



# Vienna's Economy on the Road to Net Zero

Technology  
Report

Vienna,  
April 2023

## Smart solutions for 21<sup>st</sup> century urban living – a key focus of Vienna's WIEN 2030 Economic and Innovation Strategy

Cities are dynamic centers where innovations emerge and changes have an instant impact. They also face major challenges: the climate crisis, technological and demographic change, urbanisation and migration. And these are challenges Vienna must overcome too. The city continues to feature at the top of many smart city rankings and offers a unique blend of cultural heritage, quality of life, cosmopolitanism and modernity. As a Smart City, one thing that makes Vienna unique is the fact that it prioritises the well-being of the people who live here. Innovative technologies are deployed where they can improve the lives of residents.

The WIEN 2030 economic and innovation strategy is intended to secure Vienna's attraction as a business and innovation location for years to come. WIEN 2030 is closely related to the goals of the Vienna Smart Climate City Strategy<sup>1</sup> and the Vienna Climate Roadmap<sup>2</sup> to reach net zero by 2040. The focus is on six top areas that have been implemented in numerous lead projects since autumn 2019. One of these key topics is "Smart solutions for 21st century urban living". The Vienna Economic Council advises the city administration and ensures that forward-looking projects involving large companies, start-ups, companies, universities and research institutions are put into action and that potential for

employment, value creation and innovation is utilised. The Vienna Business Agency interlinks the various players from business, science and city administration and supports Viennese companies with targeted funding and a broad range of advisory and support services.

The key projects presented in this technology report are very diverse. "We need to move many levers to get Vienna's economy to net zero," explains Eva Czernohorszky, head of the Technology Services department at the Vienna Business Agency. Czernohorszky helped shape the WIEN 2030 Economic and Innovation Strategy, coordinates the key topic "Smart solutions for 21st century urban living" and is in charge of initiating and implementing lead projects to achieve the Strategy's ambitious goals. The portfolio of key projects includes major projects such as the Waste2Value system or the large heat pump in the sewage treatment plant in Simmering, innovation laboratories that drive pilot projects and create a platform for cooperation between the relevant stakeholders. "Many projects demonstrate that digitisation paves the way to net zero," says Czernohorszky. Digital images of the city infrastructure (digital twin), help to improve process efficiency and keep materials in circulation in manufacturing, the construction industry and urban development.

Many projects have an instant impact, such as the use of waste heat from a data center to heat the Floridsdorf clinic or the solar power campaign supporting companies in switching to solar energy. This includes the GrünStattGrau Research and Innovation GmbH, which has helped create dozens of green façades and roofs, or the center of excellence for electric and hydrogen drives, which has put 400 eco-friendly buses on Vienna's streets. The Viennese Employees' Development Fund qualification measures and the VBA's technology awareness activities, which encourage young people in Vienna to pursue training and careers in natural sciences and technology and to make the climate transition as tomorrow's specialists, show a long-term effect. Projects such as the RUSZ service and repair center, which focuses on how to apply standards to rein in built-in product obsolescence, or the DoTank Circular City Wien 2030, which aims to make Vienna function like a material warehouse where all materials are kept in circulation and reused.

<sup>1</sup> [smartcity.wien.gv.at/wp-content/uploads/sites/3/2022/03/scwr\\_klima\\_2022\\_web-neu.pdf](https://smartcity.wien.gv.at/wp-content/uploads/sites/3/2022/03/scwr_klima_2022_web-neu.pdf)

<sup>2</sup> [www.wien.gv.at/spezial/klimafahrplan](https://www.wien.gv.at/spezial/klimafahrplan)



“The reality that our city has to make the climate transition has sunk in among the general public,” says Czernohorszky. Record temperatures, the pricing of climate-damaging greenhouse gases, new legislation and the energy crisis have meant that almost every business is now thinking about how to reduce its carbon footprint. The VBA wants to support companies on the path to net zero with funding and information and networking initiatives, innovative start-ups that develop renewable energy solutions and sustainable mobility concepts, small local suppliers and established industrial enterprises. The level of interest shown by visitors at the ViennaUP start-up festival and the Vienna Research Festival also shows the demand for future solutions.

Your team at the Vienna Business Agency hopes you enjoy reading about exciting projects.



**REACT-EU** ALS TEIL DER  
REAKTION DER UNION AUF DIE  
COVID-19-PANDEMIE FINANZIERT.







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### Participating organisations:

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

Austrian Economic Service  
[www.aws.at](http://www.aws.at)

University of Vienna  
[www.univie.ac.at](http://www.univie.ac.at)

TU Wien  
[www.tuwien.at](http://www.tuwien.at)

BOKU  
[www.boku.ac.at](http://www.boku.ac.at)

University of Applied Sciences Campus Vienna  
[www.fh-campuswien.ac.at](http://www.fh-campuswien.ac.at)

University of Applied Sciences Technikum Vienna  
[www.technikum-wien.at](http://www.technikum-wien.at)

MedUni Vienna  
[www.meduniwien.ac.at](http://www.meduniwien.ac.at)

Vetmeduni Vienna  
[www.vetmeduni.ac.at](http://www.vetmeduni.ac.at)

Austrian Academy of Sciences  
[www.oeaw.ac.at](http://www.oeaw.ac.at)

Vienna BioCenter  
[www.viennabiocenter.org](http://www.viennabiocenter.org)

## Digital Findet Stadt – platform for digital innovations in construction and real estate

Digital Findet Stadt<sup>4</sup>, a double entendre of “digital finds city” and “digital is happening”, is Austria’s largest platform for digital innovation in construction and real estate. With a network of over 300 companies, interest groups and research institutes from planning, construction and operation, it helps bring

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[www.inits.at](http://www.inits.at)

4

[www.digitalfindetstadt.at](http://www.digitalfindetstadt.at)

## INiTS AplusB Scale up 5.0

INiTS<sup>3</sup> is a high-tech incubator that provides qualification and financing and advice to company founders in the vicinity of Vienna’s universities and research institutions all the way from the ideas to foundation and market entry.

INiTS was founded in 2003 by the Vienna Business Agency, the University of Vienna and TU Wien and so far has supported almost 300 start-ups. In addition to the shareholders, the center’s partners also include University of Natural Resources and Life Sciences Vienna, University of Applied Sciences Campus Vienna, University of Applied Sciences Technikum Vienna, Medical University of Vienna, University of Veterinary Medicine Vienna, the Vienna BioCenter and the Austrian Academy of Sciences. INiTS services for university spin-offs and high-tech start-ups are funded by Austrian Economic Service and the Vienna Business Agency. The aim is to increase the number and probability of success of spin-offs from Vienna’s academic institutions. In future, the primary focus will be start-ups involved in the climate transition and/or predominantly led by women.

In the INiTS AplusB Scale up 5.0 project, more than 80 high-tech start-up projects each year will receive qualified advice by 30 September 2027, and 18 projects will be intensively supported in the INiTS incubation programme. In addition, the Vienna Business Agency has implemented the STARTkapital programme with INiTS. Start-ups receive up to €100,000 in equity in addition to the AplusB services. In return, INiTS receives virtual shares (non-voting participation rights) in the start-ups.

promising innovative projects to market launch and bolsters the innovative power and competitiveness of Austrian SMEs.

Digital Findet Stadt was designed by IG LebensCycle Bau and the AIT Austrian Institute of Technology and founded in cooperation with the Association of Civil Engineers and Engineering Companies (planning), Smart Construction Austria (construction) and Facility Management Austria (operation). Digital technologies, services and processes are developed and anchored in the company using co-creative methods.

As an interface between research and business, the platform shapes digital change and contributes to resource, energy and cost efficiency. Key industry representatives and initiatives for the digitisation of the Austrian construction and real estate industries are involved. The joint measures include projects for the development of digital solutions, standards and processes, the exchange of knowledge and experience at more than 20 events per year, advice and support for research projects and, starting next year, an academy for digitisation and sustainability training courses in planning, construction and operation.

### Shareholders:

AIT Austrian Institute of Technology  
[www.ait.ac.at](http://www.ait.ac.at)

VZI Association of Civil Engineers and Engineering Companies  
[www.vzi.at](http://www.vzi.at)

Smart Construction Austria  
[www.smart-construction.at](http://www.smart-construction.at)

Facility Management Austria  
[www.fma.or.at](http://www.fma.or.at)

IG Life Cycle Construction  
[ig-lebenszyklus.at](http://ig-lebenszyklus.at)

## Climate Lab

The Climate Lab<sup>5</sup> is a place of inspiration for innovative alliances to achieve net zero and circular economy goals as quickly as possible. Initiated by the Climate and Energy Fund in cooperation with Wien Energie, EIT Climate-KIC and Impact Hub, the Climate Lab intends to discover new modes of cooperation between companies, start-ups, civil society, science and the public sector. One key focus is on the biggest levers for greenhouse gas reduction: energy, mobility, building and living, and the circular economy. Joint strategies and programmes aim to connect partners from different sectors, disciplines and industries.

The goal is to develop pioneers in climate protection through active formats and a culture of trust into a community in which we work, think and strengthen each other. The Cli-

mate Lab also supports partners through three programmes: a collaboration call for start-ups and companies, ongoing processes for cross-corporate and public-private partnerships, regularly curated community industry circles and selected guests. Across more than 1,000 square metres, the Climate Lab in Vienna offers memberships and workspaces that are flexible in terms of time and place, as well as a variety of workshop and meeting rooms, demo zones, event areas, creative lofts, and much more.

### Participating organisations:

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

Climate and Energy Fund  
[www.klimafonds.gv.at](http://www.klimafonds.gv.at)

Wiener Linien  
[www.wienerlinien.at](http://www.wienerlinien.at)

EIT Climate-KIC  
[www.climate-kic.org](http://www.climate-kic.org)

Impact Hub  
[vienna.impacthub.net](http://vienna.impacthub.net)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

## INNOVATE – Digital Innovation Hub (DIH) for agriculture, timber and energy

INNOVATE<sup>6</sup> is the digitalisation and innovation partner for small and medium-sized companies in artificial intelligence, smart industry and big data. The specific focus is on agriculture, timber, forestry and energy (Agriculture, Timber, Energy – ATE). There is a need to make these industries digital and enormous potential to create added value in the process. The Digital Innovation Hub INNOVATE programmes, which are free for SMEs, are intended to set framework conditions that produce resource-saving innovations and contribute to climate protection.

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[www.climatelab.at](http://www.climatelab.at)

6

[www.dih-innovate.at](http://www.dih-innovate.at)

INNOVATE looks for solutions to social challenges, trains highly qualified workers, creates new companies and jobs, and creates opportunities for know-how exchange with key players across the globe through an international network. The tailor-made programmes also focus on junior staff, and also support the early, gender-aware awakening of interests among apprentices and employees from small and medium-sized enterprises in business, technology and the natural sciences.

The DIH INNOVATE wants to raise awareness of digital change, strengthen innovation culture, competitiveness and productivity, and build skills. By connecting research and business, the project strengthens Vienna as a location for innovation, especially in ATE fields. Since October 2022, INNOVATE has also been active throughout the European Union as part of the European Digital Innovation Hub (EDIH).

## Participating organisations include:

THI Techhouse  
[www.tech-house.io](http://www.tech-house.io)

Building Innovation Cluster  
[www.b-i-c.at](http://www.b-i-c.at)

Wood K Plus Wood center of excellence  
[www.wood-kplus.at](http://www.wood-kplus.at)

Vienna University of Economics and Business  
[www.wu.ac.at/ism](http://www.wu.ac.at/ism)

IHS  
[www.ihs.ac.at](http://www.ihs.ac.at)

Blue Minds Solutions  
[www.blueminds-company.com](http://www.blueminds-company.com)

Know-Center  
[www.know-center.at](http://www.know-center.at)

Josephine Research  
[www.josephinum.at/forschung-und-pruefung.html](http://www.josephinum.at/forschung-und-pruefung.html)

University of Leoben EVT  
[www.evt-unileoben.at](http://www.evt-unileoben.at)

BOKU  
[www.boku.ac.at](http://www.boku.ac.at)

VetMed  
[www.vetmeduni.ac.at](http://www.vetmeduni.ac.at)

7  
[www.gruenstattgrau.at](http://www.gruenstattgrau.at)

TU Wien  
[www.tuwien.at](http://www.tuwien.at)

Alpen-Adria-Universität Klagenfurt  
[www.aau.at](http://www.aau.at)

University of Applied Sciences Salzburg  
Campus Kuchl  
[www.fh-salzburg.ac.at/campus-leben/standorte/campus-kuchl](http://www.fh-salzburg.ac.at/campus-leben/standorte/campus-kuchl)

Austrian Research Promotion Agency  
[www.ffg.at](http://www.ffg.at)

Vienna Business Agency  
[www.viennabusinessagency.at](http://www.viennabusinessagency.at)

## GRÜNSTATTGRAU – innovations for the green city

As Austria's coordination and center of excellence, GRÜNSTATTGRAU<sup>2</sup> Forschungs- und Innovations GmbH provides impetus for a wide variety of projects in the field of building greening. With a large network of over 300 partners from science, business, the public sector and the general public, it offers greening checks, plausibility checks, certifications, feasibility analyses and advanced training.

