

VONOVIA



Unlocking
potential.


Capital Markets Day
Energy.

Vonovia
Energy Break-Out
June 5, 2018

Value-add – Overview

Yesterday's innovations are customers' daily routine today


- Increasing customer satisfaction by offering additional housing-related services
- Optimum control of processes and costs



Multimedia:
80% of households



Safety:
window and door security devices




Smart Metering:
80.000 households



Energy services



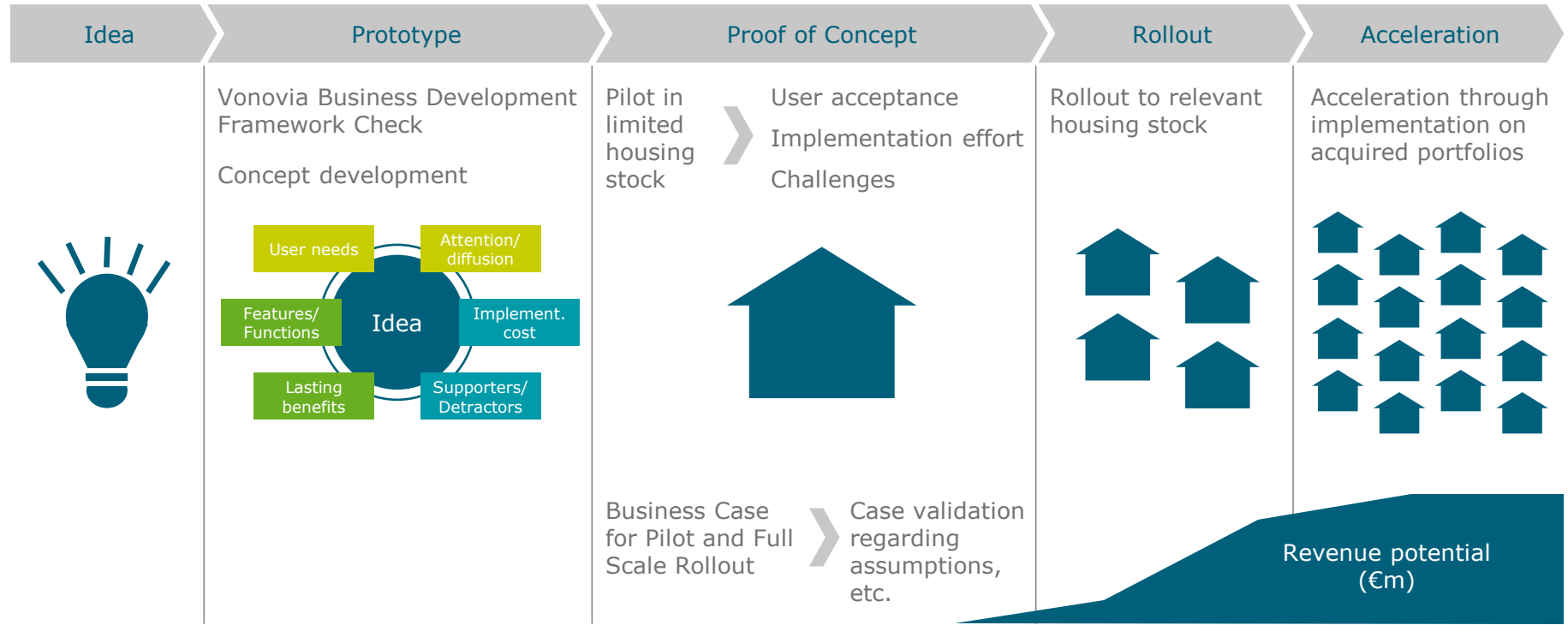
Parcel box:
Receive parcels like letters



