



Federal Ministry  
for Economic Affairs  
and Energy

# 2017 Amendment of the Renewable Energy Sources Act and Development of ground mounted PV in Germany

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# Overview

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- Auction scheme basics
- Auction scheme Photovoltaics
- Auction results Photovoltaics
- Stakeholder diversity
- Area types and potentials
- Expiry of the subsidy and outlook



## Auction scheme - Basics

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Revision of RES Act is based on **three principles**:

1. The **deployment corridor** for renewable energy will be **adhered to**:
    - **40 - 45% Electricity generation by RES until 2025**
    - **55 - 60% Electricity generation by RES until 2035**
  2. Future RES expansion will be continuously ongoing, cost-efficient and grid compatible.
  3. All stakeholders will have a fair chance in the auctions.  
**Stakeholder diversity** will be maintained.
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# Auction scheme - Basics

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- Restraining factor: restricted auctioned volume
- Awarding procedure: only price is decisive
- Bids on floating market premium (ct/kWh)
- Pay as bid

## Exemptions:

- installations  $\leq 750$  kW and new installations using biomass  $\leq 150$  kW
- pilot wind energy plants (125 MW/yr)
- hydro and geothermal power plants



## Auction scheme - Basics

Phase 1

Phase 2

Phase 3

Federal Network Agency	<ul style="list-style-type: none"><li>• Announcement</li></ul>	<ul style="list-style-type: none"><li>• Check and verify bids and Bid bonds</li><li>• Sorting, awarding</li><li>• Publication and information</li></ul>	
Investor	<ul style="list-style-type: none"><li>• Bidding</li><li>• Check for prequalification</li><li>• Identification of reference value</li></ul>		<ul style="list-style-type: none"><li>• Realisation within the period prescribed</li><li>• Penalty in case of no realisation</li></ul>



## Auction scheme - Photovoltaics

Technology	Month	Year	Volume/MW	Total amount
Photovoltaics	February	2017	200	
Photovoltaics	June	2017	200	600 MW
Photovoltaics	October	2017	200	



# Auction scheme- Photovoltaics

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## PV installations > 750 kW:

- Ground mounted PV installations (conversion areas, areas close to motorways)
- Rooftop installations and PV installations installed on other physical structures (e.g. landfills)
- „Opening clause for Federal States“



## Auction scheme - Photovoltaics

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- PV installations > **750 kW**:
    - Volume: Max. 10 MW
    - Maximum price: 8,84 ct/kWh (Oktober 2017)
    - Transfer: Transfer to other site possible but with discount
    - Realisation period: 24 months, bid bond: 50 €/kW
    - Prequalification: Admission by local authorities and/or land development plan
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# Auction scheme PV - Results

