

# UNECE support for climate action



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- The UNECE region – stretching over North America right across Europe, covering the Balkans, the Caucasus and Central Asia – is a major source of greenhouse gas emissions, responsible for [34% of the world's CO<sub>2</sub> emissions from fossil fuel combustion](#). From wildfires to flooding, heatwaves and drought, the region is increasingly forced to deal with the impacts of climate change, on homes and livelihoods, on food and water, on infrastructure and on ecosystems.
- Faced with the climate emergency and to meet the objectives of the Paris Agreement and Sustainable Development Goals, CO<sub>2</sub> emissions need to be halved between now and 2030, both globally and in the region. UNECE member States are taking important climate action in key areas. Through its norms, standards, conventions and policy assistance, UNECE provides [practical tools to support countries' efforts for both climate change mitigation and adaptation](#).





# Driving down emissions



- Action to tackle air pollution and reduce greenhouse gas emissions is mutually reinforcing. UNECE's [Air Convention](#) is a unique instrument that helps 51 countries work together for cleaner air on a broad regional basis, reducing emissions of key air pollutants by 40% to 80% in Europe and by 30 to 40% in North America since 1990. Its amended Gothenburg Protocol is the only international legally-binding agreement to tackle short-lived climate pollutants including black carbon – some 680 times more heat trapping than CO<sub>2</sub> – and targets key ground-level ozone precursors.
- As the United Nations platform for transport by road, rail and inland waterway and custodian of 59 UN Conventions, UNECE provides a [harmonized legal and regulatory framework to decarbonize mobility and transport](#). This includes facilitating the shift to more energy efficient and greener modes such as rail and inland waterways for long distance haulage and passenger journeys, and to further reduce their environmental footprint through measures such as regulatory provisions on pollution reduction for inland waterway transport.
- [UN vehicle regulations](#) and Global Technical Regulations developed at UNECE enable [harmonized measurement of fuel consumption and tailpipe CO<sub>2</sub> emissions](#) from cars and vans. These harmonized international standards also enable the widespread introduction of renewable and sustainable fuel sources for vehicles including electric, hybrid and hydrogen.
- Doubling the current level of cycling would reduce greenhouse gas emissions by 8 million tonnes of CO<sub>2</sub> equivalent with indirect economic benefits of €1.1 billion per year in the region. The first [Pan-European Master Plan for Cycling Promotion](#) provides a blueprint to help countries achieve this by 2030.
- Human-caused emissions of methane - with an instantaneous global warming potential 120 times higher than that of CO<sub>2</sub> - are rising, and must be reduced by 40-45% by 2030 to limit global temperature rise to 1.5°C. Readily available measures – of which half are in the fossil fuels sector – can reduce 2030 methane emissions by 30% if fully implemented. UNECE [guidance for methane management in the oil and gas sectors](#) and for both [operating](#) and [abandoned coal mines](#) can support concrete action now.

- Buildings account for 40% of CO<sub>2</sub> emissions through the energy services they require and around one third of the global consumption of materials. [Framework Guidelines for Energy Efficiency Standards in Buildings](#) developed by UNECE provide a set of principles to improve sustainability in the conception/design, construction, operation, maintenance, and decommissioning/recycling of buildings and their components. The Guidelines provide the basis for the High-Performance Buildings Initiative that seeks to improve health and quality of life while advancing decarbonization of the global buildings supply chain. The [#Housing2030](#) initiative launched by UNECE, UN-Habitat and Housing Europe, will further strengthen action, supporting decision-making by providing examples of climate policy tools that can help in the implementation of climate neutral and affordable housing solutions.
- As part of comprehensive [policy dialogue and cooperation to accelerate the region's sustainable energy transition](#), UNECE helps countries to develop national strategies on [energy efficiency](#), [renewable energy](#) and low-carbon development. Recent examples include Albania, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Georgia, Kazakhstan, Moldova, Russian Federation, Serbia, and Ukraine. With time running out and fossil fuels still accounting for over half of electricity generation in the region, a [UNECE technology brief](#) notes the potential role of nuclear power – which currently provides 20% of electricity generated in the region and 43% of low-carbon generation – to decarbonize the energy system and energy intensive industries, as part of a broader portfolio alongside deploying other sustainable low- or zero-carbon technologies.
- Coal-based infrastructure is at the heart of industrial complexes that include mines, power stations, steel production, other affiliated industries, and urban areas. The substantial industrial and urban ecosystems that have developed around coal facilities represent an important socio-economic and hence political barrier to diversifying away from coal mining. UNECE raises awareness of the need for adequate consideration of these issues, [calling on countries to support a just transition](#) through industrial modernisation to address short-term political drivers, notably employment in coal mining regions, that impede real action on climate change and energy for sustainable development.





