

## Press Release

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# LINZ TAKES ROLE AS A PIONEER IN THE FIGHT AGAINST CLIMATE CHANGE

AIT develops digital solutions for climate change adaptation and sustainable urban planning of the future

The heatwave summer of 2019 has made it clear how necessary climate assessments and corresponding adaptation measures are in our cities in order to maintain a high quality of life. For the development of sustainable strategies and operational action measures in modern cities, ongoing analysis and processing of climate data and information is essential. This requires effective intelligent digital platforms and IT systems to be able to design spatial planning, architecture, traffic management and energy supply for our living areas in times of climate change.

In the Horizon 2020 project CLARITY (Integrated Climate Adaptation Service Tools for Improving Resilience Measure Efficiency), coordinated by the AIT Austrian Institute of Technology and funded by the EU, innovative digital tools and services are being developed with the help of which negative impacts of climate change on Europe's cities can be analysed and assessed. Of a total of 17 European partners, the AIT, Center for Digital Safety & Security and Center for Energy, as well as the Central Institute for Meteorology and Geodynamics (ZAMG, Vienna), Smart Cities Consulting (SSC, Vienna) and the City of Linz are participating from Austria.

"In CLARITY, we are building smart IT systems to make climate risks and corresponding adaptation measures easier to assess, so that modern and targeted urban planning can be supported. The solutions developed can be used by climate experts as well as users from administration and urban planning," explains project leader and expert for crisis and disaster management Dr Denis Havlik from the AIT Center for Digital Safety & Security. The users are guided through a structured process in a tool developed by AIT, which supports them in identifying risks and assessing countermeasures. This makes it possible to analyse and evaluate climate-relevant indicators in order to estimate positive effects through tailor-made adaptation measures, for example to mitigate local impacts on cities, such as heat islands or potential flooding areas.

### Climate simulations in four European priority regions

Together with the city of Linz, which has set itself the ambitious goal of becoming the Climate Capital of Europe, and an international partner network from Germany, Italy (Naples), Spain (Madrid) and Sweden (Stockholm, Jönköping), local and city-wide climate simulations for current and future climate periods were carried out as part of CLARITY. The results show that the annual number of heat days in the city centre of Linz will increase from about 10 days in 1971 - 2000 to an average of 25 days in the annual period 2021 - 2050. For the average annual number of tropical nights, an increase from 18 to 34 days is predicted in the same period without countermeasures.

In order to be able to mitigate this increasing urban heat load, the AIT Center for Energy, led by the experienced urban climate expert Dr. Wolfgang Loibl from the Digital Resilient Cities research

area, used micro-climate simulations for three different districts in Linz to demonstrate what developments could be expected in these areas with and without adaptation measures. "The city of Linz is growing and, due to the higher building density, so is urban overheating. We know from the microclimate simulations at three locations in Linz that targeted and effectively placed adaptation measures such as soil unsealing, greening or tree planting can significantly cool the urban climate and counteract overheating. Climate simulation models serve as the basis for impact analyses of climate adaptation measures, which are usually not accessible to the population and urban planners or require the appropriate expertise to be able to apply them and evaluate the results," explains Dr. Wolfgang Loibl.

The calculations and simulations are based, among other things, on the EMIKAT IT system developed at the AIT Center for Digital Safety & Security, which has already been used for many years as an established solution for calculating emission loads and energy balances by the Austrian federal states. These calculations, which are based on a broad database, now also enable the simple evaluation of climate-relevant risk factors and an objective assessment of countermeasures based on existing data. Specific factors such as population distribution in urban districts are also taken into account. Finally, reports for decision-makers can be automatically generated from the calculations and simulations.

### **Easy-to-use climate services for cities and municipalities**

The CLARITY project will run until August 2020, after which the scenarios and climate services developed can be accessed by climate experts, urban planners and other interested cities via the platform <https://myclimateservices.eu/>, which was set up as part of the project. The climate services can also be easily used by other cities and municipalities so that they too can quantify the effects of climate change on their urban area and objectively evaluate different countermeasures. Since June 2020, webinars with further information on this topic have also been offered for interested parties and experts at <https://www.gotostage.com/channel/climate-adaptation>, which can also be accessed afterwards as a stream on this page at any time.

