

Highlights of interactions between IIASA and Austria



Member Organization

The Austrian Academy of Sciences (OeAW)



Selected partners

Over 40 Austrian organizations have collaborated with IIASA in 2020-2025. The top ten most active collaborators are:

- Austrian Academy of Sciences (OeAW)
- Austrian Institute of Economic Research (WIFO)
- Complexity Science Hub Vienna
- Medical University of Vienna (MedUni Wien)
- University of Innsbruck (UIBK)
- BOKU University
- University of Graz
- University of Vienna
- Vienna University of Economics and Business (WU)
- Vienna University of Technology (TU Wien)



Areas of research collaboration

- Advancing climate adaptation, disaster risk reduction, and wildfire risk modeling in Austria.
- Assessing sustainable supply chains for circular bioeconomy and bioenergy in Austria.
- Strengthening evidence-based climate and environmental policy through distributional risk, water stress, and just transition research.
- Collaborating on energy system transitions and circular economy pathways supporting EU and Austrian decarbonization goals.
- Integrating AI, Earth observation, and citizen science into forest monitoring and carbon assessment.
- Advancing demographic and human capital research in Austria. Supporting migration, ageing, and social inequality analysis to inform long-term socioeconomic planning.
- Developing tools and approaches to explore the feasibility of decarbonization pathways and identifying opportunities to strengthen climate policies.
- Assessing socioeconomic climate risks and resilience through integrated models and stakeholder-informed scenarios to support financial sector strategies and policies.
- Enhancing Austrian expertise in applied systems analysis and raising a new generation of talented researchers in Austria.
- Connecting Austrian partners to EU and global research networks, models, and scenario platforms for policy-relevant systems analysis.
- Providing a forum where Austrian scientists can engage with diverse stakeholders from around the world and collaborate on global challenges, fostering international cooperation through science.



Capacity building

15 doctoral students from Austria or studying in Austrian institutions have participated in the IIASA Young Scientists Summer Program and over 600 participants from Austria attended IIASA's workshops for schools and youth organizations in 2020-2025.



Publication output

IIASA has co-authored over 700 publications with institutions in Austria, and its researchers from Austria have authored over 1200 publications in 2020-2025.



Scientific exchange

Over 1200 participants from Austria have joined IIASA events and over 170 Austrian nationals have been employed at IIASA in 2020-2025.

Engagement with Member Countries: Austria

IIASA Info Sheet 2026

The electronic version of this document is available at
<https://iiasa.ac.at/members/austria>

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IIASA Info Sheets provide succinct summaries of IIASA activities. They do not necessarily reflect the views of IIASA staff, visitors, or National Member Organizations.

This Info Sheet summarizes the recent interactions of IIASA with Austria from January 2020 to December 2025 and will be regularly updated in the following years. It includes highlights with links to further information but is not meant to be a comprehensive report on all interactions. Feedback and updates are encouraged and should be sent to the External Relations Department.



1. Introduction

The International Institute for Applied Systems Analysis (IIASA) was established in 1972 as an international, independent, non-governmental, multidisciplinary research institute located in Laxenburg near Vienna, Austria. As of May 2025, IIASA has 18 national members and one regional member, representing 36 countries across Africa, the Americas, Asia, and Europe. Over the years, IIASA made **groundbreaking research contributions** with real-world impacts on global decision-making and continues to prepare for an increasingly complex future.

While IIASA is an international institution committed to fostering scientific cooperation across the globe, its history is tightly linked to Austria, the country that has been generously hosting the institute since its founding in 1972. The **Austrian Academy of Sciences (OeAW)** is the National Member Organization (NMO) representing Austrian membership of IIASA. The Austrian Academy of Sciences (OeAW) entrusts the **Austrian IIASA Committee** with oversight of IIASA and with strengthening connections between IIASA and Austria's science and policy communities. The committee includes representatives of the Academy, ministries, universities, and other research organizations.

Research collaborations between IIASA and Austria have been highly productive throughout the history of the Institute and date back to the 1970s. In the years between 2020-2025, research collaborations between IIASA and Austria involved over 40 Austrian organizations and led to over 700 joint scientific publications. Current collaborations aim to address several of Austria's strategic priorities associated with research and innovation. Those efforts are primarily focused on enhancing expertise in applied systems analysis in Austria and harnessing its power to tackle the climate crisis, improve climate adaptation and disaster preparedness, monitor land use change and change in population dynamics, improve ecosystem services and management, ensure energy security, facilitate the green transition, as well as transitions to new technologies. IIASA also offers several capacity building opportunities for Austrian researchers. Finally, IIASA acts as a science diplomacy hub within Austria, supporting the country's goals with regard to the internationalization of Austrian research by facilitating international research partnerships with other countries all over the world and offering a platform for global engagement.

2. IIASA's Unique Value Proposition for Austria

We are navigating an era of unprecedented complexity, marked by a global polycrisis that includes global environmental changes, civil unrest, conflict, migration pressures, and geopolitical tensions. This unique position demands innovative solutions that balance sustainability with development priorities. IIASA's expertise in systems analysis, science diplomacy, and leadership in methodological innovation, combined with its wide international network of partners, enabled the Institute to establish itself as a pioneering organization, designed specifically to inform real-world decision-making at national, regional, and global scales and address complex, interconnected problems that transcend traditional disciplinary and sectoral boundaries.

IIASA has strong ties and a long history of cooperation with Austria, the Institute's host country, built over decades of mutual trust and impact-oriented collaborative projects. In 2023, the Austrian Research Promotion Agency (FFG) has **ranked** IIASA as one of the most active participants in the Horizon Europe Programme in Austria, reflecting the institute's commitment to addressing pressing global challenges and advancing sustainable solutions.

IIASA is actively co-developing evidence-based solutions to inform policy in priority areas aligned with **Austria's Research, Technology and Innovation (RTI) Strategy**. Leveraging its expertise in science diplomacy and interdisciplinary systems analysis — with a focus on sustainable development, climate action and the green transition, biodiversity preservation, digital transformation, energy and resource systems, population dynamics, and health — IIASA is keen to help Austria achieve its strategic ambitions and strengthen its position as a leader in research and innovation and a key global RTI location. IIASA's priorities are closely aligned with Austria's ambitions to foster sustainable development, ensure social and economic resilience, achieve its **Nationally Determined Contribution (NDC)**, as well as enhance Austria's contributions within the **European Research Area** and globally.

IIASA provides a valuable portfolio of critical resources and connections to support these efforts:

- ▶ IIASA offers advanced research capabilities, cutting-edge analytical tools, and methods to empower its partners and collaborators in shaping policy-relevant solutions at regional, national, and local levels.
- ▶ IIASA uses systems analysis as a formal approach to studying the multiple synergistic factors contributing to the global polycrisis (e.g. climate, pandemic, economic) across sectors (e.g. energy, agriculture, forestry, health, water, environment) and other complex problems.
- ▶ IIASA uses the most advanced methodologies in systems analysis with a special recent focus on AI, for example by integrating AI in agent-based models (ABMs), to better understand the drivers and impacts of the global polycrisis and offer data-driven solutions.
- ▶ IIASA opens doors for its partners to tap into additional global funding opportunities and resources.
- ▶ IIASA provides access to state-of-the-art large-scale applied models (EU and global scale), which can complement the traditional work, conducted at the national level.
- ▶ IIASA provides opportunities to get involved in the EU and global policymaking through its networks and models.
- ▶ Operating in an independent, apolitical, and research-focused international environment, IIASA remains nimble in addressing global challenges.
- ▶ IIASA research is focused on addressing real-world problems in partnership with decision-makers, community members, and practitioners from the countries involved to ensure that results contribute to policy.
- ▶ Most importantly, IIASA offers its expertise, data, and modeling tools to partners in Austria, facilitating knowledge transfer and capacity building to strengthen national and sub-national policymaking.

IIASA is a neutral space for international scientific collaboration. Under the protection of Austrian law, scholars from nations currently involved in conflicts work together peacefully, collaboratively, and constructively at IIASA. The Institute plays a leading role in setting the research agenda within the international scientific community. It connects national scientific communities to a dynamic global network of researchers, policymakers, and practitioners through capacity building, in-person meetings, workshops, joint research initiatives, tool development, collaborative projects, and virtual webinars.

IIASA is actively fostering collaborations with Austrian institutions, strengthening national research capacity within the country. A prime example of such a collaboration is IIASA's role within the **Wittgenstein Centre for Demography and Global Human Capital**. The Centre is a strategic partnership between IIASA, the Vienna Institute of Demography of the Austrian Academy of Sciences (OeAW), and the University of Vienna that combines world-class expertise in population dynamics, human capital, education, and socioeconomic forecasting under one roof. The Centre specializes in population research, produces high-quality, policy-relevant data and projections, and equips Austrian policymakers with evidence-based tools to inform

decisions on ageing, education, labor markets, migration, and long-term societal change — effectively elevating Austria's influence in global demographic science and supporting informed national planning.

IIASA plays a key role in conducting large-scale, policy-relevant assessments at both the global and national levels, providing integrated systems analysis that directly supports priorities of the Austrian policy agenda and informs strategic planning. For example, in the years 2020-2025, IIASA led the development of the **Second Austrian Assessment Report on Climate Change (AAR2)**, a comprehensive document which lays out past, present, and potential future impacts of climate change in Austria and defines opportunities and limits of mitigation and adaptation. IIASA contributed scientific expertise, modeling insights, and analytical input to assess climate impacts, mitigation pathways, and adaptation strategies, helping to provide a comprehensive and policy-relevant evaluation of climate risks and response options for Austria.