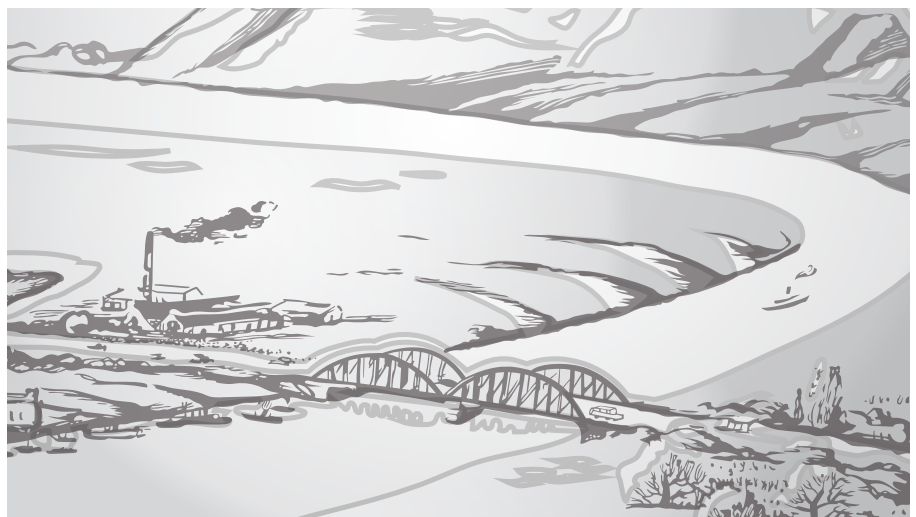
# Supporting adaptation



- The [Water Convention](#) provides a global legal and intergovernmental framework for cooperation between countries on [climate change adaptation in shared basins](#), which are home to more than 40% of the world's population. Working together across borders is essential to strengthen resilience to water-related disasters including floods, droughts and storms, and helps access climate finance for adaptation efforts. The Water Convention helped to increase resilience to climate change in 5 major basins directly (Chu Talas, Dniester, Drin, Neman and North Western Sahara Aquifer System, with a total population of around 35 million persons). The Water Convention's global network of basins working on climate change adaptation has supported 13 additional basins to implement transboundary adaptation measures, strengthen capacities, share knowledge and support basins in accessing finance for climate change adaptation.
- However, increased commitments are needed in shared basins for climate change adaptation and to reduce climate-related disasters, according to the second [reporting exercise for SDG indicator 6.5.2 on transboundary water resources management](#), supported by co-custodians UNECE and UNESCO. In 2020-2021, climate change adaptation is referred to in less than a half of responses among the tasks and activities of the joint bodies responsible for transboundary cooperation and as an area of cooperation under operational transboundary arrangements (47% and 43% respectively). Around 70% of responses included disaster risk reduction (with a focus on floods and droughts).
- The UNECE-WHO/Europe [Protocol on Water and Health](#) can strengthen communities' resilience to the effects of climate change, including water-related disasters linked to extreme weather events, and water scarcity. Activities focus on building awareness, evidence and capacities, while also helping to set national targets towards increasing resilience of water supply and sanitation services.