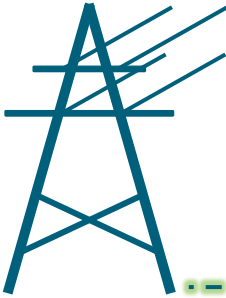
Electro-mobility and car sharing

Value-add – Method

Proven concept for extension implementation

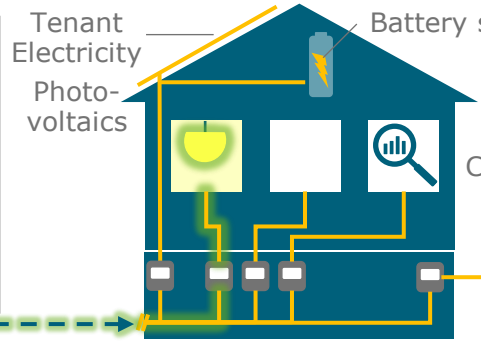


1 Supply & Sales

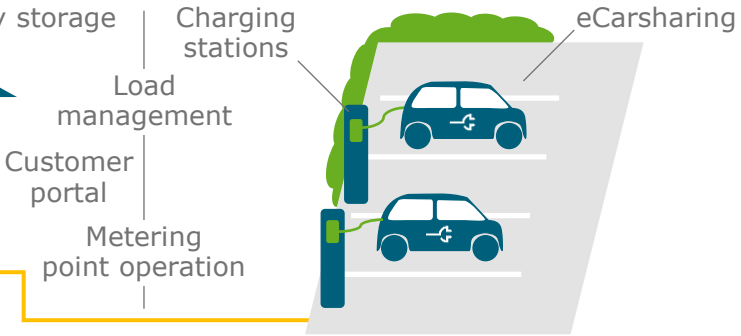


Energy supply

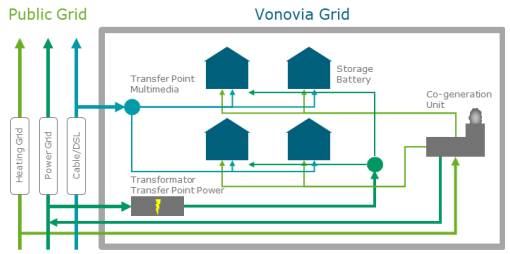
2 Generation & Storage



3 Digitization & Services



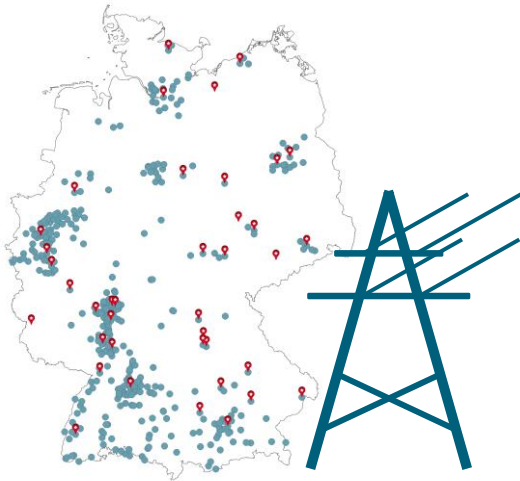
4 „The grid“



1 Energy Supply

Rollout overview

- › Vonovia manages about 370,000 apartments with about 1 million tenants nationwide
- › Established customer relationship is used to provide additional services to tenants



1. New tenants

- › Compared to established utilities, we are able to use our unique point-of-sales for energy contracts: TIMING is key
- › Furthermore, given the established customer relationship and available data, no cost-to-acquire accrue: PROCESS is key
- › Advantages:
 - › Comfortable contract conclusion
 - › Cheaper than basic supply (Grundversorgung)
 - › Green certificates (Grünstrom)
 - › 12 months contract term
 - › Change driven customers are not our target group

2. Existing tenants

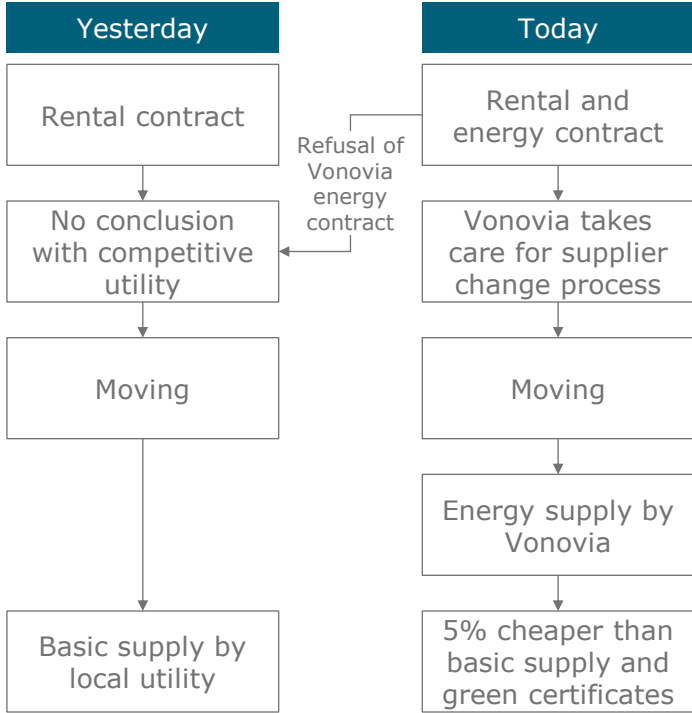
- › Customized campaigns to address existing tenants