The owner is the Association for Building Greening (Verband für Bauwerksbegrünung). The project is not economic in focus. Existing and new technologies, competencies and services are used. The aim is to ensure quality and create a new awareness of the range of climate friendliness and energy features offered by green buildings.

Activities also focus on the development and operation of a center of excellence of excellence with an office and a central point of contact via a digital platform to provide broad access to its spaces (offices, MUGLI experimental room, etc.) as well as networks, resources and expertise. An environment should also be provided that offers sustainable knowledge transfer with further and training opportunities, public relations and event formats, as well as project initiation, cooperation, studies and in-depth networking.

The innovation laboratory provides systematic and early access to users within a framework of a real development environment and with the opportunities of the digital stakeholder platform. Market data should also provide science, business, the public sector, political institutions and training centers with a basis for further decisions and provide impetus for activities.

Simmering heat storage tank © Wien Energie\_Ian Ehm



## Participating organisations include:

GRÜNSTATTGRAU  
Forschungs- und Innovations- GmbH  
[www.gruenstattgrau.at](http://www.gruenstattgrau.at)

Verband für Bauwerksbegrünung  
[www.gruenstattgrau.org](http://www.gruenstattgrau.org)

## Participating organisations:

City of Vienna  
Department of Economics Affairs, Labour & Statistics –  
Department of Research, Technology and Innovation  
in coordination with all departments of the City of Vienna  
[www.wien.gv.at](http://www.wien.gv.at)

## Innovation management in the Vienna City Administration

The aim of innovation management is to continuously improve and target groups for further development of the city's services. This should also explicitly strengthen cross-organisational cooperation and the breaking down of the barriers between departmental "silos".

After a pilot phase in 2021/2022, innovation management has now been put into regular operation. A total of 23 innovation projects have received support of €1.2 million over the past two years. Innovation projects can be submitted twice a year as part of calls. All employees of magistrate departments can make submissions. More than 70 departments and external partners (universities, companies, NGOs) are involved in the supported projects. A brief overview of the supported projects can be found here: [smartcity.wien.gv.at/innovationsmanagement](http://smartcity.wien.gv.at/innovationsmanagement).

## Development of silicone Gastronorm reusable containers

In 2020, around 79.3 million tonnes of packaging waste were generated in the EU, 19.5 per cent of it plastic. The EU is trying to create incentives for new circular business models by introducing reuse and recycling quotas in the new Regulation on packaging and packaging waste. The company Donau-Finanz is working in collaboration with the designer Oliver Irschitz and the Austrian Ecology Institute to create a sustainable, foldable and plastic-free reusable Gastronorm-compliant container made of a stainless steel-silicone mix. As disposable containers are currently the norm, the target group for the innovative product includes catering companies, company kitchens and canteen kitchens in the Vienna area, which supply schools, companies or social institutions with food, etc. A calculation based on discussions with market-leading companies in community catering shows that, as of 2020, schools and nurseries alone create around 250 tonnes of waste per year through the use of disposable PP packaging. With the EU plastics strategy, which envisages the reduction of single-use plastic material, getting this reusable solution onto the market quickly will be a great advantage. The drip-proof innovation also has all the essential properties for transporting food.

### Project partner:

Donau-Finanz Treuhand- und Finanzierungsgesellschaft m.b.H.  
[www.donau-finanz.at](http://www.donau-finanz.at)

## MALVE – Marin Degradable Food Packaging

The aim of the MALVE project is to develop packaging that protects delicate food effectively and thus reduces food waste. The packaging should be home compostable or biodegradable in the sea. The innovation is based on a biodegradable barrier coating that is applied to a specially manufactured biopolymer (polyhydroxyalkanoate) to ensure a high level of protection against oxygen and rapid environmental degradation. MALVE wants to help reduce environmental and marine pollution caused by plastic packaging.

## Food funding priority

The Vienna Business Agency funding priority “Food” supports innovation projects by Viennese companies that contribute to the sustainable and resource-efficient production, packaging and distribution of food in a major city like Vienna.

The aim of the project, which ended in 2022, was to strengthen regional local supply, increase sustainability in Vienna, and support growth and employment in Viennese companies. The project also aimed to improve quality of life through regional healthy nutrition.

### Participating organisation:

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

## 2.1 Funded projects from the funding priority Food

### Project partner:

Circular Analytics TK GmbH  
[www.circularanalytics.com](http://www.circularanalytics.com)

## Novel Biosensors for Food Quality and Safety (NoBiFoQS)

In cooperation with the Austrian center of excellence for Feed and Food Quality Safety and Innovation (FFoQSI) and the Institute for Food Safety (LMM) of the University of Veterinary Medicine of Vienna, imd BIOTECH is developing a novel application of biosensors for faster detection of the bacterium *Listeria monocytogenes*. In the context of climate change and the COVID-19 pandemic, securing food production systems is a widespread issue and makes people aware of the vulnerability of existing systems. One aspect of supply security is maintaining an adequate level of food safety. The pathogenic bacterium *Listeria monocytogenes*, which causes the rare disease listeriosis, is highly economically and socially important. Current detection methods cannot identify the bacterium in sampling. It is virtually impossible to stop the bacterium from spreading across products, especially with foods that perish quickly. This can lead to costly product recalls and disease outbreaks. The new application aims to counteract this.

### Project partner:

imd BIOTECH GmbH  
[www.imdbiotech.com](http://www.imdbiotech.com)

## Predictive condition detection in industrial coffee production

Fabscale's industrial research project aims to bring novel optimisation and innovation approaches to industrial coffee production. Data is continuously collected by networking different manufacturer-independent system components and sensors. This makes it possible to determine the state of aggregation and to give recommendations for action, taking the highly specialised production processes into account. Analysing large amounts of data helps detect cross-component patterns and anomalies, thus preventing system failures and optimises processes (e.g. workloads). By considering industry-specific processes and generating manufacturer-independent interfaces, Fabscale wants to significantly lower the entry hurdle for Industry 4.0 technologies. Thanks to the combined know-how and market access of the two shareholders, Fabscale sees excellent potential for revolutionising this market in the long term.

### Project partner:

Fabscale GmbH  
[www.fabscale.com](http://www.fabscale.com)

## Predictive Modelling for Smart Vinification – SmartVinify

Wine production has developed traditionally and is still fairly analogue even to this day. The key requirements of winegrowers, control bodies and consumers, however, have outgrown old methods. VINOZORO's SmartVinify project wants to counteract this. Wine quality is currently assessed using the sensory analysis of tasting – an expensive and slow process. There are no scientific methods to predict wine quality before irreversible decisions are made in the production process. Instead of receiving documented and traceable information on the wine's origin and quality, tasters and consumers have to rely on information from producers. This can open the door to food fraud.

SmartVinify employs a range of innovative chemical analysis methods combined with bioinformatics, statistics and machine learning technologies. This should enable producers to predict the quality of their wines, optimise the production process and document quality and origin with a clear digital, verifiable fingerprint.

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**Project partner:**

VinoStellar OG, VinoZoro

## Rapid ASF detection in farm-pigs

Special point-of-care (POC) diagnostic devices can detect diseases in farm animals more cost-effectively. Developed by NDx Bio, the device uses microscopy technology to image individual metal nanoparticles and offers a high degree of sensitivity. The device enables rapid on-site diagnosis of many diseases that can currently only be done in a veterinary laboratory. In this project, the company is focusing on creating a rapid diagnosis for the African swine fever (ASF) virus. The current ASF epidemic has killed 1.3 million pigs in Europe over the past five years. In China, it is estimated that more than 150 million pigs died in the first year of the outbreak alone. Methods for early on-site detection, such as the one mentioned here, are therefore crucial to controlling this disease.

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**Project partner:**

NDx Bio GmbH

## Reduction of bacteria on slaughter chickens in the food chain

During the slaughter of chickens, the carcass can become contaminated with harmful germs such as Campylobacter and Salmonella. In order to minimise entry into the slaughter chain, BRAINCON is testing an innovative approach: germ reduction immediately before packaging, directly on the carcass. Three methods are used: ultraviolet light in the C range, hydrogen peroxide and bacteriophages. This will see the first test of bacteriophage application via the dry nebuliser. DCX technology is one of the most effective measures for room and surface decontamination in the fight against microorganisms. Its function in the field of food safety would mean a completely new approach that has never been used before. Assessments regarding the individual or combined effectiveness of these approaches, the logical order of sequence, and their potential application in common slaughterhouses are ongoing. This research project is carried out in cooperation with the Austrian Agency for Health and Food Safety (Österreichische Agentur für Gesundheit und Ernährungssicherheit GmbH, AGES).

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**Project partner:**

BRAINCON GmbH & Co KG  
[www.braincon.com](http://www.braincon.com)



## Large heat pump EBS (Vienna Simmering sewage treatment plant)

Large heat pumps use waste heat from treated wastewater from the Vienna sewage treatment plant (ebswien) to supply the Vienna district heating network. For this purpose, Wien Energie is building a new heat generation plant with a thermal generation capacity of up to 110 MW. The project includes planning and constructing the heat pump building and procurement, assembly and commissioning of the heat pumps and connecting pipes, connection to the sewage treatment plant outlet and realisation of the direct power supply from the Danube power plant in Freudenau.

Further aspects include planning and implementing the integration of the large heat pump into the existing district heating network, creating additional district heating transport capacities for the integration of the additional generation capacities and developing and planning the necessary operating strategies for the use of the large heat pump.

Using waste heat from the sewage treatment plant greatly reduces the use of primary energy. Two thirds of the district heating generated is waste heat that would otherwise end up escaping unused into the environment. By using 100%-hydro-power electricity to operate the heat pumps, district heating generation is 100% fossil-fuel free.

### Participating organisation:

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

## Hydrogen Research Centre Austria

The Hydrogen Research Center Austria (HyCentA)<sup>8</sup> is a COM-ET center that aims to advance sustainable hydrogen. Hydrogen technologies are being researched for a holistic change from fossil energy to green hydrogen and green electricity in mobility, industry, households and energy services.

The main strategies of HyCentA and the numerous domestic and international companies and organisations involved are renewable energy storage, increased efficiency and resource conservation through research and development of electrochemical technologies for hydrogen production and use. Examples include electrolysis, compression and fuel cells and new hydrogen storage technologies. Many research priorities are organised across areas, such as simulation and systemic analysis for application, test methods and instrumentation, and circular economy including production, industrialisation and recycling.

The aim is to reduce costs, particularly degradation, and increase efficiency. At the same time, the functionalities of electrochemical and storage technologies are being improved. Further aims include identifying optimisation potential through coupling the energy, industry and mobility sectors and discovering the ideal combination of key technologies.

The highly specialised and broad-based consortium of domestic and international research centers and industrial partners represents the entire hydrogen technology value chain. Based on the existing knowledge, not only will new technologies be developed, but the key challenges regarding optimum storage and distribution of hydrogen energy also will be addressed.

The COMET Center (Competence Center for Excellent Technologies) is funded by BMK, BMAW and the co-financing provinces of Styria, Upper Austria, Tyrol and Vienna. The programme is managed by the Austrian Research Promotion Agency (FFG).

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[www.hycenta.at](http://www.hycenta.at)

### Participating organisations include:

AIT  
[www.ait.ac.at](http://www.ait.ac.at)

AVL List  
[www.avl.com](http://www.avl.com)

MAGNA STEYR Fahrzeugtechnik  
[www.magna.com](http://www.magna.com)

Montanuni Leoben  
[www.unileoben.ac.at](http://www.unileoben.ac.at)

OMV  
[www.omv.at](http://www.omv.at)

TU Wien  
[www.tuwien.at](http://www.tuwien.at)

Verbund  
[www.verbund.com](http://www.verbund.com)

voestalpine  
[www.voestalpine.com](http://www.voestalpine.com)

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

Austrian Research Promotion Agency  
[www.ffg.at](http://www.ffg.at)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

## Use of waste heat from a data center to heat a hospital

Wien Energie is installing a heat pump system in the Klinik Floridsdorf (Floridsdorf Clinic) that uses waste heat from the cooling system of the nearby Interxion GmbH data center to heat the clinic. The high-temperature heat obtained from the waste heat is fed into the hospital's heat distribution system.

The system, which is installed in open spaces in the clinic refrigeration center, consists of three heat pumps and various pumps, containers, heat exchangers, cold and hot water piping, and a transformer and switchgear for the electrical supply from the public network. The Interxion GmbH data center cooling system is connected via its own intermediate circuit and two heat exchangers.

At present, the Floridsdorf clinic gets its heat supply from a district heating converter station with a thermal output of 3x5 MW. The primary converter station side is connected

directly to the district heating primary network, the secondary side forms the heat distribution system of the Floridsdorf clinic. The new heat pump system is integrated on the secondary side. The operation of the heat pump system removes the need to purchase district heating. The hot water generated by the heat pumps connected in series is fed directly into the Floridsdorf clinic heat distribution system.

