

Energy Flexible Buildings Potential and Performance



Workshop and technical visits
in cooperation with
IEA EBC Annex 67

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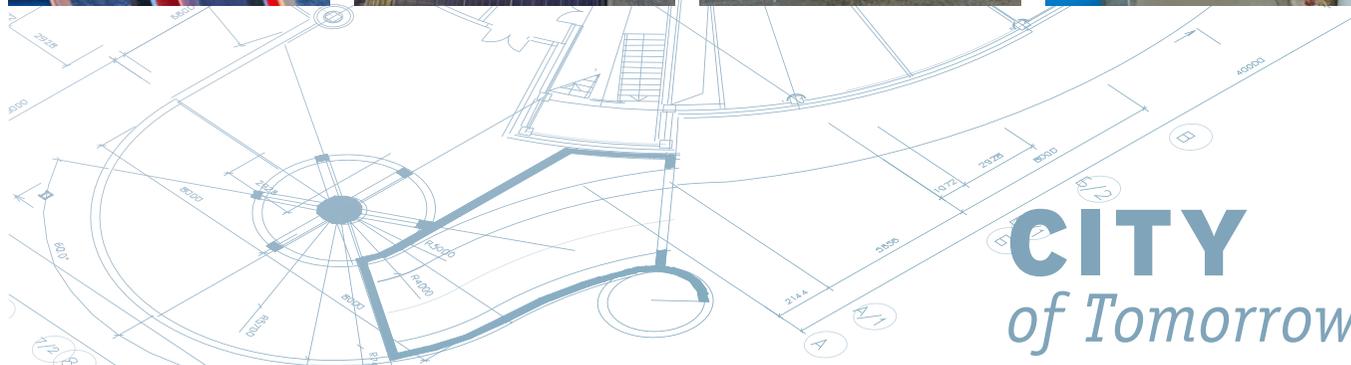


Date:

Tuesday, 26th September 2017
10:00 to 18:30

Venue:

Kuppelsaal
TU Wien (Technical University of Vienna)
Karlsplatz 13, 1040 Vienna



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Energy Flexible Buildings – Potential and Performance

This workshop in Vienna is organized in the run-up of the 5th working meeting of the IEA EBC Annex 67 “Energy Flexible Buildings” in Graz, a research project within the Technology Collaboration Programme “Energy in Buildings and Communities” EBC of the International Energy Agency IEA. It aims at bringing together international experts and the Austrian building and demand response community for know-how exchange and discussion on the topic of energy-flexibility in buildings and its role for smart grids. The focus will be on thermal and electricity based flexibility potential of buildings and practical experience with first implementations and demonstrations.



Heating and electricity consumption on demand – at building level

This event is one in a row of the City Of Tomorrow in Practice workshops, where relevant research and development results are presented and discussed with experts and professionals. Along the City of Tomorrow programme of the Austrian Ministry for Transport, Innovation and Technology, new technologies and innovations should pave the way for an altered understanding of future working and living within cities in combination with mobility and production, making cities an attractive place to live while being energy efficient at the same time.

In the future, the high share of renewable energy sources in electrical power and district heating grids will force the transition from a purely demand-oriented energy production (“generation on demand”) to a production-oriented demand respectively consumption (“consumption on demand”). This is also rational and necessary for the promotion of more accurate direct use of short-term predictable yet not time-controllable renewable energy production from e.g. wind or solar power, as well as solar thermal systems. It will relieve the grids and storage requirements likewise.



Foto: Windkraft Simonsfeld/Helge Bauer

The adaptability of buildings to currently available energy supplies, their “energy flexibility” in respect with load balancing of the grid, is hard to quantify at this point in time. Indicators and a methodology for quick characterization of a building regarding such flexibility do not exist. The potential for energy flexibility in buildings is determined by factors like heat storage capacity of building components, quantities and sizes of thermal storage tanks and batteries, quantities and type of electrical devices and consumers such as heat pumps, the specifically utilized control systems, and similar.

Intelligent use of related equipment enables to shift peak loads and discharge the grids at the right time. In this spirit, buildings could be intelligent “prosumers” (consumers AND producers of energy). The aim of the EBC Annex 67 is to evaluate, analyze and characterize this future role of energy-flexible buildings integrated with renewable energy systems. Ongoing studies in the field will be presented and discussed.

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Programme 26th September 2017 > Kuppelsaal > TU Wien



10:00 Registration and Networking with Coffee

10:30 Welcome

- > Theodor Zillner, Austrian Federal Ministry of Transport, Innovation and Technology (bmvit)
- > TU Wien ASG (Wolfgang Kastner, Susanne Metzger)/ AEE INTEC (Armin Knotzer)

10:45 Results from the Danish iPower project – what can we learn for Annex 67?