3. Common-area power

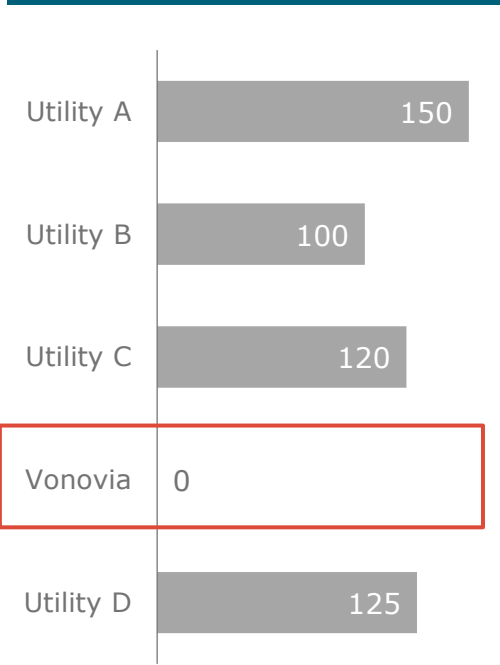
- › Supply based on what is economically most feasible

1 Energy Supply

Unique selling proposition – Timing and process



Cost-to-acquire in € per customer



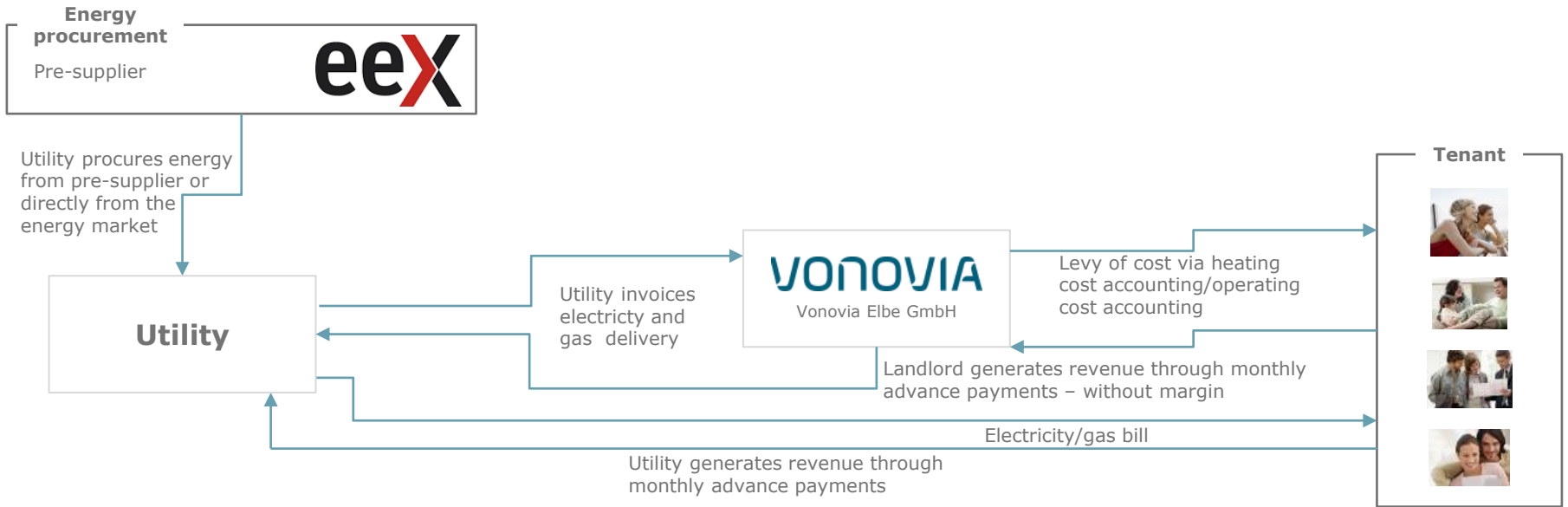
- > Conclusion of energy contract at the same time is the rental contract: Unique point-of-sales compared to established utilities
- > Comfortable contract conclusion with no additional paperwork compared to signing an energy contract with an other utility
- > No cost-to-acquire for Vonovia compared to often more than € 100 per customer for other competitive utilities