IIASA offers an opportunity for its member countries to broaden their global partnerships through inclusive, multilateral collaboration, providing access to a wide network of international partners.

In the last decade, IIASA helped to establish several centers of excellence for systems analysis in different parts of the world, partnering with local researchers to advance the discipline. Those include the North Africa Applied Systems Analysis Centre (NAASAC) in Egypt, the South African Systems Analysis Centre (SASAC) in South Africa, the Archimedes Center in Israel, and the Asian Demographic Research Institute (ADRI) in China. Through these collaborations, IIASA helps foster productive scientific partnerships between the Austrian research community and leading scientists around the world, creating a community of professionals that shares expertise nationally and is well connected, both regionally and internationally, to support impactful policymaking at all levels.

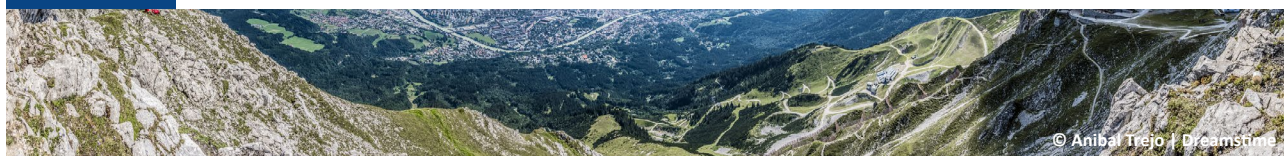
IIASA also provides a variety of capacity development opportunities for future leaders in science, politics, business, and culture through its **Young Scientists Summer Program (YSSP)**, a variety of **Summer Schools**, and its **Postdoctoral Fellowships**. These programs provide individualized and cohort-based mentoring to early career researchers, students, and advanced practitioners from around the world to apply systems thinking to global challenges under the mentorship of world-leading experts. Their collaborations produce policy-relevant research focused on their home countries and help them become proficient in the scientific and diplomatic skills needed to operate at the highest levels of international science and policy. For Austria, these initiatives represent an important opportunity to support the next generation of Austrian researchers by helping them develop expertise in applied systems analysis, get involved with international research networks, and work with high-level global stakeholders. These efforts ultimately support their future career development and long-term engagement in global science and policy communities, benefitting the national talent pool. In addition, IIASA strengthens Austria's role as an international science hub, attracting talented researchers and practitioners from across the world to collaborate, exchange expertise, and build lasting partnerships in Austria.

Continued collaborations between Austria and IIASA will be essential to sustaining these efforts, advancing collaborative research, delivering policy-relevant insights, and strengthening global partnerships. As Austria navigates complex and evolving challenges, IIASA is keen to continue serving as a vital partner in shaping innovative, science-based solutions to address Austria's domestic and international priorities.

3. Highlights of IIASA Research Projects and Collaborations with Austria

IIASA actively collaborates with other Austrian researchers and institutions on targeted projects that aim to address national strategic priorities. Below are a few selected examples of IIASA projects with Austrian partners from across the different IIASA research programs and their research groups.

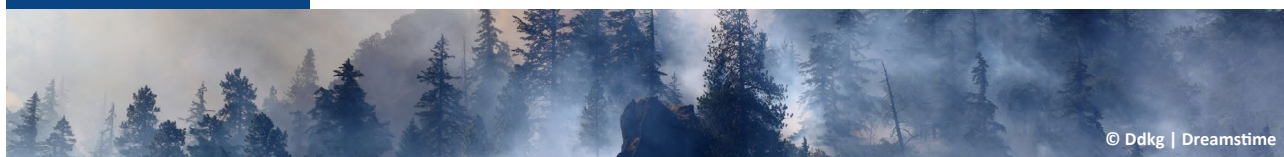
A-LEVERS



The Major Levers in Climate Change Adaptation in Austria (A-LEVERS) project focused on the development of a methodological framework for deriving the most effective leverage points for implementing climate adaptation in Austria. The project was conducted in partnership with GeoSphere Austria and the University Graz.

The primary aim of the project was to build bridges between science and practice and support decision makers in Austria to implement climate change adaptation efficiently and avoid maladaptation. To achieve this goal, researchers first evaluated existing knowledge on climate change impacts and risks and derived the key risks for Austria. For the identified key risks, adaptation measures and bundles were then prioritized, based on the available scientific synthesis on effectiveness and feasibility. For three selected representative regions, adaptation pathways with a time sequence of adaptation measures and bundles were developed. These adaptation pathways were then transferred to other Austrian regions and a set of practical recommendations was identified.

Austria Fire Futures



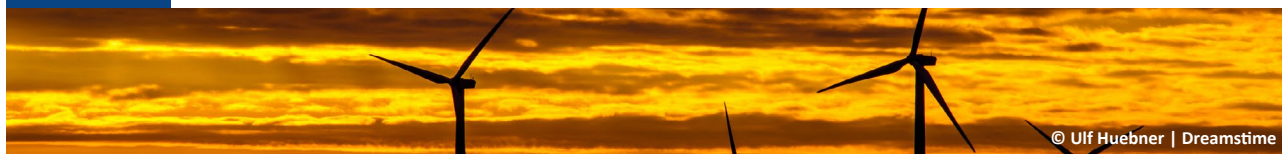
The Integrated Future Wildfire Hot Spot Mapping for Austria (Austria Fire Futures) project focused on domestic mountain-dominated forest systems and integration of novel insights on local fuel types into forest and forest fire risk models, including new variables such as morphology and recreational activities. The project helped to develop a unique and innovative set of fire risk and fire hazard hotspot maps at highest spatial resolution under various climate change scenarios. As part of this project, IIASA closely cooperated with the Austrian Research Centre for Forests (BFW) and BOKU University.

The study helped to improve the understanding of fire-prone forest areas that may change over time and space, taking into account underlying climate change and existing fuel levels. One of the main results of the project was the development of new future-oriented hotspot maps for Austria, based on integrated forest fire risk modeling taking into account climate change and new fuel quantity data.

CHIAS

The Cognitive Health in Aging Society (CHIAS) project explores cognitive health in aging societies and its policy implications across Europe. Using advanced quantitative methods on high-quality longitudinal survey data from the Survey of Health, Ageing and Retirement in Europe (SHARE), researchers examine how labor market participation shapes healthy cognitive aging. The project places particular emphasis on inequalities across countries, regions, and time, with gender and education serving as central individual dimensions. CHIAS is conducted in partnership with the University of Vienna, Johannes Kepler University Linz (JKU), and additional international partners (e.g. Karolinska Institutet).

The project's findings contribute to advancing the scientific understanding of inequalities in aging across countries, regions, time, and population subgroups (defined for example by gender and education). Beyond generating new substantive insights into the cognitive aging process, CHIAS provides evidence that is highly relevant for policy development. In particular, the results support efforts to design effective social and health policies aimed at reducing disparities, mitigating the long-term societal and financial challenges of population aging, and ensuring that policies and interventions leave no one behind at both the national and sub-national levels.

CircEULAR

IIASA is coordinating the Developing Circular Pathways for EU Low-Carbon Transition (CircEULAR) project, aimed at developing circular pathways for a low-carbon transition in the European Union. The project is the result of a collaboration of 11 international partners, including the BOKU University.

The goal of the project is to develop a stronger understanding of the potential of circular economy strategies for reducing greenhouse gas emissions and achieving the EU's net zero emissions target by 2050. The project is aimed at addressing circularity and related impacts on emissions from a systems perspective, taking into account different levers for change, such as dematerialization and the transition to a service-based economy to limit material stock growth, extending the lifetimes of products via repair, maintenance, and reuse, and reducing waste while increasing recycling.

C4C

The Citizens for Copernicus (C4C) project aims to develop an Austrian citizen science data component to bridge the in situ data gap for more reliable forest mapping. The project focuses on the combined use of citizen science and satellite images to develop AI models for forest resource (biomass/carbon) monitoring. As

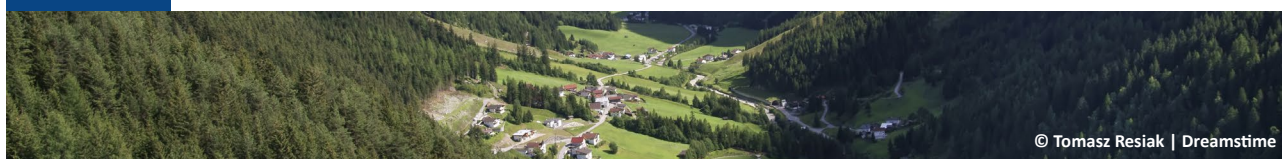
part of this project, IIASA actively collaborates with the Austrian Research Centre for Forests (BFW), Austrian Academy of Sciences (OeAW), Austrian Environment Agency, Austrian Federal Forests Agency, and the Vienna University of Technology (TU Wien).

The project encourages the public to help monitor the changes occurring in their local forests by simply taking pictures with their phones. Utilizing modern 3D vision and AI techniques for 3D forest information extraction, as well as forest mapping with Sentinel-1 and Sentinel-2 satellite images, researchers aim to compile data and make it more reliable so it can be used in new, more advanced tools for forest monitoring.

The C4C project will have a solid social component, helping to improve understanding and spread awareness about the added value of using Copernicus data and by demonstrating, in return, how citizen science can contribute to climate neutrality and the sustainable use of forest resources. Finally, the Austrian citizen science data component will serve as the permanent source for validation of current and future Copernicus satellite data, setting standards for developing the European and global Copernicus citizen science in situ data components.