#### **Further information**

EU project website: <https://clarity-h2020.eu/>

Centre for Digital Safety & Security / Crisis and Disaster Management: <https://www.ait.ac.at/cdm/>

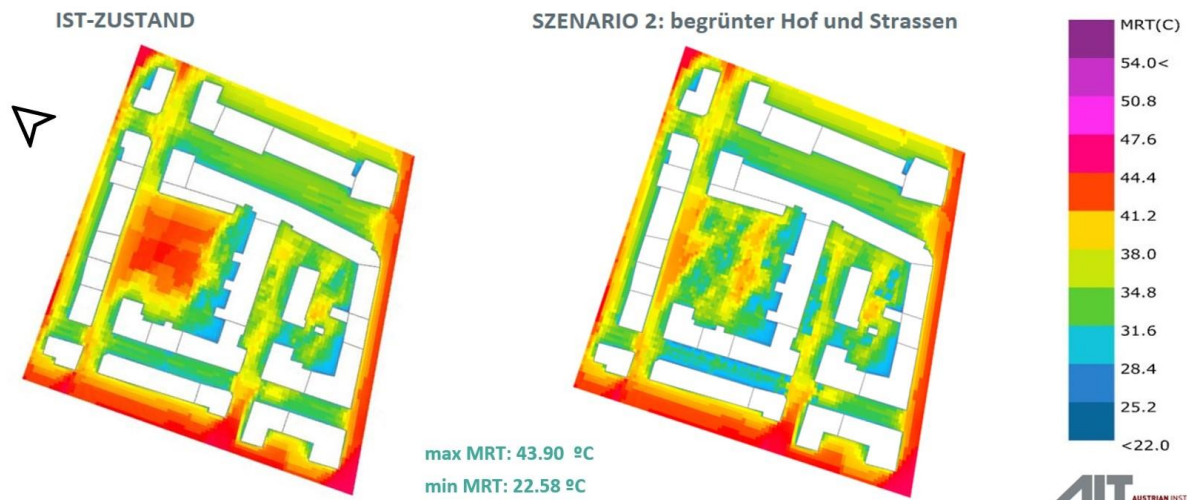
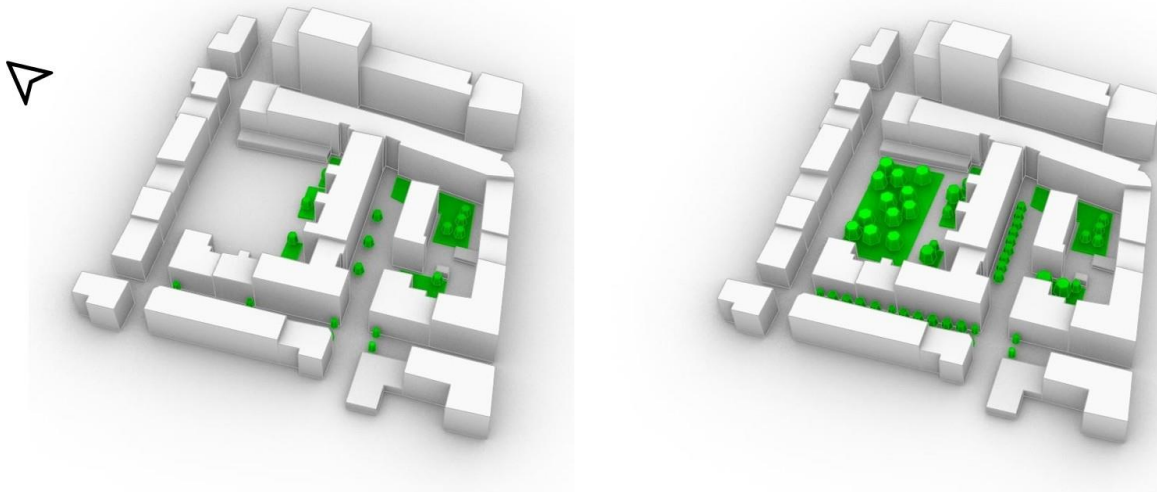
Center for Energy: <https://www.ait.ac.at/energy/>

Further details:

<https://myclimateservices.eu/>

<https://myclimateservices.eu/en/scenarios/linz-austria-suffers-from-heat-waves>

Press photos:



"As part of the Clarity research project, climate simulations were carried out for summer and heat days in specific urban areas and scenarios without and with greening measures were compared. The graphic shows fictitious courtyard and street greening measures of an inner-city building block in Linz. The comparison with and without fictitious greening illustrates temperature differences of up to 15°C in the courtyard in the area of the mean radiant temperature, as well as differences of up to 9°C in the streets and buildings shaded by trees during the day."

Photo credit: AIT

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