

# Municipal Energy Management in Austria

The e5-Programme for Energy-Efficient  
Communities



**Austrian Energy Agency (AEA)**

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# Part 1

# Energy Management Systems

# I. Energy Management Systems

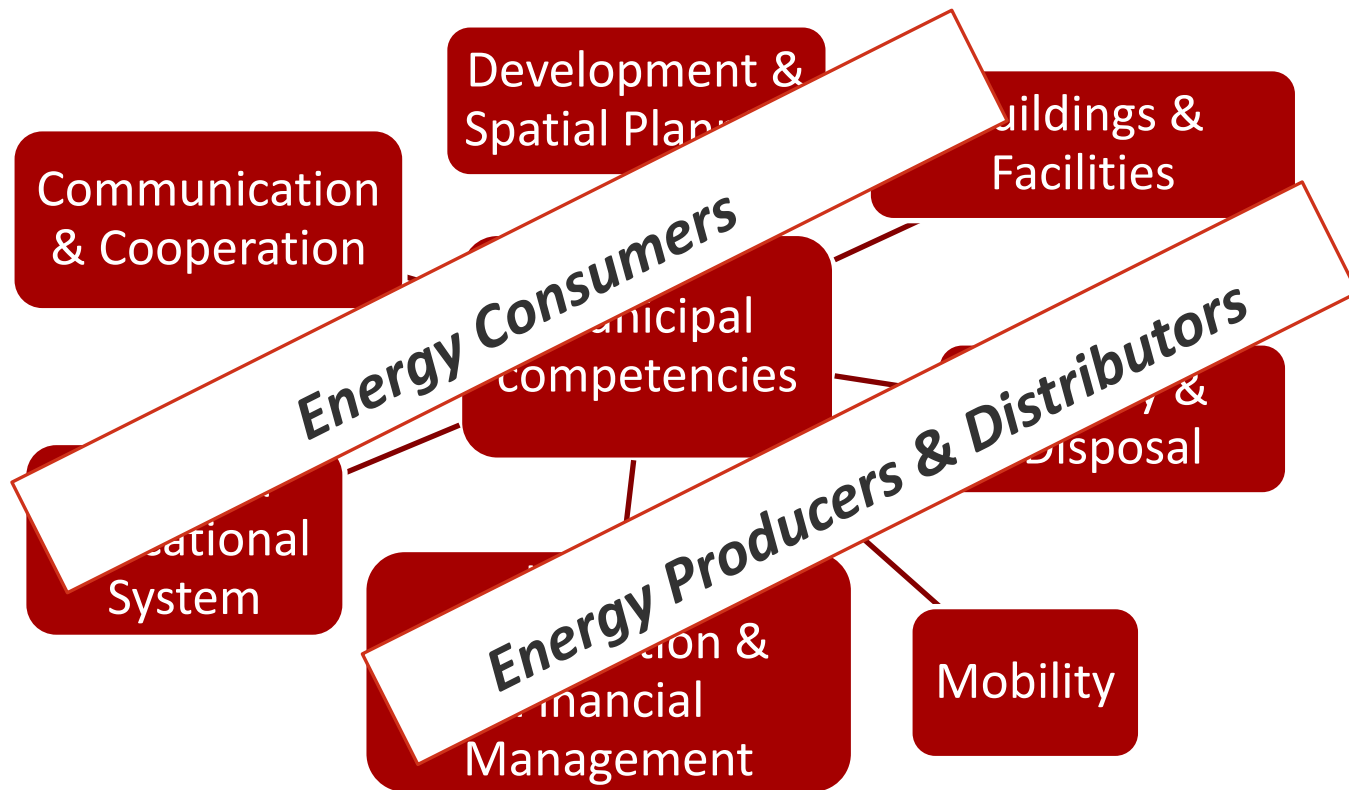
## What is Energy Management?