The **Tree-Quest** mobile phone app developed by the C4C project has been selected by OeAD to receive the **2026 Citizen Science Award**.

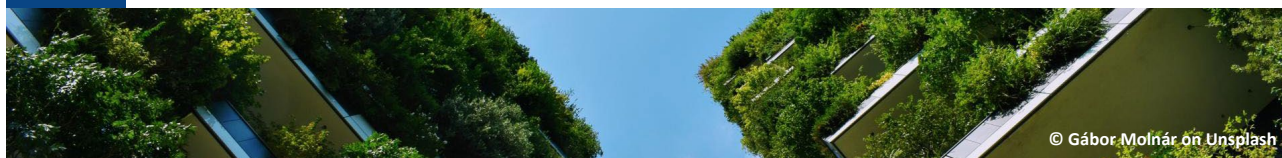
DISCC-AT



The research project Assessing the Distributional Effects of Climate Change Impacts and Adaptation in Austria for Just, Targeted and Efficient Adaptation (DISCC-AT) was focused on informing decision makers in Austria about group-specific social vulnerabilities to key climate risks and enabling the implementation of just and cost-effective adaptation measures, as well as increasing adaptive capacities of private households where most needed. The project was conducted in partnership with Medical University of Vienna, the University of Graz, and other Austrian partners.

The project achieved significant policy and societal impact and is described in more detail on page 15.

EDITS



The Energy Demand Changes Induced by Technological and Social Innovations (EDITS) network brings together experts from various disciplines to regularly discuss and engage in multifaceted energy demand research. The EDITS community works together based on common interest in interlinked topics, on transferring methodological knowledge, and on exploring modeling innovations across demand-side models. Within the framework, IIASA collaborates with the Central European University (CEU), BOKU University, and over 40 other partners from all over the world.

The aim of the EDITS network is to identify gaps and potentials to enhance modeling, analyzing, and communicating the demand-side solutions for climate mitigation and the SDGs. EDITS focuses on enhancing

both the human and the technical resources of demand-side research and policy support by operating an expert network and a demand-side model complementarity exercise. EDITS reviews current practices, gaps, and potentials in empirical research and demand-side modeling across three demand sectors: buildings, transport, and industry. The work is extended to identifying interlinkages across sectors along a low energy demand future, as well as understanding the implications of cross-cutting aspects (such as digitalization, inequalities, energy access, decent living standards) for the sectors.

MakingAchange



MakingAchange was a project, aimed at fostering collaborations between science and schools. As part of this project, IIASA collaborated with Climate Change Center Austria (CCCA), BOKU University, Technical University of Graz (TU Graz), University of Applied Arts Vienna, University of Innsbruck, University of Vienna, Karl Franzens University of Graz, and Central Institute for Meteorology and Geodynamics (ZAMG).

IIASA led the development and implementation of a 'climate peer-to-peer training' for secondary grade students. The training program lasted over a full school year, providing the students not only with solid scientific facts, but also with soft skills that are needed for passing on this knowledge and for building up their own climate initiatives in their schools and municipalities. One of the key aims was to provide solid scientific support while not overburdening the younger generation. The primary aim of the project was to contribute to the transformation of society and to integrate and perceive the topics of climate protection and sustainability as a matter of course, both in the school environment and in everyday life. The students participating in the project were called upon to deal with the topic independently and to find solutions, not only within the school, but also in everyday life.

QuantMig



The primary aim of the Quantifying Migration Scenarios for Better Policy (QuantMig) project was to produce comprehensive, multi-perspective, and robust quantitative migration scenarios to support various areas of European migration policy, based on cutting-edge developments in conceptualizing, explaining, estimating, and forecasting migration. This work was conducted in partnership with University for Continuing Education Krems and five other institutions.

The project made important contributions to improve the understanding of qualitative and conceptual foundations of migration flows into, out of, and within Europe and was selected as a **Success Story** by the European Commission's Research and Innovation Services. The final project meeting gathered high-level officials from different government agencies across Europe. Based on their recommendations and inputs, the QuantMig consortium produced a **paper on Migration Policy and Practice**, summarizing key policy recommendations, which was published by the International Organization for Migration.

WaterStressAT



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The Climate Change Induced Water Stress: Challenges and Opportunities in Austrian Regions (WaterStressAT) project was focused on assessing water availability and demand in Austrian regions considering alternative socio-economic and climate futures. This project was conducted in partnership with Environment Agency Austria, the University of Graz, and Central Institute for Meteorology and Geodynamics (ZAMG).

As part of the project, researchers produced a series of policy briefs and several Qualitative System Maps (QSM) for case study regions in Austria, including Neusiedl am See and Pinzgau. These maps integrate knowledge from several sources such as existing academic and public sector projects, interviews, and core team meetings. They serve as a reference for further analysis and contextualization of hydrological and socio-economic modeling efforts.

4. Selected Examples of IIASA Models, Tools, and Data

IIASA develops a wide range of advanced models that integrate scientific knowledge across disciplines to address complex global challenges. These models are designed to capture the interconnected dynamics between human, environmental, and technological systems, providing robust tools for exploring alternative futures and informing evidence-based policy decisions.

Several IIASA models cover key areas of strategic priority for the government of Austria and are extensively used by Austrian partners of IIASA. Below are a few selected examples from across the different IIASA research programs and their research groups.

BeWhere



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BeWhere is a spatially explicit, bottom-up, techno-economic, system optimization model designed to support cost-effective, low-carbon system transitions at the supply chain level. The model optimizes the location and capacity of low-carbon technologies, system expansion planning, and energy/resource flows across sectors within a spatially explicit and temporally resolved framework at local, regional, and global scales (e.g., applications in Alpine Region, Pan-Europe, North America, South America, Asia, and New Zealand). It integrates trade dynamics, optimizing supply chain infrastructure such as bio-refineries, power grids, transportation, and logistics (pipelines). It employs an integrated framework assessment to evaluate technological, economic, and environmental trade-offs while considering policy instruments, such as carbon pricing, environmental regulations, and climate pathways (SSPs/RCPs) to ensure forward-looking analysis up to 2100.

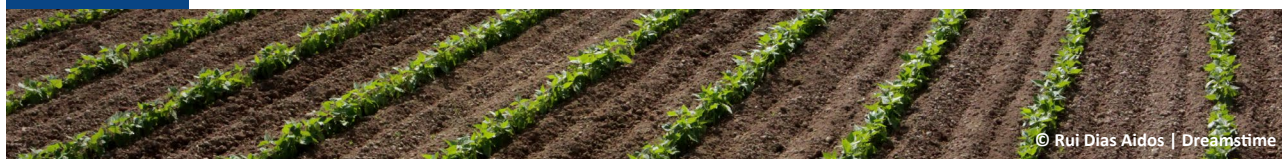
CWatM



The IIASA Community Water Model (CWatM) is an open-source model used to examine how future water demand will evolve in response to socioeconomic change and how water availability will change in response to climate, enabling assessment of water supply and human and environmental water demands at global and regional levels.

CWatM is the first step toward developing an integrated modeling framework, which will be able to provide vital information to decision and policy makers. The integrated modeling framework will consider water demand from agriculture, domestic, energy, industry, and the environment. It will also take into account the investment needed to alleviate future water scarcity and provide a portfolio of economically optimal solutions. In addition, it will be able to track the energy requirements associated with the water supply system; for example, pumping, desalination, and inter-basin transfer.

EPIC-IIASA



The Environmental Policy Integrated Climate-based Global Gridded Crop Model (EPIC-IIASA) is used to assess the main global agricultural systems in response to management interventions, such as cropping practices, fertilization and irrigation practices, or conservation and organic agriculture options, as well as under changing environmental conditions, including climate change and soil degradation.

EPIC-IIASA models a wide range of biophysical processes in the soil-plant-atmosphere system at large scales to consider alternative land uses where land is becoming degraded or is putting natural ecosystems at risk. It includes a full water cycle, allowing the quantification of water availability for plant growth, surface water runoff and percolation downward to the groundwater system. It can simulate effects of different weather patterns and events, such as heavy rainfall or prolonged drought, on crop production, and it can estimate plant growth and yield based on the temperature or moisture content of the soil. The effects of natural processes, such as erosion, and of human activities, such as soil cultivation, can also be fully demonstrated. The primary modeling focus covers the impacts of land use on carbon cycling, greenhouse gas emissions, and soil functioning.

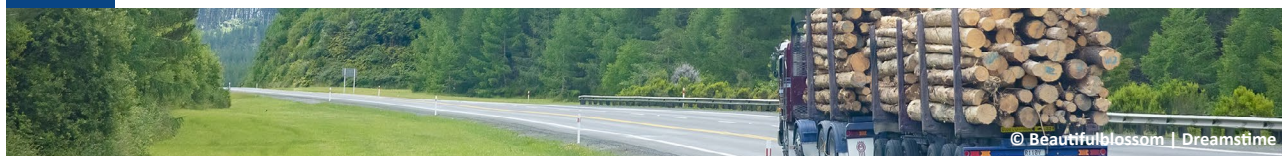
FLAM



The Wildfire Climate Impacts and Adaptation Model (FLAM) can be used to reproduce historical wildfire events and to project future burned areas, as well as to assess climate change impacts and adaptation options. It is able to capture impacts of climate, population, and fuel availability on burned areas and associated emissions.

