

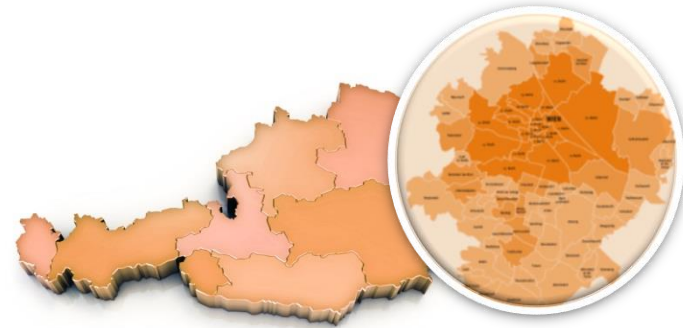
# Decarbonization of the energy system: Challenges from a municipal utilities' point-of-view

Michael Strebl, 04.09.2017



***SO BUNT  
WIE MEIN LEBEN.***

# Business activities of Wien Energie



Electricity and heat production  
via power plants and thermic  
waste treatment



Sale of gas,  
electricity,  
district  
heating &  
cooling



Procurement  
and energy  
trading



Services linked to the energy market



# Key performance indicators 2016

Turnover

EUR 2,056.7 million

Investment

EUR 74 million

Headcount

2,652 employees

Supplying electricity,  
natural gas and  
heating to

- Two million people
- 230,000 businesses and industrial facilities
- 4,500 farms

# Disruptive developments



# „The horse is here to stay but the automobile is only a novelty - a fad” *President of the Michigan Bank*

Easter parade Fifth Avenue, New York

1900

Where is the car?



1913

Where is the horse?

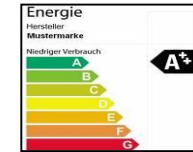


# The world has changed



# The challenge

**1. Political goals**  
20-20-20 aims from the EU  
EU Roadmap 2050: -80% CO2



**2. ICT Revolution**  
Internet of Things  
Miniaturization  
Linking-up and integration

**3. Social developments**  
Individualization  
Pursuit of autarky  
Environmental awareness

**The so called „Energiewende“ is much more than the replacement of fossil fuels by renewable energy sources: It's a game changing shift of the energy system!**

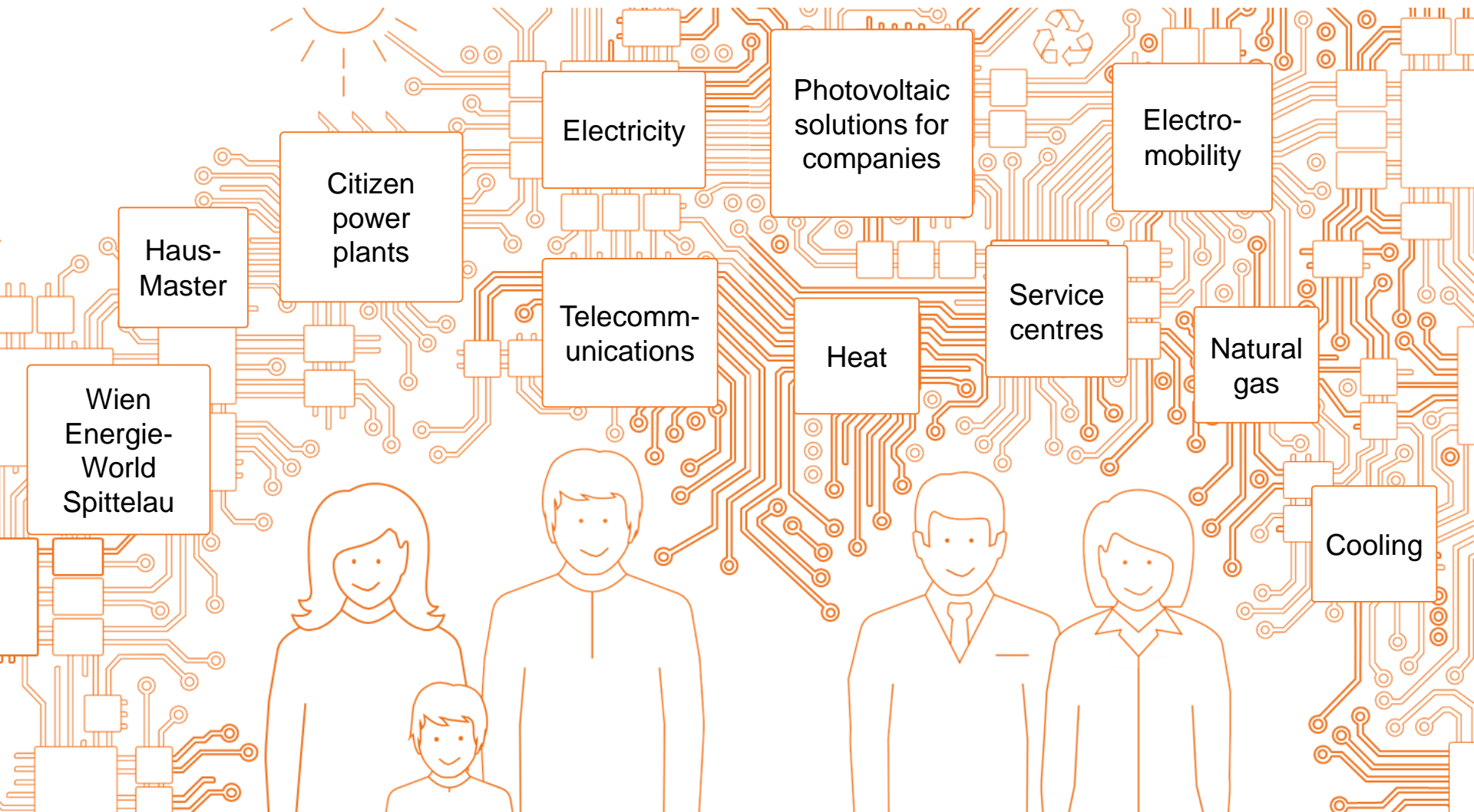
# How does Wien Energie meet these challenges?