1 Energy Supply

How are we selling energy?

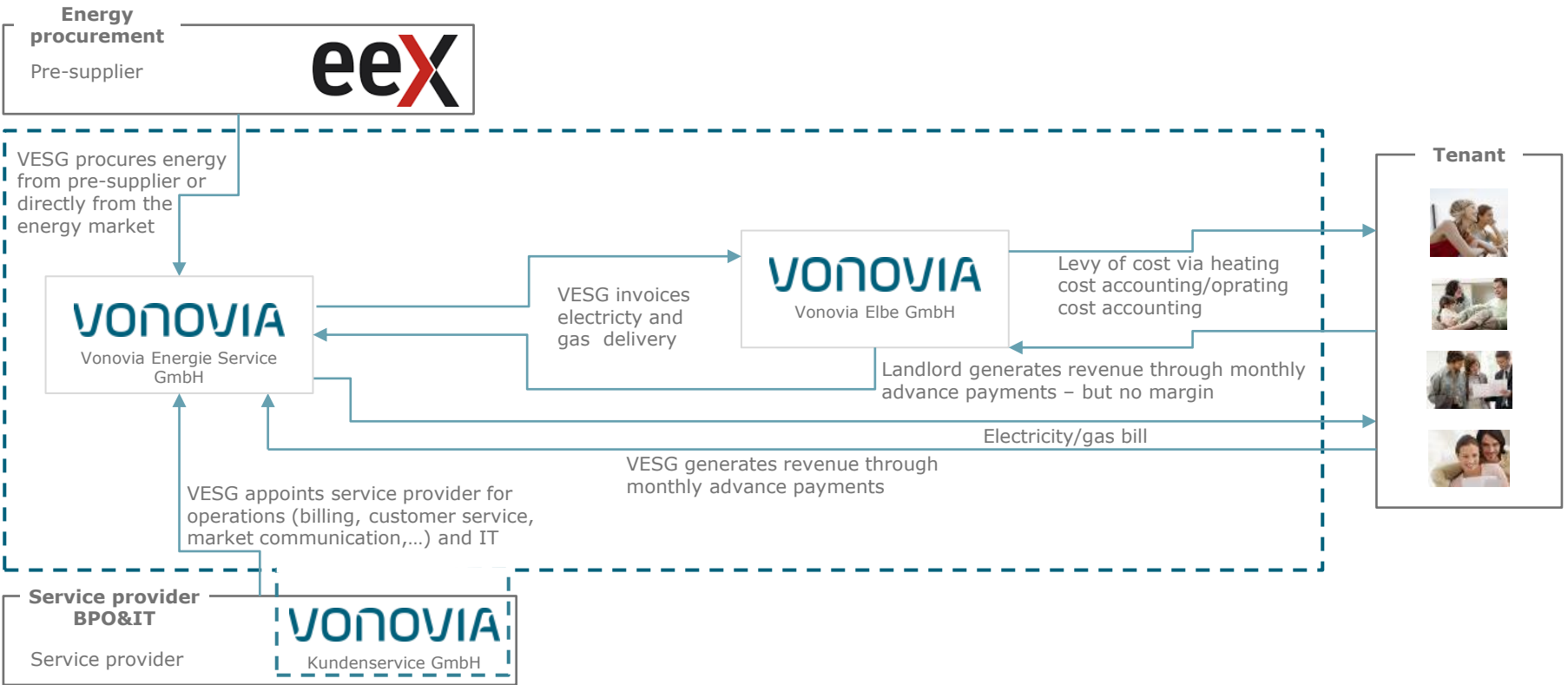
1 Energy Supply

Electricity and gas supply for our tenants – Yesterday



1 Energy Supply

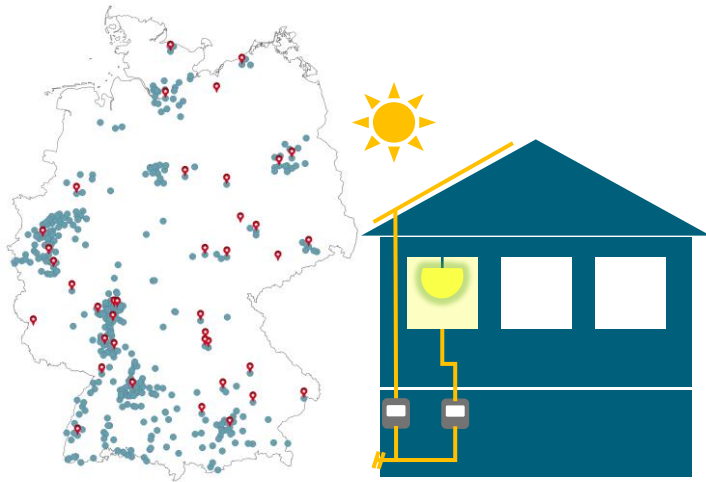
Electricity and gas supply for our tenants – Today



2 Generation & Storage

Photovoltaics and tenant electricity – Overview

- Vonovia manages about 370,000 apartments in about 50,000 buildings
- Use of our assets to generate additional revenue



Photovoltaics

- Installing solar power systems on rooftops of suitable buildings
- Generating additional revenue from photovoltaics installed on rooftops due to feeding generated electricity in the public grid and receiving remuneration (EEG)
- Target: „Vonovia 1,000 roofs per year programme“
 - About 11,000 suitable roofs in total
 - Result: ~270 MWp installed
 - Energy generated: ~250 GWh per year

Tenant electricity models

- Selling of electricity generated on rooftops directly to tenants in respective buildings