- From road and rail networks to ports, airports and inland waterways, critical transport resources are facing unprecedented threats from a climate which is already changing. For instance, over 60% of EU seaports may be under high flood risk by 2100, causing disruptions to operations and damages to port infrastructure and vessels, especially along the North Sea coast, where the traffic of over 500 ports accounts for up to 15% of the world's cargo transport. UNECE is leading pioneering work to [map key risks and hotspots, and to build resilience of transport infrastructure and operations](#) in the region by identifying the most suitable and cost-effective adaptation measures.
- Increasingly frequent and intense extreme weather events such as floods and heavy storms bring heightened risks of Natural Hazards Triggering Technological Disasters (called Natech accidents). The [UNECE Convention on the Transboundary Effects of Industrial Accidents](#) helps countries to prevent such accidents and to prepare for and respond to them, should they occur, focusing on transboundary aspects. Support includes guidance development, capacity building and by contributing to projects and workshops. [Words into Action guidelines on man-made/technological hazards](#), prepared together with other international organizations, contain a dedicated section on Natech risk reduction. Cross-sectoral guidance which addresses aspects on Natech risks has also been prepared under UNECE's auspices, e.g. on [land-use planning](#).
- Together with the [Convention on the Protection and Use of Transboundary Watercourses and International Lakes](#), the two UNECE instruments provide a legal framework for addressing the risk of transboundary water pollution arising from industrial accidents, including those caused by Natech events. Their [Joint Expert Group on Water and Industrial Accidents](#) developed sector-specific guidance materials such as safety guidelines and good practices for [oil terminals](#), [pipelines](#) and [tailings management facilities](#). It also developed checklists, such as on [transboundary contingency planning](#), and supports countries in their application.
- To [help local governments better withstand shocks and stresses](#), including in relation to climate change, UNECE – together with UN Regional Commissions, UN-Habitat and the UN Capital Development Fund – is supporting 16 cities globally to design, implement and monitor sustainable, resilient and inclusive COVID-19 economic and financial responses, recovery and rebuilding plans. In the UNECE Region these include Tirana (Albania), Bishkek (Kyrgyzstan), and Kharkiv (Ukraine).





# Harnessing environmental action and nature-based solutions



- [Environmental Performance Reviews \(EPRs\)](#) and the [Protocol on Strategic Environmental Assessment](#) help countries to integrate climate change measures into policies and planning. The fourth cycle of EPRs strengthens the in-depth assessment of climate change impacts on priority sectors, mainstreaming climate adaptation, and greenhouse gas mitigation. EPRs have been conducted for some 25 countries to date.
- The UNECE region is home to 42% of the world's forests, accounting for a net biomass carbon sink worth 433 million tonnes of carbon per year, and a living biomass carbon stock in forest land worth about 93 billion tonnes. UNECE/FAO provide wide-ranging support for the [protection and sustainable management of these precious forest resources](#). Among many areas covered are [mobilizing science and policy expertise on boreal forests](#), which are [the world's largest terrestrial carbon storehouse](#); promoting the use of wood in construction, which offers a material with carbon emissions 40% lower than concrete and 30% lower than steel; and advancing the [sustainable use of wood energy](#) – the leading source of renewable energy in the region, accounting for 35.4% of renewable energy supply for 31 countries.



- UNECE has already supported six countries in the Caucasus and Central Asia (Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan) in their commitment to restore around [3 million hectares](#) of degraded land by 2030 under the Bonn Challenge. At a [Ministerial meeting on 12 October 2021](#), countries in Eastern and South-Eastern Europe have committed to restore more than 4 million ha of land by 2030 in contribution to the UN Decade on Ecosystem Restoration.
- Tree planting in urban areas can unlock important benefits: a single tree can store up to 150 kg of CO<sub>2</sub> per year, while trees also regulate urban temperatures, help limit erosion and flooding, and contribute to biodiversity. Over 20 cities have already pledged to plant some 11 million trees as part of the [Trees in Cities Challenge](#) launched by UNECE and Mayors in 2019.







# Strengthening the knowledge base and informing action



- Through its work on statistics related to the [environment](#), [climate change](#) and [hazardous events and disasters](#), UNECE helps countries to compile reliable, comparable statistics for climate-related policymaking, international reporting and informing the public. UNECE produced the first ever [Recommendations on Climate Change-Related Statistics](#) and the first internationally-agreed [Set of Core Climate Change-related Indicators and Statistics](#) providing the foundation for countries' statistical offices to produce core indicators to track and report their progress towards nationally determined contributions under the Paris Agreement's enhanced transparency framework (ETF). The indicator set is accompanied by practical guidelines on producing the indicators within the contexts of different national policy priorities and data availability. UNECE also facilitates a continuous dialogue between users and producers of climate-related statistics through its annual [Expert Fora](#).
- The Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention) [supports the public's role in climate change negotiations and in shaping climate action policies](#).
- The [Kyiv Protocol on Pollutant Release and Transfer Registers](#) facilitates access to integrated data and information on releases of greenhouse gases and hazardous chemicals and wastes. By supporting adequate measurement, reporting and dissemination of information, implementing PRTR systems help governments and stakeholders to manage risks in production processes and throughout product lifecycles, and support the sound management of chemicals as part of climate change mitigation and adaptation measures. Results from a [recent survey among Parties and stakeholders on the experiences in implementing the Protocol on Pollutant Release and Transfer Registers](#) showed that using PRTR together with, and for, other existing reporting obligations may also improve data quality and reduce costs for its reporting, management and use. This could also facilitate analysis related to cross-cutting issues, helping to improve, for example, cooperation and coordination under the UNFCCC and Stockholm, Rotterdam and Minamata Conventions.