### Participating organisations:

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

Klinik Floridsdorf  
(Stadt Wien – Unternehmung Wiener Gesundheitsverbund)  
[klinik-floridsdorf.gesundheitsverbund.at](http://klinik-floridsdorf.gesundheitsverbund.at)

Interxion Österreich GmbH  
[www.interxion.com/at](http://www.interxion.com/at)

## H2REAL – Hydrogen Model Region Vienna and Eastern Austria/ Hydrogen Valley

With the H2REAL project (Hydrogen Region East Austria Goes Live), Wien Energie is developing an integrated H2 network with partners from science and industry. Hydrogen Valley acts as a hub for hydrogen technology and applications in eastern Austria. It covers the entire hydrogen value chain – from production, distribution/logistics to end use. An innovative and holistic solution should lead to significant emission reductions, the decarbonisation of all sectors and cost reduction for green hydrogen.

Eastern Austria offers the perfect environment to demonstrate the implementation of an integrated value chain. Partners with similar core competencies and activities are grouped together in clusters. Scientific partners are: AIT Austrian Institute of Technology, the Energy Institute at the Johannes Kepler University Linz, HyCentA Research GmbH, Vienna University of Technology, and WIVA P&G. The industrial partners are: Austrian Power Grid AG, Energie Burgenland AG, Energienetze Steiermark GmbH, Gas Connect Austria GmbH, Hafen Wien GmbH, Linde Österreich GmbH, movingpower GmbH, Netz Burgenland GmbH, Netze Niederösterreich, Wiener Linien GmbH, Wiener Netze GmbH, Wiener Wasserstoff GmbH, Windkraft Simonsfeld AG and Wien Energie GmbH. The project is also supported with funds from the Climate and Energy Fund through FFG funding.

The H2REAL project focuses on joint investments and coordinated infrastructure projects across several provinces and regions. The systemic and technological innovations within the project will be the subject of comprehensive accompanying research.

#### Participating organisations include:

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

AIT  
[www.ait.ac.at](http://www.ait.ac.at)

HyCentA Research GmbH  
[www.hycenta.at](http://www.hycenta.at)

TU Wien  
[www.tuwien.at](http://www.tuwien.at)

WIVA P&G  
[www.wiva.at](http://www.wiva.at)

Energie Burgenland  
[www.burgenlandenergie.at](http://www.burgenlandenergie.at)

Gas Connect Austria  
[www.gasconnect.at](http://www.gasconnect.at)

Hafen Wien GmbH  
[www.hafen-wien.com](http://www.hafen-wien.com)

Wiener Linien GmbH  
[www.wienerlinien.at](http://www.wienerlinien.at)

Wiener Netze GmbH  
[www.wienernetze.at](http://www.wienernetze.at)

Wiener Wasserstoff GmbH  
[www.wienerstadtwerke.at/wiener-wasserstoff](http://www.wienerstadtwerke.at/wiener-wasserstoff)

## BEST – new research site for BEST – Bio-energy and Sustainable Technologies COMET Center

BEST – Bioenergy and Sustainable Technologies GmbH<sup>9</sup> is a COMET competence center. It combines academic research and technology development through industry-driven, applied research and development in the fields of bioenergy, sustainable bio-based economy and future-proof energy systems. The Waste2Value project is a lighthouse project with a strong connection to Vienna.

In Waste2Value, BEST is working on the process basics of how to use biomass and waste to produce heat, electricity, gaseous and liquid energy carriers and raw materials for the chemical industry. As part of the project, BEST is building and operating a pilot-scale 1 MW gas generation plant on the Wien Energie site in Simmeringer Haide. The pilot plant will host the research into and demonstration of the use of residues for the production of synthesis gas on an industrial scale.

The pilot plant is the central key technology of the Syngas Platform Vienna, in which a number of possible uses of synthesis gas are being developed. These include various recycling paths to renewable CO<sub>2</sub>-neutral diesel (Fischer-Tropsch (FT) fuel) and kerosene, mixed alcohols, synthetic, green natural gas and green hydrogen. Wiener Linien, Wiener Netze, OMV, Österreichische Bundesforste, Laakirchen Papier AG and SMS group Process Technologies are involved in the project, in addition to Wien Energie, which wants to develop the basis for the future realisation of a syngas plant on an industrial scale as part of Waste2Value.

For the plant manufacturer SMS, the pilot plant represents a gateway a new technology which will enable them to offer a supplement to the electricity-based provision of hydrogen as an energy carrier and reducing agent for steel production. The scientific partners are TU Wien and the Luleå University of Technology, while the financing partners are the FFG, the State of Lower Austria, the SFG and the Vienna Business Agency.

#### Participating organisations:

BEST – Bioenergy and Sustainable Technologies GmbH  
[www.best-research.eu](http://www.best-research.eu)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

Lower Austria Province  
[www.no.e.gv.at](http://www.no.e.gv.at)

9  
[www.best-research.eu](http://www.best-research.eu)

Steirische Wirtschaftsförderungsgesellschaft SFG  
[www.sfg.at](http://www.sfg.at)

Austrian Research Promotion Agency FFG  
[www.ffg.at](http://www.ffg.at)

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

Wiener Linien  
[www.wienerlinien.at](http://www.wienerlinien.at)

Wiener Netze  
[www.wienernetze.at](http://www.wienernetze.at)

OMV  
[www.omv.at](http://www.omv.at)

Österreichische Bundesforste  
[www.bundesforste.at](http://www.bundesforste.at)

Laakirchen Papier AG  
[laakirchen.heinzelpaper.com](http://laakirchen.heinzelpaper.com)

SMS group Process Technologies  
[www.sms-group.com](http://www.sms-group.com)

TU Wien, Institute for Process Engineering, Environmental Technology and Technical Biological Sciences  
[www.tuwien.at](http://www.tuwien.at)

Luleå University of Technology  
[www.ltu.se](http://www.ltu.se)

## Green Energy Lab

Green Energy Lab<sup>10</sup> is the innovation laboratory for sustainable energy solutions and part of the Department of Research, Technology and Innovation's Showcase Energy Region campaign by the Climate and Energy Fund. More than 300 partners from research, business and the public sector are developing customer-centric, scalable solutions in the field of green energy in cooperation with the four provincial energy suppliers Wien Energie, EVN, Burgenland Energie and Energie Steiermark.

The aim is to bundle unused potential in research and innovation and to activate it for the design of a sustainable, net-zero energy system. This goal is to make significant contributions to achieving climate and energy goals. The ideas are generated via a central open innovation process and en-

10  
[www.greenenergylab.at](http://www.greenenergylab.at)

11  
[sonnenstrom.wien.gv.at](http://sonnenstrom.wien.gv.at)

able far-reaching cooperation between partners who are not currently working together: start-ups, established technology providers and energy service providers, researchers and users in energy communities, as well as hardware manufacturers and innovative IT companies. The innovation lab also assists in the optimum positioning of Austrian energy technologies and thus strengthening Austria as a business and technology location.

The hope is that target group-specific innovation services will positively influence more than one million consumers through personal involvement on their way to a carbon-neutral energy future. Obstacles that hinder the transsectoral and interdisciplinary cooperation of actors in the energy system are removed. Test environments for shared use and formats for the exchange of knowledge and experience support solution development.

#### Participating organisations include:

Verein Forschungsinitiative Green Energy Lab

Wien Energie GmbH  
[www.wienenergie.at](http://www.wienenergie.at)

Burgenland Energie AG  
[www.burgenlandenergie.at](http://www.burgenlandenergie.at)

Energie Steiermark AG  
[www.e-steiermark.com](http://www.e-steiermark.com)

EVN AG  
[www.evn.at](http://www.evn.at)

Austrian Research Promotion Agency  
[www.ffg.at](http://www.ffg.at)

## “Vienna’s got it” solar power campaign

A particularly important building block for net zero by 2040 and the energy transition is solar energy. In this context, the Vienna provincial government has commissioned the implementation of a comprehensive and coherent expansion programme: the Vienna solar power campaign<sup>11</sup>. Concrete goals have been set: Vienna will increase electricity generation from photovoltaics (PV) in the city from 50 MWp in 2020 to 250 MWp by 2025 and to 800 MWp by 2030.

By 2025, PV systems will be installed on all city-owned areas wherever technically feasible and economically profitable. Private areas will also be used for PV expansion. The programme includes far-reaching process optimisations, a major PV campaign on city-owned areas and intensive cooperation with the Renewable Energy center of excellence. One focus is on innovative solutions for urban PV expansion. The





aim of a series of workshops and events with city representatives, stakeholders from business, science and research and other interest groups is for the solar power campaign to have an impact – both internally and externally in a sustainable environment.

All Viennese companies are invited to become solar partners of the City of Vienna. This partnership includes a company feature on the programme homepage, visualisation of the company's commitment through a seal and homepage banner and invitations to regular network and exchange formats, the Vienna Solar Panels. In addition, all solar partners receive updates on the solar power campaign (e.g. funding, approval procedures). Contact details for interested parties: [sonnenstrom@post.wien.gv.at](mailto:sonnenstrom@post.wien.gv.at)

The campaign involves optimising the legal framework, identifying potential areas – in particular sealed or built-up areas and building areas – and using technical innovations. Plans also include programme monitoring, improving fund processing through the Vienna Green Electricity Fund and establishing a public point of contact in accordance with EU Directive 2018/2001 and expanding this into a new information and advice facility for the City of Vienna, the Renewable Energy center of excellence. [sonnenstrom@post.wien.gv.at](mailto:sonnenstrom@post.wien.gv.at)

#### Participating organisations include:

City of Vienna – Energy Planning  
[www.wien.gv.at/kontakte/ma20](http://www.wien.gv.at/kontakte/ma20)

Municipal Directorate – Buildings and Technology Division  
[www.wien.gv.at/kontakte/md-bd](http://www.wien.gv.at/kontakte/md-bd)

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

Wiener Netze  
[www.wienernetze.at](http://www.wienernetze.at)

Urban Innovation Vienna  
[www.urbaninnovation.at](http://www.urbaninnovation.at)

Renewable Energy center of excellence  
[renewable-energy.urbaninnovation.at](http://renewable-energy.urbaninnovation.at)

## Zero Emission Cities Funding Call

With funding for climate protection and energy saving in the city's economic and location policy, Vienna is focusing on overcoming the climate crisis and supporting innovative projects that make a direct contribution to the city's climate neutrality. This should accelerate the transition to climate neutrality and strengthen the innovative power of the regional economy. In a 2022 call for tenders, the Vienna Business Agency made €3 million available for the development of innovative solutions.

The call funded research and development projects by companies that lead to product, service and process innovations. Innovative solutions were sought for existing buildings and new construction, (urban) infrastructure, transport, mobility and logistics, energy generation, use and storage, (urban) production processes and value chains and resource management and the circular economy.

Companies were able to network with Viennese decision-makers at the Smart City SuMMit<sup>12</sup> and explore opportunities for cooperation to get joint projects on track. The key topics were “net-zero city”, “innovative city”, “participatory city”, “circular city”, “inclusive & barrier-free city” and “15-minute city”. More than 500 innovators from 48 nations took part.

An international expert jury recommended ten out of 31 submissions for funding. Nine projects are being implemented in cooperation with several partners, and a total of 34 organisations are involved in project implementation. Seven projects received the women's bonus from the Vienna Business Agency because they are led by women. The funded projects will be implemented by 2025.

#### Participating organisations:

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

City of Vienna  
[www.wien.gv.at](http://www.wien.gv.at)

Wiener Stadtwerke  
[www.wienerstadtwerke.at](http://www.wienerstadtwerke.at)

Wien Holding  
[www.wienholding.at](http://www.wienholding.at)

ASCR  
[www.ascr.at](http://www.ascr.at)



## 3.1 Funded projects from the Zero Emission Cities funding call

### cobee – collaboration on the energy transition

Renewable energy projects in existing buildings in need of renovation are essential for the energy transition. When it comes to the implementation, however, initiators (e.g. owners, property managers, property developers) get tangled up in complex planning and coordination processes. The high degree of complexity and the in-depth technical knowledge required for this task often exceed the expertise of the project initiators and specialised contractors. This leads to uninformed and unstructured inquiries to planners and other executing companies in the renewable energy sector. This means that many inquiries are rejected or have to be worked out in painstaking detail. This inefficient process wastes time for both contractors (SMEs) and clients. Given the current shortage of skilled workers, this is a key problem.

