

# Acid News

## Upgrading electricity grids in Eastern Europe

The integration of renewable sources into electricity grids is reshaping the way many nations approach sustainability.

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## US EPA unveils stricter standards for air quality

The US air quality standard for fine particulate matter is reduced from 12 to 9  $\mu\text{g}/\text{m}^3$ .

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The Air Convention Parties have committed to a revision of the Gothenburg Protocol. Existing measures fall short in safeguarding human health, ecosystems, crop yields, and the climate.

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High upfront costs, limited financing options, and a lack of awareness among landlords and tenants are some of the barriers for renewable heating adoption in the rental sector.

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## A turning point for oceans in climate action

The COP28 not only stressed the crucial role of oceans in combating climate change but also laid the ground for enhanced integration of ocean action in UNFCCC processes.

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# The economic benefits of a food system transition

Restoring ecosystems and limiting emissions from farming could curb hidden costs from the food system by around 500 billion US dollars a year. Combined with healthy diets and tackling poverty, the benefits are many times greater.

**Five years after** the launch of the 2019 EAT-Lancet Commission report<sup>1</sup> comes the sequel. Some of the prominent names behind the last report have assembled a new commission comprising economic, health and sustainability experts, known as the Food System Economics Commission. Their work is presented in a report<sup>2</sup> that addresses the costs incurred by an unus-

tainable food system, manifesting as both human suffering and planetary harm. They have calculated the economic toll of continuing on the set path, pegging it at a minimum of 10 trillion US dollars annually by 2050. However, there is also a more hopeful message: it is estimated that more than half of this loss could be

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# Acid News

A newsletter from the Air Pollution & Climate Secretariat, the primary aim of which is to provide information on air pollution and its effects on health and the environment.

Anyone interested in these matters is invited to contact the Secretariat. All requests for information or material will be dealt with to the best of our ability. Acid News is available free of charge.

In order to fulfil the purpose of Acid News, we need information from everywhere, so if you have read or heard about something that might be of general interest, please write or send a copy to:

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## The Air Pollution and Climate Secretariat

The Secretariat has a board consisting of one representative from each of the following organisations: Friends of the Earth Sweden, Nature and Youth Sweden, the Swedish Society for Nature Conservation, and the World Wide Fund for Nature (WWF) Sweden.

The essential aim of the Secretariat is to promote awareness of the problems associated with air pollution and climate change, and thus, in part as a result of public pressure, to bring about the needed reductions in the emissions of air pollutants and greenhouse gases. The aim is to have those emissions eventually brought down to levels that man and the environment can tolerate without suffering damage.

In furtherance of these aims, the Secretariat:

- Keeps up observation of political trends and scientific developments.
- Acts as an information centre, primarily for European environmentalist organisations, but also for the media, authorities, and researchers.
- Produces information material.
- Supports environmentalist bodies in other countries in their work towards common ends.
- Participates in the advocacy and campaigning activities of European environmentalist organisations concerning European policy relating to air quality and climate change, as well as in meetings of the Convention on Long-range Transboundary Air Pollution and the UN Framework Convention on Climate Change.

# Editorial

Last autumn, a cold shower came from the EU Commission. Nothing would be done to fulfil a range of remaining commitments from Farm to Fork. Several nearly finished proposals, developed over years by the Commission's officials, were put on ice. Among them, are the Sustainable Food System Law and the Integrated Nutrient Management Action Plan, along with animal welfare and pesticide legislation.

Instead, a strategic dialogue on the Future of EU Agriculture was launched with the aim of “less polarisation”, accompanied by the somewhat clichéd declaration that “agriculture and protection of the natural world can go hand in hand”. The process commenced in January, involving 31 representatives from different interest groups. The outcome is anticipated to be a report containing recommendations for the upcoming EU Commission.

Meanwhile the ongoing farmer protests across Europe have been hard to ignore. From a distance, it might seem like a unified movement. They are likely inspired by each other's methods. However, the reasons behind the discontent and the demands vary:

- German farmers protested against proposals to eliminate tax exemptions for agricultural vehicles and a halt to agrarian diesel.
- French farmers are dissatisfied with perceived low wages, extensive regulations, and unfair competition from farmers in other countries.
- Polish farmers' anger is directed at the influx of cheap Ukrainian cereals, a concern shared by farmers in other Visegrád countries.
- Spanish farmers have demanded changes in EU agricultural policy and measures to combat drought and rising production costs. Similar demands can be heard from farmers in neighbouring Portugal
- Dutch farmers protest the implementation of nitrogen measures based on the 1992 Habitat Directive.
- Belgian farmers are upset about what they consider rigid EU rules regarding,

expensive fuels, and competition from goods imported from countries with lower environmental requirements.

It's a mix with often location-specific and sometimes even contradictory issues. However, many EU politicians and the European umbrella farmers organisation,

Copa-Cogeca, have not hesitated to paint a much simpler picture of an angry rural population versus environmental activists in the cities wanting to make life difficult for farmers. We will likely hear more of such rhetoric, which is unfortunate and even dangerous.

The drought that farmers on the Iberian Peninsula are suffering is a direct consequence of climate change. As you can read in the front-page article there are great economic benefits of transitioning agriculture now, compared to sticking to old tracks for a few more decades.

As a group, farmers do not face as tough economic conditions as one might think. Statistics show that, on average, farmers' incomes have not deteriorated compared to other industries in the past decades<sup>1</sup>. However, certain parts of the sector may have had a worse outcome, likely over-represented by those visible on the streets.

What is not talked about as much is that the agro-industry that provides farmers with feed, fertilisers and pesticides, makes money by not transitioning. It's also known that they have financially supported the protests on several occasions.<sup>2</sup>

Will the strategic dialogue lead to the consensus it aims for? I would encourage them to be inspired by the Food System Economics Commission, sit down, and examine the debits and credits for both the environment and farmers in depth. Ultimately, it's not just a question of whether agriculture and the protection of the natural world “can” go hand in hand – they must do so.

Kajsa Pira

<sup>1</sup> <http://capreform.eu/what-is-actually-happening-with-agricultural-incomes/>

<sup>2</sup> <https://nos.nl/nieuwsuur/collectie/13910/artikel/2435724-agro-industrie-moet-miljardenn-meebetalen-aan-stikstofcrisis>





## The economic benefits of a food system transition

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time. The positive impact is due to the restoration of forests and ecosystems, as well as effectively counteracting the lingering effects of methane emissions and nitrogen pollution from farming. Furthermore, the Food System Transition pathway implies a significant improvement in nitrogen use efficiency.

For health, the reduction in hidden costs becomes more noticeable, amplifying Food System Transition pathway's impact over time. This progress is attributed to the gradual adoption of healthier diets, steadily contributing to the pathway's positive influence on public health.

The overall reduction in hidden costs between 2020 and 2050 under the Food System Transition pathway can be dissected as follows:

- A significant part, 55 per cent of the total reduction, stems from curbing health-related hidden costs. This is mainly due to addressing overconsumption, leading to a decrease in the years of life lost to non-communicable diseases.
- Another 45 per cent is attributed to mitigating environmental costs. This reduction arises from a variety of measures, including the decrease in greenhouse gas emissions from agriculture (13 per cent), preventing habitat loss (17 per cent), and reducing nitrogen pollution (15 per cent).
- In contrast, the hidden costs of poverty undergo minimal change, accounting

for less than half a percentage point of the gross benefits of the Food System Transition. This is primarily due to an increase in food prices. Although income support measures offset this increase, they do not eliminate poverty.

The Food System Transition pathway, on its own, does not erase all hidden costs of the global food system. The remaining costs are mostly associated with the lasting burden of disease. In contrast, the food system gradually transforms into a net carbon sink, resulting in overall net environmental benefits.

**Turning to the** top-down approach, where a kind of social welfare calculator is used. First off, the commissioners have estimated the global social welfare under the two pathways. Then they calculate the difference in welfare between these two paths and quantify it in dollars to figure out the net economic benefits under the Food System Transition.

Applying the top-down approach, the projected net economic benefits of the Food System Transition amount to approximately 10 trillion US dollars annually by 2050. This constitutes roughly 8 per cent of global GDP PPP in 2020, as illustrated in Figure 2. The cumulative net welfare gains are projected to reach 270 trillion US dollars by the middle of the century. That is considerably more than in the bottom-up approach. The major differ-

ence is that the top-down approach takes a bigger picture view of how everyone's income changes, not just focusing on the poor. When only comparing the combined value of environmental and health benefits, the two assessments end up close to each other, within the range of 5–6 trillion US dollars PPP per year, which reinforces the reliability of the findings.

**The attentive reader** has probably noticed that a crucial part is missing from the equation. What are the costs of implementing the Food System Transition pathway? The researchers estimate the costs to fall within the range of 200 to 500 billion US dollars PPP annually until 2050. The wide range considers the great uncertainty that prevails regarding poverty measures above all. It plays out as follow:

- The safety nets are estimated to account for the largest share of the transition costs, roughly 300 billion US dollars.
- Measures to protect, restore and manage forests and other natural ecosystems, which are expected to comprise annual expenditures of almost 90 billion US dollars.
- Reducing GHG emissions from livestock and crop production through improved management practices, agroforestry, increasing soil organic carbon croplands and grasslands, and biochar applications may cost 70 billion US dollars.
- Ensuring an inclusive transition by investing in rural infrastructure and training is expected to absorb some 30 billion US dollars per year.
- Measures to support shifts to healthy diets is expected to need slightly more than 20 billion US dollars a year.

A transition of the food system would bring great economic benefits. And the required investment appears to be readily affordable on a global scale – estimated to range between 0.2 and 0.4 per cent of the global GDP PPP in 2020. However, these costs disproportionately burden low-income countries, surpassing their financial capacity. Even at the lower bound of cost estimates, covering the expenses of the transformation in low-income countries would necessitate nearly 2 per cent of their GDP PPP in 2020. In middle- and

Trillion USD PPP 2020

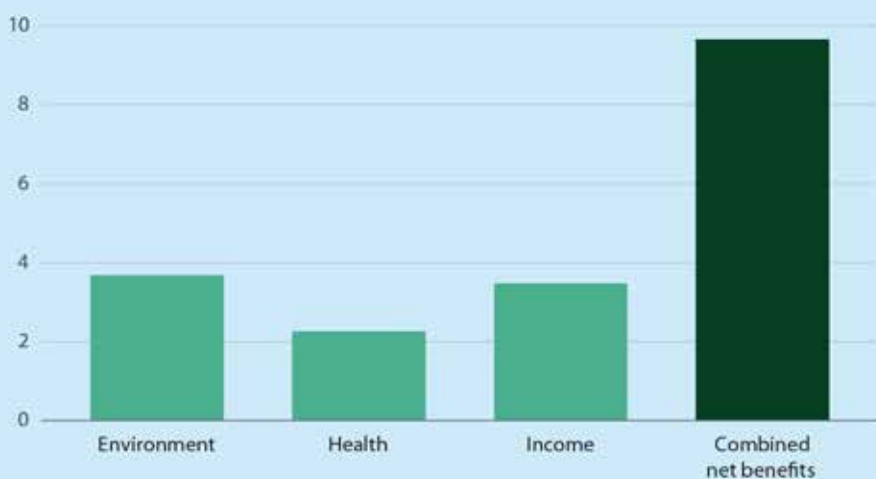


Figure 2. Net benefits of the FST compared to current trends, overall and disaggregated by food system outcome, top-down approach.



high-income countries the relative cost to GDP is in the order of one tenth or one hundredth of that in poor countries. This calls for the need for global redistribution, but the report's authors state that at present a tiny part of international development funds and climate finance are directed to measures in the food system.

The report highlights that actual global food system change will mostly unfold on national and local levels. While there isn't a one-size-fits-all blueprint, they have identified five overarching priorities that can serve as guiding principles for national and local strategies:

Support a shift towards healthy diets. There are some measures that have been proven effective, but this is an area where policy development and research is needed.

- Farm subsidies must favour a sustainable food system. Unlike today where a lot of support is directed towards the largest farms and promotes unsustainable practices.
- Develop carbon and nitrogen taxes to propel the transition. Since net carbon sinks and reducing nitrogen pollution will bring great benefits.
- Empower and streamline the dissemination of innovation. Especially those that facilitate for small-scale farmers in low- and middle-income countries.
- Improve safety nets to keep food affordable for the poorest. This is key to making food system transformations inclusive and politically feasible.

The report underscores the urgent need for a transformative approach to the global food system to mitigate costs, promote health and ensure environmental sustainability, while acknowledging the challenges and emphasising the importance of global co-operation and inclusive policies. The focus on the economic benefit of a transition is well-timed given the recent and on-going protests by farmers in several parts of the world. Hopefully, this type of economic analysis can provide a potential avenue for mutual understanding and agreement.