- Additional income compared to simple photovoltaics through lower grid cost and additional compensation payments
- Marketing and field sales required

2 Generation & Storage

Photovoltaics projects

Photovoltaics – Proof of Concept

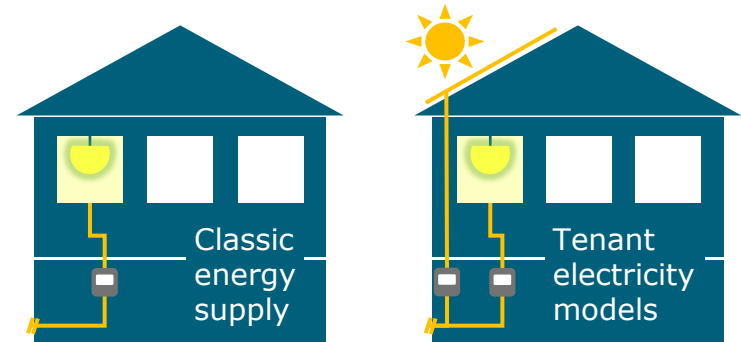


- Installation of photovoltaic systems in Dresden on more than 240 roofs in 2017
- Currently about 500 roofs with photovoltaics in operation



- Digital identification of suitable buildings by matching geographical data with existing solar cadastrals

Tenant electricity models – Idea

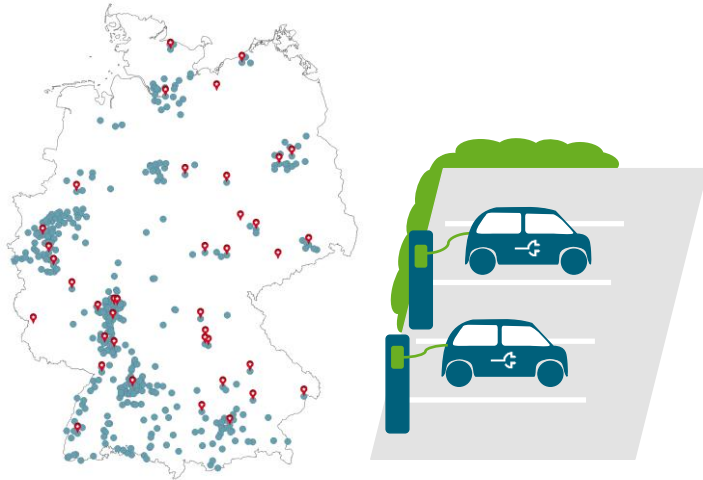


- Total electricity generated by the photovoltaic system is fed in the public grid
- Electricity generated with the installed photovoltaic system is directly consumed by the tenants – only surplus is fed in the public grid
- Photovoltaic is considered for all new Vonovia buildings in planning phase