FLAM operates with a daily time step at various spatial resolutions and uses mechanistic fire modeling algorithms to parameterize the impacts of climate, fuel availability, and human activities on wildfire probabilities, frequencies, and burned areas. Resolution of results is adjustable dependent on the resolution of input data. FLAM has been applied to model forest fires in countries such as Sweden, Indonesia, South Korea, Italy, and Austria.

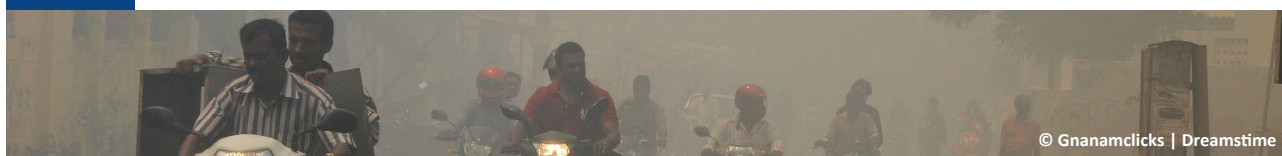
G4M



The IIASA Global Forest Model (G4M) estimates the productivity of five forest types (evergreen needleleaf, evergreen broadleaf, deciduous needleleaf, deciduous broadleaf and woody savannas) in four ecoregions (tropical, subtropical, temperate, and boreal) based on dynamic site characteristics (monthly temperature, precipitation, radiation, CO₂), semi dynamic (water holding capacity, soil depth, nitrogen, phosphorus, salinity, pH-Value) and static (air pressure). Combining productivity with a management regime (e.g., keep current stock, maximize harvests, maximize stock, no harvests) which could be enabled or disabled to change the current species to better adapted to the potentially changed site characteristics, it is possible to show the development of increment (carbon sequestration), stock (stored carbon), and harvests (potential substitutes for nonrenewable products and stored carbon).

Most recently, forest growth for the regions of Germany and Austria was successfully estimated and validated against field observations, and new data on several tree species groups was added for modeling on a global scale.

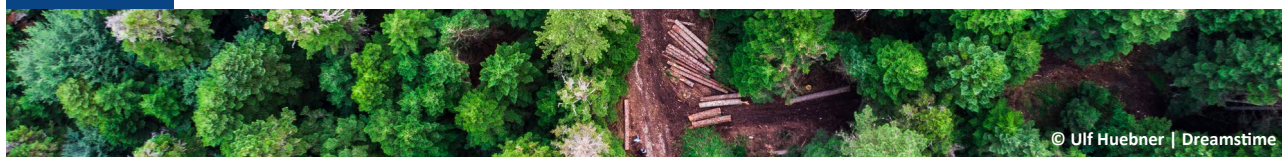
GAINS



The Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) model assesses emission and pollution reduction strategies that combat air pollution and climate change simultaneously. GAINS estimates historic emissions of 10 key air pollutants and 6 GHGs for each country based on data from international energy and industrial statistics, emission inventories, and on data supplied by countries themselves. It assesses emissions on a medium-term time horizon, with projections being specified in five-year intervals through the year 2050. The model is continuously refined to improve representation of key sources and new mitigation opportunities, as well as address new emerging challenges.

Scientists in many nations around the globe use the GAINS model to assess emission reduction potentials in their regions. GAINS is also widely used for policy analyses under the Convention on Long-range Transboundary Air Pollution (CLRTAP). Through CLRTAP, Austria cooperates internationally to tackle cross-border air pollution and improve regional air quality, while also addressing impacts on human health, ecosystems, and climate.

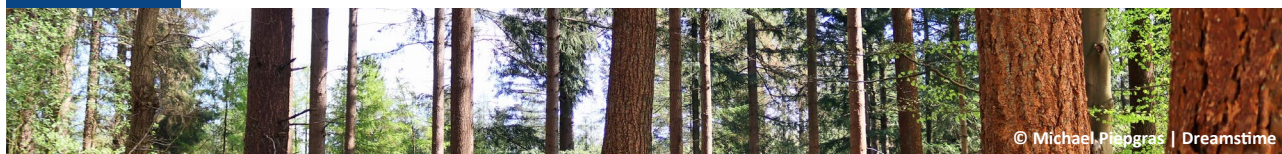
Geo-Wiki



The Geo-Wiki Project is a global network of volunteers who participate in Earth observation driven citizen science through the Geo-Wiki tool. The Geo-Wiki portal offers all citizen scientists the opportunity to participate in environmental monitoring of the Earth's surface by evaluating satellite and aerial images in detail. By using these innovative techniques, Geo-Wiki has been used to successfully integrate citizen-derived data sources with expert and authoritative data. Data can be input via desktop or mobile devices, with campaigns and games used to incentivize input. These innovative techniques have been used to successfully integrate citizen-derived data sources with expert and authoritative data to address pressing policy-related questions.

Since its inception, Geo-Wiki has grown rapidly, with currently over 22,000 registered users having contributed more than 18 million image classifications from around the world. Furthermore, the Geo-Wiki toolbox has expanded to include numerous applications which help to address a variety of global challenges (e.g. land use change, food security, pollution, and more). In addition, IIASA has several ongoing research projects that rely on and further develop these applications, kindly supported by e.g. the European Commission, the European Space Agency, and the Austrian Research Promotion Agency.

GLOBIOM



The IIASA Global Biosphere Management Model (GLOBIOM) is used to analyze the competition for land use between agriculture, forestry, and bioenergy, which are the main land-based production sectors. The model can provide scientists and policymakers with the means to assess, on a global basis, the rational production of food, forest fiber, and bioenergy, all of which contribute to human welfare. The partial-equilibrium model represents various land use-based activities, including agriculture, forestry, and bioenergy sectors.

The model is built following a bottom-up setting based on detailed grid-cell information, providing biophysical and technical cost information. This detailed structure allows a rich set of environmental parameters to be taken into account, and its spatial equilibrium modeling approach represents bilateral trade based on cost competitiveness.

MESSAGEix



The IIASA Model for Energy Supply Strategy Alternatives and their General Environmental Impact (MESSAGE) has been a central tool in energy-environment-economy systems analysis in the global scientific- and policy arena. It provides a flexible framework for the comprehensive assessment of major energy challenges

and has been applied extensively for the development of energy scenarios and the identification of socioeconomic and technological response strategies to these challenges.

The modeling framework enables the development of robust technology strategies and related investment portfolios to meet a range of user-specified policy objectives. It played a major role in the Intergovernmental Panel on Climate Change (IPCC) assessment reports; it provided marker scenarios of the Representative Concentration Pathways and the Shared Socioeconomic Pathways; and underpinned the analysis of the Global Energy Assessment. It is currently known as MESSAGEix.

WCDE



The Wittgenstein Centre Human Capital Data and Graphic Explorer (WCDE) is a dataset that allows users to browse, select, visualize, and download demographic data and population projections. It was developed under the umbrella of the Wittgenstein Center for Demography and Global Human Capital, which includes IIASA, the Austrian Academy of Sciences (OeAW), and the University of Vienna.

The Data Explorer provides data, projection assumptions, and results on the population of 200 world countries and regions by age, sex, and education for alternative scenarios from 2020 to 2100, based on different scenarios of future population and human capital trends. Other indicators relating to fertility, mortality, and migration are also available.

5. Key Data on IIASA Engagement with Austrian Policy

IIASA is not just a research partner but a trusted source of knowledge and a policy resource for the Austrian government, directly supporting the delivery of the country's strategic priorities across different sectors and scales.

Citations in policy, regulatory, strategic, practice, or other documents, including parliamentary publications, are among the main indicators of research impact on public policy, law, and services. IIASA researchers rank among the world's most cited in the fields of environment and ecology research, cross-field research, and social sciences. Between 2020 and 2025, IIASA researchers coauthored over 2,900 scientific articles in the fields of environmental, social, earth and planetary, agricultural, and energy sciences, which gathered over 90,000 citations. Out of those publications, over 700 were coauthored in collaboration with Austrian institutions. IIASA publications were cited Over 3,500 times by governments around the world, including 17 times in Austrian government documents.

Government sources citing IIASA research in the years 2020-2025 include:

- ▶ Federal Environment Agency (13 citations or 76%)
- ▶ Austrian National Bank (2 citations or 12%)
- ▶ Federal Ministry of Defense (1 citation or 6%)
- ▶ Federal Ministry of European and International Affairs (1 citation or 6%)

Funders of IIASA research cited in policy documents

The main funders of the research cited in Austrian policy documents were the US National Science Foundation (NSF), the Austrian Science Fund (FWF), the European Research Council (ERC), the UK Natural Environment Research Council (NERC), and the National Natural Science Foundation of China (NSFC).

6. How the Government of Austria Benefits from IIASA Research

We present a few selected case studies illustrating how Austria benefits from policy-relevant research conducted at IIASA. The case studies showcase how the Institute's expertise in modeling and systems analysis helps the government of Austria address the country's interconnected priorities with regard to economic resilience, climate change mitigation and adaptation, social inequality, demography, and climate risk vulnerability in Austria.

Leading the development of the Second Austrian Assessment Report on Climate Change

In 2014, IIASA researchers helped to compile the first comprehensive **Austrian Assessment Report on Climate Change** and establish the Austrian Panel on Climate Change (APCC), which tracks the current state of research on how climate change has changed and will change Austria, and where IIASA researchers play a key role. Building on this work, in 2025, IIASA scientists co-chaired and led the development of the **Second Austrian Assessment Report on Climate Change (AAR2)** — a comprehensive document which lays out past, present, and potential future impacts of climate change in Austria and defines opportunities and limits of mitigation and adaptation, including potential solutions and tools.