Kajsa Pira

1 The EAT-Lancet Commission Report, 19 January 2019, [https://doi.org/10.1016/S0140-6736\(18\)31788-4](https://doi.org/10.1016/S0140-6736(18)31788-4)

2 The Economics of the Food System Transformation, 27 January 2024, <https://foodsystemeconomics.org/>

## Danish court declares Europe's largest pork producer guilty of greenwashing

Denmark's high court has ruled against Danish Crown, Europe's largest pork producer, in the country's first climate lawsuit, stating that the company misled customers with its "climate-controlled pork" campaign. The court found that the label had not been subject to independent control, violating Denmark's marketing act and limiting consumers' ability to make informed decisions. However, the court accepted the second claim that Danish Crown's pork was "more climate-friendly than you think." Activists hope the case, brought by the Vegetarian Society of Denmark and the Climate Movement, sets a precedent for holding food industry giants accountable for greenwashing.



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Danish Crown has been ordered to pay legal costs.

The Guardian, 1 March 2024, <https://www.theguardian.com/environment/2024/mar/01/danish-firm-climate-controlled-pork-claim-misleading-court-rules>

## Danish proposal for a tax on farm emissions

On 21 February, an expert group appointed by the Danish government unveiled its conclusive report, presenting three proposed models for a CO<sub>2</sub>e tax on agriculture. The group's mandate was to determine the most effective ways for the agricultural sector to contribute towards Denmark's goals of a 70% reduction in greenhouse gas emissions by 2030 and achieving climate neutrality by 2045.

The three main models all suggest a tax on greenhouse gas emissions ranging from 250 to 750 Danish kroner per ton, combined with deductions and subsidies funded through the restructuring of agricultural support. If they are fully implemented their potential to reduce

emissions are between 2.4 and 3.2 million tons of CO<sub>2</sub>e by 2030.

"In our work, we have placed emphasis on specifying models that, to varying degrees, balance the consideration of achieving the socio-economically cheapest goal with the consideration of reducing the burden on agriculture, the risk of production decline and leakage of greenhouse gas emissions abroad," said Michael Svarer, professor of economics and chairman of the expert group.

Danish Ministry of Taxation, press release, 21 February 2024: <https://skm.dk/aktuelt/presse-nyheder/pressemeddelelser/ekspertgruppen-praesenterer-tre-modeller-for-en-co2e-afgift-for-landbruget>

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# Proper accounting in agriculture

As concerns about the impact of industrial farming grow, a visionary company in southern Germany has developed a tool to recognise and incentivise sustainable practices.

**Industrial farming** has many harmful effects, including soil erosion, loss of soil organic carbon, biodiversity loss, nitrate leaching and water contamination. On the other hand, diversified farms, managed under agroecological principles, may have many positive effects. However, neither the negative nor most of the positive impacts of agriculture are reflected in farm balance sheets or translated into market prices for agricultural products.

In response to these challenges Regionalwert AG Freiburg/Br, a citizen shareholder company in southern Germany, has developed a method for “proper accounting in agriculture”. The founder Christian Hiß grew up on one of the first organic farms in Germany. He had his own organic gardening business for some years, but quickly realised that sustainable farming in small, regional cycles was not financially worthwhile. However, turning to mass production and giving up the diversity of his farm was out of the question for him. Instead, he began to fundamentally rethink operational performance accounting.

The work started in 2016 and was done in collaboration with practitioners, society and academia, and the first commercial version of the calculator was launched in 2020. Since 2021, the tool has been managed as a separate business (Regionalwert Leistungen AG).

“Our mission is to reform the accounting practices in agriculture,” says Johanna Norris who works for Regionalwert Leistungen’s international team, in explaining the core idea. “The task is to assess sustainable practices on the production side – anything the farm can do that contributes to sustainability, whether it is ecological sustainability, supporting social infrastructure or supporting the regional economy. These are our three pillars.”

The performance calculator identifies and values sustainable farm management activities and assesses them based on the three

pillars. These in turn are subdivided into ten thematic areas: soil fertility, biodiversity, climate and water, animal welfare, expertise, role in the community, quality of employment, economic sovereignty, regional economic cycles, and regional network. Each area includes sub-areas that are assessed using indicators.

She explains the procedure: “We have around 300 key performance indicators (KPIs), which we use to assess how sustainable a farm is. Farmers type in their data, they are asked a series of questions, the data entry takes up to five hours, in some cases a lot less.”

In most cases the farmers themselves pay for the service. Norris sees the time it takes to enter the data as one of the main challenges. “Farmers have a lot to do already, they don’t really want to do all the bureaucratic work.” But she believes that the effort pays off, since “this can bring them a lot of planning benefits, strategic advice”.

The result of each KPI is measured and rated on a colour-coded scale with the sustainability level expressed as a percentage. The reported efforts are also valued financially, which is a key element of the tool. “The aim is for the farmers to be compensated for these actions.”

In addition to individual farmers, a handful of food processors, millers and producers of breakfast cereals have purchased bundles of codes for their suppliers to enter data into the tool. The aim is to

monitor and support their farmers in their sustainability efforts.

There are also ideas about collaborating with other actors downstream of the supply chain. “Retailers could play a major role. They could make big leaps in choosing growers or supporting growers to move towards more ecologically sound practices.”

Several hundred farms have already assessed their sustainability level. “The tool has been used to assess twelve different branches of farming all the way from livestock to vegetables and fruit farming”.

Most are based in Germany, but the tool is also being developed for use in other parts of the world. “The biggest farm that has put their data into the sheet was a farm from Latin America with 700 hectares.”

There are other tools that measure farm sustainability. “Though most of them are outcome-based, for instance they simply count how many bird species are found on the farm.” By contrast, the new tool measures “the actions that a farmer can take to contribute to a certain category, whether it is biodiversity or soil fertility”.

Besides being a tool for farmers here and now, there is also an ambition to introduce an alternative model for valuing the work of farmers and landowners on a broader scale.

Ultimately this would mean “a Common Agriculture Policy reform that is more based on the effort put in, rather than how many hectares a farm has, of course there are a lot of compliance rules, but the bulk of the money is distributed based on area, and we would like to see that changed”.

Kajsa Pira

Regionalwert Leistungen <https://www.regionalwert-leistungen.de/about-us/>

This article will be part of a report on sustainable food system policy, which will be published later this spring.





# Replacing old boilers is a key to cleaner air in Poland

A new report by the Clean Air Centre shows that Poland has the potential to reach the AAQD thresholds proposed by the European Commission by 2030. Doing so would require the replacement of 2.7 million existing outdated boilers. As shown in the model assumptions, most will come from the subsidy scheme (2.5 million replacements) and the rest will be replaced due to natural processes (300,000 replacements). To achieve this target, it is necessary to replace approx. 6,000 boilers per week, which might sound like a lot. But replacement is already happening in Poland at this rate.



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After completing these replacements, close to 30 million Poles will be living in areas which meet the AAQD standard air quality levels, compared to 2 million Poles who have this level of air quality today. Under this scenario, there will still

be some areas where additional actions will be necessary, including in the transport and industry sectors.

Poland's Journey to clean air and AAQD compliance by 2030 [https://clean-aircentre.eu/wp-content/uploads/2023/12/ECAC\\_POLANDS\\_JOURNEY\\_TO\\_CLEAN\\_AIR\\_en.pdf](https://clean-aircentre.eu/wp-content/uploads/2023/12/ECAC_POLANDS_JOURNEY_TO_CLEAN_AIR_en.pdf)

6000 boilers a week needs to be replaced in Poland.

# First air pollution meeting in Ethiopia

At the end of December, AirClim and a group of universities in the US, Sweden and Ethiopia organised the first air pollution meeting in Addis Ababa. Around 80 participants from Ethiopia, neighbouring countries and international agencies attended the venue



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hosted by Addis Ababa University. During the three-day workshop we learnt about the growing problem of outdoor air pollution in the regions, while the new data on monitoring gave good hints on how to address it. Addis Ababa has one of the highest reported levels of black carbon in the world, mainly emitted by old diesel vehicles, driving serious health impacts. We also learnt from positive stories about the retrofitting of cars and import taxes on old polluting vehicles.

Old diesel vehicles contribute to the highest levels of black carbon in the world.

# Cars are getting bigger

Are parking spaces getting smaller? No, it's the cars that are getting wider. Half a centimetre per year might not sound much but it has been adding up for decades now. James Nix, Vehicles Policy Manager at T&E, said: "Cars have been getting wider for decades and that trend will continue until we set a stricter limit. Currently the law allows new cars to be as wide as trucks. The result has been big SUVs and American-style pick-up trucks parking on our footpaths and endangering pedestrians, cyclists, and everyone else on the road."

Among the top 100 car models in 2023, T&E's research indicates that 52% of vehicles sold were too wide for the minimum on-street parking space in major cities. This includes bustling metropolises like London, Paris, and Rome. Even off-street parking is becoming a tight squeeze, especially for large luxury SUVs, which can measure

around 200 cm wide, leaving little space for car occupants to maneuver.

Several European cities have already taken steps to address this trend by introducing stricter parking rules for SUVs. Paris, in particular, is spearheading change and has called for a referendum to triple parking fees for heavy cars.

T&E proposes that EU lawmakers mandate a review of maximum car width when updating legislation, and city authorities should implement parking charges and tolls based on vehicle size and weight. These measures aim

to ensure that larger vehicles pay a fair price for using more space, contributing to a cleaner, safer, and greener urban future. Transport & Environment press release 22 January 2024



# Solutions for upgrading electricity grids in Central Eastern Europe

The integration of renewable sources into electricity grids is reshaping the way many nations approach sustainability. But Central Eastern European (CEE) countries are grappling with regulatory obstacles, technical challenges, and a lingering reliance on fossil fuels. A new report by CAN Europe presents a roadmap to overcome these barriers.

**Europe is swiftly** incorporating renewable energy sources like wind and solar into electricity grids. However, Central Eastern European (CEE) countries notably lag behind due to regulatory barriers hindering renewable energy projects, neglect of technical challenges hindering greater integration of renewable power, and a continued heavy reliance on fossil fuels.

A new paper by CAN Europe analyses current challenges in electricity grids in CEE countries by identifying key obstacles and opportunities. The urgency to address bottlenecks is particularly pronounced in the CEE region, given its aging and chronically underinvested electricity generation, transmission, and distribution infrastructure. Outdated infrastructure not only leads to power losses and frequent low-capacity operation but also exhibits a significant lack of flexibility.

The entire European Union faces similar challenges, with aging infrastructure at transmission and distribution levels. The EU Action Plan for Grids, emphasising the removal of bottlenecks and promotion of best practices in planning, permitting, and regulation, provides valuable guidance for CEE to champion future-proof solutions and expedite grid modernisation. While challenges vary across countries, the pressing need for grid modernisation in the region presents an opportunity to address multiple issues. In the evolving landscape of energy distribution, the future grid will intricately weave together residences, offices, public structures, and industries with decentralised photovoltaics, battery storage and heat pumps.

This transformation necessitates the enhancement and expansion of existing infrastructure, coupled with non-infrastructure solutions. To facilitate this shift, Distribution System Operators (DSOs) must be incentivised to develop tools

that foster a transparent, digitalised, and decentralised grid. This optimised grid aims to efficiently manage local generation and consumption. Collaboration between DSOs, Transmission System Operators (TSOs), and various stakeholders is paramount. By sharing real-time grid data, these entities can collectively plan the future energy system, optimising resources and addressing congestion issues at both transmission and distribution levels.

The new report showcases inspiring case studies from across the European Union, highlighting successful implementations of these principles.

A useful example is a platform called GOPACS in the Netherlands, which is highlighted as an innovative solution to address grid congestion for operators. This platform uses an algorithm that combines buy and sell orders to manage energy flows in specific areas experiencing congestion. The approach, enabled by capacity-limiting contracts, allows market parties to submit flexibility offers to reduce their power in exchange for agreed compensation. GOPACS is accessed by Dutch network operators, providing a coordinated means to address congestion by leveraging flexible power in the electricity network. The use of data, innovation and transparency in this rapidly changing energy market creates a win-win situation: market parties generate additional income, and operators address system needs.

**Promoting sector coupling** with renewables is a key driver for integrating the energy system and enhancing overall efficiency. This approach, which involves renewables-based electrification for heat, transport, and industry, contributes to a more sustainable energy system by reducing overall energy demand. As Central Eastern Europe embraces renewables,

sector coupling takes on a horizontal perspective, leveraging electricity to systematically decarbonize various sectors of the economy.

A good example of this is in Austria, electric vehicle buyers are incentivized to use only renewable electricity for charging, and the subsidy rate for electric vehicles remained consistent in 2023 compared to the previous year. The Austrian government also offers subsidies for electric vehicle charging stations. Similarly, several EU member countries, including Croatia, the Netherlands, Ireland, and Italy, are adopting policies and enhancing support for the introduction of zero-emission heavy transport in their national plans.

**At the transmission level**, the flexibility of the power system is crucial for seamlessly integrating variable renewable energy, ensuring a continuous match between demand and supply while promoting efficient expansion. Strategies such as demand-side flexibility, efficiency improvements, and cable pooling enhance grid capacity and optimise existing infrastructure. Incorporating short-duration, long-duration and seasonal storage into grid planning empowers system operators to consistently provide renewable energy, even during periods of reduced renewable generation.