- Organisational, technical and behavioural measures to **minimise the consumption of energy and materials**
- Effective instrument to **continually improve energy efficiency**
- Holistic approach focusing on **concrete outcomes and impact**

## Why municipal energy management?

- **High potential** to mitigate energy consumption
- Systematically document the urban/municipal energy system
- Gain **insight into energy flows** (know the biggest users, detect changes in energy consumption, continuous monitoring and control)
- **Improve environmental performance**
- **Efficient use of resources**
- **Significant reduction of costs**
- **Spill-over effects**

# I. Which Areas are Relevant for Energy Use?



## Part 2

# e5 and the European Energy Award<sup>®</sup> Quality Management System

## II. History of the e5 Programme

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- **1998:**
  - **e5-Programme for energy efficient municipalities** was established and introduced in three federal provinces of Austria (Vorarlberg, Tirol, Salzburg)
- **2002:**
  - Together with Germany, Switzerland and Poland, the e5-Programme was further developed to a harmonised European qualification programme for municipalities
  - The result was: the **European Energy Award®**
- **2004:**
  - Overall coordination of the e5-Programme in AT through **klimaaktiv**, the climate protection initiative of the BMNT (Austrian Federal Ministry for Sustainability and Tourism)
  - Main tasks: a) strategy and coordination, b) further development of the programme, c) acquisition of further federal provinces to take part in the programme, d) quality assurance of the programme, e) participation in European Energy Award® meetings

Source: <http://www.e5-gemeinden.at/>

## II. e5 and the European Energy Award® Quality Management System for Energy-related Activities in Municipalities

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### European Energy Award®

- Quality management system for holistic municipal energy planning
- Certification and award for energy-related achievements and control of success through regular audits

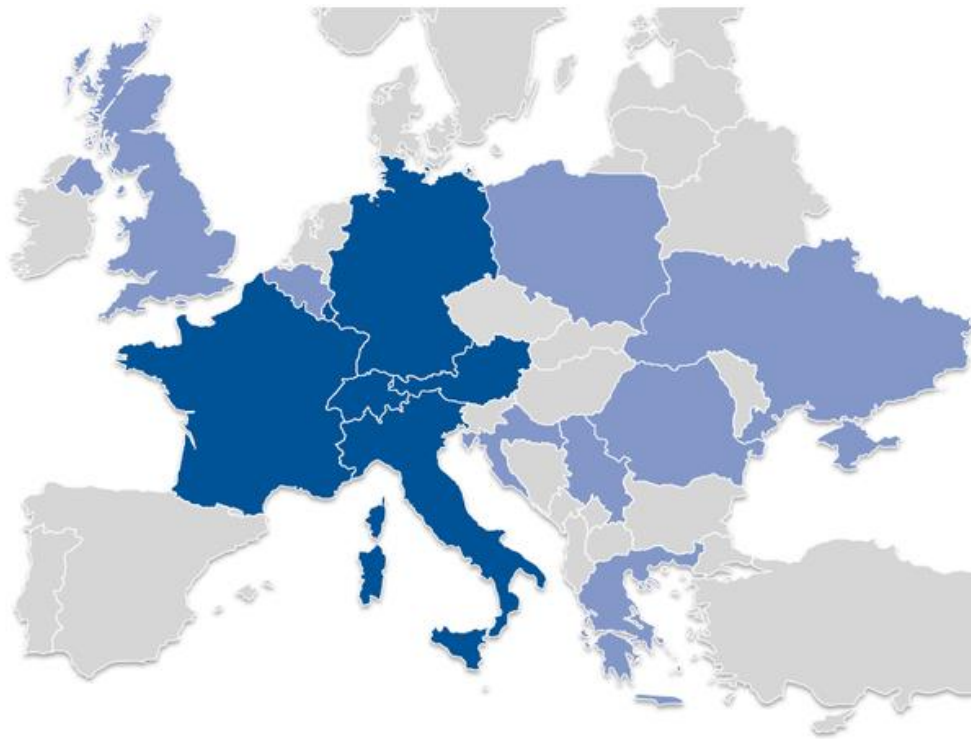
### Benefits of the e5 Programme:

- Municipalities can
  - identify strengths, weaknesses and potential for improvement
  - effectively implement EE and RE measures
- Standardized assessment allows for benchmarking between communities
- Success of a municipality's efforts is made visible by an award
- Allows member municipalities to share their experiences and expertise