3 Digitization & Services

eMobility and Carsharing – Overview

- › Besides 370,000 apartments in about 50,000 buildings, Vonovia manages about 90,000 parking lots
- › Use of our assets to generate additional revenue



eMobility

- › eMobility requires:
 - › Reliable/exclusive parking space
 - › Charging infrastructure
 - › Electric vehicle

Carsharing

- › Tenant rents apartment
- › Tenant rents garage
- › Tenant rents kitchen
- › Tenant rents ...
- › Tenant rents car

Vonovia as full-service provider for all tenants' needs

3 Digitization & Services

eMobility – Active implementation in specific projects

Streetscooter on the road



Since 2017 four Streetscooters have been used as craftsmen cars in Dresden and Berlin

Planning the construction of approx. 40 charging stations



Participation in the nationwide "promotional campaign"
Realization of the charging stations planned for 2018

Charging infrastructure for new Vonovia headquarters



Planning and construction of 18 charging points at new Vonovia headquarter

Vonovia supports the "Energiewende" with the integration of e-mobility

3 Digitization & Services

Carsharing – From a Buyer's to a Rental Market

Rental Apartments



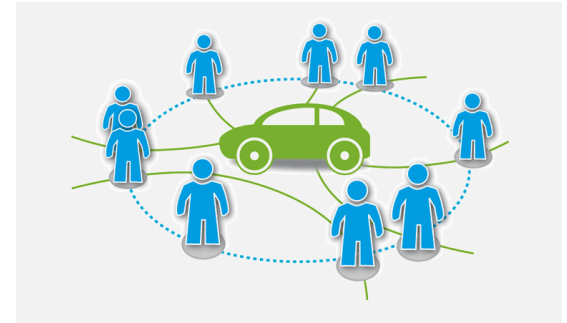
Apartments are increasingly not purchased any more - people rent

Rental Kitchens



Additionally, Vonovia already offers kitchens and bathrooms for rent

Carsharing



(E-)cars, (e-)bikes, (e-)scooters are the next step to expand the „Vonovia-Rental-Portfolio“
2018 will start the first carsharing-pilot projects at almost 20 locations

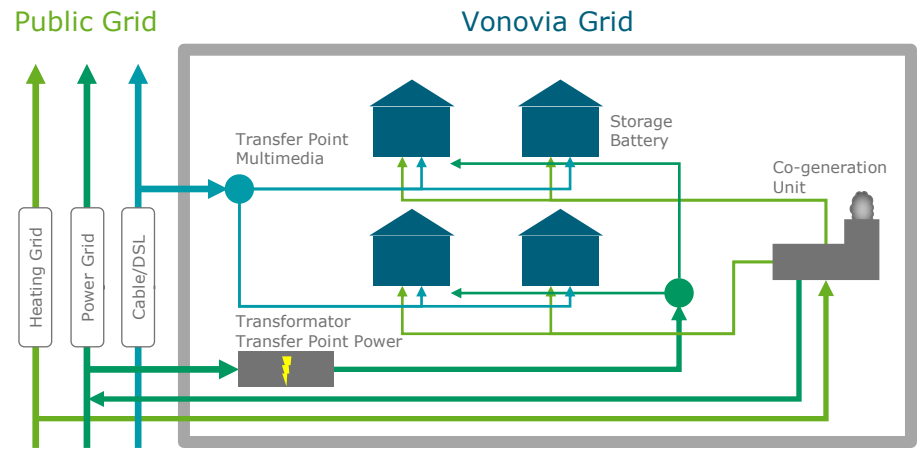
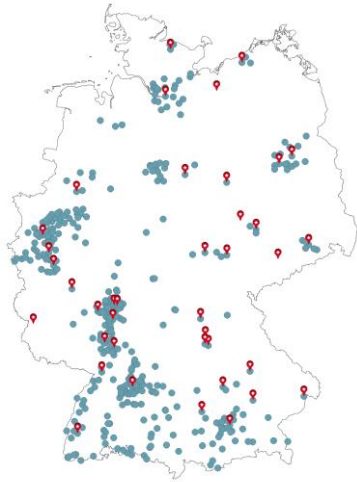
From renting apartments and kitchens to renting mobility

