experts on different sustainability topics. An integrated Solr search engine facilitates a quick access to informations and downloads.

## Accessibility and clarity as guiding principles

In redesigning the website, we took account of the user requirements and requests that emerged from a quantitative and a qualitative survey on the old website. The guiding principles of the new website concept were user-friendliness, clarity, and accessibility.

The renowned Berlin-based internet agency wegwerk implemented the design and programming of the new website in Drupal 8. The same agency is currently creating another website for the Kopernikus project from the IASS partner network: “Energy Transition Navigation System” (ENavi).



Climate Protection

## New Reports Recommend Strategies to Limit Warming to below 2° Celsius



Two new studies confirm that global temperature increases can be limited to less than 2° Celsius above pre-industrial levels. In other words, the Paris Agreement target is achievable – but only if the global community implements the following three climate protection strategies soon:

- The global energy system must be decarbonised by the middle of this century.
- Emissions of short-lived super climate pollutants like HFCs, methane, and soot need to be drastically reduced by 2020.
- Some atmospheric carbon extraction must be undertaken, since it will be needed over time if carbon dioxide emissions do not peak by 2020.

These are the main findings of two interlinked reports released during the New York City Climate Week on 15 September: “Well Under 2 Degrees Celsius: Fast Action Policies to Protect People and the Planet from Extreme Climate Change” by 33 renowned scientists and policy experts, and the peer-reviewed report “Well Below 2 °C: Mitigation strategies for avoiding dangerous to catastrophic climate changes” by Yangyang Xu and Veerabhadran Ramanathan, which was published in the Proceedings of the National Academy of Science (PNAS).

UN General Secretary Ban Ki-moon speaking to delegates at the Paris Climate Conference on 30 November 2015.

© UN Photo/Rick Bajornas

Further information:

- “Well Under 2 Degrees Celsius: Fast Action Policies to Protect People and the Planet from Extreme Climate Change”: The report can be found [here](#).
- “Well Below 2°C: Mitigation strategies for avoiding dangerous to catastrophic climate changes”: The report can be found [here](#).

## First scientific prediction of an existential threat

Both reports outline specific science-based policy pathways that serve as the building blocks for a three-lever strategy that could limit warming to well under 2° Celsius. This is probably the first time scientific reports written by climate scientists are concluding that unchecked climate changes pose existential threats to the entire human population and many other species. As co-author of the “Well Under 2 Degrees Celsius” report, IASS Scientific Director Mark Lawrence contributed especially to the section on atmospheric carbon extraction and to the foreword by Paul Crutzen.

“Climate change is an urgent problem requiring urgent solutions,” said Nobel Laureate Mario Molina, lead co-chair of one of the reports. “We have less than a decade to put these solutions in place around the world to preserve nature and our quality of life for generations to come. The time is now.”

Participation

## Democracy Boosts Climate Performance



Scientists took to the streets in the March for Science in Paris and other cities on 22 April 2017 to protest against 'alternative facts' in climate policy.

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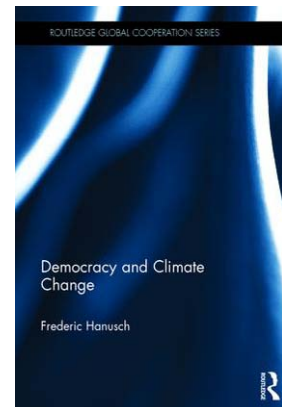
In “Democracy and Climate Change”, the political scientist Frederic Hanusch from the IAASS examines the connection between the quality of a democracy and its commitment to protecting the climate. His conclusion: countries with high democratic standards tend to adopt more ambitious climate policies.

“Admittedly, democracies are challenged when it comes to finding the right solutions to climate change. However, it is also clear that it is only by broadening democracy that climate change can be adequately addressed. Making our societies more climate friendly by design rather than in response to climate-induced disasters requires both a high degree of quality of democracy and the successful interplay of key dimensions such as transparency, independence and creativity,” says Hanusch. Recent experiences in the fields of mobility and energy generation, for example, show that people are more likely to change their lifestyles when they are able to play an active role in creating alternatives.