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# Wien Energie's world of services



# How does Wien Energie meet political goals?

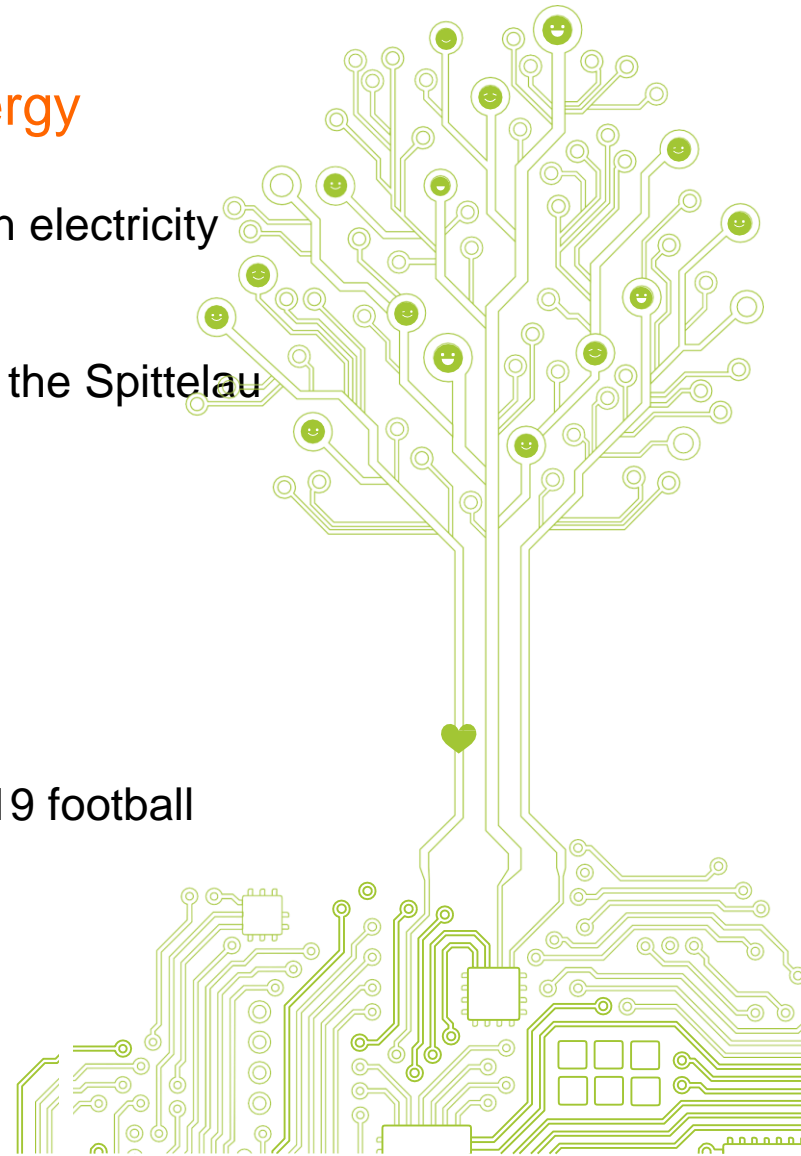


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# 1. Political goals

## We strive for environmentally-friendly energy

- Wien Energie supplies 800,000 people with green electricity
  - In 2030, this figure will be 1.5 million
- Three times more electricity is being produced at the Spittelau waste incineration plant since its modernisation
- 5 years of citizen power plants:
  - 26 solar power plants
  - 4 wind power plants
  - 17,000 tonnes of CO<sub>2</sub> saved since 2012
  - Solar panels covering an area of 19 hectares (19 football pitches)



# 1. Political goals

## CO2 reduction: Usage of industrial waste heat and large heat pumps

- Wien Energie developed a decentral plant for large buildings. This system combines the advantages of a gas-fired condensing boiler and a heat pump.
- The waffle-manufacturer Manner feeds in its waste heat into the district heating system of Wien Energie and provides ecological heat for 600 households and local companies.
- Since 2013 Wien Energie has operated the first high pressure heat storage. This storage decouples heat production and head demand which helps to reduce the need for peak load boilers.