As a digital companion, cobee supports initiators of renewable energy projects in urban areas and intuitively guides them through the first steps required to initiate a project, plan it holistically and drive it forward. Web-based tools, guides, modules, etc. allow comprehensive networking, participation and know-how transfer. In addition, cobee speeds up projects as an accelerator. The greatest challenges lie in developing user-optimised web-based solutions for standardisation or individualisation and in prioritising large amounts of information. With a use case, a prototype will be developed and validated in Vienna in the next three years. The project is initiated and managed by the start-up cobee solutions GmbH in cooperation with tatwort Nachhaltige Projekte GmbH, University of Applied Sciences Technikum Vienna, The Austrian Society for the Environment and Technology (ÖGUT) and UIV Urban Innovation Vienna GmbH.

#### Project partner:

cobee solutions GmbH

### essenzø

essenzø is a brand and an innovative concept for designing and constructing buildings that aims to achieve a 20 per cent reduction in CO<sub>2</sub> emissions and production and operating costs compared to conventional buildings by 2050. The focus is on the three benchmarks of efficiency, sufficiency and

resilience. This will develop comprehensive approaches that focus on the essence of common construction tasks. Contradictions in traditional construction methods will be critically examined and traced back to the relevant protection goal. Using concrete problems in the planning and construction of buildings, essenzø highlights gaps and overlaps, and develops possible solutions to achieve higher efficiency (production and operating costs, space), higher resilience (sustainability, environmental protection, neutrality of use) and usage-based sufficiency (consumption, comfort). The results will be shown in a pilot project.

#### Project partner:

Caelum Development GmbH  
[www.caelum-development.at](http://www.caelum-development.at)

### GREENplanout

The aim of GREENplanout is to develop a methodical concept and proof of concept for a web-based dashboard that, using 3D building models, provides climate-relevant, macro-ecological data for objects and districts in early planning phases (“climate check”). This enables stakeholders to implement climate-resilient plans and thus meet the requirements of climate change adaptation strategies, the Green Deal, EU taxonomy, etc. Due to the high level of complexity, there is currently no instrument which can help make fundamental, complex, simulation-based decisions at an early stage. It should also be possible to automatically determine the GREEN AREA FACTOR (GFF) using a BIM environment coupled with microclimatic simulations. The consortium consists of FCP Fritsch, Chiari & Partner ZT GmbH, a civil engineering company with experience in BIM planning and urban development, Rheologic GmbH, a start-up in the field of microclimate simulation, GRÜNSTATTGRAU, an innovation laboratory and research center for greening buildings, and the University of Natural Resources and Life Sciences, Landscape Planning department.

#### Project partner:

FCP Fritsch, Chiari & Partner ZT GmbH  
[www.fcp.at](http://www.fcp.at)

### INReS<sup>2</sup>

Climate change is making heavy rain events ever more frequent. Cities like Vienna are particularly affected by the consequences due to the high degree of sealing. One key aspect of creating climate-resilient cities are simple and transparent web applications for planning sustainable, green stormwater solutions. Planning, executing and operating rainwater management systems still poses frequent problems for those affected due to the enormous complexity of the tasks involved. INReS<sup>2</sup> is intended to remedy this. Using a BIM component database and calculations based on predefined and scientifically developed parameters, INReS<sup>2</sup> creates solutions for decentralised and integrative green rainwater management and makes them accessible via a web interface. This holistic approach of a low-threshold accessible web application, supplemented by compatibility with BIM software, should cover the needs of all potential stakeholders. INReS<sup>2</sup> builds on the results of the rainwater decision matrix projects (1st Prize Business Agency Rainwater in the City) and INReS (sounding, City of the Future (Stadt der Zukunft) 7th tender).

#### Project partner:

GRÜNSTATTGRAU Forschungs- und Innovations-GmbH  
[www.gruenstattgrau.at](http://www.gruenstattgrau.at)

### KLAR: Inorganic Recycling of Sewage Sludge

The KLAR – Inorganic Recycling of Sewage Sludge project (“klar”=“clear”) aims to turn sewage sludge into an urban resource and provide nutrients such as phosphorus (P) and nitrogen (N) other inorganic recyclable materials. In the research project, an innovative recovery concept via the process path from gas generation and cleaning will be developed to enable the recovery of valuable secondary materials. The KLAR project deals with the optimisation of the process and operational management of the dual fluidised bed (DFB) process at a 1 MW pilot plant to optimise the inorganic outputs. These outputs will be characterised and plant availability assessed. Up to 1,500 t/a each of nitrogen and phosphorus can be recovered from the potential recycling of Vienna’s sewage sludge. Using the process throughout Austria could cover up to 50 per cent of the annual amount of phosphorus required for mineral fertilisers. The project thus makes a significant contribution to reducing CO<sub>2</sub> and closing the cycle in the city.

#### Project partners:

Wien Energie GmbH  
[www.wienenergie.at](http://www.wienenergie.at)

BEST – Bioenergy and Sustainable Technologies GmbH  
[www.best-research.eu](http://www.best-research.eu)

### Micro-Mobility project

The aim of the Micro-Mobility project is to set up an internationally unique service or an innovative company e-kick scooter system (full-service leasing model/B2B) to promote micromobility in Vienna. Micromobility is an essential building block for achieving the goals of the Vienna Smart Climate City Strategy and the Vienna Climate Roadmap: It is an independent mode of transport to replace car trips and an addition to Wiener Linien’s public transport range for the first/last mile in the outskirts of Vienna. The social goal targeted by the project is changing everyday mobility behaviour towards more sustainability and the associated contributions on a social and ecological level.

#### Project partner:

netwiss OG  
[www.netwiss.at](http://www.netwiss.at)



## Sustainable energy through sustainable systems using intelligent real-time condition monitoring

The company Inmox GmbH wants to do its bit for sustainable mechanical engineering. It plans to use a new sensor technology to optimally and efficiently monitor wind turbines. Using intelligent condition monitoring, the aim is to make the best possible use of the wind turbine life cycle in line with the company motto “sustainable energy through sustainable systems”. An innovative sensor technology that collects both quantitative and new, qualitative information on the gearbox condition and uses this to perform a continuous, real-time risk assessment is what makes this possible. This ensures both operational reliability and readiness at any given time, contributing to security of supply. This also enables “predictive maintenance”, which means big savings thanks to fewer and shorter downtimes. Efficient, resource-saving component and lubricant use and the extension of life cycles are also possible.

### Project partner:

Inmox GmbH  
[www.inmox.com](http://www.inmox.com)

## Ecological noise barriers from REEDuce

REEDuce – noise protection technologies is working on the noise protection transition: the company’s ecological noise protection wall, made of reed, thermowood and clay, is designed to effectively and sustainably reduce road noise and other sources of noise. The noise protection wall consists of renewable raw materials, is good for the climate and built according to circular economy principles. It also serves as a valuable home for insects, binds fine dust and thus improves air quality. Since noise is a major environmental problem that could be exacerbated by increasing traffic in the coming years, the need for sustainable noise abatement measures seems greater than ever. The existing noise barrier is to be further optimised as part of the Zero Emission Cities 2022 campaign. On the one hand, REEDuce wants to achieve 100 per cent greening of the noise barrier in order to ensure complete biodegradability. On the other hand, a new product extension is to be developed that is based on a modular building block principle. The ecological noise protection wall should thus be made accessible to everyone.

### Project partner:

REEDuce – noise protection technologies  
[www.reeduce-noise.com](http://www.reeduce-noise.com)

## Social participation models for decarbonising heat supply in urban residential buildings

Decarbonising the heat supply in urban residential building is a major challenge. The reasons for this are the technical and economic need for high-investment, cross-building solutions, a widespread lack of experience in designing the legal and organisational framework for the joint implementation of these solutions by the relevant parties, and financial bottlenecks. The project develops suitable participation models for implementing decarbonised heat supply. The models are based on existing forms of resource communities (e.g. housing cooperatives, building groups), which show their worth when larger, common investments are made which are of high importance to all parties. Furthermore, a service portfolio is derived from test findings on real use cases. This will be offered by the project partners in the future.

### Project partner:

e7 Energie Markt Analyse GmbH  
[www.e-sieben.at](http://www.e-sieben.at)

## Zero emission potential through green roofs in existing buildings

Green roofs can counteract extreme weather situations and heat islands, reduce CO<sub>2</sub> emissions due to reduced cooling requirements, and also create small green CO<sub>2</sub> sinks. Under the motto “Look up! It’s going green”, the start-up Plantika produces roof greening modules to improve urban climate and quality of life. Unlike conventional modules, which are usually only suitable for flat roofs, these could be used on up to the remaining 85 per cent of Vienna’s sloping sheet metal and brick roof surfaces. However, since there is still potential in terms of sustainability, plant trays will come in an environmentally friendly alternative, not just aluminium as is the case now. In addition to criteria such as price, corrosion resistance and availability, zero emissions plays an important role in material selection. The design is also decisive in terms of effect: Research is also being carried out here in conjunction with material optimisation. The (micro) climate impact socio-economic impacts will be validated through the construction and evaluation of pilot plants.

### Project partner:

Green Roofs – Planitka GmbH  
[www.planitka.at](http://www.planitka.at)



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#### Participating organisations include:

Reparatur- und Service-Zentrum R.U.S.Z  
[www.rusz.at](http://www.rusz.at)

PROMPT  
[www.prompt-project.eu](http://www.prompt-project.eu)

RREUSE  
[www.rreuse.org](http://www.rreuse.org)

Austrian Standards International  
[www.austrian-standards.at](http://www.austrian-standards.at)

Senat der Wirtschaft  
[senat.at](http://senat.at)

AMS  
[www.ams.at](http://www.ams.at)

Fraunhofer Institute for Reliability and Microintegration IZM  
[www.izm.fraunhofer.de](http://www.izm.fraunhofer.de)

TU Delft  
[www.tudelft.nl](http://www.tudelft.nl)

## Viennese initiative for the repair and reuse of electronic devices

Together with various institutions and companies, the RUSZ<sup>13</sup> repair and service center has developed EU standards for reparability (EN 45554:2020) based on its own standard “Quality mark for durable, repair-friendly electrical and electronic devices”. The aim of RUSZ is the further development of the EU Ecodesign Directive. Test methods against premature obsolescence are being developed as part of the H2020 project PROMPT.

RUSZ offers a social business, including repair services, repaired old appliances and a “clean laundry” service, and is a center for consumer protection and sustainability. So far, the Vienna repair network ReparaturNetzWerk Wien, the Austrian umbrella organisation for social economy companies RepaNet ([www.repanet.at](http://www.repanet.at)) and the EU umbrella organisation RREUSE ([www.rreuse.org](http://www.rreuse.org)) have been established. An eco-social franchise system based on the repair center and measures to train repair technicians (RUSZ Academy) are also being planned.

The plan is to set up a reliable repair infrastructure in Europe: The franchise system is intended to create RUSZ franchising branches in other regions, first in Germany, Austria and Switzerland, then throughout the EU, which offer repair services for electronic devices, re-use devices and the product service “clean laundry” according to the “Use don’t buy” concept. The company claims that if EU households were to use their washing machines, vacuum cleaners, laptops and smartphones just one year longer, it would save the same amount CO<sub>2</sub> as removing 2 million cars from Europe’s roads.

## DoTank Circular City 2020–2030 (DTCC30)

The City of Vienna’s Construction Department, Office for Resource Conservation and Sustainability in Construction (MD-BD SRN) is conducting the 10-year DoTank “Circular City Wien 2020–2030”<sup>14</sup> (DTCC30) programme to facilitate the transition from a linear system to a circular city.

The DTCC30 programme should be a cross-municipal hub for all things circular economy in the built environment. The transdisciplinary programme encouraging the transition to a circular city is a key project in the Vienna 2030 Economy and Innovation Strategy and focuses on sustainability and resource conservation.

The long-term goal of the programme is to establish the concept of recycling in the built environment; from planning, production and use or reuse to processing for recycling and the secondary raw materials market. The DTCC30 goals flow from urban framework strategies such as the Smart Climate City Strategy Vienna: reuse at least 70 per cent of the components, products and materials from demolished buildings and

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13  
[www.rusz.at](http://www.rusz.at)

14  
[www.wien.gv.at/bauen/dotankcircularcity/index.html](http://www.wien.gv.at/bauen/dotankcircularcity/index.html)

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major conversions (from 2040), recyclable planning and construction for maximum resource conservation in new construction and renovation as standard (from 2030).

Collaborations and strategic networking will be implemented and the core elements that make the topic tangible and enable the assessment of recyclability will be established. The core task of the programme is to anchor the concept of the circular economy in law, in funding requirements, tenders and award processes in such a way that from 2030 onwards, people think of and live out the circular economy concept as a natural part of the construction industry. Experts from business, science and administration will be involved in discussions. [www.wien.gv.at/bauen/dotankcircularcity/index.html](http://www.wien.gv.at/bauen/dotankcircularcity/index.html)



(non-profit) property developers and companies. Various municipal departments and research institutions also involved. The programme is accompanied by two work packages – one on monitoring and evaluation and the other on knowledge and innovation management.