The report provides a comprehensive scientific analysis of climate change, showcasing pathways to a sustainable transformation toward climate neutrality and a sustainable, just society. The structure and processes of the report closely followed the IPCC format as the “gold standard” of climate science assessment.

Key findings of the report highlight that since 1900, the temperature in Austria has risen by around 3.1°C — more than twice the global average. The frequency of extreme weather events such as heatwaves, droughts, heavy rainfall, and mudslides has increased and will keep increasing, with significant consequences for health, infrastructure, agriculture, and tourism. The report highlights the fact that Austria experiences damages amounting to around two billion euros annually due to the effects of global warming, such as heat, extreme weather events, stress on infrastructure, and health impacts. Without effective climate protection and adaptation measures, these costs could rise to €10.8 billion per year by 2050.

The report shows that, in the long term, investments in climate protection and adaptation are significantly more cost-effective than inaction. In addition, as part of the report, researchers identified synergies across many areas of society, such as the expansion of public transport and cycling infrastructure, building renovations, the transition to climate-friendly heating systems, urban greening to combat heat islands, protection of wetlands, climate-friendly diets, and adaptation in tourism and agriculture.

Researchers agree that Austria can still achieve its emission reduction targets through measures that go beyond the currently implemented policies. However, Austria's remaining carbon budget, based on the goals of the Paris Climate Agreement, is largely depleted.

In 2025, the report was presented by the Austrian Environment and Climate Minister Norbert Totschnig and welcomed in a video message by the Austrian President Alexander van der Bellen.

More than 200 researchers from over 50 institutions contributed to the report, including the BOKU University, Vienna University of Technology (TU Wien), University of Innsbruck (UIBK), Paris Lodron University of Salzburg, University of Vienna, Vienna University of Economics and Business (WU), and other reputable organizations.

The scenario data, projections, and statistical data relevant for research on climate change mitigation and the energy transition in Austria associated with this work are [available here](#).

Informing Austrian policymakers about social vulnerabilities to key climate risks and possible adaptation measures

In 2024, the **DISCC-AT** project achieved significant policy and societal impact by actively engaging with policymakers, public authorities, civil society organizations, and the wider public on issues of climate risk, social inequality, and differential vulnerability in Austria. The overarching objective of the project was to inform decision makers in Austria about group-specific social vulnerabilities to key climate risks and enable the implementation of just and cost-effective adaptation measures, as well as increase adaptive capacities of private households. This work was led by IIASA researchers and their colleagues from the University of Graz, the Medical University of Vienna, and Vrije Universiteit Amsterdam, working in collaboration with Environment Agency Austria.

To reach this objective, researchers followed an inter- and transdisciplinary approach that combined qualitative and quantitative methods and was embedded in a broad stakeholder process, integrating “bottom-up” with “top-down” models. A food risk model and health impact analyses were soft-linked with an economy-wide, multi-sectoral, multi-household model, and scenarios were developed up to 2080.

As part of this work, the project team was invited by the Green Party of The City Government of Vienna to present key project results. This exchange supported evidence-based discussions at the municipal level and contributed to policy considerations on socially just climate adaptation in the city of Vienna, especially in the context of urban heat and unequal exposure now and in the future.

In addition, researchers also co-organized a joint webinar with the sister project **UrbanHeatEquality**. The webinar presented central findings on the unequal impacts of heat and flooding across societal groups in Austria and jointly identified their implications for equitable adaptation strategies, as well as further research needs. The event attracted more than 60 participants, including representatives from the Austrian Red Cross, ministries, provincial governments, and the research community, demonstrating strong interest from both policy and practice-oriented stakeholders.

The results of the project were also presented at the 24th Austrian Climate Day (*Klimatag*), as well as at the Forum Hitze & Gesundheit 2025, hosted by the Austrian Federal Ministry of Labour, Social Affairs, Health, Care and Consumer Protection in cooperation with the Austrian National Public Health Institute. Key findings of the project relevant for the Austrian climate adaptation policy community are [summarized here](#).

Producing scenarios underpinning the Network for Greening the Financial System

The Central Banks and Supervisors Network for Greening the Financial System (NGFS) is a group of over 140 Central Banks and Supervisors willing, on a voluntary basis, to exchange experiences, share best practices, contribute to the development of environment and climate risk management in the financial sector, and to mobilize mainstream finance to support the transition toward a sustainable economy. Two key Austrian institutions are members of the NGFS: the Austrian National Bank (OeNB) and the Austrian Financial Market Authority (FMA).

As an NGFS member, Austria is actively involved in NGFS activities, helping to develop climate-related scenarios and analytical tools that assess climate transition risks, physical climate risks, and macroeconomic implications for the financial system. These NGFS scenarios and frameworks are used by central banks and supervisors globally to understand how climate change affects financial stability. Austria benefits from this work by having access to these globally consistent scenario datasets and stress-testing tools that inform domestic risk analyses.

A consortium of climate and economic experts from IIASA and several other organizations have been providing annual, quantitative global mitigation scenarios to the Network, detailing sectoral transitions and assessing the potential for transition and physical risks. The scenario set, hosted in the [IIASA NGFS Scenario Explorer](#), is essential for future climate risk assessments and is widely used in research, financial services, climate risk consulting, and business, helping to inform measures and rules, developed by central banks to foster a more sustainable, dynamic, and modern economy, both at the national and global levels. IIASA researchers provide mitigation scenarios using the [Model for Energy Supply Strategy Alternatives and their General Environmental Impact \(MESSAGEix\)](#) to inform transition risks, and also now lead the work package on physical risks.

Establishing a hub for cutting-edge demographic research in Austria

The Wittgenstein Centre for Demography and Global Human Capital is a collaboration between IIASA, the Austrian Academy of Sciences (OeAW), and the University of Vienna. The Centre combines the partners' strengths in the field of demography, with the aim to advance demographic methods and their application to the analysis of human capital and population dynamics. Understanding the drivers and consequences of changing population structures around the world and how they affect human wellbeing and societies as a whole, as well as the provision and analysis of demographic data, and the communication of these findings to a global public, are at the heart of the Centre's work.

This partnership also ensures there is a critical mass of demographic research skills in Austria and helps deliver further research excellence through knowledge exchange. The Centre has an active research group focused on the [demography of Austria](#). In addition, IIASA interdisciplinary setting encourages the demographers to research beyond the traditional boundaries of demography and to explore how changes in society, economy, and the natural environment influence the health and mortality, migratory patterns, and reproductive behavior, both within Austria and beyond.

The Centre leads the development of the **European Demographic Datasheet** and the **Wittgenstein Centre Human Capital Data Explorer**, which provide a robust evidence base for understanding long-term demographic and human capital trends in a European and global context. By offering harmonized, comparable indicators on population dynamics, aging, migration, and educational attainment, these tools complement national statistics and enable policymakers improve strategic planning in areas such as labor markets, education, pensions, and social cohesion, where long-term demographic change plays a central role.

The Centre was formally founded in 2011 and the Memorandum of Understanding between IIASA, the Austrian Academy of Sciences (OeAW), and the University of Vienna was signed in 2020.

7. Capacity Building Opportunities at IIASA

Raising the next generation of researchers and decision makers is central to IIASA's mission, and highly relevant to Austria's ambition to strengthen skills, innovation, and global influence in the fields of research, technology, and innovation. Through its flagship training programs, IIASA provides young Austrian researchers with a unique platform to apply systems thinking to the context of their home country and translate their research into real-world impact.

Participation not only equips early-career scientists with advanced methodological expertise and experience using IIASA's world-class models but also provides access to a truly international network of peers, policymakers, and practitioners. These opportunities act as a bridge between research and practice: participants return with new skills, perspectives, and professional connections that enrich their home institutions, strengthening the national talent pool.

In addition, IIASA researchers maintain strong links with Austrian higher education institutions. Many contribute to university teaching through invited lectures, guest seminars, and summer courses, and some hold formal affiliations or positions at Austrian universities. These engagements help transfer systems analysis expertise directly into academic training, strengthen collaboration between IIASA and national institutions, and expose students to interdisciplinary approaches and global research networks.

IIASA Young Scientists Summer Program (YSSP)

For over 50 years, IIASA hosts up to 50 doctoral students from around the world as part of its Young Scientist Summer Program (YSSP) — a three-month course designed for advanced PhD students working on a topic that is compatible with ongoing research at IIASA and who wish to explore the policy implications of their work. Participants work under the direct mentorship of experienced IIASA scientists in a unique interdisciplinary and international research environment. YSSP fellows produce a paper serving as the first step toward a publishable journal article and have the opportunity to build contacts for future collaboration within the institute's worldwide network.

Many of the former YSSP participants return to IIASA as staff members, others hold esteemed positions in their home countries and research institutions all over the world. In the period 2020-2025, 15 early-career researchers from Austria (or affiliated with Austrian institutions) participated in the program.

YSSP'25

Gabriel Stecher (University of Natural Resources and Life Sciences Vienna) carried out research on climate resilience of agricultural management practices for improving water quality in Uganda under the supervision of the IIASA Biodiversity and Natural Resources Program.

Florian Weidinger (University of Natural Resources and Life Sciences Vienna) carried out research on subnational analysis of forest carbon dynamics and management impacts across Europe under the supervision of the IIASA Advancing Systems Analysis Program.

YSSP'24

André Sebastian Baumgart (University of Natural Resources and Life Sciences Vienna) carried out research on prospective scenarios for global mobility infrastructure and greenhouse gas emissions under the supervision of the IIASA Energy, Climate, and Environment Program.