# 1. Political goals

## Green mobility: Wien Energie E-Mobility services



Wallbox



Public  
Charging Stations



Installation



Hotline



Customer Card



Information  
Tanke-App



Billing &  
Settlement

# How does Wien Energie meet the ICT revolution?



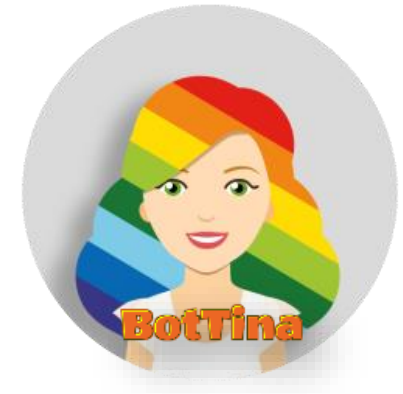
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## 2. ICT Revolution

### Collaboration with start ups: Powering digital future

- **BotTina**

We developed a chatbot together with the Viennese start up *onlim* to answer customer requests automatically.



- **Maintenance 4.0.**

Wien Energie uses augmented reality technology for maintenance purposes. Smart glasses provide real-time information for all relevant plant components.

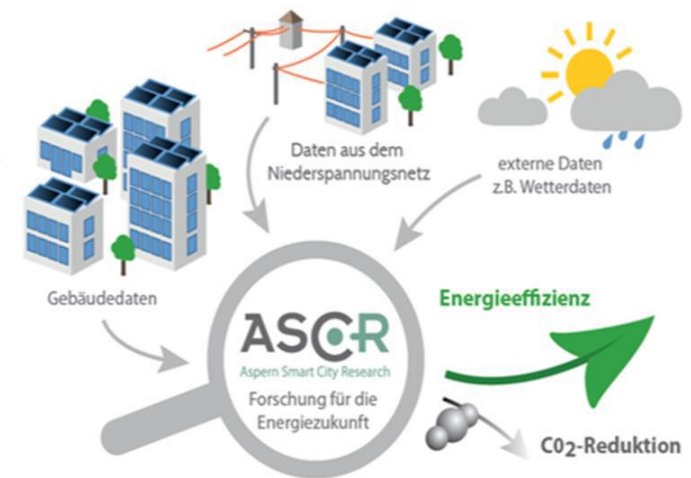


## 2. ICT Revolution

### Linking-up and integration: Applied energy research at ASCR

Wien Energie anticipates customer needs and new potential technologies:

- Smart Citizen: Integration of users
- Smart Building: Smart management of buildings (energy consumption, production and storage of energy)
- Smart Grids: Smart management of the distribution grid while integrating decentral renewable energy sources
- Smart ICT: Connecting buildings and the distribution grid via Information and Communication Technology





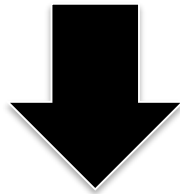
# How does Wien Energie react on social developments ?



### 3. Social developments

Shift of perspective: From the power station to the customers

**Power stations used to be the most valuable asset of Wien Energie.**



**Today, our customers are our most valuable assets:**

- **Two million people**
- **230.000 trade- and industrial facilities**
- **4.500 agricultural firms**



## 3. Social developments

### Involvement of citizen: Citizen power plants

More than 10.000 people invested already 33 million Euro in 28 citizen power plants from Wien Energie. Since 2012 more than 15.100 tons of CO2 have been saved.

- **Best practice example “MieterInnenkraftwerk”:**

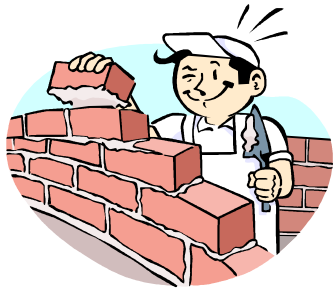
The roof of the residential neighborhood „Am Schöpfwerk“ in Wien-Meidling has the size of 4.800 square meters. Wien Energie installed 1.229 photo-voltaic panels. 132 domestic homes are supplied with local green electricity and save 113 tons CO2 every year. This model is unique as all residents received an option to participate in this local green energy project.

### 3. Social developments

The clever energy assistant offers individualization and autarky



***„When the winds of change blow,  
some people build walls while others set sails“***



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