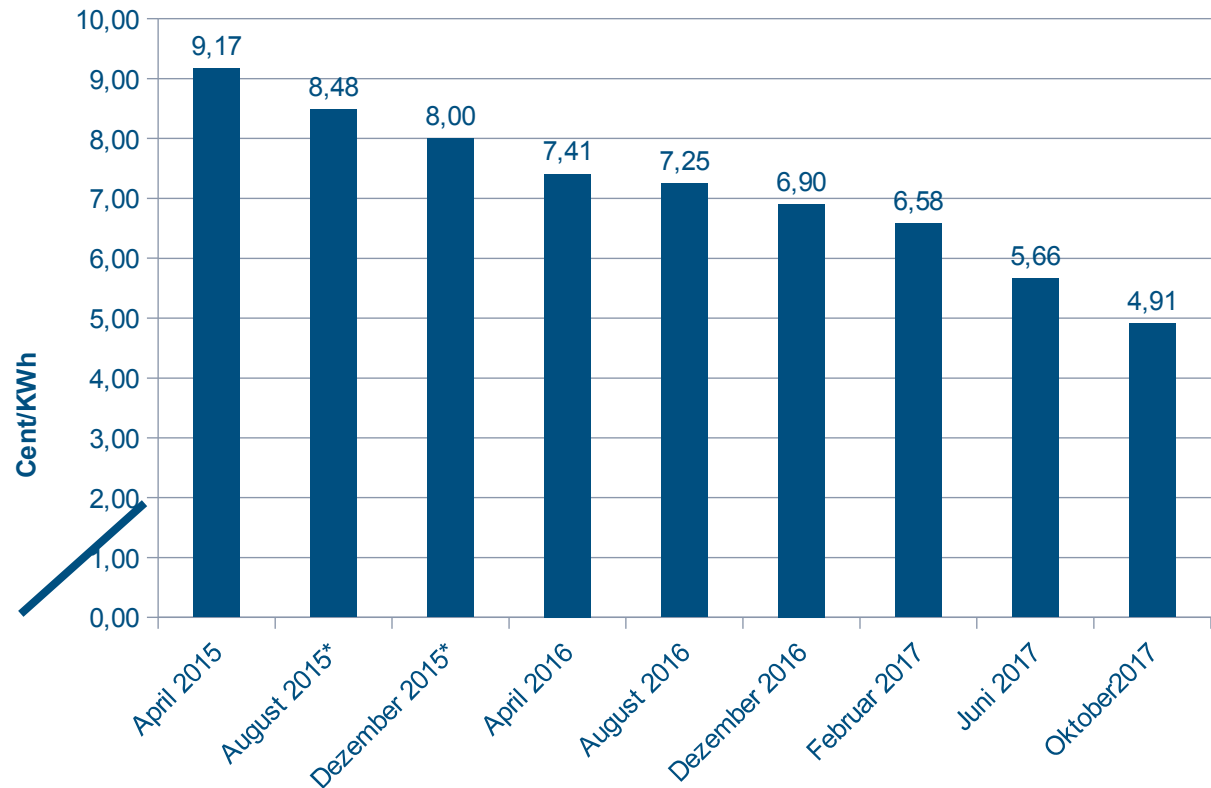
## Tenders for pv (ground mounted)

✂ Tendered volume:

150 – 200 MW  
per round

✂ Bidden volume:  
3 – 6 times higher

**Realisation  
rate:  
nearly 100 %**





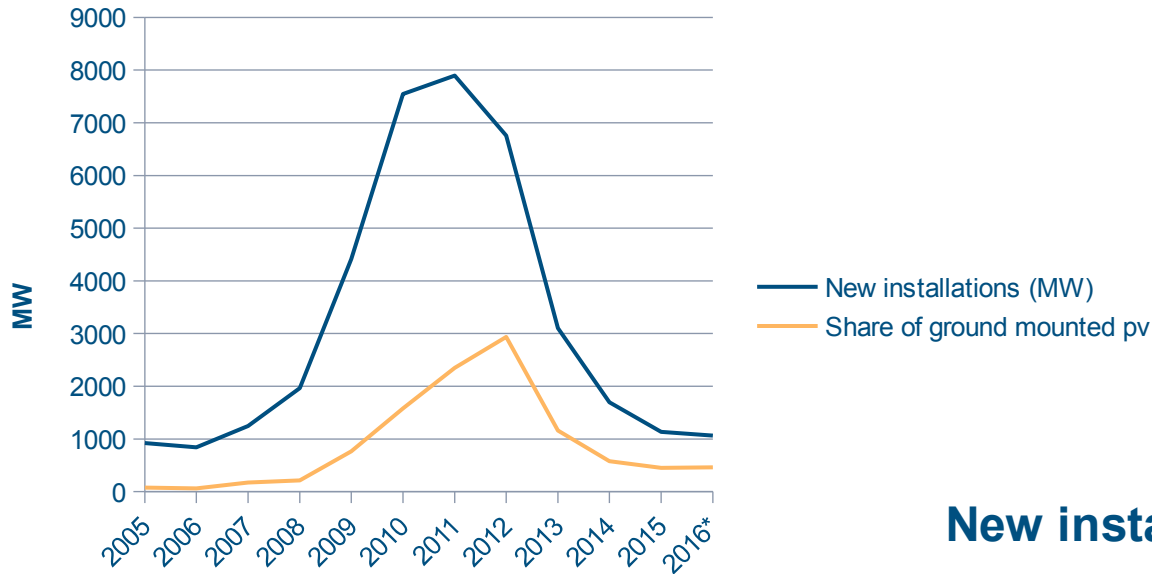
## Auction scheme PV - Results

	1st February 2017	1st June 2017	1st October 2017
Tendered Volume	200 MW	200 MW	200 MW
Bids in total	97	133	110
Volume (bids)	488 MW	646 MW	754 MW
Awarded bids	38	32	20
Awarded volume	200 MW	201 MW	222 MW