Søren Østergaard Jensen, Operating Agent of IEA EBC Annex 67, Danish Technological Institute

11:15 Grid Supportive Buildings: How “grid friendly” are buildings today? Case studies from Germany

Peter Engelmann, Fraunhofer ISE, Germany

11:40 Building to Grid: Experiences from an Austrian innovation project

Andreas Schuster, Aspern Smart City Research

12:05 The potential of energy flexibility based on the Austrian building typology

Armin Knotzer/Tobias Weiss, AEE INTEC

12:30 LUNCH BREAK

13:30 Thermal mass of dwellings as a source for energy flexibility

Glenn Reynders, KU Leuven, Belgium

13:50 Concrete structures in a single-family-house used as micro-energy hub for surplus wind power – How science, sectoral cooperation and practical experience contributed to creating a planning guide

Sebastian Spaun, VÖZ, Roman Prager, WEB AG

14:10 Buildings as energy storage for the grid – Example of a multifamily home in Vienna

Simon Handler, ALLPLAN GmbH

14:30 PEAR – Energy-efficient automation and control of buildings

Katharina Eder, AIT

14:50 Conclusion and Outlook

Claudia Dankl, ÖGUT

COFFEE BREAK AND NETWORKING

Moderation: Claudia Dankl, ÖGUT – Austrian Society for Environment and Technology, Working Group “City of Tomorrow”

15:30 Start of the technical visit / Short Bus Tour Vienna

16:00 AIT (SmartEST Laboratory)

17:30 Plusenergy Office Building TU Wien

18:30 End of the technical visit

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Responsible:

Austrian Ministry for Transport, Innovation and Technology
Energy and Environmental Technologies
Contact: DI Michael Paula
Radetzkystraße 2, A-1030 Vienna, Austria
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REGISTRATION:

[LINK ONLINE-REGISTRATION](#)



INFORMATION:

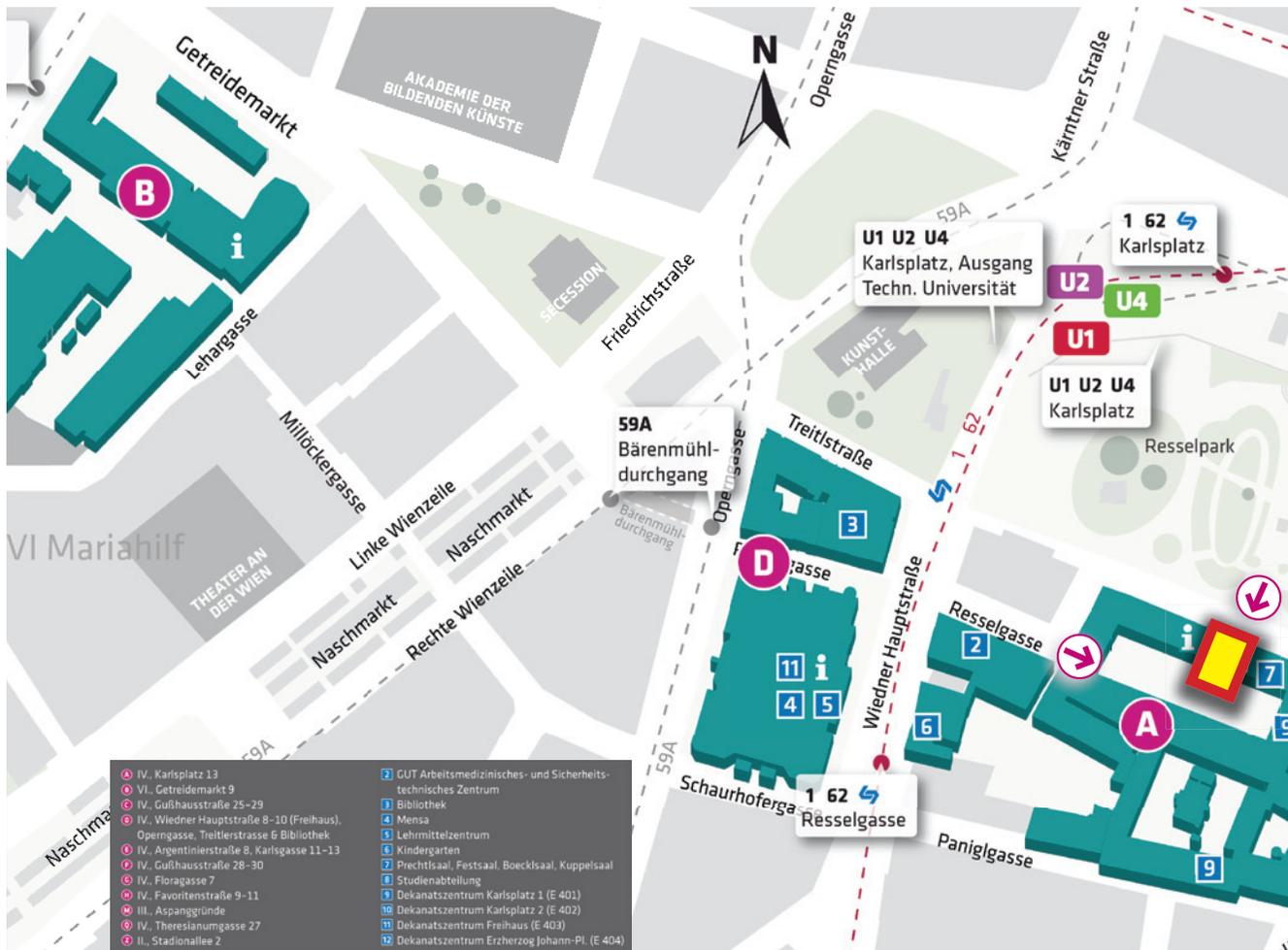
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