## II. European Energy Award®



- 16 countries
- > 1,500 municipalities
- 48 million people involved

### **Dark blue: Ordinary members of the Association European Energy Award**

Austria, France, Germany, Italy, Liechtenstein, Luxembourg, Monaco, Switzerland

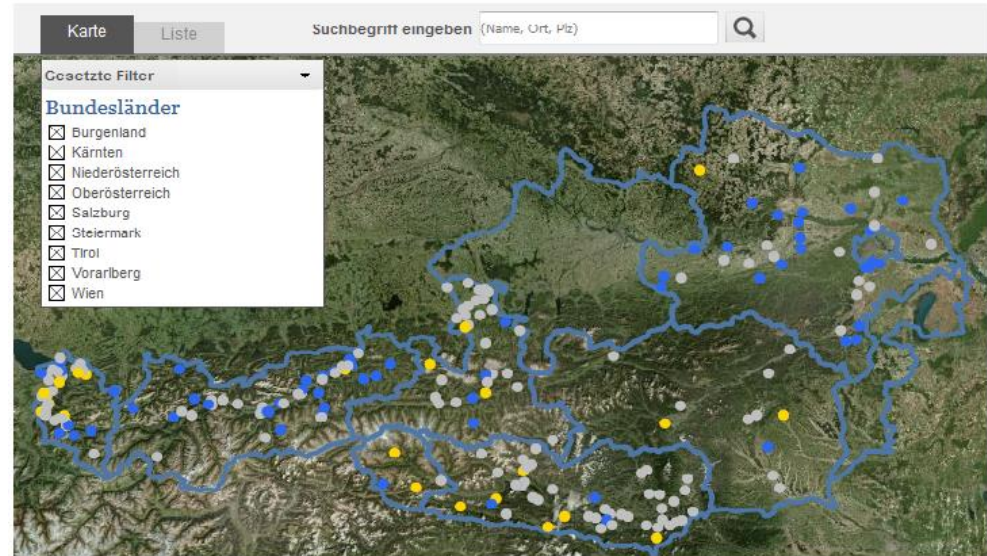
### **Light blue: Pilot countries**

Romania, Ukraine, Belgium, Croatia, Greece, Poland, Serbia, UK

Photo Credit: <https://www.european-energy-award.org/who-is-taking-part>




## II. e5 Programme in Austria



- Programme runs in 7 out of 9 provinces
- 228 e5 municipalities and cities
- More than 18.1% of the Austrian population lives in an e5 municipality
- A total of 624 “e” have been achieved



Legende:

alle [deaktivieren](#) / alle [aktivieren](#)

-  e5-Gemeinde e
-  e5-Gemeinde ee
-  e5-Gemeinde eee Silber

-  e5-Gemeinde eee (eee Silber)
-  e5-Gemeinde eeee (eee Silber)

-  e5-Gemeinde eeeee (eee Gold)

Photo Credit: <https://www.e5-gemeinden.at/e5-gemeinden/e5-gemeinden-in-oesterreich/>

## II. European Energy Award® and the European Commission

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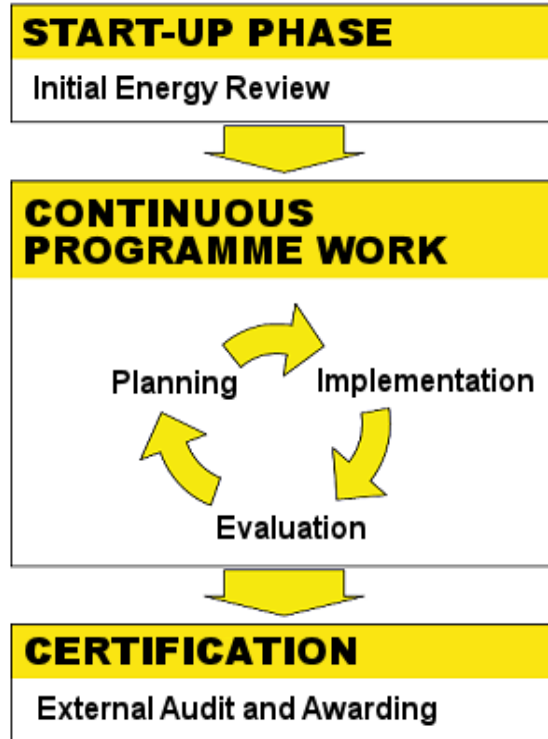
### *Letter of recognition from the European Commission*

We are pleased to confirm that the European Energy Award® can be recognised as an efficient implementation tool for Sustainable Energy Action Plans (SEAPs) in the context of the Covenant of Mayors. In doing so, the European Commission acknowledges the quality management and certification system of the European Energy Award® which has been developed within previous European programmes.