### The Canadian experience: lessons from a democratic experiment

Hanusch’s book offers an empirical analysis of the influence of quality of democracy on climate protection across forty countries and draws substantially on the example of the Canadian experience. Under the Kyoto Protocol, from which Canada withdrew in 2011, the country committed to achieving a six per cent reduction in CO<sub>2</sub> emissions by 2012 compared to 1990 levels. With the adoption of this target, the Canadian government abandoned a previously agreed national consensus, under which CO<sub>2</sub> emissions would have remained stable. This

Further information:



■ Frederic Hanusch: **Democracy and Climate Change**, Routledge, London 2017.

led to the development of a national climate change process built around public hearings and inclusive working groups. In his analysis, Hanusch shows that this experiment failed largely due to the lack of democratic tools that could have supported the integration of different voices and perspectives. “Developing climate policies and pathways for their implementation through inclusive and transparent policy processes requires robust frameworks for participation and decision-making. In their absence, processes are likely to stall, leading to frustration among participants. And that, in turn, can diminish future engagement,” explains the researcher. The adoption of more effective democratic structures may well have delivered a successful outcome.

### Using democratic solutions to develop climate policy

Despite this, Canada has benefited from the repeated reassessment of its climate policy since the Kyoto conference, and the topic has remained high on the public agenda. The strong prospects for progressive climate policy enjoyed by the new Canadian government are due to the work of an institution that offers a role model for other democracies: the Commissioner for the Environment and Sustainable Development. The Commissioner provides parliamentarians with objective, independent analysis and recommendations with regard to the federal government’s efforts, and enables them to assess the government’s performance. “The establishment of similar institutions would enhance the quality of many democracies and improve their climate change performance,” Hanusch emphasises.

Other countries would do well to engage in democratic experiments of this kind, the author suggests, noting that democracies should not be viewed as static entities. Rather, Hanusch argues, they must adapt to the challenges of the day.

Air Quality

## What Would 'Clean' Diesel Cars Do for Air Quality in Berlin?



IASS researcher Erika von Schneidemesser at an air monitoring station in Berlin.

© IASS/Rolf Schulten

According to recent calculations by IASS researchers, if all diesel passenger cars were to comply with the emission standards recommended by the United States Environmental Protection Agency (EPA), the likelihood of limit value exceedances would fall significantly.

“This is currently the strictest standard. We would already see a significant improvement in air quality if vehicles were to comply with the Euro 5 emissions standard. But given the desire of carmakers to sell their vehicles globally, they should be capable of complying with EPA standards. They would have to invest in research and development to achieve this. Our study shows that this investment would contribute significantly to achieving EU air quality targets. Emissions from Euro 5 light passenger vehicles are currently up to five times higher than the statutory limit value in the EU, while emissions from Euro 6 passenger vehicles are as much as four to twenty times higher,” explains lead author Erika von Schneidemesser. Nitrogen dioxide (NO<sub>2</sub>) is considered to be harmful to human health and has been linked to respiratory, heart and circulatory diseases.

### Data from air quality monitoring stations and an atmospheric chemistry model

In order to establish a reliable data basis, the research team used two independent methods based on measurements gathered at 16 monitoring stations in Berlin and an atmospheric chemistry model. The monitoring stations provided data on roadside concentrations of NO<sub>2</sub> as well as on the so-called urban background concentration at some distance from major sources of air pollution, such as industry or vehicles. The atmospheric chemistry model WRF-Chem was used to

■ You can find the new study [here](#).

provide data on the urban background concentration exclusively. In both cases, the background concentration results were very similar, underscoring the robustness of the results.

An annual mean concentration of 51 micrograms of NO<sub>2</sub> per cubic metre ( $\mu\text{g m}^{-3}$ ) was measured at the six roadside monitoring stations in Berlin over the course of 2014. This clearly exceeds the EU limit value of 40  $\mu\text{g m}^{-3}$ . The mean urban background concentration measured was 26  $\mu\text{g m}^{-3}$ . The researchers used data on emissions of nitrous oxides (NO<sub>x</sub>) from a European emissions inventory to calculate the proportion of NO<sub>x</sub> emissions from diesel passenger cars. They then estimated the share of NO<sub>2</sub> – to which the EU limit value refers – in overall NO<sub>x</sub> emissions.

### **Emissions below limit values even on busy roads**

The researchers' calculations show that diesel passenger vehicles account for 3,500 to 6,500 kilotons of the nearly 25,000 kilotons of annual NO<sub>x</sub> emissions in Berlin. If vehicles were to comply with the EPA standards, these emissions would drop to between 190 and 355 kilotons. This reduction would have the effect of reducing the annual mean urban background concentration of NO<sub>2</sub> by 1.2 to 2.2  $\mu\text{g m}^{-3}$ . Under this scenario, the mean value measured at roadside monitoring stations would even drop by 9 to 17  $\mu\text{g m}^{-3}$ . "Limit value exceedances would occur far less frequently. In light of these very clear impacts, policymakers should compel carmakers to take effective measures, particularly in Germany, where diesel has been heavily promoted," commented von Schneidemesser.