Aligning with climate neutrality targets and intermediate goals, such as the 2030 renewable ambition, is imperative for network development plans and strategies. This shift has significant implications for grid planning, necessitating a focus on capturing and maximising renewable energy potential.

Overcoming grid challenges in the Central and Eastern European (CEE) region requires cross-border cooperation. Increased interconnections between



countries serve to stabilise grids, enhance security of supply and reduce reliance on fossil gas peaking plants in the short term, addressing storage needs in the long term. Currently, interconnections within the broader CEE region constitute only 13 percent of the EU's internal interconnection capacity. Ember Climate modelling indicates that additional interconnection capacity in the region not only lowers power prices but also improves the integration of wind and solar by minimising energy curtailment.

Several transnational energy collaboration projects are already in progress or proposed in the CEE region, including the LitPol link co-developed by Poland and Lithuania, a shared Bulgaria-Romania energy island with offshore wind capacity, the "Black-Sea Corridor" shared grid expansion project, and an energy island concept between Poland, Sweden and Lithuania. These initiatives follow successful examples from Western Europe, such as the Bornholm Energy Island in the Baltic Sea, illustrating a concerted effort towards regional energy integration and sustainability.

### **Promoting stakeholder engagement**

in grid planning across various levels is facilitated by transparency, open data availability and data interoperability. Granting stakeholders access to grid capacity and related data fosters trust and instils confidence among investors, encouraging the implementation of new projects. Transparency in planning and utilising the latest methodologies for future grid development not only build public trust but also support the innovation needed in the sector. Embracing open data principles involves making information accessible, fostering innovation and improving interoperability among different providers.

The role of DSOs in the EU energy transition is crucial, and there are examples that some of them are aiming to be more transparent about grid capacity and connection procedures. The Czech DSO, EG.D, set an example by launching an online "grid capacity map" in early 2023. This map enables customers to assess the feasibility of installing photovoltaic panels at specific locations, providing indica-

tive information before project initiation. Furthermore, the obligation for DSOs to transparently inform customers about grid capacity is now a legal requirement, as per an amendment to the Czech Energy Act passed by the Czech Parliament at the end of 2023.

Digitalisation marks a significant shift in the management of energy systems, emphasising increased dynamism and decentralisation. Digital solutions play a crucial role in enabling real-time monitoring and control of energy flows, ensuring grid stability and efficiency amid the growing variability and decentralisation introduced by Distributed Energy Resources (DERs) like electric vehicles, small-scale renewable installations (e.g., solar panels, wind turbines), and electric heat pumps.

**Smart meters enhance** understanding of electricity consumption patterns for households, light commercial and industrial consumers, improving load visibility at the low-voltage level within the distribution grid. This, in turn, allows the introduction of dynamic pricing and time-of-use tariffs in markets. Sub-meters further track individual electricity usage, including electric heating and electric vehicle charging. Mobile applications assist consumers in receiving notifications, enabling them to plan activities such as heating and cooling homes, operating

large appliances, and charging electric vehicles based on shifts in electricity prices. Automation features relieve consumers from the need to actively track market signals or prices, contributing to bill reduction. Looking ahead, innovative approaches that reward demand-side flexibility may emerge as the energy landscape continues to evolve.

An example exists in Poland, where the existing monitoring smart meters are set to be replaced with a new generation of devices. Specifically, 17 million new remote-reading electricity meters (ROCs) are set to be installed by the end of 2028. These upgraded meters will help electricity suppliers to remotely monitor energy consumption without requiring customer involvement. Additionally, once demand-side flexibility systems are implemented, consumers will have the capability to manage their current consumption. The anticipated outcome is an encouragement of positive habits, potentially resulting in a 10 percent energy savings. By 2025, it is projected that the new metering system will encompass 25 percent of consumers.

Based on "Future-Proofing Central Eastern European Grids for Tomorrow's Energy System" Published in February 2024 by Climate Action Network (CAN) Europe



# Ten measures to improve electricity grids in Central Eastern Europe

Action needs to go beyond the usual technological solutions, countries must consider not just kilowatts and power lines, but also include the social dimensions of energy transition.

**The new report** by CAN Europe urges Transmission System Operators (TSOs), Distribution System Operators (DSOs), and national governments in the Central and Eastern European (CEE) region to collaborate and drive the transformation of electricity grid infrastructure for an accelerated renewable energy transition.

The report includes recommendations that go beyond technological advancements and renewable capacity growth, emphasizing the need to address social dimensions. This inclusive approach involves tackling energy poverty, ensuring fair energy access, supporting energy communities, and providing targeted assistance to those in need.

By adopting a socially inclusive and just approach to energy transition, CEE countries can actively shape a future energy system that contributes to the prosperity of their citizens while fostering resilience, security, and affordability. This article summarizes the main recommendations for national governments, regulators (NRAs), TSOs, and DSOs to engage with and embrace a new energy paradigm and actions which that would support the transition;

**1. Foster political vision and strategic planning:** To achieve a sustainable energy transition, coordinated planning of transmission and distribution grids is essential. This involves integrating 2030 climate and energy targets into a long-term vision for 2050. Collaboration among Central and Eastern European (CEE) Member states are encouraged

to share grid capital investment and reach EU interconnection targets. Additionally, active engagement at the EU level is crucial for sharing challenges and adopting best practices in planning, regulation, and stakeholder engagement.

**2. Improve the regulatory and operational environment:** National regulatory bodies need adequate resources to respond to changing environments. Encouraging these bodies to support regulatory frameworks that incentivise grid modernisation and renewable energy integration is vital. The revision of the Energy Market Design should prompt CEE member states to rethink tariff compositions for both capital and operational expenditures.

**3. Improve transparency and data accessibility:** Enhancing data accessibility by addressing gaps in grid capacity mapping is essential for informed decision-making and innovation. This aligns with the proposed pan-European overview within the EU Grid Action Plan.

**4. Revise ownership structures:** Ensuring the decoupling of generation and distribution assets, following EU rules, is critical. This prevents incumbent utilities from obstructing grid connections and promotes healthy competition, particularly for renewables.

**5. Leverage EU funds:** Maximising opportunities to allocate EU funds under the current Multiannual Financial Framework (2021–2027) and preparing a comprehensive strategy for the upcoming MFF (2028–2034) are key steps. Conducting economic and social studies will assess the benefits of upgraded grids and ensure financial instruments are accessible to energy-poor households.

**6. Engage in cross-sectoral dialogue and enable sector coupling:** Establishing cross-sectoral platforms for dialogue pro-

notes the adoption of new technologies and collaborative approaches. Advancing sector-coupling principles with supportive policies and experiments, is essential for integrating electricity cross-sectorally beyond the power sector.

**7. Embrace flexibility as a cost optimization and system stability measure:** Embracing demand-side flexibility, accelerating the rollout of enabling technologies like smart meters, and enhancing TSO–DSO cooperation are crucial. These measures optimise costs, ensure system stability, and engage consumers in energy demand management.

**8. Build systemic link between energy transition and addressing energy poverty:** Developing comprehensive energy transition strategies that directly link grid modernisation, decentralisation, and renewable energy deployment to measures that alleviate energy poverty is essential. This involves designing long-term structural solutions to enable energy-poor households to benefit from renewable energy systems.

**9. Make renewable heating solutions accessible for all:** Prioritising the installation of sustainable renewable heating solutions, such as renewable energy-based heat pumps and solar thermal systems, ensures accessibility, efficiency, and affordability for all.

**10. Ensure access to grids for local actors and energy services:** Granting small and local actors, including energy communities and SMEs, dedicated access to the grid promotes decentralization. This approach extends to flexibility services like demand-side response and storage, fostering a more inclusive energy system.

Based on “Future-Proofing Central Eastern European Grids for Tomorrow’s Energy System” Published in February 2024 by Climate Action Network (CAN) Europe







# US EPA unveils stricter standards for air quality

The US air quality standard for fine particulate matter is reduced from 12 to 9  $\mu\text{g}/\text{m}^3$ . This is projected to yield substantial net health benefits, amounting to up to \$46 billion by 2032.

The US Environmental Protection Agency (EPA) has released stricter air quality standards that will better protect America's families, workers and communities from the dangerous and costly health effects of fine particle pollution.

The annual national ambient air quality standard for fine particulate matter ( $\text{PM}_{2.5}$ ) was strengthened from a level of 12 micrograms to 9 micrograms per cubic metre. The new standard will save lives and money, yielding up to 46 billion US dollars in net health benefits in 2032. For every 1 US dollar spent on this action, there could be as much as 77 US dollars in human health benefits in 2032. The clean air strategy is also seen as a sound economic choice by contributing to the resurgence of manufacturing in the US. Since 2000,  $\text{PM}_{2.5}$  concentrations in outdoor air have decreased by 42% while the US Gross Domestic Product increased by 52% during the same period.

"This final air quality standard will save lives and make all people healthier, especially within America's most vulner-

able and overburdened communities," said EPA Administrator Michael S. Regan. "Cleaner air means that our children have brighter futures, and people can live more productive and active lives, improving our ability to grow and develop as a nation. EPA looks forward to continuing our decades of success in working with states, counties, Tribes, and industry to ensure this critical health standard is implemented effectively to improve the long-term health and productivity of our nation."

The EPA carefully considered extensive public input as it determined the final standards. It held a virtual public hearing and received about 700,000 written comments before finalising today's updated air quality standards. Unlike revisions to EU air quality standards, US standards become effective almost immediately (60 days after the notice of final rulemaking in the Federal Register). The EPA starts the process by designating which areas fail to meet the standards, and this work is often completed within two years after new standards are issued. States must

develop and submit attainment plans for areas designated as failing to meet the revised primary annual  $\text{PM}_{2.5}$  NAAQS no later than 18 months after the EPA finalises designations. For areas that fall moderately short of the standards, these plans must provide for attainment as expeditiously as practicable but no later than the end of the sixth calendar year after designation. Areas that fall further below the standards but are currently working on a plan are given more time to meet the new standards.

The EPA is also modifying the  $\text{PM}_{2.5}$  monitoring network with a new criterion that accounts for proximity of populations at increased risk of  $\text{PM}_{2.5}$ -related health effects to sources of air pollution. This will lead to advanced environmental justice by ensuring localised data collection in overburdened areas. The EPA is also revising the Air Quality Index based on the new evidence.

<https://www.epa.gov/pm-pollution/final-reconsideration-national-ambient-air-quality-standards-particulate-matter-pm>





# Evaluating India's billion dollar battle against air pollution

More than \$1 billion in government funding has been allocated to cities, but just 60% has been spent. Only 16 cities have achieved the targeted pollution cuts. What can be done?

**India has regularly** been in the headlines for its poor air quality over the last ten years or so. Despite one billion US dollars of investment, new policies and a health crisis the problem lingers on. Is there still hope?

We all know the air is bad in India and this harms its reputation. More than four deaths every minute are linked to air pollution-related cardiovascular and lung diseases as well as cancers. About a decade ago Delhi and Beijing shared the title as the most polluted cities in the world. Since then, pollution levels have risen in many African cities, so the picture has changed, but it is worth noting that last year, Delhi was ranked 9th and Beijing, ranked 489th among the most polluted globally. Where China has succeeded this has not always been the case for India. A recent report highlights the results of an ambitious five-year landmark government plan, the National Clean Air Programme (NCAP). The NCAP was launched in January 2019, initially to cut pollution by 20 to 30%. Two years ago, this target was increased to a 40% reduction by 2026. In the last five years, over one billion US dollars of government funding (96 billion Indian rupees) has been released to well over a

hundred cities to cut air pollution. But only about 60% has been spent, and only 16 cities managed to meet the targeted cuts according to a recent analysis.

The number of government air monitors has increased from 134 five years ago to almost 550 today. However, some regions are not covered and two-thirds of the monitors do not show continuous, real-time data. Much of the data monitored by industry is not available to the public. The degree of success in cutting air pollution is not only linked to funding but also to local factors, ranging from implementation to meteorological issues. For instance, both Greater Mumbai and Kolkata spent over 6 billion Indian rupees. But  $PM_{2.5}$  levels rose 38% in the former and fell 16.7% in the latter. Varanasi spent only about a third of its INR 2.29 billion but improved the most, cutting air pollution by 72%. Delhi's pollution has only seen a marginal dip of under 6% since 2019. Accepting and following the science is one of the most helpful things officials can do. Scientists have long contended that smog towers don't work – yet a lot of investment still went into them. In Delhi, road dust is removed by vacuum equipment mounted on trucks, but powered by polluting

diesel generators. Officials, especially in Delhi and its neighbouring areas, have long neglected promoting clean public transit over gasoline and diesel vehicles – although there is an excellent metro network. The latter could also provide the backbone for a much broader shift away from private vehicles to urban transit and non-motorised transport. Instead, more roads and parking are constantly being built for private vehicles in the capital. Vehicles are a significant source of pollution, accounting for about 40% in Delhi. One low-hanging fruit approach could therefore be to slash metro fares, using funding from an existing environmental levy on petrol and diesel – about 7.8 billion Indian rupees is lying unused. Other policies, such as the government's cooking gas scheme, Ujjwala, has helped about 80 million beneficiaries switch from burning biomass and been more successful.