We acknowledge that there is a high analogy and good convergence between the European Energy Award® and the Covenant. As the signing of the Covenant entails

Photo Credit: <http://www.european-energy-award.org/home/>

## II. e5 Process



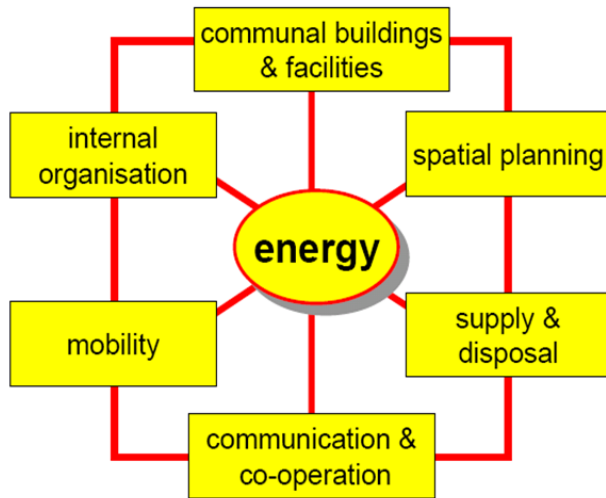
1. Municipality signs an agreement with a regional e5 programme organisation
2. Energy team is set up (representatives from the municipal administration, politicians and committed citizens)
3. Together with an e5 advisor, the energy team establishes an energy work programme
4. Initial energy review: an analysis of the current status of the community assisted by e5 tools
5. Implementation of a work plan

- **Municipality has to be audited externally at least every three years**
- **Certification and award**

Source: <http://www.e5-gemeinden.at/>

## II. e5 Catalogue of Measures: The Core of the Programme

**Structure of the catalogue:** 6 specific areas; 79 measures, each measure with a specific number of points; total number of 500 points adapted to scope of action/influence of each municipality

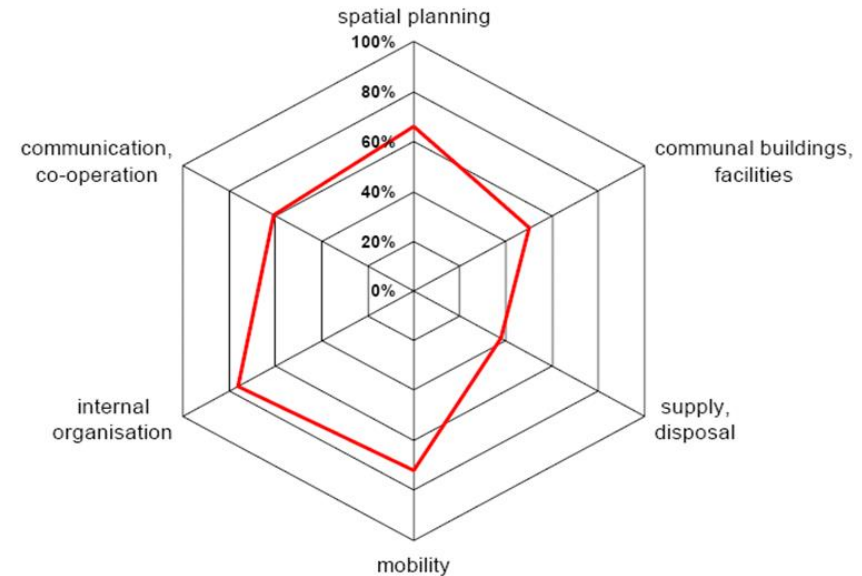


### 4 Functions:

1. Checklist
  - What has been done?
  - Quality of implementation?
  - Documentation
2. Catalyst for the process
3. Aid for planning future activities
4. Measurement tool for benchmarks, external audits and certification