Teresa Lackner (University of Graz) carried out research on macroeconomic effects of accelerating the energy efficiency renovation of residential buildings under the supervision of the IIASA Advancing Systems Analysis Program.

YSSP'23

Alexander Mozdzen (University of Klagenfurt) carried out research on the impact of agricultural subsidies across Europe using a Bayesian spatio-temporal clustering model under the supervision of the IIASA Biodiversity and Natural Resources Program.

Carmen Séra (University of Natural Resources and Life Sciences Vienna) carried out research on the South-South technology transfer, barriers, and enablers for a sustainable energy transition under the supervision of the IIASA Energy, Climate, and Environment Program.

YSSP'22

Nora Krenmayr (University of Natural Resources and Life Sciences Vienna) carried out research on obstacles and leverage points for a more sustainable e-waste management in the EU under the supervision of the IIASA Energy, Climate, and Environment Program.

Leonard Lemke (University of Vienna) carried out research with a focus on a qualitative system mapping approach to Austrian agritourism development under the supervision of the IIASA Population and Just Societies Program.

Marlene Palka (University of Natural Resources and Life Sciences Vienna) carried out research on soil data requirements to improve local fertilization strategies under the supervision of the IIASA Biodiversity and Natural Resources Program.

Jan Streeck (University of Natural Resources and Life Sciences Vienna) carried out research on triangulation of stock-flow indicators of material cycles from MESSAGEix and industrial ecology under the supervision of the IIASA Energy, Climate, and Environment Program.

YSSP'21

Pavel Kiparisov (Central European University) carried out research on urban system resilience to floods under the supervision of the IIASA Advancing Systems Analysis Program.

Sebastian Luckeneder (Vienna University of Economics and Business Administration) carried out research on mining, land-use, and regional income in Brazil under the supervision of the IIASA Biodiversity and Natural Resources Program.

Doris Virag (University of Natural Resources and Life Sciences Vienna) carried out research on material stocks for decent living standards under the supervision of the IIASA Energy, Climate, and Environment Program.

Sebastian Zwickl-Bernhard (Vienna University of Technology) carried out research with a focus on downscaling integrated assessment models through an open-source approach using empirical statistical downscaling under the supervision of the IIASA Energy, Climate, and Environment Program.

YSSP'20

Simon Plakolb (University of Graz) carried out research with a focus on using the future state maximization paradigm to analyze the emergence of societally suboptimal mobility behavior under the supervision of the IIASA Advancing Systems Analysis Program.

Summer Schools

Each year, IIASA also offers early career researchers the opportunity to participate in IIASA Summer Schools, most notably, the Summer School for Systems Modeling. As part of this course, IIASA provides systematic guidance on the development and use of mathematical and computer models, addressing uncertainties in data and processes, exploring solution spaces, and distilling viable options for taking policy action. The participants not only get to study and try out different modeling methodologies such as agent-based modeling or network analysis, they also learn about the best practices of modeling. The two-week course is designed for Master's and PhD students, as well as post-doctoral researchers who wish to use or develop models broadly related to the sustainability agenda. It is open to newcomers but also to those who have already been exposed to modeling and would like to add depth to their experience. It is also open to systems researchers who would like to gain a better understanding of the available tools. Many examples discussed are taken from IIASA's portfolio of tools and methods, ranging from ecological models, socioeconomic systems, to integrated assessment tools of energy, air, water, biodiversity, and food.

Postdoctoral Fellowships

IIASA also offers a range of (bilateral) postdoc opportunities for early career researchers. These include fully funded research positions of up to two years to study topics related to the IIASA research agenda. IIASA offers immersion in world class research, development of core research skills, and also skills related specifically to systems thinking and systems analysis, as well as exposure to international processes, organizations and networks.

Public Lectures and Events

IIASA and the Austrian Academy of Sciences (OeAW) organize regular joint public lectures on scientific topics, aimed at a broad academic audience, decision-makers, and the public. The primary aim of those lectures is to spread awareness about recent scientific discoveries, exchange knowledge and elevate research capacity within Austria. The lectures are targeted to emphasize scientific advances, policy applications, and novel research results. The lectures are conducted in both English and German languages.

In 2024, the format of the joint lectures was revised. Since then, IIASA and OeAW organized the following 4 lectures:

- ▶ Christopher Kyba, “Sternenlos durch die Nacht” (28.05.2024)
- ▶ Harald Vacik, “Waldbrände – erforschen und vorbeugen” (11.11.2024)
- ▶ Sigrid Stagl, “Transformation zu einer resilienten und nachhaltigen Wirtschaft” (17.06.2025)
- ▶ Helga Nowotny, “Zukunft braucht Weisheit” (28.10.2025)

In addition, IIASA researchers are active contributors to a variety of lectures and events organized in Austria, providing substantive contributions and systems analysis expertise. For example, in 2025, IIASA was engaged in several **lectures** organized by the City of Vienna (“*Wiener Vorlesungen*”). The institute is also a co-host and participant of the **International Vienna Energy and Climate Forum**, as well as various civil society events, such as the **Long Night of Research**.

Workshops for Schools and Youth Organizations

IIASA is offering **half-day workshops** for individual school classes and youth organizations. Each workshop focuses on a specific topic in systems thinking, with well-defined learning objectives and will have interactive activities based on real situations and the challenge of solving specific tasks during the practical part of the sessions. These interactive workshops are designed to help young people understand the broader implications of their choices and actions, equipping them with valuable problem-solving skills and holistic understanding. Since the launch of the initiative in 2022, over 600 students have participated, most of them coming from Austrian institutions.

As part of this program, IIASA also offers students an opportunity to become **IIASA Climate Champions**, advocating for the fellow students’ interests in climate protection at the school and collaborating with teachers, parents, and fellow students to promote sustainability. The aim of the training program, which runs over a full school year, is to provide the students not only with solid scientific facts within 5 half-day workshops a year but also with soft skills that are needed for passing on this knowledge and for building up their own sustainability initiatives in their schools and municipalities. All half-day trainings take place at IIASA headquarters.

Scientists from Austria Leading Research Efforts at IIASA

Austrian researchers at IIASA play a crucial role in advancing the Institute’s global scientific agenda while ensuring that issues of critical relevance to Austria remain part of the conversation. Many of them hold esteemed positions and lead research efforts at IIASA. They are active contributors to international research and global dialogue with a focus on climate change, biodiversity, digitalization, energy, sustainable development, health, population studies, land use, food and water security, and other areas.

In addition, Austrian researchers at IIASA are also among some of the major contributors to policy dialogue and advisory processes at the national level. Many serve on expert panels and scientific advisory boards that support Austrian ministries, research agencies, and public institutions. Through these engagements, they help translate cutting-edge systems research into evidence-based insights for policymaking. Presented below are brief biographies of selected IIASA researchers representing diverse fields and varying levels of seniority, all of whom worked at IIASA between 2020 and 2025.

Dilek Fraisl is a senior research scholar in the Novel Data Ecosystems for Sustainability Research Group of the IIASA Advancing Systems Analysis Program. She also serves as the managing director of the Citizen Science Global Partnership (CSGP), a global network of networks dedicated to advancing citizen science data and practice for sustainable development. Her research examines citizen science, artificial intelligence, earth observation, and data innovation as tools for enhancing official statistics and advancing evidence-based policymaking to improve the monitoring and achievement of sustainable development. She specializes in data governance and management, including research on citizen science data quality. Fraisl serves as principal investigator and contributor to numerous projects focused on citizen science, marine litter, land use and land cover, as well as a range of environmental, socioeconomic, and governance issues. Fraisl also serves on several boards and expert groups across scientific communities, the UN system, and other global initiatives. These include the UN Statistics Division Collaborative on Citizen Data, UN-Habitat Quality of Life Programme, UN Framework Convention on Climate Change (UNFCCC) Resilience Frontiers, and the UNEP Science-Policy-Business Forum, among others.

Stefan Frank is a Senior Research Scholar in the Integrated Biosphere Futures Research Group of the IIASA biodiversity and Natural Resources Program. He has contributed to the development of the institute's Global Biosphere Management Model (GLOBIOM) and was the main developer of the European version of the model, which subsequently became one of the reference tools used by the European Commission for energy- and climate policy related impact assessments on the land-use sector. His main research interests are focused on land-based mitigation, bioenergy potentials, and foresight exercises including synergies or trade-offs with the Sustainable Development Goals. He is also coordinating and further developing the integration of the GLOBIOM model with Integrated assessment Models for the comprehensive economy-wide assessment of ambitious climate stabilization pathways, which regularly underpin the foresight chapters in the Intergovernmental Panel on Climate Change (IPCC)'s reports. He is currently coordinating activities around GLOBIOM code consolidation with a view on making it openly accessible. He is the principal investigator on several international EU research and tender projects.

Gerid Hager is a Research Scholar in the Novel Data Ecosystems for Sustainability Research Group of the IIASA Advancing Systems Analysis Program. She develops participatory approaches and tools to science and the understanding of systems, including citizen science, serious games, social simulations, and participatory systems modeling. She is co-principal investigator of Urban ReLeaf, a Horizon Europe project that aims to foster citizen-powered data ecosystems for inclusive and green urban transitions and to facilitate the uptake of citizen science data and practice in authoritative data flows and urban policymaking. Prior to joining IIASA, Hager was Department Head of Science and Art Education at the Ars Electronica Center in Linz, a public center placed at the interface of art, science, technology, and society.

