

## Press Release

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### AIT PROJECT HOTCITY WINS AUSTRIAN BLOCKCHAIN AWARD

Identifying waste heat in the city in a playful way and using it sensibly: the AIT project HotCity uses blockchain technology to collect waste heat sources in an app

Large sources of waste heat from industry and commerce are often known of and already used. For smaller sources of unused energy, however, it can be much more difficult to locate them and make the data available for meaningful use. As part of the HotCity project, a methodology for obtaining heat data was developed under the leadership of the AIT Austrian Institute of Technology, where a playful approach can be used to collect waste heat potential in cities. Blockchain technology is used for the automated and secure processing of the system. The project was recently awarded the Austrian Blockchain Award in the research category by the Austrian Federal Economic Chamber and the Austrian Blockchain Center.

#### **HotCity App: Finding valuable waste heat in cities with your mobile phone**

Using a mobile phone app, more precisely a game, residents can find existing heat sources from a variety of sources such as site visits, photos of flues or recooling systems or Google Maps, similar to Pokémon Go. The gamification of data collection is intended to raise awareness of waste heat and energy use on the one hand, and to facilitate the data collection of small energy sources on the other. Based on their gamification success, the players receive incentives such as discounts, vouchers, or goodies. This leaves the purely abstract level of game metrics such as points or rankings. For the first time, the game framework is secured on the basis of the blockchain and mapped by means of a token system.

"The innovative achievement of the app is the combination of gamification and crowdsourcing methods with a reward system," explains Ernst Gebetsroither-Geringer, researcher at AIT's Center for Energy and HotCity project leader. "In urban planning and spatial energy planning we often suffer from the lack of availability of good, validated and up-to-date datasets. Gamification is an innovative and elegant approach that uses the power and creativity of people to counteract this. Based on the contributions, we can draw conclusions about the quality and quantity of waste heat sources and make sense of them in planning."

#### **Using knowledge about existing smaller waste heat potentials to use existing energy**

Plus-energy districts produce more energy than they consume and are characterised by a high supply of heating, cooling, and electricity from locally available renewable energy sources. This can be, for example, waste heat from industrial food production, local commercial operations, or hardware in data centres. Estimates assume that Vienna has a theoretical potential of about 400 GWh of low-temperature waste heat (35-100°C) per year, mainly from data centres, and 160 GWh of medium-temperature waste heat (100- 500°C), with the largest share in the food and plastics processing industries. The energy output can be harnessed by feeding it into a local or district heating network, for example. This can make a significant contribution to heat and hot water

production in plus-energy neighbourhoods. The HotCity app, the game, now makes it possible for the first time to identify the many smaller sources of waste heat in order to use the available energy. Testing of the game is planned in Vienna and Graz as a first step.

### **HotCity as winner of the first Austrian Blockchain Award**

The HotCity project won the Austrian Blockchain Award in the category Research for Outstanding Projects from Austria, which was awarded this year for the first time by the Austrian Blockchain Center (ABC) and the Austrian Chamber of Commerce. The research project convinced with its innovative use of blockchain technologies to secure the gamification framework as well as to run the reward system to gain data for spatial energy planning and to make residents aware of valuable waste heat.

### **About HotCity**

HotCity is a joint project funded by the Austrian Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology within the 5th call for proposals City of the Future, managed by FFG. The aim of the project is to generate data for energy-oriented urban planning with the help of gamification. This will be tested in an exemplary manner using waste heat sources as an example. The Center for Energy of the AIT Austrian Institute of Technology is leading the research project and contributing its expertise in digital urban planning and waste heat utilisation. The blockchain technology that drives the project is provided by Jelurida, the token logic is developed by Picapipe, and the design and implementation of the app is done by Digitalsunray. Contributions from Grazer Energie Agentur cover expertise in the energy sector.

### **About the Blockchain Award**

The Austrian Blockchain Award ([www.blockchainaward.at](http://www.blockchainaward.at)) aims to recognise outstanding and unique blockchain projects that stand out due to their sustainable business model, proven practicality and disruptive application possibilities. The Austrian Blockchain Award was initiated by the Austrian Blockchain Center (ABC) and the Austrian Federal Economic Chamber and will be awarded for the first time in 2020 in several categories. The award is intended to bring outstanding projects in the field of blockchain before the curtain each year.

Project website: <http://cities.ait.ac.at/projects/hotcity>

More information on the Center for Energy: <https://www.ait.ac.at/energy>

Press photos:



In the HotCity project, an app is being developed that sensitises the population to waste heat sources in the city and encourages them to search for them. © Jacek Dylag / AIT Project HotCity



There are many sources of waste heat in the city that have remained unused until now. © Pixabay / AIT Project HotCity

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