Energy Policy

## Policymakers Should End Support for Large-Scale Biofuel Production and Use



A special issue of the journal *Energy Policy* offers a critical examination of the benefits of biofuels: Is the expansion of bioenergy production contributing to a reduction in greenhouse gas emissions? Is it creating high-quality jobs? Does it promote rural development? How do actors from the political community and civil society deal with the risks? In this special issue, researchers draw on their analyses to make recommendations for a “more ethical approach to the planning and implementation of national biofuels programmes”.

### Bioenergy programmes frequently ignore negative impacts

Co-editor and IASS researcher Ariane Götz sees considerable need for improvement worldwide: “The state and private sector governance mechanisms in the countries examined here are not adequate to the task of ensuring effective nature and biodiversity conservation, preventing land conflicts, and improving the living conditions of populations. This applies not only to the main producers of biofuels: the countries where biofuels are consumed should also strive to implement strict certification schemes and reduce their overall demand.” In many cases a holistic approach is lacking, as Götz writes in an article co-authored with Laura German (University of Georgia), Carol Hunsberger (Western University), and Oscar Schmidt (IASS). Many programmes focus on specific aspects such as energy security or economic growth. Negative impacts on biodiversity and social structures in rural areas are often not addressed.

Protecting the climate? Studies that attribute significant potential to biofuels employ controversial carbon accounting methods.

© iStock/Teka77

Further information:

- The new publication can be found [here](#).

## Reductions in CO<sub>2</sub> emissions frequently miscalculated

That bioenergy plays such a prominent role in the sustainability strategies of many countries is due, among other things, to the great potential attributed to them in scientific studies. In their analysis of these studies, Timothy D. Searchinger (Princeton University), Tim Beringer (Mercator Research Institute on Global Commons and Climate Change) and Asa Strong (World Resources Institute) conclude that while they include potential greenhouse gas savings in their calculations, they do not account for the costs of land use for biofuels. Thus, current CO<sub>2</sub> savings calculations ignore the fact that changes in land use for the production of bioenergy always result in the release of CO<sub>2</sub> stored in soils and plants. The soil's function as a carbon sink is lost in the process. The calculations also ignored emissions from biomass burning. The loss of soils that would otherwise be used for the cultivation of foodstuffs must also be taken into account as an additional cost factor.

According to the authors, this "accounting error" highlights the need to look at alternatives: "Photovoltaics could produce at least a hundred times more usable energy per hectare on 73 per cent of the world's surface," they write. Using more land for solar power generation rather than the cultivation of energy crops would represent a significant contribution to the fight against climate change.

## Policymakers should set their sights on lowering energy consumption

Summarising their findings, the researchers recommend that policymakers should end efforts to promote the production of bioenergy from energy crops. In light of the poor performance of bioenergy, the authors advise policymakers to forge new paths in the expansion of renewable energies, while simultaneously stepping back and seeking to reduce overall energy demand. In those cases where new bioenergy programmes are to be implemented, an "adaptive and collaborative approach" is recommended.



Digitalisation

## New UNIDO Report Explores Potential of Industry 4.0 to Accelerate Energy Transition



Industry 4.0 promises improved methods of production and business models through new technologies, including automation, augmented reality, and the Internet of Things, all of which could accelerate the deployment of renewable energy in manufacturing, reduce carbon emissions, optimise energy use, and enhance productivity and cost savings. This is the conclusion of a report published by the United Nations Industrial Development Organization (UNIDO).

Yet digitalisation also presents challenges that relate to countries' ability to efficiently and rapidly introduce new technologies in manufacturing processes, and could eventually result in greater inequality. The report explores the conditions that need to be met to ensure that all countries can benefit from the potential of Industry 4.0 to advance sustainable energy. "We should make sure we shape the future of Industry 4.0 in a sustainable way, so that developed and developing countries can transform their industries towards a more sustainable future," said Grischa Beier, who leads a project on "Digitalisation and Impacts on Sustainability" at the IASS.

### Pathways towards sustainable energy

The report looks into two development pathways towards more sustainable energy: developed countries could retrofit their systems to improve energy efficiency, while developing countries could industrialise in a more sustainable manner by jumping from older technologies to very modern ones, such as smart factories and decentralised micro-grids. The report argues that the revolution needs to be supported by policies that foster the transition to sustainable energy systems. At the same time, it makes concrete policy recommendations.