4 Grid

Infrastructure in Accommodations – Idea

- Vonovia manages about 50,000 buildings, which are often clustered in neighborhoods
- Construction of new assets for autonomous neighborhood supply

- Replacement of individual house connections and heating systems by new assets for generation and distribution → local networks
- Uncoupling of third parties: Autonomous district supply using own generation and distribution facilities



4 Grid Example

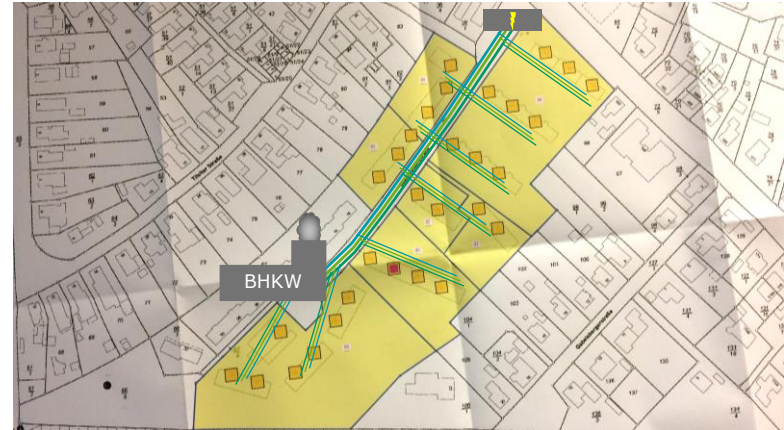
Today

- Every building is supplied with its own heating system
 - Every building is connected to the electricity grid with its own house connection
- Grid cost paid to utilities

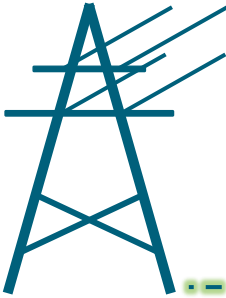


Tomorrow

- Supply of heat and power using a cogeneration unit and local heat and electricity network
 - One single substation for entire district
- Lower grid cost

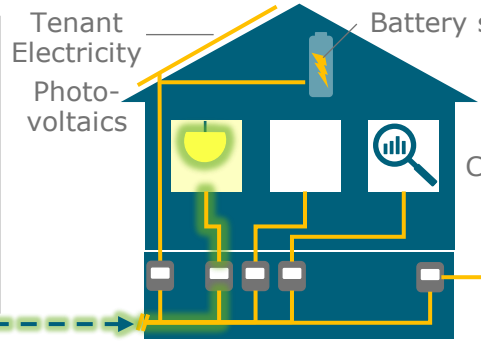


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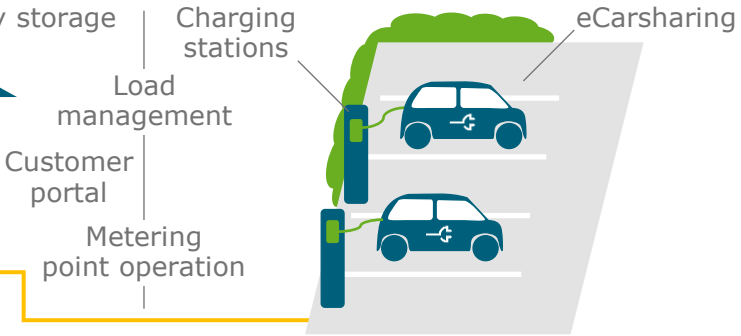