#### Participating organisations:

Project partners of the Innerfavoriten mini-neighbourhood [wieneuplus.wien.gv.at/innerfavoriten](http://wieneuplus.wien.gv.at/innerfavoriten)

See also:

Grätzlmarie fund  
[www.wien.gv.at/amtshelfer/bauen-wohnen/wohnbautechnik/foerderungen/wienu-graetzlmarie.html](http://www.wien.gv.at/amtshelfer/bauen-wohnen/wohnbautechnik/foerderungen/wienu-graetzlmarie.html)

Grätzlförderung fund  
[www.wien.gv.at/amtshelfer/bauen-wohnen/wohnbautechnik/foerderungen/wienu-graetzlfoerderung.html](http://www.wien.gv.at/amtshelfer/bauen-wohnen/wohnbautechnik/foerderungen/wienu-graetzlfoerderung.html)

## WieNeu+

WieNeu+<sup>15</sup> (from the German for “like new”) is the City of Vienna’s ten-year urban renewal programme intended to help make each of Vienna’s traditional village-like neighbourhoods (known as Grätzl) climate-friendly and future-proof. Various projects are developed and implemented in cooperation with local players and the public. The programme supports participation and partnerships in the various target neighbourhoods.

The programme aims to help achieve Smart City goals such as reducing greenhouse gases and promoting innovation. The projects include the improvement and adaptation of building stock and associated infrastructure, energy supply, mobility, public space, social infrastructure and local supply. The participation and involvement of residents and users on site is a key element of the programme, as is the active transfer of knowledge at all levels. Circular economy, ecological building renovations, ground floor use, building cooling and exportable urban pioneering solutions are taken into account.

The aim is to make several of these neighbourhoods “climate and future-proof” within ten years. The project started in 2021 in Innerfavoriten, the next area starts in 2023 in adjacent mini-neighbourhoods across the 20th and 2nd districts. The City of Vienna is providing funding for the neighbourhoods as part of WieNeu+. The Grätzlmarie fund promotes very low-threshold citizen participation projects with a funding framework between €100 and €30,000. The Grätzlförderung fund supports owners who want to implement innovative solutions for future-proof and climate-friendly buildings. These are funded with up to €500,000 (funding ratios must be observed). Feasibility studies can also be funded.

The project is organised by Municipal Department 25 (Urban Technical Renewal), with various (local) actors,

## Ottakring Grätzl initiative

The Ottakring Grätzl initiative promotes overall district development through active economic policy and urban planning. The aim is to create lively centers and streets by using vacant space on the ground floor of buildings and more variety by opening spaces for small businesses and arts and crafts and creating attractive public spaces. All of this improves urban quality of life and helps achieve climate goals by reducing travel distances and surface sealing.

Existing companies (optimisation and attractiveness) and companies that want to settle (e.g. rental support) benefit from classic support measures (max. €10,000/year). Funding from the Grätzl Initiative does not disqualify applicants from accessing other Vienna Business Agency funding sources. In addition, a structural impetus is planned in the mini-neighbourhood by renting up to nine business premises. These are curated and sublet (50 per cent of the rent) to companies for a maximum of three years. In addition, each company can access an extensive consulting programme during the project period (three years). The focus is on companies in the EC zone. The Grätzl Initiative, initiatives by companies and civil society all enable measures in public spaces that are easy to implement.

15  
[wieneuplus.wien.gv.at](http://wieneuplus.wien.gv.at)

#### Participating organisations:

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

Local actors, municipal services, stakeholders

## Wiener Netze Smart Grid Lab – From ASCR research results to implementing a Wiener Netze Smart Grid for the people of Vienna

Wiener Netze is responsible for securely integrating e-mobility, PV systems, heat pumps, storage systems and smart buildings into their overall infrastructure (energy and IT). This turns the distribution network into a smart grid that can be intelligently adapted to the new, highly volatile framework conditions using sensors and actuators.

For this purpose, Wiener Netze and Siemens AG Austria developed and set up a smart grid laboratory through the research company Aspern Smart City Research (ASCR). The lab develops and tests all sub-elements of an intelligent distribution network, from the house connection to the transformer station and central data processing and integrates them into the rollout. Employees can also be trained here.

For this, ASCR research results from Seestadt and selected other test areas in Vienna are used, and the test sensors used are placed in a training transformer and tested for their suitability for productive use. At the same time, the data is used to generate new insights into network conditions and is immediately included in network planning and operational management.

Network technicians can find out about new software solutions, sensors and new ways of working, adapt them and try them out in a digital workspace. Furthermore, those responsible for operations can train for technical emergencies in the smart grid laboratory without risking undesirable effects or even failures in the real network. Cyber-attacks can be simulated and different attack scenarios can be loaded for trainees and solved virtually.

#### Participating organisations:

Wiener Netze  
[www.wienernetze.at](http://www.wienernetze.at)

Aspern Smart City Research  
[www.ascr.at](http://www.ascr.at)  
Siemens AG Österreich  
[new.siemens.com/at/de.html](http://new.siemens.com/at/de.html)

## aspern.mobil LAB

The urban mobility laboratory aspern.mobil LAB (AML)<sup>16</sup> supports the new district of aspern Seestadt on its journey to net-zero mobility and relies heavily on cooperation. In order to make an impact, the mobility transition, which is a challenge for all society, requires broad public support. Therefore, different actors (residents, companies, research, administration) and perspectives are included in the discussion about new mobility solutions.

Together, the various actors test new routines and initiatives, develop sustainable and innovative mobility cultures at a local level, unveil new visions and ramp up innovation processes. Because the mobility transition starts in the mind. And inclusion breeds acceptance, which in turn drives the will to change the tried and tested.

The aspern.mobil LAB team is diverse: Three research areas of TU Wien are on board, namely Wien 3420 aspern Development AG, aspern district management Seestadt and Urban Innovation Vienna. Additional partnerships with mobility laboratories in Austria and the EU broaden the lab’s reach. The lab also supports initiatives on the ground, such as local ideas competitions and Seestadt initiatives.

The AML has already built up a broad technical, social and organisational infrastructure on site that mediates between research and practice. For example, the “mobility survey aspern Seestadt”<sup>17</sup>, which has been running since 2019, supervises the district’s transition and records its effects on the mobility behaviour of the residents. Methodologically, the AML relies heavily on involving residents as experts in their own living environment, whereby gender-specific mobility requirements are also addressed. Seestadt gives residents the chance to accompany and actively shape the development of their district: the perfect test environment for future mobility.

16  
[www.mobillab.wien](http://www.mobillab.wien)

17  
[www.mobillab.wien/mobilitaetspanel](http://www.mobillab.wien/mobilitaetspanel)



**Participating organisations:**

TU Wien (Technical University of Vienna),  
Institute for Spatial Planning – Transport System Planning  
(MOVE), Faculty of Computer Science – Artefact-Based  
Computing and User Research (ACUR) and Institute for  
Spatial Planning – Law (Legal Studies)  
[www.tuwien.at](http://www.tuwien.at)

Wien 3420 aspern Development AG,  
aspern district management  
[www.aspern-seestadt.at](http://www.aspern-seestadt.at)

Urban Innovation Vienna  
[www.urbaninnovation.at](http://www.urbaninnovation.at)

## Multifunctional SeeHub office garage – compre- hensively digitised and energy-optimised

The multifunctional SeeHub building in Seestadt Aspern, financed by the List Group, not only includes 1,100 square metres of office space, a sports center and parking space for 440 cars, but also has an autonomous energy system. The energy supply for the entire building is based on alternative energy sources such as groundwater heat pumps for heating and cooling or solar technology. The building and the entire e-charging infrastructure are operated via an extended management system.

The e-charging infrastructure includes nine parking spaces with charging stations from different manufacturers, its own battery storage and a PV system. Free capacities are allocated to individual charging points by means of intelligent control, with office utilisation, the charging status of the connected vehicles and the PV yields. In the future, it will be possible to combine consumers, PV systems, e-charging stations and electrical storage systems to form renewable energy communities (EEG).

As part of the project, the organisations involved are focusing on how to design energy communities and local energy clusters and presenting technical, regulatory and administrative solutions. They are developing and implementing simulations and analyses to illustrate cost savings and spell out potential for future service businesses, a system prototype or demonstration. Due to various technical and organisational circumstances, the EEG was implemented at another location as part of the ASCR project.<sup>18</sup>

**Participating organisations:**

Aspern Smart City Research GmbH & Co KG  
[www.ascr.at](http://www.ascr.at)

Siemens  
[new.siemens.com/at/de.html](http://new.siemens.com/at/de.html)

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

Wiener Netze  
[www.wienernetze.at](http://www.wienernetze.at)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

Wien3420 Aspern Development  
[www.aspern-seestadt.at](http://www.aspern-seestadt.at)

Seepark Aspern ErrichtungsgmbH  
(List Gruppe)  
[www.list-group.at](http://www.list-group.at)





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#### Participating organisations:

Urban Innovation Vienna GmbH  
[www.urbaninnovation.at](http://www.urbaninnovation.at)

AIT  
[www.ait.ac.at](http://www.ait.ac.at)

Research Studios Austria  
[www.researchstudio.at](http://www.researchstudio.at)

netwiss OG  
[www.netwiss.at](http://www.netwiss.at)

tbw research GesmbH  
[www.tbwresearch.org](http://www.tbwresearch.org)

University of Innsbruck  
[www.uibk.ac.at](http://www.uibk.ac.at)

### thinkport VIENNA

thinkport VIENNA<sup>20</sup> is all about freight logistics. The urban mobility laboratory is a catalyst and multiplier for new technologies, services and processes in city logistics. This pioneering project develops, tests and implements freight logistics innovations in Vienna which are applicable to other European cities.

Thanks to the commitment of the institutions involved – Hafen Wien, Institute for Production Management and Logistics at the University of Natural Resources and Life Sciences, Vienna, and Heavy Pedals, this mobility laboratory combines know-how and network in an impartial, simple way and also has access to a real test environment at the Hafen Wien. The team behind thinkport VIENNA knows the research and company side of things and is also in close contact with representatives of the City of Vienna.

Increasing digitalisation, changing consumer behaviour, growing online trade and increasing delivery traffic are increasing traffic volumes in major cities. This affects the environment and thus the quality of life of residents. Since it was founded in 2017, thinkport VIENNA has supported a number of research and innovation projects and actively kick-started topics, including fully electric heavy-duty long-distance transport from Vienna to Graz, developing and testing a neutral and emission-free delivery service and cooperation with the City of Vienna's "DoTank Circular City Wien 2020–2030 (DTCC30)" programme on sustainable construction site logistics. The aim

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19  
[www.policy-lab.at](http://www.policy-lab.at)

20  
[www.thinkportvienna.at](http://www.thinkportvienna.at)

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## Mobility Policy Innovation Lab

The Mobility Policy Lab<sup>19</sup> is a support and advice platform for public authorities (municipalities, regions, cities, states, central government) who want to put innovative mobility policy concepts and findings from research and development into practice. Policy-Lab.at is funded by the Federal Research Promotion Agency and the Austrian federal government, with Urban Innovation Vienna GmbH (as the supporting organisation), AIT Austrian Institute of Technology, Research Studios Austria Forschungsgesellschaft mbH, netwiss OG, tbw research GesmbH and the University of Innsbruck also involved.

The concepts focus on preventing or shifting fossil-fuel traffic, promoting net-zero drive technologies and active mobility or shifting traffic towards environmental alliances. In other words, goals which can lead to a better quality of life in cities or help defuse conflicts over land use. The current focus topic for Vienna is, for example, operational mobility management.

A lack of data, fragmented landscape of actors, unclear federal responsibilities and complex sectoral dependencies often pose a major challenge. The lab helps to overcome these. Experts analyse the current situation, approaches, constellations and implementation barriers and take action. Depending on requirements, these are; analysing good practice, preparing bases for evidence- and data-based decisions, developing concepts and recommendations for action or implementing discussion procedures and participatory processes. This also includes impact simulations and impact assessments, including storytelling, narrative development and communication.



Thinkport © Eva Kelety

is to develop more innovation projects and to expand the network and community internationally. In addition, the aim is to consolidate thinkport VIENNA as a key facility in and around Vienna in the long term.

### Participating organisations:

BOKU  
[www.boku.ac.at/wiso/pwl](http://www.boku.ac.at/wiso/pwl)

Port of Vienna  
[www.hafen-wien.com](http://www.hafen-wien.com)

Heavy Pedals  
[www.heavypedals.at](http://www.heavypedals.at)

## Vienna – Out Of The Box

The Vienna – Out Of The Box<sup>21</sup> project creates interdisciplinary framework conditions for parcel logistics in Vienna with all relevant players involved. A network of generally accessible white label parcel boxes will be established for this purpose.

In 2021, the umbrella brand “WienBox” was launched as part of the project. Wiener Lokalbahnen, Wiener Stadtwerke, Gregori Consulting, Werner Klomfar, BFI Vienna Technical College, Vienna Chamber of Commerce, A1, City of Vienna Municipal Department 18 and thinkport Vienna are all involved. WienBox brings together all boxes that can be used by logistics service providers, companies and private individuals. White label boxes allow goods to be delivered freely without provider restrictions, unlike parcel boxes, which only allow delivery by a specific logistics service provider. The open systems make inner-city logistics more efficient and promotes local trading and service companies. The bundling of deliveries at publicly accessible box locations saves delivery trips to the “very last mile”, i.e. usually to the recipient’s front door, thus reducing CO<sub>2</sub>.