Does automated production support the deployment of renewable energies? A recent report by UNIDO investigates this issue.

© iStock/skynesher

Further information:

- A short version of the report can be found [here](#).
- The full report can be found [here](#).

“UNIDO can provide policy advice to governments for setting up suitable framework conditions,” said UNIDO Senior Programme Management Expert Takeshi Nagasawa. “As a knowledge-sharing and project development platform, UNIDO can help capitalise on the sustainable energy aspects of Industry 4.0 by transforming systems or leapfrog technology waves.”

### **In Tune with the Sustainable Development Goals**

The report further points out that by enhancing the use of information and communications technologies and increasing internet access, there could be a multiplier effect that would contribute to achieving different Sustainable Development Goals (SDGs). In particular, advancing SDG 9 on industry, innovation and infrastructure could help tackle SDG 7 on affordable and clean energy and SDG 13 on climate action.

Urban Development

## Potsdam Summer School Explores the Future of Cities



IASS researcher Thomas Bruhn with participants of the 2017 Potsdam Summer School.

© IASS/Rolf Schulten

Rising temperatures, ocean acidification, biodiversity loss: current developments are having a massive impact on the futures of billions of people worldwide. How can we enhance the sustainability of human environments – especially urban settlement zones – in a rapidly changing world? That was the focus of the Potsdam Summer School held from 4 to 13 September.

Over the course of ten days, talented early-career researchers and young professionals discussed the challenges of the future. How can energy and transportation systems, water supply networks, and land-use practices be adapted to address the impacts of population growth, climate change, and other megatrends as well as delivering on the promise of the United Nations 2030 Agenda for Sustainable Development? Developing viable solutions to these complex challenges requires diverse perspectives and knowledge that is grounded in experience.

### Addressing global challenges through diverse perspectives

Selected from a pool of over three hundred and fifty applicants, the Potsdam Summer School's 42 participants were aged between 25 and 45 years and came from diverse professional backgrounds and parts of the world. Bringing together a broad spectrum of knowledge, they met with leading international researchers in the field of sustainability in Potsdam to develop strategies for the future of human environments.

■ The manifesto of the Potsdam Summer School can be found **here**.

■ Further information: [www.potsdam-summer-school.org](http://www.potsdam-summer-school.org)

On 8 September, the Summer School participants visited the garden-city borough of Drewitz in Potsdam, a local example of sustainable urban development. On 13 September, they presented a manifesto detailing the findings of the 2017 Potsdam Summer School.

The fourth Potsdam Summer School was organised by the Alfred Wegener Institute – Helmholtz Centre for Polar and Marine Research (AWI), the Helmholtz-Centre Potsdam – GFZ German Research Centre for Geosciences, the Institute for Advanced Sustainability Studies (IASS), the Potsdam Institute for Climate Impact Research (PIK), and the University of Potsdam in cooperation with the state capital, Potsdam.

## SELECTED PUBLICATIONS

Selected articles published by IASS researchers in peer-reviewed journals and specialist publications from mid-July to November 2017.

### Journals

Beier, G., Pohl, J. (2017): Ökologische Nachhaltigkeit in der digitalen Produktion. – *Ökologisches Wirtschaften*, 32, 3, pp. 18–20.

■ **Link**

Bhardwaj, P., Naja, M., Rupakheti, M., Panday, A. K., Kumar, R., Mahata, K., Lal, S., Chandola, H. C., Lawrence, M. G. (2017 online): Variations in surface ozone and carbon monoxide in the Kathmandu Valley and surrounding broader regions during SusKat-ABC field campaign: Role of local and regional sources. – *Atmospheric Chemistry and Physics Discussion*, pp. 1–49.

■ **Link**

Bozem, H., Butler, T. M., Lawrence, M. G., Harder, H., Martinez, M., Kubistin, D., Lelieveld, J., Fischer, H. (2017): Chemical processes related to net ozone tendencies in the free troposphere. – *Atmospheric Chemistry and Physics*, 17, 17, pp. 10565–10582.

■ **Link**

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## NEW PROJECTS AND COOPERATIONS

### **STRONG High Seas - Strengthening Regional Ocean Governance for the High Seas**

Launched at the UN Ocean Conference in New York in June 2017, *STRONG High Seas - Strengthening Regional Ocean Governance for the High Seas* is a new project funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) through the International Climate Initiative (IKI) and delivered under the framework of the Partnership for Regional Ocean Governance (PROG). At the Our Ocean Conference in Malta in early October, the German Environment Minister Barbara Hendricks officially announced that the German Government will provide a total funding volume of 3.9 million euro for this five-year project.