Susanne Hanger-Kopp is a Senior Research Scholar in the Equity and Justice Research Group of the IIASA Population and Just Societies Program. She has a leading role in developing the IIASA/EQU justice framework, which is instrumental in promoting comprehensive justice assessment in research and policy. Her analytical focus lies on governance and institutional development, but she also has experience with behavioral approaches. Most importantly, she is a knowledge integrator, designing and facilitating inter- and transdisciplinary research projects. For this purpose, she is invested in developing and promoting qualitative systems mapping as an indispensable tool to support systems thinking across disciplines, sectors, and subject matters. Hanger-Kopp has been chapter lead author for the Global Assessment Report for Disaster Risk Reduction 2022, and Lead Author for the Austrian Panel on Climate Change (APCC) Assessment Report on Climate Change in Austria (AAR2).

Florian Hofhansl is a Research Scholar, working jointly within the Novel Data Ecosystems for Sustainability Research Group of the IIASA Advancing Systems Analysis Program and the Biodiversity, Ecology, and Conservation Research Group of the Biodiversity and Natural Resources Program. His work centers on

understanding the relationships between biodiversity and ecosystem functioning, with a particular emphasis on plant functional traits and process-based vegetation modeling. He joined IIASA in 2018 as a post-doctoral research fellow, where he worked on the development of next-generation vegetation models, advancing mechanistic representations of plant ecological processes under changing climates. Prior to joining IIASA in 2018, he led ecological research projects in Austria, Brazil, and Costa Rica. At IIASA, he coordinates collaborative research projects with international partners to address complex ecological and societal challenges with the goal of guiding sustainable ecosystem management strategies under global change.

Daniel Huppmann is a Senior Research Scholar in the Integrated Assessment and Climate Change Research Group of the IIASA Energy, Climate, and Environment Program. Within the program, he coordinates the Scenario Services and Scientific Software research theme. With his team, he develops tools and software packages for scenario ensemble compilation, validation, analysis, and dissemination in line with best practice of scientific-software development and fair data management. These tools are used in numerous Horizon Europe projects including NEWPATHWAYS, iDesignRES, and other research activities including the Scenario Compass project. Huppmann was one of the Co-Chairs of the Second Austrian Assessment Report (AAR2) and is slated to serve as the next Chairperson of the Climate Change Centre Austria (CCCA). He was also an author of the 2018 IPCC Special Report on Global Warming of 1.5°C (SR15). His responsibility for the SR15 was the compilation of an ensemble of quantitative scenarios (Chapter 2) and the assessment of the interaction across different Sustainable Development Goals (SDGs, Chapter 5). In parallel to his contribution to the IPCC, he was the lead developer of the energy system and integrated assessment framework MESSAGEix, an open-source platform for integrated and cross-cutting modeling. This system underpins the MESSAGEix-GLOBIOM Integrated Assessment Model, which is used as the core modeling tool in the ECE Program to explore national and global transformation strategies in the context of climate change and their linkages to a range of sustainable development objectives.

Gregor Kieseewetter is a Senior Research Scholar in the Pollution Management Research Group of the IIASA Energy, Climate, and Environment Program. He joined the former IIASA Mitigation of Air pollution & Greenhouse gases (MAG) Program in November 2011 to work on the improvement of the GAINS model. His primary focus areas include the introduction of a downscaling methodology linking the different spatial scales of air pollution impacts in GAINS (regional to street-level), as well as further advancing the treatment of radiative forcing in GAINS. Before joining IIASA as a research scholar, he participated in the 2009 Young Scientists Summer Program (YSSP) working on long-range transport of European air pollution to the Arctic and connections to hemispheric modes of climate variability. For his study, he was awarded IIASA's Peccei fellowship in 2010.

Florian Kraxner is a principal research scholar in the IIASA Biodiversity and Natural Resources Program and holds a visiting professorship on land-based negative emission technologies at Korea University in Seoul. At IIASA, he is leading research on Agriculture, Forestry, and Ecosystem Services. Together with his research group, he puts an emphasis on integrated global landscape modeling complemented with sustainable supply chain and systems optimization and impact assessments of climate change, with a particular interest in natural disturbances and climate risk. His research portfolio includes forest and landscape restoration, negative emissions technologies, nature-based/-climate solutions, ecosystems services assessments and related sustainability aspects, and safeguards, including forest management certification. Biodiversity, nutrient/CNP cycles, and a strong link into societal topics are crosscutting themes throughout his work. Among other roles, he serves on various scientific boards within the framework of Future Earth, the International Union of Forest Research Organizations (IUFRO), and the Asian Resilience Center (ARC), and he is president of the International Boreal Forest Research Association (IBFRA). Kraxner is also an official Austrian representative to several forest-related expert groups and teams of specialists under the FAO/UN-ECE Timber Committee.

Wolfgang Lutz is a Distinguished Emeritus Research Scholar at IIASA. In addition to the numerous roles he has held at IIASA over the years, among which were Acting Director General, Interim Deputy Director General for Science, and Program Director, Lutz is the Founding Director of the Wittgenstein Centre for Demography and Global Human Capital, a cooperation between IIASA, the University of Vienna, and the Austrian Academy of Sciences (OeAW). He is a leading academic in the field of population and sustainable development and was one of the scientists appointed by the UN to write the Global Sustainable Development Report 2019 titled, *The Future is Now*. He has won numerous prestigious awards including the Wittgenstein Prize, two European Research Council (ERC) Advanced Grants, the Mattei Dogan award of the International Union for the Scientific Study of Population (IUSSP), the Science Prize of the Austrian Research Association, and most recently, the 2024 Yidan Prize, which recognizes individuals or teams who have contributed significantly to the theory and practice of education. He is a member of the Austrian Academy of Sciences (OeAW), the German National Academy Leopoldina, the US National Academy of Sciences (NAS), the World Academy of Sciences (TWAS), the Finnish Society for Sciences and Letters, and the Academia Europaea. He also serves as special advisor to the Vice-President of the European Commission, Dubravka Suica.

Nebojsa Nakicenovic is the former Deputy Director General/CEO of IIASA, and former tenured Professor of Energy Economics at Vienna University of Technology (TU Wien). He holds the title of a Distinguished Emeritus Research Scholar in the IIASA Energy, Climate, and Environment Program. His research interests are the long-term patterns of technological change, economic development and response to climate change and, in particular, the evolution of energy, mobility, and information and communication technologies. Among other positions, Nakicenovic is the Executive Director of The World in 2050 (TWI2050); Member Ad Hoc Informal Multi-stakeholder Technical Group of Advisors on Sustainable Development Goal 7, United Nations; Member of the Scientific Advisory Board of the German Aerospace Center (DLR) Institute for Networked Energy Systems Analysis; Member of the Scientific Advisory Board of the Potsdam Institute for Climate Impact Research (PIK); Member of the Scientific Advisory Board of the Fondazione Eni Enrico Mattei (FEEM); Member of the Panel on Socioeconomic Scenarios for Climate Change Impact and Response Assessments; Steering Committee Member of the Renewable Energy Policy Network for the 21st Century (REN21); Member of the International Academy for Systems and Cybernetic Sciences; Member of the International Advisory Board of the Helmholtz Programme on Technology, and Member of OMV Advisory Group on Sustainability.

Michael Obersteiner is a Principal Research Scholar in the Exploratory Modeling of Human-natural Systems Research Group of the IIASA Advancing Systems Analysis Program. He is also the director of the Environmental Change Institute at Oxford University in the UK. He was Program Director of the former IIASA Ecosystems Services and Management (ESM) Program until June 2019, where he led and developed the ESM Program from its inception to an inter-disciplinary research cluster of over 100 staff. His current research at IIASA stretches from modeling robust Earth system management and supporting the FABLE consortium, to economic stress-testing of supply chain networks. Obersteiner has led large scale interdisciplinary research projects in the fields of integrated assessment of climate, energy, and land-use. He currently serves in the Climate Overshoot Commission and the United Nations Environment Programme (UNEP)'s international resource panel. In addition, he is a lead convening author of two chapters of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) and a steering member of the United Nations Office for Disaster Risk Reduction (UNISDR)'s Global Assessment Report.

Keywan Riahi is the Director of the IIASA Energy, Climate, and Environment Program. He holds faculty and teaching positions at the Graz University of Technology, Austria, and the University of Victoria, Canada. He is a Corresponding Member of the Austrian Academy of Sciences (OeAW). Riahi has extensive experience in interdisciplinary research of climate change response options, working with the Intergovernmental Panel on Climate Change (IPCC) and providing policy advice at the international as well as national level. In 2020, he was ranked first by Reuters as the most influential climate scientist worldwide, and he has been recognized

by Clarivate as a Highly Cited Researcher in multiple categories every year since 2020. UN Secretary General Guterres appointed him to the 10-Member Group to advise the UN on Science, Technology and Innovation for the implementation of the Agenda 2030; he was reappointed in 2024. He is a member of the European Scientific Advisory Board on Climate Change and serves as Climate Advisor to the City of Vienna. His key scientific achievements comprise the coordination and development of the Representative Concentration Pathways (RCPs) and the Shared Socioeconomic Pathways (SSPs), which have facilitated the integrated analysis of climate change response options across the entire scientific community. He plays a leading role in the scientific community as a member of the Scientific Steering Committee of the Integrated Assessment Modeling Consortium (IAMC) and the International Committee on New Integrated Climate Change Assessment Scenarios (ICONICS), where he is responsible for the coordination and co-design of flagship research activities across the research community.