The project also serves to network the key stakeholders in the field of urban logistics. The “WienBox platform: The digital networking platform for city logistics” wants to link all the players involved in order to exploit the full potential of the white label boxes. Use cases are also tested, for example when involving local companies, such as service orders (clothes for cleaning, mobile phone repair) or the collection of goods.

### Participating organisations:

Wiener Lokalbahnen  
[www.wlb.at](http://www.wlb.at)

Wiener Stadtwerke  
[www.wienerstadtwerke.at](http://www.wienerstadtwerke.at)

GREGORI Consulting  
[www.gregori.cc](http://www.gregori.cc)

BFI Vienna Technical College  
[www.fh-vie.ac.at](http://www.fh-vie.ac.at)

Vienna Chamber of Commerce  
[www.wko.at](http://www.wko.at)

A1  
[www.a1.net](http://www.a1.net)

City of Vienna Municipal Department 18  
[www.wien.gv.at](http://www.wien.gv.at)

thinkport Vienna  
[www.thinkportvienna.at](http://www.thinkportvienna.at)

## Öffi-Packerl – parcels on public transport

In the Öffi-Packerl project<sup>22</sup>, a consortium led by Fraunhofer Austria is researching and testing the possibility of transporting parcels on Vienna’s trams. The parcel couriers are the tram passengers, who actively take parcels with them on the tram and return them to parcel and envelope boxes at tram stops.

The plan is to set up white label parcel boxes at certain tram stops. Desired routes for passengers and parcels will be matched in an app, in which Wiener Linien passengers can register for the system as parcel carriers. Parcel removals and deposits at parcel stations are processed via a QR code, which links the parcel to the passenger delivering it throughout the journey.

21

[www.wienbox.at](http://www.wienbox.at)

22

[www.wienerlinien.at/Öffi-packerl-fraunhofer](http://www.wienerlinien.at/Öffi-packerl-fraunhofer)

A feasibility study has shown that passengers are very interested in climate-friendly parcel delivery. However, there is still work to be done: Passenger flows are being analysed to identify suitable tram lines and positions for the parcel stations. In addition, development has started on an app and the parcel stations, which, thanks to solar energy will also work without a power connection. The project is funded by the Austrian Research Promotion Agency (FFG). [www.wienerlinien.at/Öffi-packerl-fraunhofer](http://www.wienerlinien.at/Öffi-packerl-fraunhofer)

### Participating organisations:

Wiener Linien  
[www.wienerlinien.at](http://www.wienerlinien.at)

Fraunhofer Austria Research GmbH  
[www.fraunhofer.at](http://www.fraunhofer.at) (Konsortialführer)

FFG  
[www.ffg.at](http://www.ffg.at)

GRT Spedition und Logistik Ges.mbH  
[www.grt.at](http://www.grt.at)

Malerei Grossbötzl GmbH  
[www.grossboetzl.at](http://www.grossboetzl.at)

netwiss OG  
[www.netwiss.at](http://www.netwiss.at)

Österreichische Post AG  
[www.post.at](http://www.post.at)

TU Wien – Institut Computertechnik  
[www.ict.tuwien.ac.at](http://www.ict.tuwien.ac.at)

Upstream – next level mobility GmbH  
[www.upstream-mobility.at](http://www.upstream-mobility.at)

Variocube GmbH  
[www.variocube.com](http://www.variocube.com)

## Center of excellence for electric and hydrogen drives

In the meantime, 426 eco-friendly Euro 6 buses and twelve electric buses in the city get almost 200 million passengers to their destinations every year. The inner-city lines 2A and 3A have been completely converted to 8-metre electric buses since 2013. Twelve-metre e-buses are also being tested – including vehicles from Mercedes, Irizar, Ebusco, Solaris, Silent, Dragon and MAN. A total of 60 e-buses are to go into

service from 2023, even in outer districts and to Schwechat. The charging options for the e-buses will be expanded accordingly. A battery tow truck is also planned.

Wiener Linien has already tested a 12-metre hydrogen bus on line 39A and another throughout the city. The findings led to the fundamental decision to convert the drive technology of articulated buses to hydrogen from 2027. The mega filling station in Leopoldau is a joint project of Wiener Linien with Wien Energie and Wiener Netze as future partners. The conversion of route 39A to hydrogen will start from 2023. Ten 12-metre hydrogen buses will be used. In addition to the two vehicles from the manufacturers Solaris and Hyundai, a third hydrogen test bus from the company Caetano will soon be in use. Wiener Linien is therefore testing all three available fuel cell manufacturers. A 3 MW electrolysis plant with a connected hydrogen filling station is also currently being built on the Wiener Netze campus.

### Participating organisations:

Wiener Linien  
[www.wienerlinien.at](http://www.wienerlinien.at)

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

Wiener Netze  
[www.wienernetze.at](http://www.wienernetze.at)

Maximator  
[www.maximator-ht.com](http://www.maximator-ht.com)

## VRVis K1 Centre for Visual Computing

Around 70 researchers are working at the interface between science and industry as part of the VRVis K1 COMET Center for Visual Computing.<sup>23</sup> Technological innovations in the fields of artificial intelligence (AI), visual data analytics, XR and simulation strengthen companies in various industries. In the coming years, VRVis will work on visual computing's key role in human-centric artificial intelligence, for which a new data science and AI lead team has been established to coordinate these technologies across all areas. Establishing and further developing the growing research field of immersive analytics (visual data analysis in virtual space) is another area of focus, as are the topics of Tech4Green and sustainable solutions.

New technological developments produce more and more data, more quickly and with more variety. This requires new solutions to meet the challenges that arise (e.g. in the areas of healthcare, infrastructure and urban planning, industrial production, energy management and disaster management). Together with the scientific partners and company partners, the VRVis is working on research topics and developing practical methods, which, for example, improve digital radiology and make AI more trustworthy in medicine, save people from floods or make cars more efficient.

VRVis can bring about innovations in almost every area of industry, society and the economy. The success factors of the VRVis are the resulting software packages and applications and the many long-established partnerships with first-class scientific players from a large number of specialist areas.

23

[www.vrvis.at](http://www.vrvis.at)

### Participating organisations include:

VRVis Center for Virtual Reality and Visualisation  
[www.vrvis.at](http://www.vrvis.at)

Agfa HealthCare NV  
[www.agfa.com](http://www.agfa.com)

Austrian Power Grid  
[www.apg.at](http://www.apg.at)

AVL List  
[www.avl.com](http://www.avl.com)

Blackshark.ai  
[www.blackshark.ai](http://www.blackshark.ai)

GE Healthcare Austria GmbH & Co OG  
[www.ge.com/at](http://www.ge.com/at)

ÖBB Infra  
[infrastruktur.oebb.at](http://infrastruktur.oebb.at)

RHI Magnesita  
[www.rhimagnesita.com](http://www.rhimagnesita.com)

Zumtobel Lighting  
[www.zumtobel.com](http://www.zumtobel.com)

AIT  
[www.ait.ac.at](http://www.ait.ac.at)

TU Wien  
[www.tuwien.at](http://www.tuwien.at)

University of Vienna  
[www.univie.ac.at](http://www.univie.ac.at)

Austrian Research Promotion Agency  
[www.ffg.at](http://www.ffg.at)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

## Vienna's digital twin

The city's extensive data is being used to create a digital virtual mirror image of the City of Vienna. The digital twin will enable the acquisition and modelling of interactions between urban buildings and processes. It builds on the ViennaGIS geodata budget and the data from specialist applications that several departments have managed for decades and improves their quality and integration.

Surveyors are already working on the "digital geo twin", a virtual, semantic 3D city model that contains all of the city's buildings. It can be used to derive the basic geodata required for Vienna and to guarantee coherence in terms of content and time. Linking the objects of the digital geo twin with other data and information, such as demographic and socio-economic data, energy consumption and maintenance management, sensor data and real-time data of the Internet of Things, creates a City Information Model (CIM) for planning and simulation as the basis of a "living" digital twin of Vienna.

This twin will serve as the basis for city management and is also essential for improved planning and simulation of developments. This makes it possible to reduce risks and improve the acceptance of projects through optimised communication and transparency. Planning and projects, both in Vienna and elsewhere, can be supported in many areas, including urban development, energy, transport and environment.

### Participating organisations:

Municipal Directorate of the City of Vienna  
Division Organisation and Security /  
Process Management and ICT Strategy group

Municipal Directorate Division Buildings and Technology /  
Center of Excellence for Urban Planning,  
Smart City Strategy, Participation, Gender Planning

Municipal Department 01 – Vienna Digital

Municipal Department 23 – Economy, Labour and Statistics

Municipal Department 41 – Surveying  
[www.wien.gv.at](http://www.wien.gv.at)

## BRISE Vienna

BRISE<sup>24</sup> is regarded as a pioneering research and development project for smart administration in Europe. By using a combination of several technologies and a digital process flow, the City of Vienna is making construction processes faster, more efficient, more sustainable and more transparent.

The most innovative technologies, such as 3D building modelling (BIM), augmented reality, robotics and artificial intelligence, contribute to this. A fully digital approval process will save everyone involved time and money in the future. BRISE connects science, business, citizens and administration at the highest level and sets new standards for building submission and approval processes.

BRISE was the winner of the submission as part of the EU initiative Urban Innovative Actions (UIA). The project's unique approach involves the holistic merging of technical and organisational aspects. The further development of ICT infrastructure and software with the help of AI, AR, BIM, etc. is always done with a focus on practical application including processes, responsibilities and organisational issues such as the establishment of digital organisational units within municipal departments.

The City of Vienna processes around 13,000 building project submissions every year. BRISE can accelerate building applications by up to 50 per cent. The project is considered a prime example of efficient, user-friendly e-government.

### Participating project partners include:

City of Vienna  
[www.wien.gv.at](http://www.wien.gv.at)

TU Wien  
Institute for Interdisciplinary Construction Process Management, Department of Construction Operations and Construction Process Engineering  
[www.tuwien.ac.at](http://www.tuwien.ac.at)

Office for Digital Engineering (ODE)  
[www.ode.or.at](http://www.ode.or.at)

Chamber of Civil Engineers,  
Architects and Engineers in Vienna,  
Lower Austria and Burgenland  
[wien.arching.at/home.html](http://wien.arching.at/home.html)

WH Media GmbH  
[www.wh-m.at](http://www.wh-m.at)

24

[www.digitales.wien.gv.at/site/projekt/brisevienna](http://www.digitales.wien.gv.at/site/projekt/brisevienna)





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## Digital building commissioning for the Vienna Business Agency Technology Center

With a pilot project on a specific building, Seestadt Aspern is testing how to commission a building more efficiently, quickly and networked through the use of intelligent software in a pilot project on a specific building. Those responsible for buildings should in future use Building Information Modelling (BIM) to avoid potential problems in facility management.

The large number of people involved in a construction project – builders, planning, construction, installations, commissioning, management, use – entails many interfaces. An intelligent building data model can map the entire life cycle of a building and make information equally accessible for everyone involved. A project of the Vienna Business Agency with Aspern Smart City Research (ASCR)<sup>25</sup>, Siemens AG Austria and Wien Energie is developing a BIM system for a specific building in Seestadt.

All relevant processes, from monthly status report planning and execution to commissioning, are digitised and inter-linked so that technical commissioning is consistently digital, easier and the building can be handed over to customers faster. The project focuses on the essential expansion of the interfaces and the further development of the entire software system and to coordination with the underlying BIM model. One key research area is the creation of a Common Data

Environment (CDE) for the operational phase. This has already been thoroughly researched in a pre-project of the ASCR (“Digital Building Twin”) and is to be tailored to the technical and economic requirements of facility management.

### Participating organisations:

Aspern Smart City Research  
[www.ascr.at](http://www.ascr.at)

Siemens AG Österreich  
[new.siemens.com/at/de.html](http://new.siemens.com/at/de.html)

Wien Energie  
[www.wienenergie.at](http://www.wienenergie.at)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

25  
[www.ascr.at](http://www.ascr.at)

## Building Information Modelling (BIM) in the Technology Center Seestadt construction project Part 3 (TZ3)

In the third expansion phase of the Technology Center Seestadt<sup>26</sup>, Aspern Smart City Research GmbH & Co KG (ASCR) is carrying out a pilot and research project for the application of Building Information Modelling (BIM). The application and development of BIM-supported planning and construction are being examined in a building construction project use case. A simulated preliminary commissioning of the building technology systems with the help of a digital twin is also included.