Ebba Malmqvist

Health Policy Watch 30 January 2024, <https://healthpolicy-watch.news/despite-1-billion-expenditure-indias-air-quality-is-still-appalling-but-improvements-are-possible/>



# UN warns: World nears 'hellish' 3°C heating

The world is on track for a “hellish” 3°C of global heating, a new UN report has warned. To get on track for the internationally agreed target of 1.5°C, 22 billion tonnes of CO<sub>2</sub> must be cut from the currently projected total in 2030, the report said. That is 42% of global emissions and equivalent to the output of the world’s five worst polluters: China, US, India, Russia and Japan.

The secretary general of the UN, António Guterres, said: “Present trends are racing our planet down a dead-end 3°C tempera-

ture rise. This is a failure of leadership, a betrayal of the vulnerable, and a massive missed opportunity.

Renewables have never been cheaper or more accessible. We know it is still possible to make the 1.5 degree limit a reality. It requires tearing out the poisoned root of the climate crisis: fossil fuels.”

He added: “Leaders must drastically up their game, now, with record ambition, record action, and record emissions reductions. No more greenwashing. No more foot-dragging.”

Source: The Guardian, 20 november 2023, <https://www.theguardian.com/environment/2023/nov/20/world-facing-hellish-3c-of-climate-heating-un-warns-before-cop28#>

UN Secretary General 20 november 2023, <https://www.un.org/sg/en/content/sg/press-encounter/2023-11-20/secretary-generals-press-conference-unep-emissions-gap-report-launch>

A perfectly reasonable response.



# Gothenburg Protocol ready for an update

The Air Convention Parties have committed to a revision of the Gothenburg Protocol. A recent review report pointed out that despite reductions in emissions, existing measures fall short in safeguarding human health, ecosystems, crop yields, and the climate.

The Air Convention Parties have agreed to work on a revision of the Gothenburg Protocol to further strengthen efforts for better air quality in Europe and North America.

The UNECE Convention on Long-range Transboundary Air Pollution (Air Convention) came to this ground-breaking decision on 14 December following discussions on different policy options for addressing the findings of the recent review report of the Protocol to Abate Acidification, Eutrophication and Ground-Level Ozone (Gothenburg Protocol). The review report had found that while emissions have been reduced it has not been enough to protect human health, ecosystems, crop yields and climate. More action is needed in many sectors, such as energy, transport and agriculture, and societal changes are also needed. To address ozone precursors, global action on methane is vital. Parties agreed to consider revisions to the following issues, including new emission reduction commitments for the already covered pollutants; revision of technical annexes on further reductions of black carbon and ammonia emissions; and how to address methane emissions. It will also address methods to lower the bar



Methane emissions will be considered.

for non-Parties to ratify and implement the Protocol, such as flexibilities. One overarching theme is to take an integrated approach to climate, energy and air policies. Task forces under the Convention have already worked on updating technical guidance to reduce emissions from specific sources mentioned in the review report, specifically agriculture, shipping, waste and energy. Parties adopted the new guidance on co-mitigation of methane and ammonia emissions from agricultural sources, methane mitigation from landfill,

and fossil and bio-gas facilities, and SO<sub>2</sub> mitigation from shipping.

The amended Gothenburg Protocol, in force since 2019, is the only binding regional treaty anywhere in the world to regulate major air pollutant emissions. It already supports 28 Parties – including the European Union, the UK, the US and Canada – to deliver significant emissions cuts.

UNECE Executive Secretary Tatiana Molcean commented: “By agreeing to further strengthen this instrument, governments in the region are demonstrating their commitment to take integrated, multilateral action on air pollution that will benefit health, ecosystems, food production and the climate. I therefore urge negotiators to ensure the revisions to the Gothenburg Protocol will enable Parties to deliver ambitious emissions cuts and call on policymakers to ensure the required measures for full implementation.”

Work to revise the Gothenburg Protocol will start at the 62nd session of the Working Group on Strategies and Review (Geneva, 27–31 May 2024).

Ebba Malmqvist

# Clean air for all or will the poor have to wait?

A group of health scientists has recently published a scientific commentary which shows the significant consequences that postponing deadlines to achieve new EU air quality objectives would have for Europeans' health.

**The European Commission's** 2021 Zero Pollution Action Plan committed to revising the outdated EU Ambient Air Quality Directive (AAQD), a legal instrument crucial for regulating air pollution across EU member states. Current EU limits for pollutants such as particulate matter (PM<sub>2.5</sub>) and nitrogen dioxide (NO<sub>2</sub>) differ significantly from the 2021 WHO guidelines, emphasising the need for EU law to align with scientific evidence. The revised AAQD, as proposed by the European Commission in October 2022, falls short of WHO recommendations – with air quality limit values for PM<sub>2.5</sub> and NO<sub>2</sub> that are twice the level of the WHO guidelines to be achieved by 2030. In September 2023, the European Parliament voted for WHO guideline alignment by 2035, but the Council has since endorsed the Commission's original proposal, and included mechanisms to delay compliance until 2040. The mechanisms that enable member states to delay compliance can be called on for a wide range of reasons,

including having a lower GDP than the EU average – this will therefore result in the most economically vulnerable people breathing worse quality air.

According to one of the authors of the commentary, Professor Zorana Jovanovic Andersen at the University of Copenhagen:

“Allowing additional delays in reaching new EU air quality standards, differentiated based on GDP, are completely unacceptable to ERS community, as they would widen existing inequalities in air pollution levels and health burden between East and West. Children and adults in Eastern European countries have already been breathing the most polluted air in Europe, and suffering from related lung diseases, for far too long. We need fair and ambitious new EU air quality legislation, that values the health of all Europeans equally. New Air Quality Directive must provide clear vision and support to speed up, and not delay, much needed air pollution reductions in Eastern Europe, in order to improve health and wellbeing, and achieve clean air for all in

Europe, as soon as possible.”

Trilogue discussions among the Council, Parliament and Commission will be concluded by the time you read your copy of Acid News, and we hope the compromised text does not allow for such delays, which have devastating impact.

Professor Barbara Hoffmann at the University of Düsseldorf and one of the authors of the article says:

“Every year of delay of reaching limit values directly translates into more deaths and disease. For Italy and Poland alone, 120,000 and 90,000 additional deaths will result from delaying compliance with the suggested limit values from 2030 to 2040. For the 15 member states with the lowest GDP in Europe, about 330,000 additional deaths will be caused by this delay. It is highly unfair to put this huge burden on societies that are already struggling. We urgently need to reduce air pollution.”

Ebba Malmqvist

Int J Public Health, 01 February 2024, <https://doi.org/10.3389/ijph.2024.1606958>

Households burning coal causing air pollution and smog in a Polish village.





# Halving corporate air travel by 2030 would reduce emissions equal to 16 million cars

Between 2005 and 2019, aviation traffic in Europe grew by 67%, resulting in an increase in emissions at a time when reductions are crucial. Projections indicate a further 38% rise in emissions by 2050. It is imperative to take decisive action.

Immediate measures are necessary to curtail aviation emissions before 2030 and completely offset their climate impact by 2050. The Intergovernmental Panel on Climate Change emphasises the urgency of rapid, substantial reductions, especially within the next three years. Notably, reducing long-haul aviation offers the most significant potential for emission avoidance.

Given the pressing need to decrease oil dependency, a practical approach is to sustain the reduced flying levels wit-

nessed during the pandemic. In 2020, a substantial portion of the 64.4 million tonnes of oil equivalent (Mtoe) reduction in total EU oil consumption compared to 2019 (37%) was attributed to the decline in international aviation, despite constituting only 6.3% of transport oil consumption. The International Energy Agency's 10-point plan underscores the considerable impact of reducing business flights and opting for high-speed trains over planes for business travel.

A small fraction of the global population, less than 1%, comprises frequent flyers, yet they contribute over 50% of aviation emissions. Corporate travel significantly drives aviation demand. A 50% reduction in this sector by 2030 could reduce European emissions by 32.6 MtCO<sub>2</sub>, equivalent to

removing 16 million polluting cars from the roads. Adopting smarter flying practices is a feasible solution, challenging the outdated and inefficient notion of dispatching workers worldwide.

"It's scandalous that in a time of the climate emergency we still have these extra routes," said Victor Thévenet, from green group Transport & Environment. "These flights [between Brussels and Amsterdam] have a climate impact that is 14 times higher than the train."



## 11 out of 322 businesses score high on travel emissions ranking

The "Travel Smart" initiative, led by Transport & Environment (T&E), is an effort involving a coalition of partners in Europe, North America and Asia. Its goal is to reduce corporate air travel emissions, as the most effective way to significantly reduce aviation's climate impacts in the present decade.

Businesses are presented with a unique opportunity to play a pivotal role in accelerating sustainable aviation and reducing corporate emissions. Developing target-based policies can lead the way toward achieving the necessary halving of global emissions by 2025.

The Travel Smart initiative includes a ranking, which lists 322 US, European and Indian companies according to 10 indicators, relating to air travel emissions, reduction targets and reporting. The top global flyers from the 17 countries of the ranking represent a sizable portion of business travel worldwide. This sheds light on the significant efforts certain global businesses have still to make to reduce their corporate travel emissions. Companies are given an A, B, C or D grade. In this year's edition of the ranking,



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11 companies qualified for an A grade, 38 a B, whilst the large majority (212) received a C and 61 companies saw a D grade next to their name.

The campaign facilitates the connection of corporate leaders with essential tools to drive change, improve their standing, innovate their policies, and invest in their reputation. Governments also have a role to play by mandating air travel targets in corporate climate plans and emissions reporting.

Through the sharing of success stories from businesses that have already adapted to these changes and reaped the benefits, the campaign aims to inspire companies and their employees to embrace a new culture of purposeful and effective corporate travel. This momentum is expected to ripple across networks, fostering lasting change.

Based on Travel Smart campaign <https://travelsmartcampaign.org/about/>

## Kenya promotes a shift to electric "Boda-bodas"

Motorbike taxis, locally known as "Boda-Bodas", are everywhere in Kenya, as in many African countries, because they are cheaper and often faster than cars. The problem is that they are often noisy and pollute the air. The rise in fuel prices and a push for e-mobility by the government has started a switch from fossil-fuelled motorbikes to electric bikes. The drivers or the company buy an electric motorbike but rent a battery, which can be exchanged for a fully charged battery in the growing number of swap shops close to roads. This reduces the time it would take to charge a battery for drivers, and the swap shops can easily be found on an app. As Kenya has good access to renewable energy, this initiative has good possibilities for both air quality and climate.

BBC, 7 January 2024, <https://www.bbc.com/news/world-africa-67781109>



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# Renewable heating in rental housing

High upfront costs, limited financing options, and a lack of awareness among landlords and tenants are some of the barriers for renewable heating adoption in the rental sector. In a recent briefing CAN Europe proposes solutions to facilitate the transition.

**The rental sector** has various market barriers to the accelerated adoption of renewable heating technologies. These can be high upfront costs, limited access to financing options, and a general lack of awareness among both landlords and tenants. CAN Europe has recently published a briefing which highlights this dilemma and proposes solutions.

Thirty per cent of Europeans reside in homes which they do not own, a percentage that escalates notably in major European cities, such as 63% in Brussels and 76% in Berlin. These tenants often lack control over the heating systems in their homes, as such decisions are made by the property owners. But owners, do not reap the benefits of adopting renewable heating systems. This situation frequently leads to suboptimal decisions from both economic and environmental perspectives, creating what is known as the landlord-tenant dilemma.

While many policy measures incentivise renewable heating for homeowners, they often fall short in encouraging landlords to renovate their properties. Grants, rebates, loans, and tax cuts predominantly target property owners, neglecting the energy poor tenants.

Recent initiatives aim to make renewable heating accessible and affordable for vulnerable families. Example of these measures include grants covering the full system cost without upfront payments and state-backed or low-interest loans. With energy poverty affecting one in ten Europeans and the threat of more individuals in the middle class slipping into energy poverty due to high inflation, these efforts are crucial. However, in most cases, these measures primarily benefit energy poor homeowners and overlook energy poor tenants.

CAN Europe's briefing investigates the necessary steps to make renewable heating viable for tenants in Europe. The report emphasises the importance of an inclusive heating decarbonisation transition that considers individuals' income and tenancy status. The four main recommendations are:

**1. Build on what already exists.** Increase efforts to promote renewable heating across the entire building stock, even if they do not specifically target the rental sector. It is important to set clear targets towards a rapid phase-out, as well as ending support for fossil-fuel heating. It is also important to have appropriate taxation of environmentally harmful fuels used for heating (oil, gas, coal and biomass). This approach creates a market for renewable heating, reducing costs through economies of scale and changing social perceptions. This would also improve the economics of investment decisions for all owners, including landlords.

