Photovoltaics in urban areas – legal framework

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Agenda

- Development of RE, especially of PV
- Legal framework
- Development of prices
- Status quo self-consumption in Germany
- Scheme Landlord-to-tenant electricity supply
- Summary
Annual Installed Capacity RE
Renumeration by the EEG-levy: 6,4 ct/kWh (23 billion Euro in total in 2018)

Development of renewables-based electricity generation in Germany

1

1 incl. solid, liquid and gaseous biomass, sewage sludge and the biologic fraction of waste

BMWi based on Working Group on Renewable Energy-Statistics (AGEE-Stat); as of February 2019; all figures provisional
State-regulated price components, EEG-levy: 6,4 ct/kWh

Source: Stiftung Umweltenergierecht, Ecofys, Fraunhofer ISI, Consentec
Annual Installed Capacity PV

- RE in total: 118,000 MW, 225 TWh = 38% RE share
- Photovoltaics in total: 46.2 GW = 8% share on total energy consumption

Development of electricity generation and installed capacity of photovoltaic plants in Germany

BMWi based on Working Group on Renewable Energy Statistics (AGEE-Stat); as of February 2019; all figures provisional
- Strong increase from 2017 to 2018 about 70%
- Installed capacity in 2018: 2.900 MW
- 2.130 MW on rooftops and 770 MW free-installed plants
PV-battery systems

- Every 2nd PV-system lower 30 kW are installed with an PV-battery
- 2018 in total more than 120,000 PV-battery-systems
- one third were installed with KfW support programme
Legal Framework: Renewable Energy Source Act

Feed-in-tariffs for all rooftop plants:

<table>
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<th>Feed-in-tariffs</th>
<th>bis 10 kW</th>
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<td>EEG 2017 ab 1.4.2019</td>
<td>11,63 ct/kWh</td>
<td>11,32 ct/kWh</td>
<td>9,39 ct/kWh</td>
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Self-consumption is allowed in Germany:

- Identity of operator and consumer necessary
- Time-matched production and consumption
- No EEG-levy for small units below 10 kW and 10 MWh per year / 40% EEG-levy for larger units / 100% for fossil fuels with exemptions
- Wide range of rules from laws and provisions, privileges concerning taxes and business law
- High benefits by avoiding electricity tariff (about 29 ct/kWh)
Self-consumption: in 2018 about 3 TWh

Self-consumption: no EEG-levy for small units below 10 kW, 40% EEG-levy for larger units

**Gesamtsumme: PV-Selbstverbrauch [GWh]**

- umlagebelasteter SV
- ungeförderter SV
- geförderter SV

<table>
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<th>Betriebsjahr</th>
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Landlord-to-tenant electricity supply

What? Landlord invest into PV-systems and provides the electricity to his tenants, living within this building

How? Landlords will receive the Premium per kWh paid for the electricity supplied
Rules are set out: to ban landlords from making this contract part of the rental agreement and also to introduce a cap on the price

Who? Landlord or plant operator receives the premium

How much? Between 2,8 and 3,8 Ct./kWh, depending on system-size
Conclusions

• High acceptance of PV (contrary to wind power on land) and popularity of self-consumption

• **Self-consumption is one pillar of electricity supply**

• **Landlord-to-tenant electricity supply at present on very low level (6 MW in 2018)**

• Incentives for self-consumption (with or without of PV-battery systems) are highly dependent of development of the electricity prices, design of privileges, levies and charges

• Challenge to integrate high number of small systems into energy system
  => Higher system costs, higher grid integration costs

➢ For the recently discussed 65% goal RE in 2030 we need more PV (about 4-5 GW/a)