The WA Business and Service Center GmbH project focuses on three use cases. The first use case considers the BIM concept in the context of the public awarding of construction contracts under the Federal Procurement Act (BVerG), while the second concerns the analysis of the planning and execution process, which includes the BIM-supported execution planning of the general planner as well as the BIM-supported work and installation planning by the executing company to create the digital building twin.

The third use case relates to the preliminary commissioning or simulation of the building technology systems based on the digital building model. This boosts research into and further development of measurement, control and regulation technology-related planning and commissioning processes and the relevant software tools and interfaces. The digital simulation of the building services system should enable early error corrections and better planning. Enriching the BIM model with the relevant data should minimise information losses between engineering and commissioning.

### Participating organisations:

WA Business and Service Center GmbH  
[viennabusinessagency.at](http://viennabusinessagency.at)

Aspern Smart City Research (ASCR)  
[www.ascr.at](http://www.ascr.at)

26  
[viennabusinessagency.at/immobilien/technologiezentrum-seestadt/technologiezentrum-seestadt](http://viennabusinessagency.at/immobilien/technologiezentrum-seestadt/technologiezentrum-seestadt)

## futureEDUCATION Award

Overcoming the climate crisis requires people with the necessary expertise in technical and scientific issues. Although everyone is talking about the shortage of skilled workers, the number of young people who decide to pursue training and career paths in the STEM disciplines (science, technology, engineering and mathematics) is stagnating. That is why there is a demand for educators who can talk about STEM topics in everyday pre-school and school activities in a way that arouses curiosity and enthusiasm in children.

With the futureEDUCATION Award, the Vienna Business Agency wants to motivate prospective educators to devote their degree theses to the question of how they can arouse interest in STEM topics in children. The award is given for the best theses and projects by students and graduates of educational institutions in Vienna.

The degree theses and project work should specifically deal with the following issues: How can educators inspire enthusiasm for STEM topics? How can we strengthen children's confidence in their own skills and dismantle STEM-related gender stereotypes and social inequalities in pre-school and school education? All teacher training colleges and universities in Vienna are involved in the project, motivating the students to participate and nominating the best theses and projects. Companies such as Erste Group, Austrian Standards International, ÖBB Infrastructure, Verlag Holzhausen, AK Vienna and Vienna Airport donate prize money for the winners.

### Participating organisations:

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

Verlag Holzhausen GmbH  
[www.verlagholzhausen.at](http://www.verlagholzhausen.at)

Erste Bank der österreichischen Sparkassen AG  
[www.sparkasse.at/erstebank/privatkunden](http://www.sparkasse.at/erstebank/privatkunden)

Vienna Chamber of Labour  
[wien.arbeiterkammer.at/index.html](http://wien.arbeiterkammer.at/index.html)

Austrian Standards plus GmbH  
[www.austrian-standards.at](http://www.austrian-standards.at)

ÖBB Infrastruktur AG  
[infrastruktur.oebb.at](http://infrastruktur.oebb.at)

Flughafen Wien AG  
[www.viennaairport.com](http://www.viennaairport.com)

Vienna Chamber of Commerce and Industry  
[www.wko.at/service/w/wirtschaftskammer.html](http://www.wko.at/service/w/wirtschaftskammer.html)

Educational Institute for Elementary Pedagogy BAFEP Kenyongasse  
[www.kenyon.at/bafep](http://www.kenyon.at/bafep)

Educational Institute for Elementary Pedagogy BAFEP Maria Regina  
[www.mariaregina-clarafey.at/bafep](http://www.mariaregina-clarafey.at/bafep)

BAFEP8  
[www.bafep8.at](http://www.bafep8.at)

BAFEP10  
[www.bafep10.at](http://www.bafep10.at)

BAFEP21  
[www.wien.gv.at/bildung/kindergarten/arbeit-kindergarten/bafep/bafep21/index.html](http://www.wien.gv.at/bildung/kindergarten/arbeit-kindergarten/bafep/bafep21/index.html)

University College of Christian Churches of Teacher Education Vienna/Krems  
[kphvie.ac.at](http://kphvie.ac.at)

College for Teacher Training Vienna  
[phwien.ac.at](http://phwien.ac.at)

## Implementation of the Vienna University Cooperation Agreement

The universities in Vienna and the City of Vienna are committed to promoting Vienna as a university location.<sup>27</sup> This includes participation in public debates, interdisciplinary cooperation, art and culture, research with a connection to Vienna and dialogue with the public administration. In this context, the City of Vienna will support the universities in their search for suitable locations for their institutions.

In coming years, research projects will be developed and implemented in cooperation with the universities in line with the goals of the Smart City Wien Framework Strategy. This will see findings and innovations applied on-site, the know-how of Vienna's universities expanded through cooperation with the City of Vienna and regional companies, and support encouraged for university spin-offs.

More discussions for evidence-based decision-making for policies are also planned. The aim is to arouse enthusiasm for science, research and technology, as well as art and culture among Vienna's population. It is also important to motivate Vienna's young people to pursue an apprenticeship and career in this field. Ultimately, Vienna should also be made more well-known abroad as a research and innovation location to attract talent and international R&D units and initiate international cooperation.

### Participating organisations include:

City of Vienna  
Magistrate Directorate Federal Research and Training Center for Forests, Natural Hazards and Landscape, Municipal Departments 23 & 7 Department of Science and Research Funding  
[www.wien.gv.at](http://www.wien.gv.at)

Vienna Science and Technology Fund  
[www.wwtf.at](http://www.wwtf.at)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

## Target Group Foundation Youth & Future Professions

The waff target group foundation Jugend & Zukunftsberufe (Youth & Future Professions), in cooperation with the Austrian Public Employment Service in Vienna and the Vienna

Chamber of Labour, enables young Viennese (18 to 25) to complete their training or vocational training in the spectrum of "professions of the future". The focus is on those who were unable to complete their apprenticeship or training due to COVID-19 and other young unemployed Viennese.

In the employment foundation, individual action plans are drawn up with the participants, which are aimed at continuing their training or a professional reorientation in occupations where there is a particular demand in Vienna. This refers to legally regulated health and care professions, medical assistance and social care professions, professions in the IT sector, in the commercial and organisational sector with aspects of digitisation, in environment, climate, energy, resource conservation, sustainable building etc. in the areas of education and social affairs.

Possible training includes courses or vocational school attendance to obtain an apprenticeship certificate, vocational school/university certificates, schools for health and social professions, university training, colleges and technical colleges, and other specialist courses. While participating in the foundation's activities, they receive a training unemployment benefit equal to their unemployment benefit entitlement plus a monthly allowance. The training costs are borne in full. The length of stay at the foundation can be up to four years and includes career orientation, training plan preparation, the training itself and the job search phase.

### Participating organisations:

waff  
Vienna Employment Promotion Fund  
[www.waff.at](http://www.waff.at)

Public Employment Service Vienna  
[www.ams.at](http://www.ams.at)

Vienna Chamber of Labour  
[wien.arbeiterkammer.at/index.html](http://wien.arbeiterkammer.at/index.html)

## Securing skilled workers in Vienna

The project "Securing skilled workers in Vienna" has two goals: to ensure a supply of qualified workers in the context of the medium and long-term development perspectives of the Viennese employment system and to improve the professional development opportunities of employees in Vienna. The establishment of a specialist center at waff will lay the empirical and strategic foundations and establish a structured



problem-solving process. The project to secure skilled workers is anchored in the present government programme.

The plan is for the future specialist center to also offer concrete support for companies and ensure systematic communication with the employment system and other relevant stakeholders. The project aims to create synergies through cooperation with the actors in the field of skilled worker recruitment. Three working groups have been formed for the topics: The Requirement Forecasts working group focuses on the necessary instruments and studies oriented towards establishing future skilled labour requirements across specific regions and industries.

The "Strategic Options for Action" working group (waff) is developing a handbook with basic options for action. The Development and Further Development of Support Offers for Securing Skilled Workers working group (waff, Public Employment Service Vienna) examines the existing support packages and identifies further development needs and options. All qualification levels and all employment segments (private economy, community economy, social economy and public service) are covered. In terms of content, the focus is on changes in the labour market in connection with climate protection, digitisation and services of general interest.

#### Participating organisations:

waff  
[www.waff.at](http://www.waff.at)

Austrian Trade Union Confederation  
[www.oegb.at](http://www.oegb.at)

Vienna Chamber of Labour  
[wien.arbeiterkammer.at/index.html](http://wien.arbeiterkammer.at/index.html)

Vienna Chamber of Commerce and Industry  
[www.wko.at](http://www.wko.at)

Federation of Austrian Industry Vienna  
[wien.iv.at](http://wien.iv.at)

Representatives of the City of Vienna,  
Municipal Department 23 – Economics, Labour  
and Statistics  
[www.wien.gv.at](http://www.wien.gv.at)

Public Employment Service Vienna  
[www.ams.at](http://www.ams.at)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

## Training initiative for women in digitalisation, sustainability and technology

waff is supporting digitisation, sustainability and technology in a training initiative. In concrete terms, working women who are curious about part-time technical college studies in this area are made aware, motivated and supported.<sup>28</sup> The waff finances a grant for subsistence, pre-qualification courses and, if necessary, additional university places.

waff's goal is to make it easier for Viennese employed people to access tertiary training in digitalisation, sustainability and technology. The aim is to increase the proportion of women in these subjects and degrees – and thus job and career opportunities. waff collaborates with universities of applied sciences and Viennese companies such as Wiener Stadtwerke, Magenta, Atos or Mondi, which are looking for skilled workers and are actively working on gender diversity, to increase the proportion of women on staff, and are thus also as role models for the industry.

The programme includes advice and a clearing phase with in-depth professional orientation, compatibility checks, financing and pre-qualification needs. There are also plans to hold information events and workshops in cooperation with universities of applied sciences, companies and role models, coaching and networking. There is decision-making, application and pre-qualification support in preparation for the university of applied sciences assessment. The scholarship is €10,000 for a bachelor's degree and €7,500 for a master's degree.

#### Participating organisations:

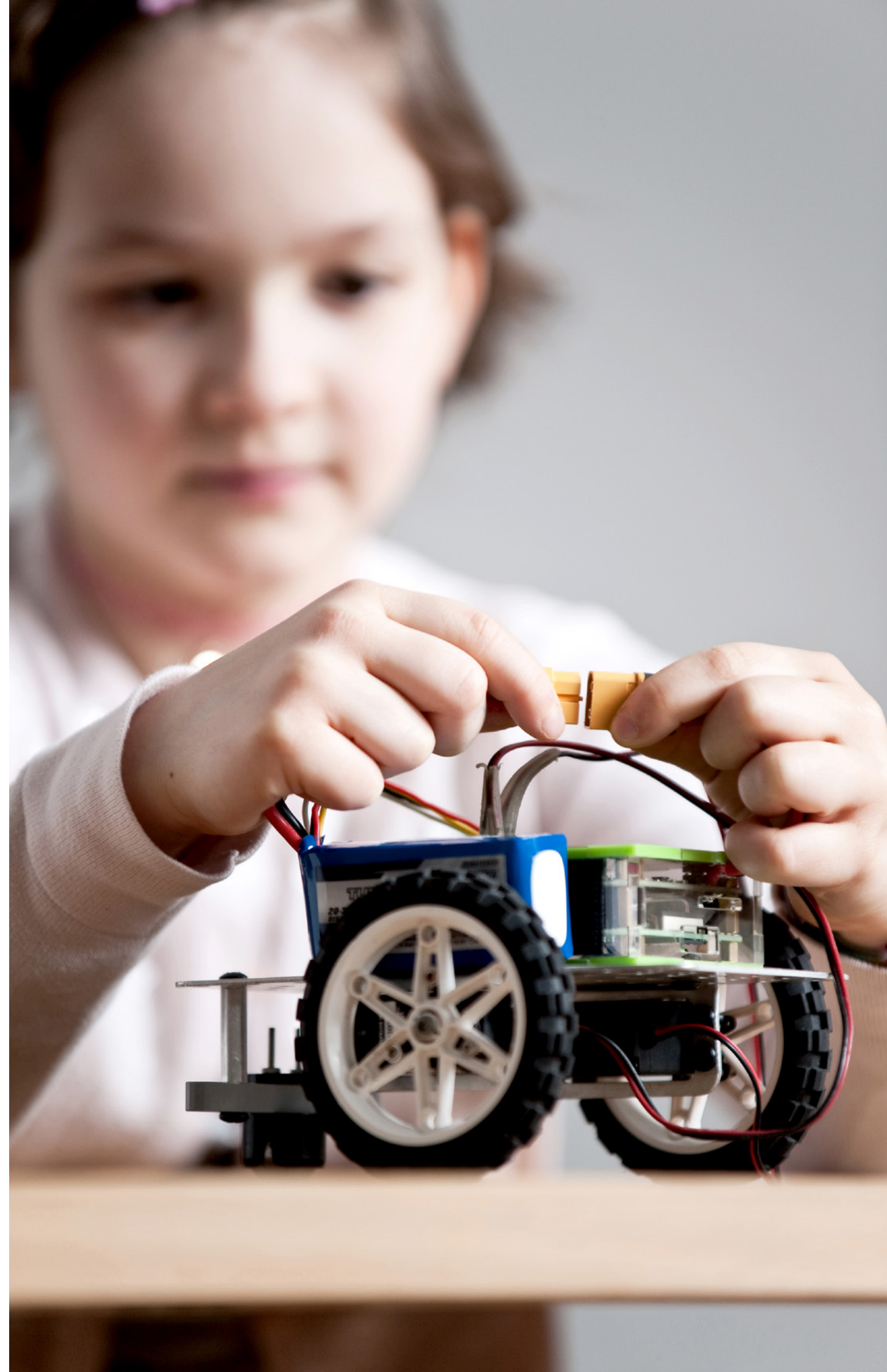
waff  
[www.waff.at](http://www.waff.at)

University of Applied Sciences  
Technikum Vienna  
[www.technikum-wien.at](http://www.technikum-wien.at)

University of Applied Sciences  
Campus Vienna  
[www.fh-campuswien.ac.at](http://www.fh-campuswien.ac.at)

BFI Vienna Technical College  
[www.fh-vie.ac.at](http://www.fh-vie.ac.at)

University of Applied Sciences  
FH Wien der WKW  
[www.fh-wien.ac.at](http://www.fh-wien.ac.at)



## The Vienna Research Festival

The Vienna Research Festival<sup>29</sup> has been taking place every two years since 2008 and aims to provide interested visitors of all ages with an interactive experience of future-oriented innovations, developments and research projects in Vienna. It is organised by the Vienna Business Agency in cooperation with companies, universities, technical colleges and the city administration.