Member states should plan to implement Minimum Energy Performance Standards (MEPS). Special priority should be dedicated to addressing the worst-performing buildings. The development of a supportive framework, inclusive of financing, technical assistance, and social safeguards, must prioritise the needs of the most vulnerable households and those already grappling with energy poverty. National Building Renovation Plans must incorporate well-defined policies and initiatives to ensure the decarbonisation of heating and cooling in buildings, with a complete phase-out of fossil fuel boilers by 2040. These strategies should encompass all forms of tenures, including rental arrangements.

**2. Address supply-side barriers while prioritising the most vulnerable.**

Leverage social housing providers and rental agencies to overcome supply-side barriers and offer affordable, quality housing with renewable heating solutions for the most vulnerable populations. Analysis from Housing Europe, the European Federation of Public, Co-operative & Social Housing, shows that the share of social housing varies from no social rental housing sector in Greece, to 29 per cent of the total housing stock in the Netherlands.

Social rental agencies help to identify vulnerable tenants. In Flanders, landlords are excluded from subsidies and subsidised loans unless they lease a house or apartment through a social rental agency for a minimum duration of nine years. Landlords meeting this criterion are entitled to the highest subsidies, equivalent to those provided to vulnerable homeowners, irrespective of their income. This approach serves to promote both affordable housing and renovation efforts, including measures related to heating.

There are notable instances of effectively consolidating demand for energy retrofits within the public, cooperative, and social housing sectors, with a specific focus on prioritising the most vulnerable. One example is The EnergieSprong initiative, which stands as a testament to the significant role of social housing in fostering a mass market for extensive energy retrofits. Originating in the Netherlands, the EnergieSprong concept aims to deliver net-zero energy retrofits, commonly involving features such as solar rooftops, heat pumps, and enhanced thermal insulation.

With the support of financial institu-



tions, the retrofit is financially viable, with repayment facilitated through savings in energy costs and reductions in the budget allocated for planned maintenance and repairs over a span of 30 years

EnergieSprong's "market development teams" strategically position themselves amidst various retrofit stakeholders, including landlords, tenants, retrofit providers, financial institutions and public authorities, ensuring optimal outcomes.

These entities can also play a key role in developing innovative solutions, aggregating demand for deep renovations, and addressing supply-side obstacles.

- 3. Fill the gaps.** Adjust existing renewable heating policy tools to suit the rental sector and create new measures while ensuring social safeguards are in place to protect tenants. When it comes to regulation, Minimum Energy Performance Standards (MEPS) state that existing buildings in an area must either meet a set performance level or help lower the average energy use by a certain amount. Renovation can be carried out when certain events occur, such as signing a new rental agreement or selling the property, or as part of a bigger renovation plan. These rules can apply to all buildings or just certain parts of a building.

For example in France, a ban on renting has been put in place for the Worst Performing Buildings (WPBs). It begins in 2025 for buildings with energy performance certificates in class G, and will be gradually expanded to include those in class E by 2034. If effectively enforced, this measure gives landlords a reason to consider renewable heating to enhance their property's energy rating. Another important gap to fill is the need for financial safeguards. These are necessary to safeguard vulnerable tenants from potential increases in housing costs that may result from renovations and to guarantee housing accessibility for all residents. These can take the form of rent ceilings, for example. In the French MEPS example above, since 2023 owners of buildings in classes F and G have been banned from increasing the rent between two lettings without undertaking energy renovations.



Governments can also mandate that rents should not increase, even if there's a renovation. In France, the "Denormandie scheme" offers tax cuts to owners who purchase and renovate an unoccupied dwelling, which they subsequently rent out for an extended period (six, nine or twelve years) at a fixed price per square metre. The renovation must result in at least a 20 percent improvement in efficiency (30% for houses).

- 4. Information is power.** Facilitate access to and proactively provide independent information on existing tools for transitioning to renewable heating. Ensure that both landlords and tenants understand the added value of renewable heating in their properties and provide support to reduce administrative burdens. Energy Performance Certificates (EPCs) are central to various regulations. They establish the performance standards for MEPS, such as requiring a minimum level of E in order to rent out a dwelling. Additionally, EPCs set thresholds for financial support, stipulating that renovations must achieve a minimum energy class, such as A, to qualify for financial assistance. Because EPCs consider heating systems in their methodology, they play a role in promoting the use of renewable heating. Moreover, they serve as a useful shared language for landlords and tenants to discuss energy-related matters.

One-stop shops can play a crucial role for both landlords and tenants by providing reliable and easily accessible information about energy efficiency improvements. This includes details on available support, existing regulations, and more. Landlords can also be informed about the potential increase in the value of renovated properties that incorporate renewable heating systems. Another important participation opportunity is community-led projects, specifically Community Heating and Cooling (CH&C) initiatives, in which thermal energy systems are collectively owned by participating citizens, municipalities and small to medium-sized enterprises (SMEs). CH&C projects prioritise social and environmental benefits, such as thermal well-being, over profit maximisation, making them cost-effective and durable solutions for heating and cooling.

**In conclusion, there** are several ways to address the challenges in the rental sector for renewable heating and it is important to highlight and tap into their potential now.



# The Kyoto Protocol was not a failure

Overall, the countries that participated in the Second Commitment Period of the Kyoto Protocol have overachieved their collective target and achieved an overall emission reduction of 28% in 2020 (compared to 1990 emissions).

In the run up to COP28 in Dubai, countries closed the Second (and last) Commitment Period of the Kyoto Protocol. Under the Kyoto Protocol, industrialised countries took binding commitments to limit or reduce greenhouse gas emissions over a certain period of time. The First Commitment Period ran from 2008 to 2012 and had 41 participating countries, representing 38% of global emissions in 1997 (when the Kyoto Protocol was adopted). The Second Commitment Period, which ran from 2013 to 2020, had 34 participating countries (originally 37 but Belarus, Kazakhstan and Ukraine dropped out), representing 11% of global emissions in 2012 (when the Second Commitment Period was agreed).

While the Protocol still exists, and some of its institutions, such as the Adaptation Fund are still active, no new commitments were made for the period after 2020, as countries decided, through the Paris Agreement, that in future all countries, including developing countries, should take on emission reduction targets. These new targets (called NDCs, Nationally Determined Contributions) are, however, very different in nature: they are not legally binding, some are economy-wide but not all, and they are end-year targets (mostly referring to the desired level of greenhouse gas emissions in 2030) as opposed to the cumulative targets of the Kyoto Protocol (which set an average emission reduction for a number of years compared to the baseline, mostly based on emissions in 1990).

It is definitely worthwhile that the Kyoto Protocol infrastructure is kept alive. In

an ideal (but probably rather unrealistic) scenario, countries could, at some time, move back from the voluntary nature of the Paris pledges to binding economy-wide cumulative emission reduction targets, covering all the countries of the world.

The binding nature and the economy-wide scope of the targets as well as the cumulative approach are all features that made the Kyoto Protocol commitments more interesting than the Paris Agreement pledges. But the Kyoto Protocol's First and Second Commitment Periods were limited in coverage (with the Second Commitment Period mainly being an EU exercise as the EU made up over 85% of all emissions covered), while containing too many cheap tricks and loopholes. The latter refers to the use of flexibility mechanisms allowing countries to offset emissions by sometimes doubtful measures such as picking and choosing certain land-based activities, the use of dubious credits from projects in developing countries and the carry-over of unused allowances from the First Commitment Period.

Despite these limitations, the overall performance of countries in the Second Commitment Period is positive, mainly thanks to the EU and the UK largely overachieving their target (note that the EU, including the UK, took a joint commitment with Iceland and so they report collectively on their results). Other countries, such as Norway and Switzerland, had to make use of the flexibility mechanisms referred to above to achieve their targets.

The Table below shows the greenhouse gas emissions from all countries participating in the Second Commitment Period without taking into account LULUCF (Land Use, Land Use Change and Forestry) emissions and removals.

Overall, the countries that participated in the Second Commitment Period of the Kyoto Protocol have overachieved their collective target, and will achieve a reduction of their 2013–2020 greenhouse gas emissions by over 25% as compared to the base year (1990) emissions. This corresponds to an overall emission reduction of 28% in 2020 (compared to 1990 emissions).

This compares to a reduction of greenhouse gas emissions in 2020 by 15% in those industrialised countries that did not join the Second Commitment Period, and an overall emission reduction of 19% in all industrialised countries (based on EDGAR database). Developing countries on the other hand saw their emissions increase by 150% in the same period, leading to a 50% increase in global emissions in 2020 as compared to 1990 levels.

Graph 1 shows that overall, while far from ambitious enough, industrialised countries that joined the Kyoto Protocol's Second Commitment Period achieved substantial reductions in their greenhouse gas

Table: comparison of commitments under the Kyoto Protocol's Second Commitment Period and actual reported emissions (before the use of flexibility mechanisms) in the relevant countries

Country	KP 2013–2020 reduction target <sup>a</sup>	Realised 2013–2020 emission reductions <sup>b</sup>
Australia	95.5%	95.2%
EU27+UK+Iceland <sup>c</sup>	80%	71.8%
Liechtenstein	84%	84.1%
Monaco	78%	85.1%
Norway	84%	101.1%
Switzerland	84.2%	89.3%
<b>TOTAL</b>	<b>81.1%</b>	<b>74.2%</b>

(a) targets expressed as maximum % of emissions compared to baseline emissions (mostly based on emission levels in 1990) as an average for the years 2013 up to and including 2020, as indicated in the Doha Amendment; (b) reported emissions based on UNFCCC True-up period information report - see: here, and reported as an average of emissions for the years 2013 up to and including 2020 as compared to the baseline; (c) The EU28 and Iceland made a joint commitment, with the UK remaining part of this commitment after Brexit.

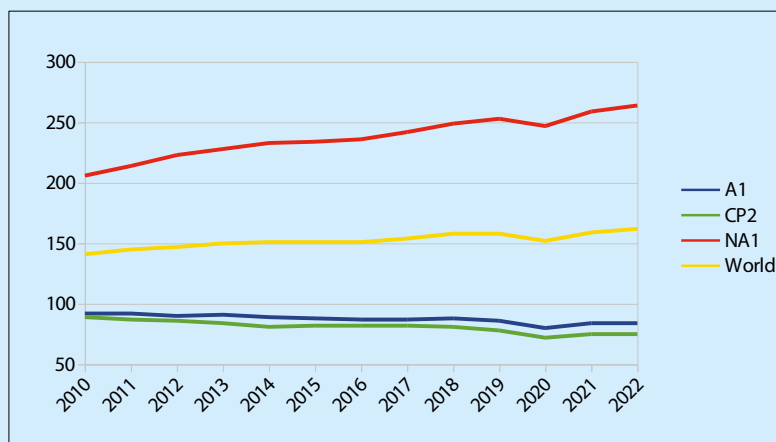


emissions, greater than the reductions achieved in other industrialised countries, while quite a few countries from the Economies in Transition group (such as Ukraine, Russia and Belarus), who did not join the Second Commitment Period, also saw very substantial reductions in their greenhouse gas emissions. Overall, the graph shows that despite their action being insufficient in light of what is needed to limit temperature rise to 1.5°C as committed to in the Paris Agreement, industrialised countries as a group have taken the lead in reducing their emissions as the trajectories of A1 and NA1 countries are widely divergent.

Graph 2 shows the evolution of emissions in the EU27 between 1990 and 2022, for all emissions (including international aviation and shipping) and removals. Early emission reductions in the period 1990 to 1995 can all be attributed to the economic collapse of former Warsaw countries that became member of the EU after the year 2000. Further reductions are visible from 2005 onwards when both the EU Emissions Trading Scheme and the First Commitment Period of the Kyoto Protocol started.

**The inclusion of** the land sector in the Kyoto Protocol has been controversial from the beginning. It led to the development of the so-called LULUCF (Land Use, Land Use Change and Forestry) rules, which remain controversial. Three key elements are of concern here:

- The issue of fungibility referring to the assumption that avoided emissions and removals from the land sector are interchangeable with emission reductions from fossil fuels. There is large-scale evidence pointing to the limitation of this assumption.
- The issue of the scope of land-based mitigation to be included by countries to fulfil their commitments under the Protocol. The solution is an activity-based approach, whereby countries are allowed to account for specific activities rather than land areas and also get to choose voluntarily which activities they can include or exclude from their accounting, which clearly allows countries to just include those activities most beneficial to them. In particular, the decision to characterise forest management as a



Graph 1: The evolution of emissions from different country groupings between 2010 and 2022 taking 1990 levels as the benchmark (based on EDGAR database). (A1) referring to all countries from the A1 group (excl. Turkey); (CP2) referring to all countries that joined the Kyoto protocol's Second Commitment Period; (NA1) referring to all countries who are not part of the A1 group.



Graph 2: The evolution of emissions (in million tonnes of CO<sub>2</sub>e) in the EU27 between 1990 and 2022, for all emissions (including international aviation and shipping) and removals. Source: EEA Greenhouse Gas Emissions Data Viewer

voluntary activity became one of the most heavily criticised aspects of LULUCF accounting rules in the Kyoto Protocol's First Commitment Period (2008–2012), given significant under-reporting of forest-related emissions that became possible as a result.