The STRONG High Seas project focuses on the Southeast Pacific and Southeast Atlantic. Thanks to their unique oceanographic and ecological features, both regions are home to a huge diversity of commercially and ecologically valuable species and contribute to high marine and coastal productivity. Working with the Secretariat of the Comisión Permanente del Pacífico Sur (CPPS; Permanent Commission for the South Pacific) and the Secretariat of the West, Central and Southern Africa Regional Seas Programme (Abidjan Convention), this project will develop and propose targeted measures to support the coordinated development of integrated and ecosystem-based approaches for ocean governance in areas beyond national jurisdiction and support capacity building within the two regions. The emphasis will be placed on building scientific, socio-economic, and legal cases for the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction. In addition, tools and mechanisms for monitoring, control, and surveillance will be identified. The overarching objective is to promote multi-stakeholder processes in other regions and the implementation of a new legal instrument under the United Nations Convention on the Law of the Sea (UNCLOS).

The Institute for Advanced Sustainability Studies (IASS) will coordinate the project and implement it together with six partners based in Europe, South America, and Africa: the Institute for Sustainable Development and International Relations (IDDRI), BirdLife International, the International Ocean Institute (IOI) – Southern Africa, the Universidad Católica del Norte (UCN), WWF Colombia, and WWF Germany. The kick-off meeting of the STRONG High Seas project took place from

10 to 11 October 2017 at the IASS in Potsdam, Germany. This gave all project partners the opportunity to meet and discuss the planning and management of the project.

For more information about the STRONG High Seas project, please contact:

Mr Sebastian Unger, Leader Ocean Governance, IASS:  
**[sebastian.unger@iass-potsdam.de](mailto:sebastian.unger@iass-potsdam.de)**

Dr Carole Durussel, Co-lead STRONG High Seas project:  
**[carole.durussel@iass-potsdam.de](mailto:carole.durussel@iass-potsdam.de)**

Follow us on Twitter: **[#stronghighseas](https://twitter.com/stronghighseas)**

Contact:

■ **Sebastian Unger**

■ **Carole Durussel**

■ For more information about the Partnership for Regional Ocean Governance (PROG), please visit: **[www.prog-ocean.org](http://www.prog-ocean.org)**.

## JOB ADVERTISEMENTS

### Non-scientific positions

The IASS is currently seeking a:

#### [Salaries clerk](#)

Deadline for applications: 10 November 2017

#### [Tendering assistant for the Science Platform Sustainability 2030 \(part-time\)](#)

Deadline for applications: 30 November 2017

### Student Assistants

The IASS is currently seeking:

#### [Two student assistants for the Science Platform Sustainability 2030](#)

Deadline for applications is 19 November 2017

#### [A student assistant to provide IT support](#)

This position will remain open until it is filled.

■ [To the job advertisement \(in German\)](#)

■ [To the job advertisement \(in German\)](#)

■ [To the job advertisement \(in German\)](#)

■ [To the job advertisement \(in German\)](#)

## Awards and Appointments

IASS Scientific Director **Ortwin Renn** was recently presented with the international Integrated Disaster Risk Management Society's (IDRiM) Distinguished Research Award 2017 at IDRiM's annual general meeting in the Icelandic capital Reykjavik. With this annual award, the Society has been honouring outstanding research in the area of catastrophe and risk management since 2012. IDRiM's President Adam Rose underlined Renn's leading role in the development of the widely recognised Risk Governance Framework of the International Risk Governance Council (IRGC). He also praised Renn's excellent scientific work on integrated risk assessment and his commitment to designing concrete risk strategies and communicating them to the wider public.

IASS Research Associate **Bing Xue** was presented with the Youth Science and Technology Award of the Chinese province of Liaoning for his contribution to research in the areas of sustainability and industrial ecology. The Youth Science and Technology Award is awarded every two years to around 40 young researchers under 40. Recognised as one of the most prestigious prizes awarded by the Chinese provinces, it pays tribute to scientists who have made a significant contribution to technical development in their respective research fields.