- The Environmental Monitoring and Assessment programme helps countries develop their capacities in relation to climate change indicators within the [UNECE set of environmental indicators](#), and oversees preparation of a [pan-European environmental assessment](#) that addresses climate change, among other issues.
- Guidelines for the Development of a Criteria and Indicator Set for Sustainable Forest Management, developed by UNECE and FAO to support Armenia, Georgia, Kazakhstan, Kyrgyzstan and Uzbekistan in the development of their national systems, are available to help all countries monitor progress on sustainable forest management, which is vital for both climate change mitigation and adaptation. To further support informed action, the unique online data platform [INForest](#) gathers the most up-to-date information on the over 1.7 billion hectares of forests in the UNECE region and its forest-based sector in one place, providing a user-friendly interface.
- The Transport, Health and Environment Pan-European Programme, serviced by UNECE in collaboration with WHO/Europe, brings member States together to ensure a joined-up approach to policy development in these three areas with a strong focus on reducing the environmental and health effects of transport. The [Vienna Declaration](#) agreed by member States at the Fifth High-level meeting in May 2021 sets the agenda for working towards more sustainable transport and mobility with a strong focus on achieving climate action targets.





# Unlocking opportunities



- Food loss and waste is responsible for 8% of global greenhouse gas emissions. UNECE has developed an application, FeedUP@UN, to allow the systematic collection and analysis of data on food lost and resources saved along the food supply chain, helping to [reduce losses and redistribute otherwise lost food](#). To provide policy guidance and help to quantify the misuse of resources a Code of Good Practice for Reducing Food Loss in Handling Fruit and Vegetables has been developed along with a food loss and waste measuring methodology for fresh produce supply chains.
- Greenhouse gas emissions from textiles production amount to [1.2 billion tonnes annually](#), which is more than the emissions of all international flights and maritime shipping combined. Until now, lack of transparency in complex global value chains has remained a barrier to improving sustainability in the sector. UNECE has developed an industry-ready normative framework and a technical standard for full [traceability of sustainable and circular value chains in the garment and footwear sector](#), as part of an EU-funded project. As technology promises to be a key enabler of transparent, open, efficient and innovative value chains, the toolbox is currently piloted in a blockchain system developed by the project, with more than 50 industry actors from 20 countries across the globe, covering the entire garment and footwear value chain, from field to shelf and beyond.
- The UN Framework Classification for Resources (UNFC) facilitates [comprehensive resource classification and management](#), addressing technical, social, environmental, and economic issues. With rising demand for the critical raw materials needed for the green energy transition in mobile appliances, electric vehicle batteries, or wind turbines, UNFC can help identify new regional and national production opportunities. The European Union has already used this tool for its Strategic Action Plan on Batteries, with 19 member states reporting on cobalt, lithium, nickel, and graphite.

- Internationally harmonized UNFC specifications for the [assessment and reporting of renewable energy resources](#) including geothermal, bioenergy, wind and solar will further help to scale up their use and channel increased investments.
- UNECE [recommendations to help scale up hydrogen use](#), together with policy support and cooperation, can aid the region's sustainable energy shift. Combined with electricity from renewable sources, hydrogen – which can be used in transport, homes, industry and power generation – has the potential to replace hydrocarbons in the region by 2050.
- Large scale deployment of Carbon Capture Use and Storage (CCUS) technology in the UNECE region would allow countries to decarbonise the energy sector and hard-to abate industrial sectors in the medium term to bridge the gap until next generation low-, zero-, or negative- carbon energy technologies become available. Captured CO<sub>2</sub> can be used in a range of mineralization, chemical and biological processes, with applications in the industrial, steel, cement and chemicals sectors. In a future hydrogen economy, this captured carbon could be used to make many of the chemicals and plastics currently made using fossil fuels. UNECE-led [regional cooperation can help countries scale up CCUS implementation](#).
- According to the UN International Resources Panel, resource extraction and processing account for half of total greenhouse gas emissions, excluding those related to land use. Adopting circular economy principles offers a unique opportunity to improve resource efficiency and decarbonize our economies. From its leading normative work to policy support and platforms for cooperation, UNECE provides a variety of [tools to facilitate the widespread adoption of circular economy approaches](#).





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