- The issue of baselines and reference levels. Given strong opposition against a logical net-net approach (whereby all industrial and land-based emissions and removals in the years covered by the Kyoto Protocol commitment would be compared to all industrial and land-based emissions and removals in the base year) countries agreed on a gross-net approach whereby the baseline emissions did not include land-based emissions and removals. This approach proved to be a boon for those countries (including in the EU)

with low deforestation rates but with intensive forest management, given that forest management was a voluntary activity that could be excluded. As forest management became a mandatory activity in the Second Commitment Period, the gross-net baseline accounting approach was replaced by a so-called Forest Management Reference Level approach. With this, countries can propose a quantified (expected) future level of performance (in terms of net emissions from forest management) and compare this against actual emissions at the end of a commitment period. This opens up the possibility of inflating future expectations of emissions, in order to make targets easier to meet.

Wendel Trio

# Lessons learned from Europe's fossil fuel energy crisis

Europe is at a pivotal moment to transition to a fossil-free energy future, and decisive actions, including policy-level commitments, are crucial to achieving this goal.

**Two years have** passed since Russia's invasion of Ukraine catapulted the world into a global energy crisis, exposing the vulnerabilities of Europe's historic reliance on fossil fuels. A wake-up call for the continent, European governments don't have any excuse for still being in emergency response mode. Opting to rely on fossil fuels, Russian or otherwise, is neither economically nor environmentally wise. It places Europe's security in the hands of foreign regimes and exposes households and businesses to volatile global markets.

To reduce energy bills, ensure permanent energy security, and prevent the climate emergency from deepening, we need urgent action. This means Europe's power system must be fossil-free, fully based on renewable energy by 2035 — as strongly emphasised by the International Energy Agency's 1.5 degree Celsius-compatible global energy scenario<sup>1</sup>.

Europe has already been taking bold steps to bolster its power system in response to the crisis, adding record numbers of solar panels and heat pumps. In 2023, wind produced more electricity than coal or gas in the European Union. Households and businesses made important energy savings, and an unusually mild winter helped reduce demand for power and heat. In some countries, an economic downturn created by inflation and energy costs has led to important energy cuts in the manufacturing sector. However, some countries prolonged the lives of a handful of ageing coal-fired power plants — one of the most polluting power sources of all — in case they were unable to meet power demand.

**Many speculated about** coal's return when these prolongation announcements were made — the majority in 2022. But two years later, European coal power generation has been steadily dropping<sup>2</sup> and the vast majority of temporary coal plant

reactivations were just that — temporary. While a part of the coal and gas demand reduction in 2023 can be attributed to economic downturn, the surge in solar and wind power generation, energy-saving efforts, massive public support schemes and mild winters largely contributed to Europe making it through unscathed.

Austria was one of the few countries that considered a temporary return to coal after proposing to reactivate its Mellach coal plant. But this idea was always unviable due to the cost burden it would have placed on taxpayers. Instead, the country boosted its wind and solar growth to protect its energy security, catapulting Austria into second place among European nations, with the highest energy share in power generation from wind, solar and hydropower in 2023<sup>3</sup>.

Countries such as Spain, which briefly reactivated one coal plant as a short-term solution during the crisis, quickly recognised the long-term benefits of renewable energy. Spain signalled that it will bring its coal phase-out forward by five years with the 2024 closure of its remaining coal plant, As Pontes<sup>4</sup>. The plant will be replaced by a portfolio of renewable energy projects across the Galician region, including 1 GW of wind power capacity, demonstrating just how much renewables are outperforming fossil fuels on price, energy security, and desirability. Not only does this transformation provide 1,300 clean jobs, but it also supplies affordable energy to the region, setting it up for enduring success.

Similarly, Slovakia has emerged as a frontrunner in Central and Eastern Europe by committing to expedite its coal phase-out by six years, from 2030 to 2024. Not only is this great news for people's health, the timely coal exit also provides an economic dividend, saving up to EUR 605 million for the Slovak economy<sup>5</sup>.

The energy crisis brought to light how

unstable, costly, and damaging a fossil fuel-based energy system is. Instead of turning toward more coal, many countries made the right decision to rapidly transition toward renewable energy instead. Although some countries persisted with disproportionate emergency coal measures, in most cases, they were not necessary to meet electricity demand.

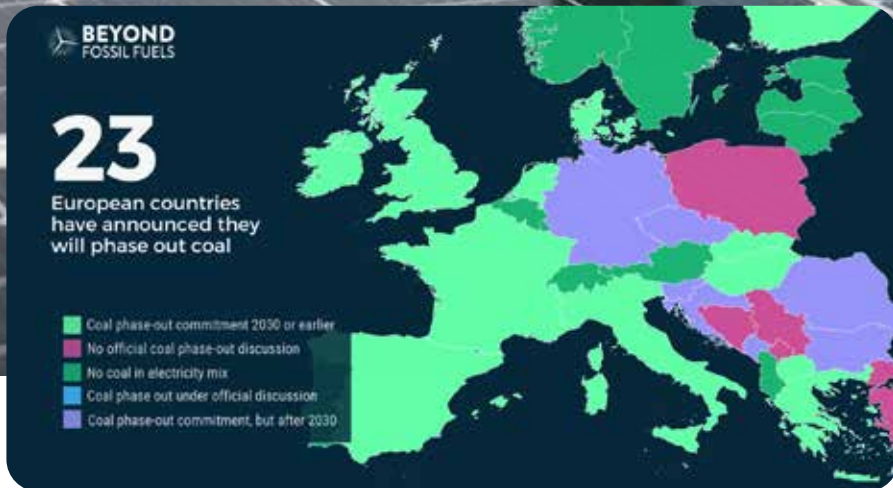
**Some countries have** been slow to learn from the crisis and are sabotaging their own energy transition to develop new fossil gas infrastructure. Most recently, three European countries, Italy, Hungary and North Macedonia, postponed their coal phase-out commitments by several years but all still adhere to the 2030 phase-out date.

Those delays stem directly from risky plans to replace coal power plants with gas power generation units. The coal phase-out delays will increase the amount of CO<sub>2</sub> emissions the plants will produce in the near term, but they also guarantee a massive release of climate-warming methane, should the fossil gas projects go ahead. As the use of fossil fuels declines because they can't compete with renewable energy, project developers risk getting stuck with stranded assets.

**UN Secretary-General António Guterres** said it best: "Only renewables can safeguard our future, close the energy access gap, stabilise prices and ensure energy security." After the difficult winter of 2022–23, Europe's power system is in a better place now. But to avert climate catastrophe and keep Europe secure during crises, rapid investments in wind and solar as well as distribution grids and battery storage are the only credible path forward.

Thankfully, Europe is starting to find this path. In 2023, wind and solar made up more than a quarter of the energy mix in the EU as coal and gas saw un-





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precedented declines, saving consumers EUR 100 billion between 2021 and 2023. Coal remains in long-term decline and more than a fifth of the EU's coal fleet is closing in the next two years. With wind producing more electricity in the EU than fossil gas for the first time last year, the EU could soon be on its way to ditching fossil fuels for good<sup>6</sup>.

The pace of phasing out all fossil fuels is gaining much needed momentum on a national level. In December 2023, seven European nations within the Pentalateral Forum – Austria, Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland – have pledged to eliminate carbon emissions from their power systems by 2035<sup>7</sup>. These commitments show a consensus is building for a fossil-free European power sector by 2035. It also echoes similar calls for a 2035 fossil fuel exit in the power sector, when in 2023 G7 countries pledged to “predominantly” decarbonise their electricity sectors by 2035.

**There are clear** signals that ordinary people across Europe have learnt the painful lesson of fossil fuel dependence as a consequence of the energy crisis. Household solar and heat pump instal-

lations have increased in many countries, and over 80 per cent of Europeans surveyed by the European Union in the summer of 2022 said they want massive investments in renewable energy to ensure energy security and independence from Russia, drive down costs, and ward off climate breakdown.

But Europe needs to bring the same enthusiasm for renewable energy to the policy level, where there has not consistently been the same focus on the right solutions. National-level political commitments are pivotal to this process. Setting more ambitious targets for renewable energy deployment and better energy efficiency measures will continue to reduce Europe's gas demand to a level that negates the need for more gas import infrastructure such as gas pipelines and LNG terminals.

To truly realise Europe's renewable energy potential, we need concerted action. By prioritising renewables, distribution grids and storage, enhancing energy efficiency measures, and phasing out fossil fuel infrastructure, Europe can not only achieve energy security but also lessen the impact of the climate crisis and reduce reliance on authoritarian regimes. As we move beyond crisis mode, we must leave

fossil fuels behind and seize the opportunity to build a cleaner, cost-effective and more resilient renewable energy future for generations to come.

Alexandru Mustaț  
Campaigner at Beyond Fossil Fuels

Beyond Fossil Fuels is a collective civil society campaign consisting of over 70 partner organisations committed to ensuring all of Europe's electricity is generated from fossil-free, renewable energy by 2035. It expands and builds upon the Europe Beyond Coal campaign, and its goal of a coal-free Europe in power and heat by 2030 at the latest.

1 <https://www.iea.org/reports/world-energy-outlook-2023>

2 <https://ember-climate.org/insights/research/european-electricity-review-2024/>

3 <https://www.euractiv.com/section/politics/news/austria-boasts-europes-second-greenest-power-sector-in-2023/>

4 <https://beyondfossilfuels.org/europes-coal-exit/>

5 <https://www.minzp.sk/iep/publikacie/ekonomicke-analyzy/decarbonization-slovak-economy-2030.html>

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# Forests – still a neglected issue in climate negotiations

The protection of forests did not figure high on the UN climate convention's COP28 agenda last December and it really seems negotiators are waiting for Brazil's COP30 in 2025.

**With attention rightly** focusing on the fossil fuel phase-out debate at Dubai's COP28, it is good to briefly reflect on the outcomes of COP28 as they relate to (Northern) forests. As was expected, forest issues did not figure high on the COP agenda and it really seems negotiators are waiting for Brazil's COP30, to be held in the Amazon city of Belem in November 2025, to restart real conversations on the important role of forest conservation in the fight against climate change.

Three key elements of COP28's outcome relate directly to forests:

- continued dissension on forest-related elements in the rules to implement Article 6 of the Paris Agreement which relates to carbon markets;
- additional pledges on financial support for forest conservation (in developing countries);
- the integration of the Glasgow Leaders Declaration on Forests and Land Use in the outcome of the First Global Stocktake.

**Governments have been** battling over rules to manage carbon markets. These are very important as forest-related offset projects in particular have been very controversial, both in terms of their actual rather limited contribution to fighting climate change, as well as in their failure to recognise the rights of indigenous peoples and legitimate concerns over their impact on biodiversity.

The discussions on Article 6.2 (which focuses on bilateral markets) revolved around how to ensure environmental integrity of forest projects while discussions on Article 6.4 (which provides a UN managed market) dealt with the inclusion of removals in the mechanism.

The Article 6.2 negotiations were in particular torn between two opposing positions: The US and others promoted

an open system that builds on the infrastructure established by the voluntary carbon market. The EU and its partners, by contrast, advocated for a more centralised system with an international transaction registry at its core and high minimum standards for mitigation activities. No agreement was found and negotiations were postponed until 2024.

Regarding Article 6.4, Parties faced the task of taking final decisions that would make the Article 6.4 mechanism operational. This mainly entailed a decision on guiding principles for developing methodologies to calculate emission reductions and to ensure additionality. The recommendations on methodologies tabled by the Supervisory Body of the mechanism shortly before the COP provided an acceptable basis for many Parties, however many Parties also regard these and decisions on the inclusion of removals as an unbreakable package. And including both nature-based as well as technology-based removal activities proved once again a task of such complexity with its crunch issues of permanence, reversals, and leakage that a consensus was impossible to achieve.

For both Article 6.2 and 6.4, final compromise texts were published on the evening of the 12 December but also with discussions through the night, and ultimately Parties were unable to find

common ground. The intense negotiations could not bridge the divide between countries that were aiming for a system with a maximum of flexibility and those that demanded a more centralised approach to increase transparency, environmental integrity and measurable contributions to the ambition-raising character of the Paris Agreement. In light of the loopholes and flaws included in the text proposals for Article 6.2 and 6.4, their non-adoption has prevented further damage.

Countries did, however, move forward on Article 6.8 to establish “non-market approaches” which essentially would lead to more grants for forest preservation, a decision strongly welcomed by countries such as Bolivia.

**Several new measures** to tackle deforestation (in developing countries) were announced by countries at COP28, with Brazil leading the pack by announcing a new Tropical Forests Forever proposal. This would essentially create a 250 billion US dollars trust fund for forest conservation. Critics say that even if the sale of a carbon credit keeps one patch of forest from being cut down, deforestation will often simply shift to another patch that is unprotected. Under this new initiative, governments and corporations would donate to a fund that would pay countries a dividend based on how many hectares of primary forest they keep standing. If a country lets a hectare be cut down, its payments from the fund would be reduced by a factor of 100.