Energy supply

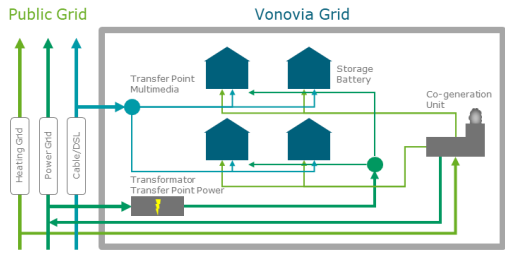
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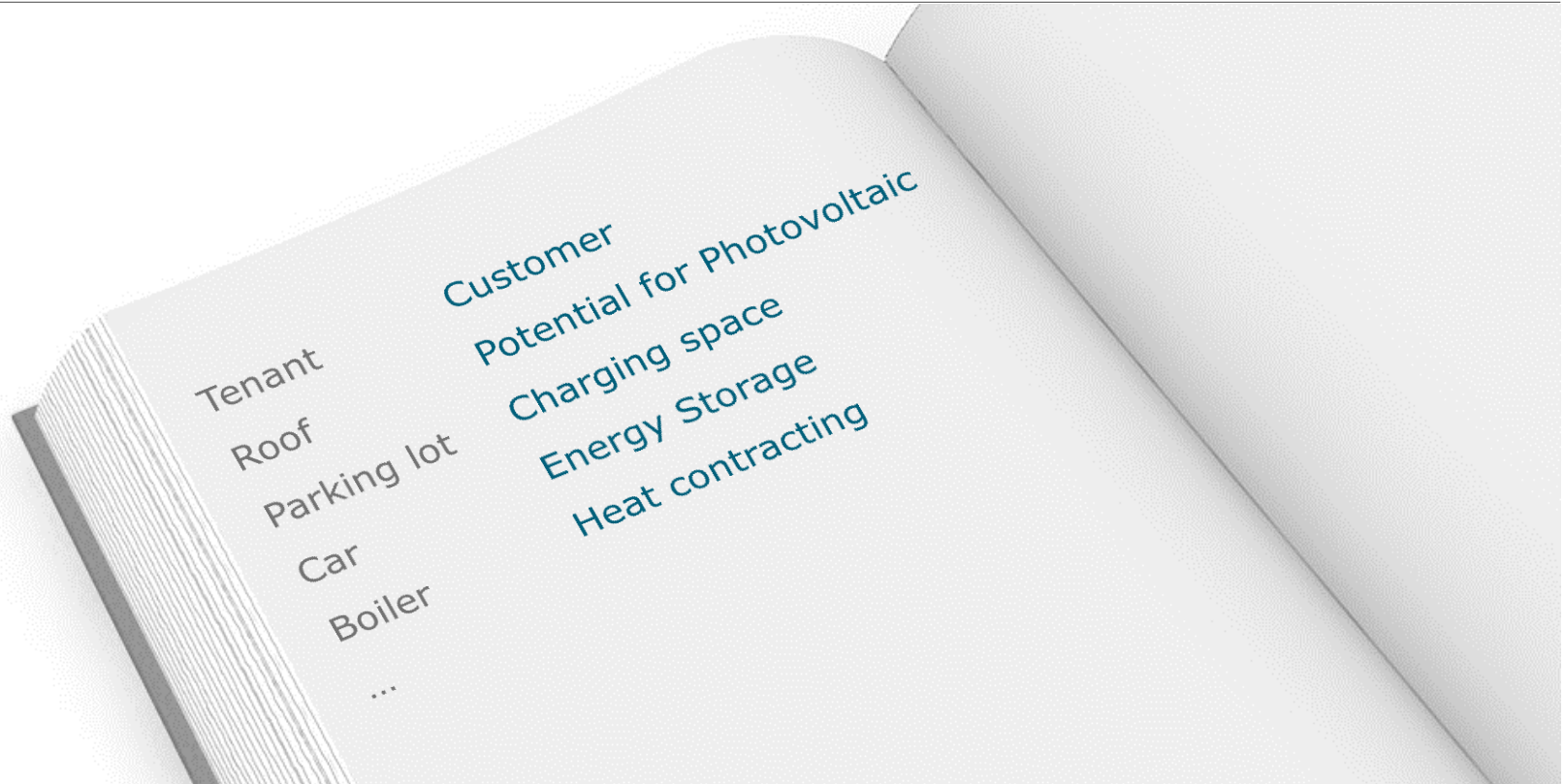


3 Digitization & Services



4 „The grid“





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