## II. The Energy Profile

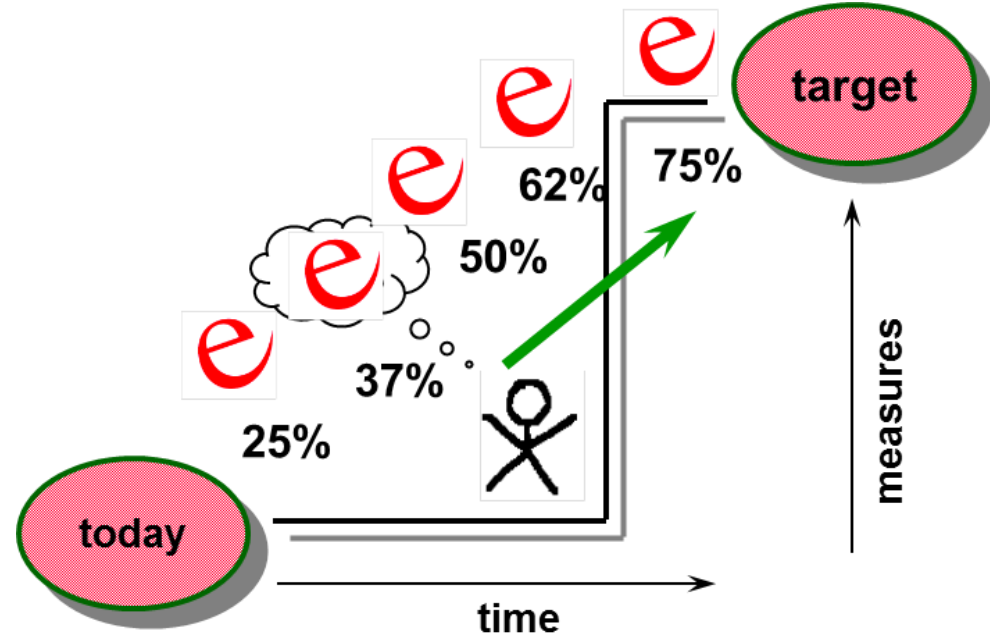
- Percentage of **realisation** in each specific area
- **Visualisation** of strengths & weaknesses
- **Audit** result:
  - Level of realisation in %
  - Certification



## II. e5 Certification Scheme

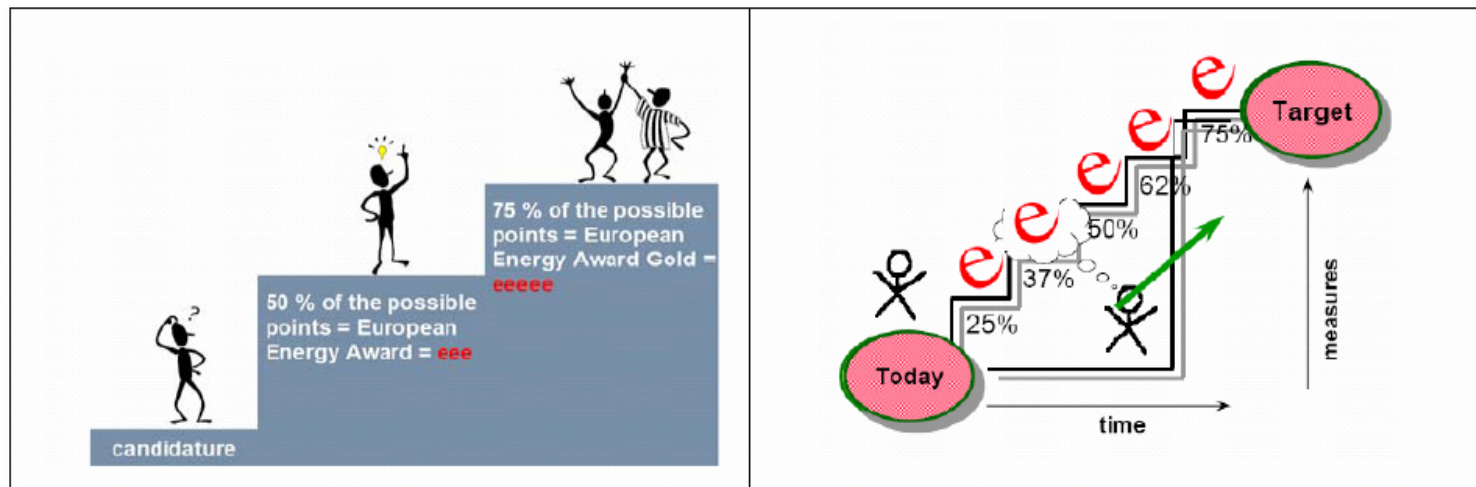
“e”	25 %
“ee”	37 %
“eee”	50 %
“eeee”	62 %
“eeeee”	75 %