Furthermore, French President Emmanuel Macron pledged 100 million US dollars to Papua New Guinea, 60 million US dollars to the Democratic Republic of Congo and 50 million US dollars to the Republic of Congo to try and encourage private spending on carbon credits to keep forests intact. The UK pledged 38 million US dollars to the Amazon Fund, and Norway later committed 50 million US dollars.

**The biggest result** was achieved in the COP decision on the First Global Stocktake, which strongly recognised the importance of ecosystem conservation and also recognised the importance of not only tackling deforestation (which is mostly a developing country issue) but also halting forest degradation (which is





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Canadian and other northern forests are given little attention in the climate negotiations.

more relevant for Northern forests).

The GST decision not only recognises the “urgent need to address the interlinked global crises of climate change and biodiversity loss” but also stresses “the vital importance of protecting, conserving, restoring and sustainably using nature and ecosystems for effective and sustainable climate action”. The GST decision further calls for “enhanced efforts towards halting and reversing deforestation and forest degradation by 2030”. While there is still a very strong focus on the need for funding to support developing countries efforts to reverse deforestation, it is important that countries are reminded through the GST that forest degradation, which is prevalent in the Northern forests of Canada, the US, Europe and Russia, also needs to be tackled and halted by 2030.

Accountability for this and previous commitments remains an issue of concern. A proposal, linked to the Glasgow Leaders Declaration, to develop a Forest Accountability Framework did get support from a range of countries, but this has not yet led to any specific results. On the contrary, concerns were raised over the fact that only a limited number of

countries (26) have yet engaged in the Forest and Climate Leaders’ Partnership (FCLP) while the Glasgow Declaration was signed by 145 countries.

**Besides the explicit** reference to forest degradation in the GST text, there was little attention for the plight of Northern forests, besides a few side events, including one organised by AirClim with speakers from the Saami Council, Climate Analytics, the European Commission and the Natural Resources Defense Council, highlighting the importance of protecting and restoring Northern forests, while recognising indigenous peoples’ land rights and Northern forests’ importance for fighting biodiversity loss.

Forests also made a prominent appearance in the other major text to come out of COP28: the work programme on the global goal for climate change adaptation. It noted that a future adaptation framework should strengthen efforts toward the preservation and regeneration of forests, and that reducing climate impacts on ecosystems and biodiversity should be one of the targets.

Wendel Trio

## Climate-heating gases reach record highs

The abundance of climate-heating gases in the atmosphere reached record highs in 2022, the UN’s World Meteorological Organization (WMO) has reported.

The WMO said “there is no end in sight to the rising trend”, which is largely driven by the burning of fossil fuels. The concentration of carbon dioxide, the main greenhouse gas, is now 50% higher than before the start of the Industrial Revolution.

The Earth has not experienced similar levels of CO<sub>2</sub> for 3-5 million years, when the global temperature was 2-3°C warmer and sea level was 10-20 metres higher than today, the WMO said.

The WMO report found that the heating effect of greenhouse gases in the atmosphere rose by 50% between 1990 and 2022, with CO<sub>2</sub> accounting for about 80% of this increase.

Methane is a potent greenhouse gas, with the human sources being the fossil fuel industry, cattle and waste dumps. Levels of methane rose again in 2022 and scientists are concerned that a recent acceleration of methane emissions may be driven by the effect of global heating on wetlands, producing a potential feedback effect.

The increase in nitrous oxide levels in 2022 was the highest ever recorded. This greenhouse gas is produced by overuse of fertilisers, crop waste burning and industry. Source:

The Guardian 15 November 2023 <https://www.theguardian.com/environment/2023/nov/15/climate-heating-gases-reach-record-highs-un-reports>

WMO, 15 November 2023 <https://wmo.int/publication-series/wmo-greenhouse-gas-bulletin-no-19>



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Graffiti on car advertisement.



21 countries have pledged to restore and protect 15 million hectares of mangroves globally.



# A turning point for oceans in climate action

The COP28 not only stressed the crucial role of oceans in combating climate change but also laid the ground for enhanced integration of ocean action in UNFCCC processes.

**The United Nations** Climate Change Conference (COP28) in Dubai closed with an agreement that signals the “beginning of the end” of the fossil fuel era, by making the first explicit call in the final Global Stocktake outcome (GST) to transition away from fossil fuels in energy systems. On the very first day of the conference, Parties also made an important decision on climate finance, finally operationalising the Loss & Damage Fund and allocating for it 792 million US dollars in pledges.

The need to pay attention to ocean issues at the climate talks in Dubai was emphasised way before the start of the COP28. The latest Ocean and Climate Change Dialogue, which took place in June 2023, focused on the topics of coastal ecosystem restoration (including blue carbon) and fisheries. It aimed to strengthen ocean-climate action at national level and under the UNFCCC process, which was included in the summary report of the dialogue together with messages for COP28. The launch of the Ocean Breakthroughs ahead of COP28, once again highlighted the mobilisation of the ocean community towards the recognition of the oceans’ role in climate

negotiations, resulting in the largest ocean pavilion to date and in the organisation of numerous of ocean-related events.

**COP28 was also** marked by several announcements to scale up ocean-based climate action. Key highlights included the formation of the Ocean Resilience and Climate Alliance (ORCA) by leading climate and ocean institutions, along with an initial pledge exceeding 250 million US dollars that will advance ocean-based solutions to climate change across seven key areas over a five-year period. Efforts to support ocean action were further buoyed by initiatives such as the “Rapid Assistance Fund”, aimed at supporting countries in the development and implementation of national Sustainable Ocean Plans. Additionally, the Joint Declaration on ocean and climate action, signed by 18 countries, underscored the imperative of sustainably managing 100 per cent of the ocean under national jurisdictions.

COP28 also witnessed momentum in marine conservation efforts for mangrove and coral ecosystems. 21 countries formally endorsed the Mangrove Breakthrough, securing momentum to restore and protect

15 million hectares of mangroves globally by 2023 as a nature-based solution to climate change. To support coral conservation and protection, the Global Fund for Coral Reefs (GFCR) announced the mobilisation of more than 200 million US dollars of new direct investment. Additionally, Pacific nations presented the Unlocking Blue Pacific Prosperity Plan, which will aim to sustainably manage 100 per cent of the Pacific Ocean and effectively protect 30 per cent of it, making it one of the world’s largest conservation efforts.

Decarbonising shipping emerged as another important ocean-related action with more than 50 announcements from countries, ports, and shipping companies towards scaling up zero-emissions under the Green Shipping Challenge.

**As for negotiations,** the agreed text of the GST outcome recognized the oceans’ role in achieving the goals of the Paris Agreement, making several references to the ocean from the preamble to the guidance and ways forward, and acknowledging the oceans’ potential for both mitigation and adaptation. In the preamble, Parties note “the importance of ensuring the integrity



of all ecosystems, including (...) the ocean” and in the mitigation section (Article 33) emphasised “the importance of conserving, protecting and restoring nature and ecosystems towards achieving the Paris Agreement temperature goal including (...) marine ecosystems acting as sinks and reservoirs of greenhouse gases and by conserving biodiversity, while ensuring social and environmental safeguards (...)”. Noticeably, Article 35 “Invites Parties to preserve and restore oceans and coastal ecosystems and scale up, as appropriate, ocean-based mitigation action”, recognising the need for broader ocean-based mitigation solutions. However, concerns have been raised as the suggested wording in this article neither mentions the need to ensure social and environmental safeguards, nor specifies that ocean-based mitigation action should do no harm to coastal and marine ecosystems. This is important to avoid geoeengineering approaches and/or other harmful practices that gain increasing attention despite little to no proof that they work, but may have unknown consequences and cause potential harm to ocean biodiversity and its functions. A precautionary approach to high-risk, unproven approaches in ocean-climate action, such as carbon dioxide removal and marine geoeengineering, is imperative while the urgent fossil fuel phase-out remains the priority.

COP28 underscored the oceans’ indispensable role in combating climate change, laid the ground for further integration of the ocean action in the UNFCCC processes, reflected the need for concrete actions aimed at preserving marine ecosystems, and raised questions on the danger from potentially harmful practices, which should also be carefully addressed in the next Ocean and Climate Change dialogue planned for June 2024.

Sofia Sadogurska  
Ecoaction, Ukraine

## Southern Ocean acidity might double by the end of the century

Almost 30 per cent of CO<sub>2</sub> released to the atmosphere is taken up by the oceans. As a consequence, the oceans become more acidic – in a process called ocean acidification.

Cold waters, such as those of the Southern Ocean, absorb even more CO<sub>2</sub> than warm and temperate ones, making them especially susceptible to acidification. Changes in pH in the Southern Ocean have recently been studied by researchers from the University of Colorado Boulder. They observed existing and proposed marine protected areas in coastal waters of this region.

Using computer models to project end-of-the-century pH changes, the researchers found that the pH could be reduced by 0.36 in the upper 200-metre layer of the water column, translating into a doubling of the acidification.

So far, the average pH of the oceans’ surface has already dropped from 8.29 in the pre-industrial area to its present value of 8.1 (around a 30 per cent change in acidity).

Marine life is adapted to slightly alkaline conditions. More acidic waters have direct impacts on a number of marine organisms. For instance, phytoplankton grow more slowly. Because

these organisms form the base of marine food chains, negative effects can be expected to cascade throughout these food chains. Another example comes from shellfish (e.g., sea urchins and sea snails). The shells of these organisms consist of calcium carbonate, and they start to dissolve under acidified conditions. Altogether, acidification effects can be expected to reach the very top of the food chains (e.g., whales and penguins) due to negative effects lower down in these food chains.

For the studied areas in the Southern Ocean, the researchers predict that the acidification would not be restricted to the ocean surface, but affect the entire water column, from the surface to the seabed.

Sources:

Polar Journal 17 January 2024, <https://polarjournal.ch/en/2024/01/17/southern-ocean-acidification-could-double-by-the-end-of-the-century/>

Nature Communications, 4 January 2024, <https://www.nature.com/articles/s41467-023-44438-x>

Antarctic krill (*Euphausia superba*) is a key species in the Antarctic ecosystem.



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# Nuclear power is proven uneconomic in the real world

At COP in Dubai some countries imagined nuclear power to be part of the solution. Real world experience shows it is too expensive to contribute.

**Real world nuclear** power projects are ridiculously expensive and utterly uncompetitive<sup>1</sup>. Nevertheless, new nuclear power is marketed again and again as something that will be low cost and able to replace fossil fuels. It is difficult to understand the motives behind these marketing efforts. Even though tax payers or rate payers have had to carry the costs of these projects, very few private individuals have actually earned any money from them, and many private investors have made considerable losses.

Recently, the idea of standardised modular reactors has failed.

The US AP-1000 programme, conceived in the early years of this century with ideas of low costs and short construction times, resulted in four heavily subsidised projects of which two were abandoned after spending almost 10 billion dollars<sup>2</sup>, while the third, very expensive, reactor is finally in operation and the fourth might produce power in 2024<sup>3</sup>.

The parallel European Pressurised Reactor programme has succeeded in starting six<sup>4</sup> and possibly eight<sup>5</sup> reactor builds. Three have been completed, of which Taishan 1 and Taishan 2 in China took nine years to build and have now operated with load factors of only 57 per cent and 74 per cent respectively.

Olkiluoto 3 in Finland was supposed to start generating electricity in 2009 but did not enter commercial operation until 2023 after almost 18 years of construction.

Flamanville 3 and the Hinkley Point reactors are still under construction and the costs are predicted to be on the order of 2–4 times the original budgets.<sup>6</sup>

The idea now put forward by the nuclear industry is that smaller reactors will make nuclear power more competitive. There are good reasons to be sceptical. Small reactors may cost less to build, but they also produce fewer kWh each year over which to spread the cost. Experience shows that large reactors produce cheaper electricity than other reactors. That is why modern reactors are the biggest ever.

If you double the size of a reactor vessel it does not double the costs. The same goes for many components.

Similar factors apply to operation. You do not need twice as many people to run a reactor that is twice as large.

Small reactors are likely to produce more radioactive waste per kWh and, according to some experts, more expensive high-level waste<sup>7</sup>.

One claim that has generated optimism is that the small reactors will be built in such large numbers that industrial learning will bring down costs, just as it has for solar PV panels and lithium batteries. This idea is disputed by Amory Lovins, who explains that 75–85 per cent of the costs of a nuclear power plant are common to other thermal power plants where learning has long since passed the early phase in which costs fall fast. Even if learning were to result in reactors being built so efficiently that reactors could deliver steam for free to the turbines, such small reactors would not be able to compete.<sup>8</sup>

There is yet another argument that seems to have validity. Large reactors create costs as their sudden, long and unpredictable shutdowns

disturb the frequency of the alternating current grid and may require large back-up capacity to be available at short notice. With many small reactors these costs would be lower.

In this century only Russia has succeeded in completing a couple of floating small modular reactors, called Akademik Lomonosov, which generate 32 MW each. The original plan was to build seven of them at a cost of 6 billion roubles. But by the time the first two were completed, ten years late, the cost was 36 billion roubles<sup>9</sup>. They have operated poorly and there are no plans to build any further reactors.