The large hands-on exhibition is rounded off by an extensive workshop programme, a separate “under-age-6” area for the youngest researchers, plus gastronomic offers. Visitors can experience research and development from Vienna up-close at interactive stations and speak to researchers face-to-face. This can help reduce anxieties and shed light on exciting new professional fields in the field of innovation. Girls and women in particular can get to know female role models from R&D&I when speaking to exhibitors.

In particular, the event also shows solutions to the major challenges of the future: from technologies towards a net zero city, digital innovations to increase quality of life to new achievements in life sciences. The last event in 2022 saw the inaugural futureEDUCATION Award. This prize is awarded to educators who have already devoted themselves to teaching STEM, i.e. science, technology, engineering and mathematics, in their final degree theses and project work. The next Vienna Research Festival will take place in 2024.

### Participating organisations:

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

Federation of Austrian Industry Vienna  
[wien.iv.at](http://wien.iv.at)

Various research institutions  
and companies

### Participating organisations include:

CDP Center for Digital  
Production GmbH  
[www.acdp.at](http://www.acdp.at)

TU Wien  
[www.tuwien.at](http://www.tuwien.at)

Vienna University of  
Economics and Business  
[www.wu.ac.at](http://www.wu.ac.at)

v-research  
[www.v-research.eu](http://www.v-research.eu)

Swiss Federal Institute of  
Technology Zurich  
[www.ethz.ch](http://www.ethz.ch)

Otto von Guericke  
University of Magdeburg  
[www.ovgu.de/en](http://www.ovgu.de/en)

EVVA  
[www.evva.com](http://www.evva.com)

ENGEL  
[www.engelglobal.com](http://www.engelglobal.com)

ATOS  
[www.atos.net](http://www.atos.net)

Klatt Fördertechnik  
[www.klatt.at](http://www.klatt.at)

Austrian Research Promotion  
Agency  
[www.ffg.at](http://www.ffg.at)

Vienna Business Agency  
[www.wirtschaftsagentur.at](http://www.wirtschaftsagentur.at)

## Center for Digital Production

The Comet Austrian Center for Digital Production (CDP)<sup>30</sup> is dedicated to research and development of technologies for the digitalisation and automation of discrete manufacturing and production processes. A special focus is on supporting companies that typically produce in small to medium-sized batches.

The center at the Seestadt Aspern site collaborates with leading research institutions in the DACH (Germany, Austria, Switzerland) region. The research programme's projects are also defined in terms of topics that would bring the greatest benefit potential for the operational implementation of Industry 4.0.

CDP studies simulation-based, tactically usable forecasts of production system behaviour (digital twin), whereby simulation models are coupled with the physical production system. Another topic is adaptive process control, reconfiguration and prediction for smart factories: The core technologies developed should allow for the flexible configuration of heterogeneously composed manufacturing infrastructures (first time right manufacturing).

As part of production process orchestration, CDP is developing a process-based framework with which business processes can be transferred directly from graphic modelling to executable software artefacts. Other fields include production data integration & analytics, as well as support for sustainability goals in the context of circular economy, resource conservation and functional safety.



## EIT Manufacturing Co-Location Center (CLC) East in Vienna

EIT Manufacturing<sup>31</sup> is a knowledge and innovation community supported by the European Institute for Innovation and Technology (EIT), an institution of the European Union that promotes the establishment of a Europe-wide network of companies, research and educational institutions to promote innovation projects, start-ups and educational initiatives. The aim of EIT Manufacturing is to equip production in Europe for growing global competition and to make it socially and ecologically sustainable.

EIT Manufacturing connects and integrates the three areas of the knowledge triangle in its activities: innovation, education and business development. Innovation supports the European manufacturing companies of all sizes, universities and research and technology organisations in the industrialisation of innovative projects. Education promotes industry-relevant education and training and aims to empower Europe with people who are capable and motivated to shape the future of manufacturing. The Business Creation team supports fast-growing, profitable and socially effective companies creating innovative solutions and future-oriented technologies. In addition, the Regional Innovation Scheme (RIS) empowers countries with moderate or moderate innovation capacity through targeted programs and initiatives.

EIT Manufacturing is the largest innovation network for the manufacturing industry in Europe. In addition to its headquarters in Paris (France), EIT Manufacturing is represented at six locations in Europe: Athens (Greece), Darmstadt (Germany), Gothenburg (Sweden), Milan (Italy), San Sebastian (Spain) and Vienna (Austria). The Austrian branch of EIT Manufacturing, the Co-Location Center East, was founded in Vienna in 2020 and manages the activities and initiatives of EIT Manufacturing in seven countries in central and eastern Europe: Croatia, Austria, Serbia, Slovakia, Slovenia, Czech Republic and Hungary.

### Participating organisations in Austria:

European Institute of Technology  
[eit.europa.eu](http://eit.europa.eu)

ATOS  
[www.atos.net](http://www.atos.net)

magna  
[www.magna.com](http://www.magna.com)

voestalpine High Performance Metals  
[www.voestalpine.com](http://www.voestalpine.com)

TU Wien  
[www.tuwien.at](http://www.tuwien.at)

Joanneum Research  
[www.joanneum.at](http://www.joanneum.at)

Supported by:

Austrian Federal Ministry of Employment and Economic Affairs  
[www.bmaw.gv.at](http://www.bmaw.gv.at)

Austrian Federal Ministry of Education, Science and Research  
[www.bmbwf.gv.at](http://www.bmbwf.gv.at)

Austrian Federal Ministry for Climate Protection, Environment, Energy, Mobility, Innovation and Technology  
[www.bmk.gv.at](http://www.bmk.gv.at)

Austrian Research Promotion Agency  
[www.ffg.at](http://www.ffg.at)

Vienna Business Agency  
[viennabusinessagency.at](http://viennabusinessagency.at)

## AI-driven digital transformation of SMEs – towards Industry 5.0 production processes (AI5production)

The European Digital Information Hub (EDIH) AI5production by TU Wien is a local point of contact to support the digital transformation, especially for small and medium-sized manufacturing companies in Vienna, Upper Austria and Lower Austria. Together with companies and research institutions, it offers training courses, support in production process digitisation and investor searches and access to a network of experts.

The aim of the hub is to strengthen the Industry 4.0 maturity of local small and medium-sized companies in the region and to convert them into Industry 5.0 companies. An experienced consortium offers an established test-before-invest infrastructure as well as excellent services and support in artificial intelligence, design, digital production and cyber security. Two pilot factories are involved – the Pilot Factory 4.0 of TU Wien and the LIT Factory of Johannes Kepler University of Linz. The entire consortium consists of five centers of excellence for excellent technologies, three non-university

31  
[www.eitmanufacturing.eu](http://www.eitmanufacturing.eu)



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research institutions, three universities, two industrial partners, a start-up center and the Industry 4.0 Austria platform and EIT Manufacturing East.

### Participating organisations:

TU Wien  
[www.tuwien.at](http://www.tuwien.at)

CDP Center for Digital Production Gmbh  
[www.acdp.at](http://www.acdp.at)

Industry 4.0 Austria  
[www.plattformindustrie40.at](http://www.plattformindustrie40.at)

Johannes Kepler University Linz  
[www.jku.at](http://www.jku.at)

Linz Center of Mechatronics GmbH  
[www.lcm.at](http://www.lcm.at)

Profactor GmbH  
[www.profactor.at](http://www.profactor.at)

SCCH Software Competence Center Hagenberg GmbH  
[www.scch.at](http://www.scch.at)

VrVis Center for Virtual Reality and Visualization Forschungs-GmbH

[www.vrvis.at](http://www.vrvis.at)  
EIT Manufacturing East GmbH  
[www.eitmanufacturing.eu](http://www.eitmanufacturing.eu)

FILL Gesellschaft mbH  
[www.fill.co.at](http://www.fill.co.at)

AIT Austrian Institute of Technology GmbH  
[www.ait.ac.at](http://www.ait.ac.at)

LKR Light Metal Competence Center Ranshofen  
[www.ait.ac.at](http://www.ait.ac.at)

RIC (Regionales Innovations Centrum) GmbH  
[www.ric.at](http://www.ric.at)

University of Vienna  
[www.univie.ac.at](http://www.univie.ac.at)

SBA Research Gemeinnützige GmbH  
[www.sba-research.org](http://www.sba-research.org)

INITS Universitäres Gründerservice Wien GmbH  
[www.inits.at](http://www.inits.at)

Ars Electronica Linz GmbH & Co KG  
[www.ars.electronica.at](http://www.ars.electronica.at)

Austrian Research Promotion Agency  
[www.ffg.at](http://www.ffg.at)



The objective of the Vienna Business Agency is the continuous development of international competitiveness by supporting both Vienna-based companies and their innovative strengths, and the sustainable modernization of the city as a business location. To achieve this, the Agency provides free consultations to all entrepreneurs in Vienna on the topics of business creation, business location or expansion, business support and financing. Furthermore, networking contacts in the Viennese economy are also made available.

The Vienna Business Agency supports and helps businesses complete their research and development projects with both individual consulting and monetary funding. Depending on requirements, they will receive information about sponsorships, financing opportunities, possible development partners, research service providers, or research infrastructure, according to their needs.

The Vienna Business Agency sees itself as a network of the Viennese Green Tech & Social Tech industry and supports businesses with consultations, as well with distribution and networking among themselves. Events and workshops on topics from the sustainability sector are held regularly.

Additionally, the Vienna Business Agency helps with company relocations or internationalization services. Assistance is provided to business founders and young entrepreneurs in the start-up area. Free workshops and training sessions on topics of everyday business are offered as well as small, affordable office spaces.

Founders Labs<sup>32</sup> support aspiring entrepreneurs and founders with a two-month, part-time program to help them get started.

All funding programs of the Vienna Business Agency can be found here: [viennabusinessagency.at/funding/programs](https://viennabusinessagency.at/funding/programs)

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[viennabusinessagency.at/startup-and-grow/lets-talk-founding-1/founders-lab](https://viennabusinessagency.at/startup-and-grow/lets-talk-founding-1/founders-lab)





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## Design

seitezwei.com

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## Producer, Production site

Print Alliance HAV Produktions GmbH  
2540 Bad Vöslau



printed according to the Austrian  
Ecolabel criteria for printed matter  
(UZ 24), UW-Nr. 715



**Klimaneutral**  
Druckprodukt  
ClimatePartner.com

**REACT-EU** ALS TEIL DER  
REAKTION DER UNION AUF DIE  
COVID-19-PANDEMIE FINANZIERT.



Europäische Union Investitionen in Wachstum & Beschäftigung, Österreich.

The Project "Fit für die Zukunft" contributes to the development of corporate research and innovation activities in Vienna, encourages cooperation and awakes enthusiasm for research and innovation among young Viennese. Additional information on the [www.efre.gv.at/en](http://www.efre.gv.at/en)

The information in this document is subject to change without notice. The Vienna Business Agency does not assume any liability for mistakes or typesetting and printing errors.

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## Media owner, Publisher

Vienna Business Agency.  
A service offered by the City of Vienna.  
Mariahilfer Strasse 20  
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Alexandra Roth and Stefan Thaler from APA together with the Vienna Business Agency

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## Photos

Cover: ATPWien/Kurt Kuball  
Vienna Business Agency/Karin Hackl



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Technologie Reports gibt es zu den Themen:

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The digital version can be found at  
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business  
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