Thomas Schinko is a Principal Research Scholar and Research Group Leader of the Equity and Justice Research Group of the IIASA Population and Just Societies Program. He is a regular lecturer at the University of Graz and the Joint Vienna Institute. His main research interests at IIASA are in the areas of comprehensive climate risk management and just transitions. He focuses on the assessment of socioeconomic impacts of climate-related risks and their distributional effects, the identification of just and inclusive climate risk management strategies, the understanding of risks and risk perceptions connected with climate change mitigation and adaptation options, and the ethical and politico-economic aspects in the context of a just transition towards a sustainable future. His areas of expertise include quantitative economic modeling as well as qualitative social science methods with a particular focus on mixed-methods approaches involving participatory processes. He first joined the institute as a Young Scientists Summer Program (YSSP) participant in 2014.

Sylvia Tramberend is a Senior Research Scholar in the Water Security Research Group of the IIASA Biodiversity and Natural Resources Program. Her key research interests and main responsibilities include scenario development, identifying solution pathways until the 2050's in the food-water-energy-environment nexus and sustainable consumption in a globalized world, and studying linkages between the biophysical and socio-economic domain. Her responsibilities as a land use and GIS expert have included the development of large spatial databases serving the modeling and analysis needs in the areas of food-environment-bioenergy-water linkages, food-system analysis, land use and water scenarios and environmental transition. She was involved in Agro-Ecological Zones Methodology assessments for agricultural development planning, worked on several assessments of biofuels and food security, and the mobilization of resources for the bio-economy. In sustainable consumption research she has been a principal investigator in analysis tracing embodied land use and deforestation in agricultural and forestry products from primary production to final utilization. The geographic focus of her research has been both global and regional (e.g. Sub-Saharan Africa, Europe, China, and Brazil).

Caroline Zimm is a Research Scholar jointly associated with the Transformative Institutional and Social Solutions Research Group of the IIASA Energy, Climate, and Environment Program and the Equity and Justice Research Group of the Population and Just Societies Program. In addition, she is a member of the Advisory Board for Klimabuendnis Niederoesterreich. She currently works on the international research initiatives of the Earth Commission of the Global Commons Alliance. Her research is concerned with the diffusion of innovations for sustainable development, inequalities across countries, and transformative development pathways for humanity within a stable Earth system. Prior to joining IIASA in 2014, she worked in development cooperation and on consulting projects in the field of rural energy supply, energy access, and climate change. She held positions with the United Nations Industrial Development Organization (UNIDO), a private consulting firm, and the German Development Agency (GIZ), where she was based in Cambodia and India.

8. Outlook for the Future of Partnerships between IIASA and Austria

This Info Sheet summarizes recent research collaborations between IIASA and Austria. There is significant potential to further intensify the IIASA-Austria relationship through developing a range of new joint activities including:

- ▶ **Developing new IIASA applied systems analysis models for the Austrian context:** Austrian institutions are actively utilizing several IIASA modeling tools, including the ones outlined above. There is a possibility to develop new bespoke versions of other IIASA global models to further enable researchers and policymakers assess complex global problems and their impact on Austria in a holistic and integrated way.
- ▶ **Conducting international assessments in areas of mutual strategic interest:** Austria was a significant contributor to **IIASA Global Energy Assessment** which brought together over 500 specialists to transform the way society thinks about, uses, and delivers energy. IIASA also plays a key role in the Austrian Panel on Climate Change (APCC) and has recently contributed to the development of the **Second Austrian Assessment Report on Climate Change (AAR2)**. The new IIASA Strategy will empower its members to collectively initiate new large-scale interdisciplinary projects of high relevance to the regions where its members are located.
- ▶ **Forging new partnerships between IIASA and Austrian institutions to win grants from international research funders:** IIASA high-quality research and international research network makes it highly competitive in its applications for international research funds. About half of IIASA funding comes from additional funds through contracts, grants, and donations. IIASA and Austria actively collaborate as part of Horizon Europe projects and there is significant potential to scale up these efforts and secure grants from other international research funders to conduct research in areas of mutual interest, such as climate change, environmental protection and conservation, pollution, demography, and health.
- ▶ **Fostering multilateral collaborations:** Austria can use IIASA as a platform to broaden its global partnerships and further its research internationalization agenda through inclusive, multilateral collaboration. For example, IIASA's new initiative, the Raiffa Academy, is specifically designed to help IIASA member countries enhance international cooperation on global policy challenges by bridging the gap between researchers, policymakers, and stakeholders through evidence-based decision-making.
- ▶ **Academic training opportunities for young Austrian scientists:** Further collaborations can help enhance participation by young Austrian postdoctoral students in IIASA capacity development programs. As part of their experience at IIASA, early-career researchers from Austria can gain hands-on experience in applying systems analysis to global challenges, working side by side with leading experts from around the world. This immersion in an international, interdisciplinary setting equips participants with skills in modeling, scenario development, and science-policy engagement. By combining advanced analytical training with access to IIASA's global networks and real-world policy processes, these opportunities prepare young Austrian researchers to become leaders in addressing complex sustainability challenges at both the national and international level.
- ▶ **In 2026, a joint workshop will be held with Österreichische Studienstiftung** with a focus on systems thinking, opening new opportunities for future collaborations between IIASA and the Austrian Academy of Sciences (OeAW).

Annex 1.

Selected IIASA projects with Austrian funders and partners (active in 2020-2025, arranged by end date).

TITLE	FUNDER	PARTNERS IN AUSTRIA	DATES
REMASS: Resilience and malleability of social metabolism	■ Austrian Science Fund (FWF)	■ BOKU University; ■ Central European University (CEU); ■ Complexity Science Hub; ■ The University of Vienna; ■ Vienna University of Economics and Business (WU).	01-OCT-2024 to 30-SEP-2029
MULTIFUTURES: A multi-methods approach towards developing novel policy options towards developing multi-dimensional transition futures	■ European Commission	■ Johannes Kepler University Linz (JKU)	01-JAN-2024 to 30-JUN-2027
CHIAS: Cognitive health in aging society – The role of context for cognitive functioning and related policy implications in Europe	■ Vienna Science and Technology Fund (WWTF)	■ University of Vienna; ■ Johannes Kepler University Linz (JKU)	01-FEB-2023 to 31-JAN-2027
EYE-CLIMA: Observation-based approach for verifying emissions of climate forcers	■ European Commission	■ University of Vienna	01-JAN-2023 to 31-DEC-2026
Austria Fire Futures: Integrated future wildfire hot spot mapping for Austria	■ Austrian Climate Research Program (ACRP)	■ BOKU University	15-SEP-2022 to 31-DEC-2025
BIOCONSENT: Decision Support for Forest Biodiversity Policy	■ Austrian Science Fund (FWF)	■ -	01-APR-2022 to 31-DEC-2025
MOSAIC: Managing protective forest facing climate change compound events	■ Interreg Alpine Space	■ Federal Research and Training Centre for Forests, Natural Hazards and Landscape Austria	01-NOV-2022 to 30-APR-2026
A-LEVERS: Major levers in climate change adaptation in Austria	■ Austrian Climate Research Program (ACRP)	■ Geosphere Austria; ■ University of Graz	01-NOV-2023 to 31-DEC-2025
WIMBY: Wind In My Backyard: Using holistic modelling tools to advance social awareness and engagement on large wind power installations in the EU	■ European Commission	■ BOKU University	01-JAN-2023 to 31-DEC-2025
AAR2: Second Austrian Assessment Report on Climate Change	■ Austrian Climate Research Program (ACRP)	■ Austrian Panel on Climate Change (APCC); ■ BOKU University; ■ University of Innsbruck	01-FEB-2022 to 30-SEP-2025
DG-GROW: Analysis of life-cycle greenhouse gas emissions and removals of EU buildings and construction	■ European Commission	■ Graz University of Technology (TU Graz)	01-FEB-2023 to 31-JUL-2025

TITLE	FUNDER	PARTNERS IN AUSTRIA	DATES
Bioflex: Integrative energy infrastructure planning tool for cross-sector resilience and flexibility concepts	Austrian Research Promotion Agency (FFG)	- Vienna University of Technology (TU Wien); - BOKU University	01-DEC-2023 to 28-FEB-2025
DISCC-AT: Assessing the distributional effects of climate change impacts and adaptation in Austria	Austrian Climate Research Program (ACRP)	- Medical University of Vienna; - University of Graz	01-OCT-2022 to 31-JAN-2025
WaterStressAT: Climate change induced water stress: challenges and opportunities in Austrian regions	Austrian Climate Research Program (ACRP)	- Environment Agency Austria; - Central Institute for Meteorology and Geodynamics; - University of Graz	01-OCT-2020 to 30-NOV-2023
QuantMig: Quantifying migration scenarios for better policy	European Commission	Danube University Krems	01-FEB-2020 to 31-JAN-2023
TransLoss: Transformational risk management to tackle climate loss and damage in Austria and beyond	Austrian Climate Research Program (ACRP)	- BOKU University - University of Salzburg	01-NOV-2019 to 30-JUN-2022
PETRA: The role of persistence in tackling Austria's climate target – policies for the transport sector	Austrian Climate Research Program (ACRP)	- University of Graz; - Environment Agency Austria	01-DEC-2019 to 28-FEB-2022
SimSAEV: Simulating the environmental and socio-economic effects of shared Autonomous Electric Vehicles: the case of Vienna	Austrian Climate Research Program (ACRP)	- Vienna University of Economics and Business (WU); - AIT Austrian Institute of Technology	01-MAY-2018 to 31-OCT-2021



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