In North America the first Nuscale project that was envisioned to be completed by 2028 has been cancelled due to customers not being able to handle the high electricity costs, despite generous subsidies to both the company and the planned construction.<sup>10</sup>

A possibly more successful SMR is being built in China. The ACP100 reactor project was started in 2010, design work was completed in 2014, the safety review passed in 2016, construction officially started in 2021 and it is claimed it is even ahead of the construction schedule.<sup>11</sup>

But even in China, nuclear power is unable to compete. While 1.4 GW of new nuclear capacity was added in 2023, there was 76 GW of new wind power and over 200 GW of new solar capacity.<sup>12</sup>

So, all over the world nuclear is too expensive to matter economically.

Tomas Käberger

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1 Words used by Nabou Tanaka, former head of the IEA at a REI event in Tokyo.

2 Summer-2&3

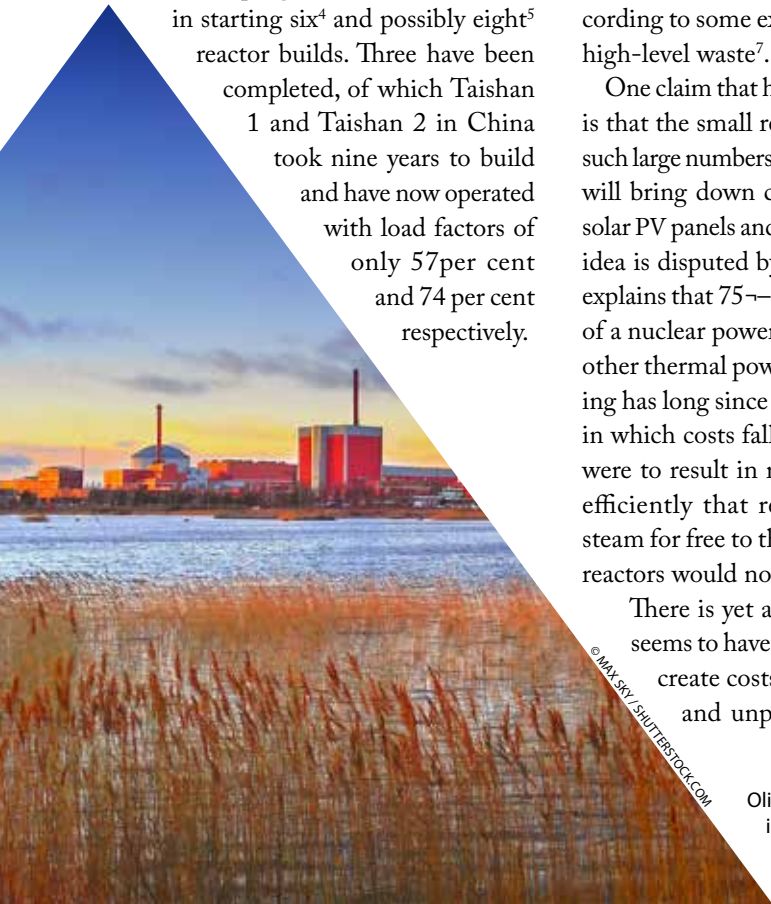
3 Vogtle-3&4

4 Olkiluoto 3, Flamanville 3, Hinkley Point 1, Hinkley Point 2, Taishan 1, Taishan 2

5 If two reactors at Sizewell C are built

6 Cour des Comptes 9 July 2020, <https://www.>

Olkiluoto 3 went into operation in 2023, which is 14 years later than planned.



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9 World Nuclear Industry Status Report 2022, <https://www.worldnuclearreport.org/-World-Nuclear-Industry-Status-Report-2022-.html>, p 52-53

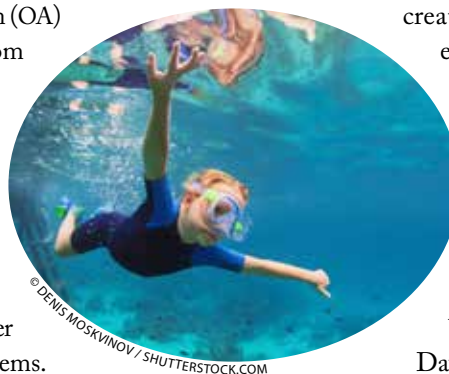
10 Reuters 9 November 2024 <https://www.reuters.com/business/energy/nuscale-power-uamps-agree-terminate-nuclear-project-2023-11-08/>

11 World Nuclear News 14 July 2024, <https://world-nuclear-news.org/Articles/Core-module-completed-for-Chinese-SMR>; IAEA, Power Reactor Information System, <https://pris.iaea.org/PRIS/CountryStatistics/ReactorDetails.aspx?current=1111>

12 China's National Energy Administration, 26 January 2024, [https://www.nea.gov.cn/2024-01/26/c\\_1310762246.htm](https://www.nea.gov.cn/2024-01/26/c_1310762246.htm)

# International Ocean Acidification Action Week

Ocean Acidification (OA) caused by CO<sub>2</sub> from the burning of fossil fuels puts our seas at danger. Corals, cod, salmon, shrimps and shellfish are among the organisms at peril, together with whole ecosystems.



The threats to nature are also a great concern for humans and affect everyone who benefits from nature and the sea – for work, for leisure, and for inspiration.

The threat from OA is in general poorly recognised in the governance of marine waters. To raise awareness about OA, AirClim encourages other NGOs and all those concerned about our seas to take action to highlight OA. We hope that

creative contacts with, for example, fishers, schools, artists, museums and journalists can be established so that information on OA will be widely spread in societies globally. In week 23, both the

UN World Environment Day (5 June) and the UN World Ocean Day (8 June) are

arranged. This week also kicks off the Bonn Climate Change Conference (June 3–13) and therefore provides an excellent backdrop to this year's action week.

Materials on OA are available under the heading "Ocean Acidification Working-Group" at [www.airclim.org](http://www.airclim.org).

## Airdim publications over the last three years

- ▷ Northern forests, climate change and the UNFCCC
- ▷ EU climate targets aligned with the Paris agreement's 1.5°C objective
- ▷ Baltic Sea Offshore Wind Collaborative-Learning project
- ▷ Air pollution in Europe and children's health
- ▷ The EU as a Normative Power?
- ▷ Climate neutrality, Energy security and Sustainability - A pathway to bridge the gap through Sufficiency, Efficiency and Renewables
- ▷ Climate Change: A Himalayan Odessey
- ▷ No further discussion needed. The agreed global goal is to limit temperature rise to 1.5°C
- ▷ Fossil-free electricity 2021
- ▷ Emissions trading system for road transport and buildings in the policy mix for achieving climate neutrality in the EU
- ▷ Extreme high temperatures - a threat to human health
- ▷ 1.5°C Pathways for the EU27: accelerating climate action to deliver the Paris Agreement
- ▷ 1.5°C Pathways for the Council of Europe: accelerating climate action to deliver the Paris Agreement
- ▷ Failing to achieve 1.5°C puts a huge economic burden on our (grand)children
- ▷ Policy implications of Europe's dwindling carbon budget
- ▷ The EU too must revisit its 2030 climate pledge (NDC) as -55% is not compatible with 1.5°C
- ▷ Making the EU ETS and ESR legislation compatible with the Paris Agreement
- ▷ Counting the numbers: EU carbon budget not compatible with 1.5°C target
- ▷ Temperature overshoot The concept of temporarily going beyond 1.5°C
- ▷ Why the EU must strengthen its Climate target
- ▷ Speeding up the decarbonisation of European industry
- ▷ Strengthening EU climate policies
- ▷ Briefing on the proposal to integrate maritime transport in the EU ETS
- ▷ 1.5°C - A tipping point for the Arctic
- ▷ The Revision of the European Union Emissions Trading System Directive: Assessing Cap and Market Stability Reserve Reform Options
- ▷ Phasing out oil
- ▷ Forests of Russia and Climate Change
- ▷ The science of temperature overshoots
- ▷ 1.5°C to survive. Evidence from the IPCC Special Reports
- ▷ Overview briefing on the IPCC Special Report on Global Warming of the 1.5°C
- ▷ Overview briefing on the the IPCC Special Report on Climate Change and Land
- ▷ Overview briefing on the IPCC Special Report on Ocean and Cryosphere
- ▷ Nordic Food Transition
- ▷ Ocean acidification in the Black Sea
- ▷ Ocean acidification - country report for Finland
- ▷ Ocean acidification in the Baltic Sea from a Swedish perspective
- ▷ Ocean acidification - country report for Poland
- ▷ What is Ocean Acidification?
- ▷ Ocean Acidification in the Baltic Sea
- ▷ Phasing out fossil gas power stations in Europe by 2030
- ▷ Analysing marine geoengineering technologies

### 1.5°C Pathways for Europe 2021 series

- ▷ Achieving the highest plausible climate ambition 2021
- ▷ Sweden Country Factsheet
- ▷ Spain Country Factsheet
- ▷ Romania Country Factsheet
- ▷ Portugal Country Factsheet
- ▷ Poland Country Factsheet
- ▷ Italy Country Factsheet
- ▷ Germany Country Factsheet
- ▷ France Country Factsheet
- ▷ Denmark Country Factsheet



## Recent publications from the Secretariat

Reports can be downloaded in PDF format from [www.airclim.org](http://www.airclim.org)

**Extreme high temperatures – a threat to human health.** (November 2022). By Hanna Slogén. A summary of knowledge.



**Fossil-free electricity 2021** (March, 2023). By Fredrik Lundberg. Global EU status and trends.



**Baltic Sea Offshore Wind Collaborative-Learning project** (September 2023). By Emilia Samuelsson et al. Finding new ways of addressing offshore wind conflicts.



**No further discussion needed. The agreed global goal is to limit temperature rise to 1.5°C.** (March 2023). By Wendel Trio.



**Emissions trading system for road transport and buildings in the policy mix for achieving climate neutrality in the EU.** (December 2022). By Dr. Felix Chr. Matthes, Jakob Graichen.



**Northern forests, climate change and the UNFCCC** (December 2023). By Wendel Trio & Roger Olsson. Forests have a great potential to deliver on climate mitigation.



**Air pollution in Europe and children's health** (May 2023). Emilie Stroh.



**EU climate targets aligned with the Paris agreement's 1.5°C objective** (December, 2023). By Wendel Trio. The implications of current EU policies and targets on the EU's carbon budget.

## Coming events

**IMO Marine Environment Protection Committee.** London, UK, 18–21 March 2024. Information: <https://www.imo.org/>

**International day of forests.** 21 March 2024. Information: <https://www.un.org/observances/forests-and-trees-day>

**Environment Council.** Brussels, Belgium, 25 March 2024. Information: <https://www.consilium.europa.eu/en/meetings/env/2024/03/25/>

**Task Force on Integrated Assessment Modelling 53rd meeting** Paris France 15 - 17 April 2024 Information: <https://unece.org/info/Environmental-Policy/Air-Pollution/events/>

**25th meeting of Task Force on Measurement and Modelling (TFMM)** 23 - 25 April 2024 Information: <https://unece.org/info/Environmental-Policy/Air-Pollution/events/>

**13th Annual meeting of the Task Force on Emission Inventories and Projections (TFEIP),** Dessau Germany, 17 May 2024 Information: <https://unece.org/info/Environmental-Policy/Air-Pollution/events/>

**27th meeting of the Joint Convention/WHO Task Force on the Health Aspects** Bonn Germany 22 - 23 May 2024 Information: <https://unece.org/info/Environmental-Policy/Air-Pollution/events/>

**Working Group on Strategies and Review, sixty-second session** Geneva, Switzerland 27 - 31 May 2024 Information: <https://unece.org/info/Environmental-Policy/Air-Pollution/events/384007>

**European Maritime Day,** Svendborg, Denmark 30 - 31 May 2024 Information: [https://maritime-day.ec.europa.eu/index\\_en](https://maritime-day.ec.europa.eu/index_en)

**Energy Council.** Brussels, Belgium, 30 May 2024. Information: <https://www.consilium.europa.eu/en/meetings/tte/2024/05/30/>

**European elections.** In all EU member states, 6–9 June 2024. Information: <https://elections.europa.eu/>

**Climate Change Conference.** Bonn, 3- 13 June 2024

**Ocean Acidification Action Week** 1-9 June 2024

**ISEE Europe Young and Early Career Researchers Conference.** Rennes, France, 5-7 June 2024. Information: <https://iseeyoung2024.sciencesconf.org/>

**World Environment Day.** 5 June 2024

**World Ocean Day.** 8 June 2024 <https://unworldoceansday.org/>

**Environment Council.** Luxembourg, 17 June 2024. Information: <https://www.consilium.europa.eu/en/meetings/env/2024/06/17/>

**The international N Workshop.** Aarhus, Denmark. 17–21 June 2024. Information: <https://conferences.au.dk/nworkshop>

**UNFCCC COP 29.** Baku, Azerbaijan, 11 -22 November 2024.

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