**Claus Leggewie** joined the IASS as a Senior Fellow on 1 September 2017. "Time and Sustainability" is one of the issues he will explore during his stay here. Leggewie has engaged intensively with sustainability issues as a member of the German Advisory Council on Global Change (WBGU) and Director of the Institute for Advanced Study in the Humanities (KWI Essen). He first discovered the field of 'political ecology' as a student in Paris in the 1970s and has been true to it ever since, as evidenced most recently by the establishment of the Climate and Culture research area at the KWI. Together with IASS Scientific Director Patrizia Nanz, Leggewie published the book "Die Konsultative. Mehr Demokratie durch Bürgerbeteiligung" (The Consultative. More Democracy through Citizen Participation) in 2016.

## Upcoming Events

### November 2017

#### 6–17 November 2017

##### Climate Change Conference 2017 (COP23)

Organised by: United Nations, Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety  
Venue: World Conference Center, Bonn  
(By invitation only)

#### Selected IASS events at the COP23 in Bonn

#### 7 November 2017, 3–4.30 p.m.

Coordinated action on sustainable development and climate change  
Venue: Bonn Zone (Rheinaue), Meeting Room 4

#### 10 November 2017, 2.15–3.45 p.m.

Oceans in the Earth System: Sustainable Ocean Climate and the Role of Science  
Venue: Bonn Zone (Rheinaue), European Union Pavilion

#### 15 November 2017, 10 a.m. – 12.30 p.m.

How can transdisciplinary research contribute to greater advance of the energy transition?  
Venue: Transfer Zone (Rheinaue), Dome of the Helmholtz Centre Geesthacht Centre

#### 7 November 2017

Expert discussion  
**Effektiver Vollzug eines umweltverträglichen Tiefseebergbaus**  
Organised by: IASS, Federal Environment Agency  
Venue: IASS, Potsdam  
(By invitation only)

#### 9 November 2017

##### Beyond Good

##### Die Ethik-Konferenz

Invited speakers include IASS Scientific Director Patrizia Nanz,  
Organised by: Salon Luitpold, Street Philosophy  
Venue: Literaturhaus, Munich  
(Open to the public)

#### 13–14 November 2017

##### The Coal Rush and Beyond: A Workshop on Coal Contestation and Advocacy

Organised by: IASS  
Venue: IASS, Potsdam  
(By invitation only)

#### 14 November 2017

Presentation and discussion  
**Soziale Nachhaltigkeit der Energiewende – wo stehen wir in Deutschland?**  
Organised by: IASS  
Venue: GLS Campus Berlin  
(By invitation only)

#### 14 November 2017

68. Zeit Forum Wissenschaft  
**Expertise in der Krise**  
Organised by: ZEIT-Stiftung Ebelin und Gerd Bucerius, the weekly German newspaper DIE ZEIT  
Invited speakers include IASS Scientific Director Ortwin Renn,  
Venue: Berlin-Brandenburg Academy of Sciences and Humanities  
(Open to the public)

#### 15–17 November 2017

Workshop and symposium  
**Areas-Based Management COST Action Governance for Sustainability**  
Organised by: IASS, La Laguna University  
Venue: Tenerife, Spain  
(By invitation only)

**22 November 2017**

**Meeting of the Kopernikus  
Competence Team**

Organised by: IASS  
Venue: IASS, Potsdam  
(By invitation only)

**23–24 November 2017**

Workshop  
**Futurisation of Politics**

Organised by: IASS  
Venue: IASS, Potsdam  
(By invitation only)

**23–24 November 2017**

**Meeting of the ENavi/Kopernikus  
research consortium**

Organised by: IASS  
Venue: IASS, Potsdam  
(By invitation only)

**December 2017**

**4–5 December 2017**

Workshop  
**Democratic Sustainability**

Organised by: IASS  
Venue: IASS, Potsdam  
(By invitation only)

**7–8 December 2017**

**Blue Action Workshop**

Organised by: IASS, Kiel Institute  
for the World Economy (IfW)  
Venue: Moscow  
(By invitation only)

**13 December 2017**

**3<sup>rd</sup> meeting of the steering committee  
of the Science Platform Sustainability  
2030**

Organised by: IASS  
Venue: Berlin  
(By invitation only)

**13–14 December 2017**

4<sup>th</sup> Potsdam Ocean Governance Work-  
shop

**The Ocean in 2030 – How to get to  
the future we want?**

Organised by: IASS, IDDRI, GEOMAR,  
TMG – Think Tank for Sustainability  
Venue: IASS, Potsdam  
(By invitation only)

■ **To the IASS Calendar of Events**

**Join the discussion:** Should we still be flying? Could cargo bike sharing promote the green transport revolution in our towns and cities? And why is Bhutan a role model in matters of ecological sustainability? Read more about these issues in the latest blog contributions by IASS scientists.

**Follow us on Twitter!**

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