of all possible points that can be attained



## II. Comparison: e5 & European Energy Award® Certification

- EEA®:
  - 50 % of all possible points = European Energy Award®
  - 75 % of all possible points = European Energy Award® Gold



Source: <http://www.e5-gemeinden.at/>



# Part 3

# Good Practice Examples

### III. Example: REICHENAU, Tirol

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- 10x-factor reduction in energy consumption of a school in Reichenau
- Renovation measures included:
  - structural conservation measures, energy-efficient renovation, improvement of the indoor climate, protection against overheating during the summer
  - Passive house components were used for the insulation of the enclosing components
- Main project details:
  - Duration: 09.2013 - 10.2014
  - Surface Area: 5,000 m<sup>2</sup>
  - Heating Demand Before: 175 kWh/m<sup>2</sup>a
  - Heating Demand After: 15 kWh/m<sup>2</sup>a
  - Energy Savings: 420,000 kWh = 42,000 m<sup>3</sup> gas/a
  - CO<sub>2</sub>-savings: ca. 100 t/a



### III. Example: LUDESCH, Voralberg



- New community center:
  - built according to maximum ecological and energetic criteria
  - "Ökoleitfaden Nachhaltig:Bauen" (Guideline for Sustainable Buildings) was applied
  - built in passive construction
- Success achieved through broad involvement of the population
- The remaining low energy requirement is covered by the power of the sun and by the biomass heat (for example, roofing of the patio with transparent PV panels)
- The multi-purpose building with a usable area of around 3,100 m<sup>2</sup> was built in passive house quality
  - No use of PVC
  - Waiver of solvent and plasticizer colors
  - High proportion of renewable building materials (silver fir, cellulose insulation)

### III. Example: GÖTZIS, Voralberg (a)

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- Built the **largest biomass district heating plant** in the Vorarlberg Rhine Valley
- Decided in 2006 to build a **biomass heating network**
  - Security of supply
  - The highest possible use of renewable energies
  - Value creation through the use of local raw materials in the region
  - Use of domestic biomass
- **Result**
  - Municipal buildings, companies and private residential buildings are supplied with heat and hot water
  - **2.9 million kilograms of CO<sub>2</sub> are saved**



### III. Example: GÖTZIS, Voralberg (b)

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- **Accompanying measures:**
  - Public relations: regular information for citizens
- **Successful implementation:**
  - Biomass district heating plant
    - with a boiler output of 3,300 kW
    - 8 km long district heating network with approx. 170 connected objects
    - highly efficient emission control
  - **Results**
    - the share of renewable energy in the community was thereby increased
    - around 700,000 liters of heating oil are saved each year in the nearby area
    - created jobs through the procurement and processing of raw materials

## III. Example: DORNBIRN, Voralberg (a)

- **Comfortable way to football matches - alternative means of transport**
- **Background:**
  - Club FC Dornbirn
  - Many football matches
  - Limited parking in front of the stadium
- **Idea:**
  - Development of a traffic concept
  - Cooperation with the city of Dornbirn and the city bus Dornbirn
  - Environmental-friendly way to travel to football matches



### III. Beispiel: DORNBIRN, Voralberg (b)

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- Fans were motivated via **targeted public relations** to travel by city bus, regional train, bicycle or on foot
  - For visitors of the football match, the trip by city bus and bus is free.
  - For the cyclists, the possibility was created to use the covered bicycle parking spaces of the stadium, which are located in close proximity to the stadium.
- **Development of a traffic concept**
  - During the season, the city bus Dornbirn drives with a shortened clock of 7 minutes directly to the main entrance of the stadium

Thank you for your  
attention!



# Contact

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Expert

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In the podcast [Petajoule](#), the experts of the Austrian Energy Agency will be answering questions to the energy future with guests from the energy sector.