

Press Release

Vienna, 22 January 2021

BEST PRACTICE FOR CLIMATE-FRIENDLY PRODUCTION

- AIT and Takeda develop decarbonization concept for Takeda production site in Vienna
- Optimization of plant operation and use of more efficient equipment enable a 15% reduction of CO2 emissions

The optimisation of energy consumption and the associated reduction of greenhouse gas emissions from industrial production processes play an important role in achieving climate targets. Together with the pharmaceutical company Takeda, the AIT Center for Energy developed a decarbonization concept for Takeda's Vienna production site. The initially drawn up catalogue of measures revealed a savings potential of 15%, or around 600 tons of CO2 per year. A path to complete decarbonization was developed, which shows the enormous potential through the use of new technologies such as high-temperature heat pumps coupled with efficiency measures as best practice. The source for the heat pump is waste heat from the production process, which was previously released unused into the environment. The catalogue of measures and the decarbonization concept were developed primarily online in the period from April to October 2020 abiding by the local COVID-19 regulations.

"A sense of responsibility for the future of our planet is an integral part of our corporate philosophy and a deeply embedded mindset at Takeda. We have set ourselves the goal of becoming CO2 neutral by 2040. By focusing on sustainable solutions and innovations, we are massively reducing our CO2 emissions along the entire pharmaceutical value chain," said **Carlos Friedrich**, Head of Supply Engineering at Takeda's Vienna production site.

"The successful collaboration with Takeda shows that our technologies and methods from the research area of industrial energy systems can be directly applied to industrial processes in pharmaceutical production. The best practice project with Takeda's production site in Vienna is a win-win for the company and the climate - higher energy efficiency and lower CO2 emissions. For a complete decarbonization of industrial plants like Takeda, the use of industrial heat pumps is an essential building block for a future and efficient energy system," says **Wolfgang Hribernik**, Head of Center for Energy at AIT Austrian Institute of Technology.

New heat pump technology for pharmaceutical production processes

After an evaluation of the production processes, the energy sources used and the possible efficiency measures, the AIT Center for Energy created a decarbonization concept for the Vienna site of the pharmaceutical company Takeda. Processing blood plasma for the production of vital therapies for people with rare and complex diseases, requires large amounts of steam for cleaning processes and cold for cooling and air conditioning processes. Steam generation in particular requires large amounts of fossil gas, whereby the generation efficiency could be increased, and the steam requirement reduced by making use of simple measures. For a complete decarbonization,

an integration concept of a steam-generating high-temperature heat pump in combination with other units is now under consideration. "Heat pumps are a real alternative to current technologies, especially for low-pressure steam generation from waste heat," explains **Gerwin Drexler-Schmid**, project manager and senior research engineer at the Center for Energy of the AIT Austrian Institute of Technology.

Global warming requires process optimization in industry

Accordingly, the project team analysed the potential of industrial heat between 30 °C and 80 °C and how it can be sustainably reused, thereby reducing climate-damaging CO₂ emissions. With sophisticated waste heat concepts and the use of heat pumps, waste heat can be made usable and steam can be generated again. This greatly increases energy efficiency compared to conventional gas boilers and massively reduces CO₂ emissions. High-temperature heat pumps are one of the core technologies in the AIT portfolio. In addition, AIT has comprehensive know-how and knowledge in the field of thermal and electrical storage technologies, battery storage and, together with partners, covers a broad technology portfolio in order to be able to create sustainable and, above all, cost-efficient decarbonization concepts. The developed methods and concepts are used together with partners in diverse industrial sectors from paper, food, and beverages via textiles through to chemical industries, and integrated into existing plants.

About Takeda in Austria

In Austria, Takeda works along the entire pharmaceutical value chain: research & development, plasma application, production, and distribution. Takeda is the largest pharmaceutical employer in Austria and thus an important part of the domestic pharmaceutical industry. Every day, around 4,500 employees help to ensure that medicines from Austria reach the whole world and that patients in Austria have access to innovative medicines from Takeda. Takeda's production sites in Austria are located in Vienna, Linz and Orth an der Donau. The product portfolio helps Austrian patients in the fields of oncology, gastroenterology, immunology, haemophilia, and genetic diseases, among others. In 2020, Takeda Austria was recognized as a Top Employer and Great Place to Work. More information on the sustainability goals and projects at

https://www.ots.at/presseaussendung/OTS_20201130_OTS0146/gruene-und-innovative-pharmaceuticals-no-contradiction

AIT Center for Energy

At the AIT Center for Energy, around 250 employees under the direction of Wolfgang Hribernik are researching solutions for the sustainable energy supply of tomorrow. The many years of experience and scientific excellence of the AIT experts as well as the high-quality laboratory infrastructure and global networking offer companies innovative and applied research services and thus a clear competitive advantage in this market of the future. The Center for Energy's portfolio of topics is oriented around three central systems: Sustainable public energy supply systems, decarbonization of industrial processes and plants, and innovative technologies and solutions for urban transformation (buildings, cities). More information about the Center:

<https://www.ait.ac.at/energy>



Takeda production sites in Vienna. Photo credit: Takeda



Industrial high-temperature heat pumps are an important building block for the complete decarbonization of production processes. Photo credit: AIT/Schneeberger

Press contact AIT:

Mag. Margit Özelt
Marketing and Communications, Center for Energy
T +43 (0)50550-6302
E: margit.oezelt@ait.ac.at | www.ait.ac.at

Daniel Pepl, MBA, MAS
Corporate and Marketing Communications
AIT Austrian Institute of Technology
T +43 (0)50550-4040
daniel.pepl@ait.ac.at | www.ait.ac.at

Press contact Takeda:

Astrid Kindler,
MA
Communications
T: 01/20 100-0
E: astrid.kindler@takeda.com | <https://www.takeda.at>