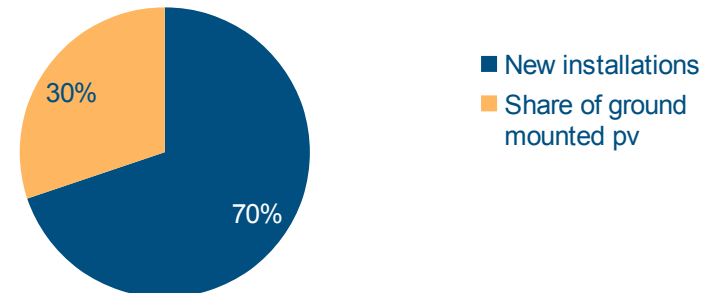


# Auction scheme PV - Results

## Development of PV realisation 2005 to 2016



## New installations pv in 2016\*

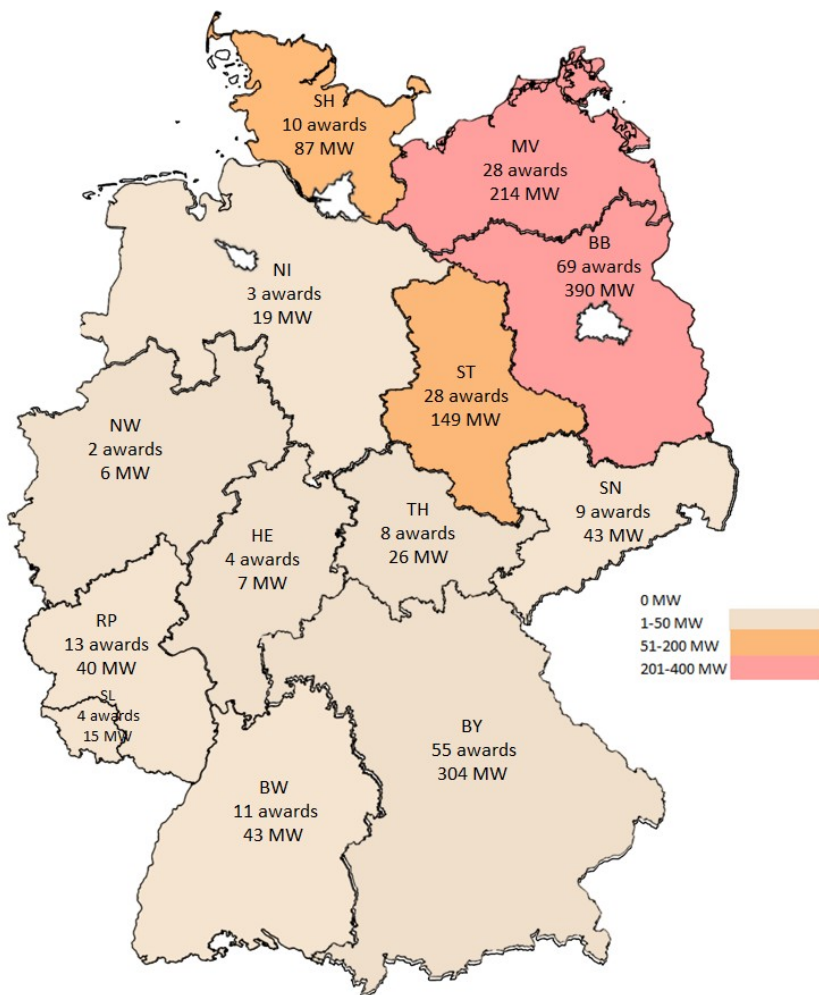


\*2016 provisional ground mounted pv



# Auctions (April 2015 – June 2017)

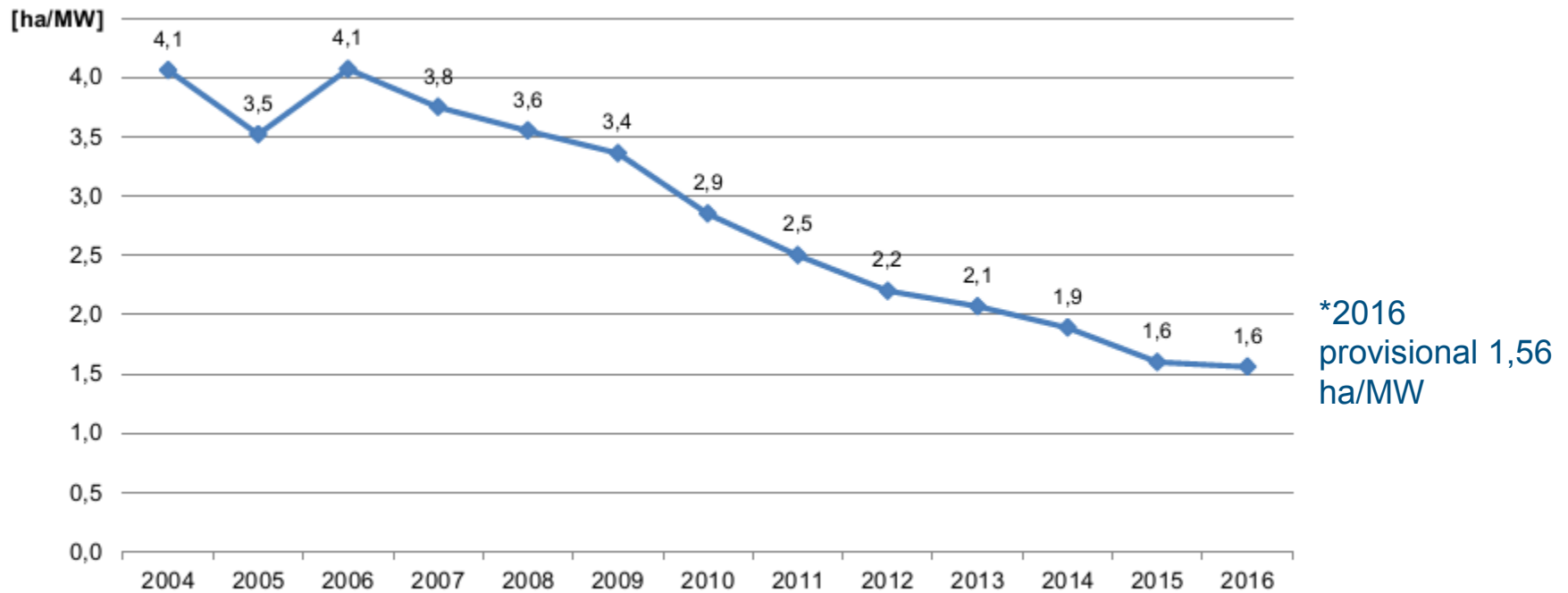
- 244 awards, 1343 MW awarded volume
- Eight auctions (April 2015 – June 2017)





# Auction scheme PV - Results

## The Development of necessary areas (hectar per megawatt)





## Auction scheme PV - Results

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- Intensive competition
- Volume several times oversubscribed
- decreasing reference value  
(9,17 → .. 8,00 → .. 5,66 ct/kWh)
- Nearly all bids that were awarded a contract deposited a second bid bond
- Different actors participated, also smaller actors and projects had been successful
- Realisation rate of first rounds ~ 90 %



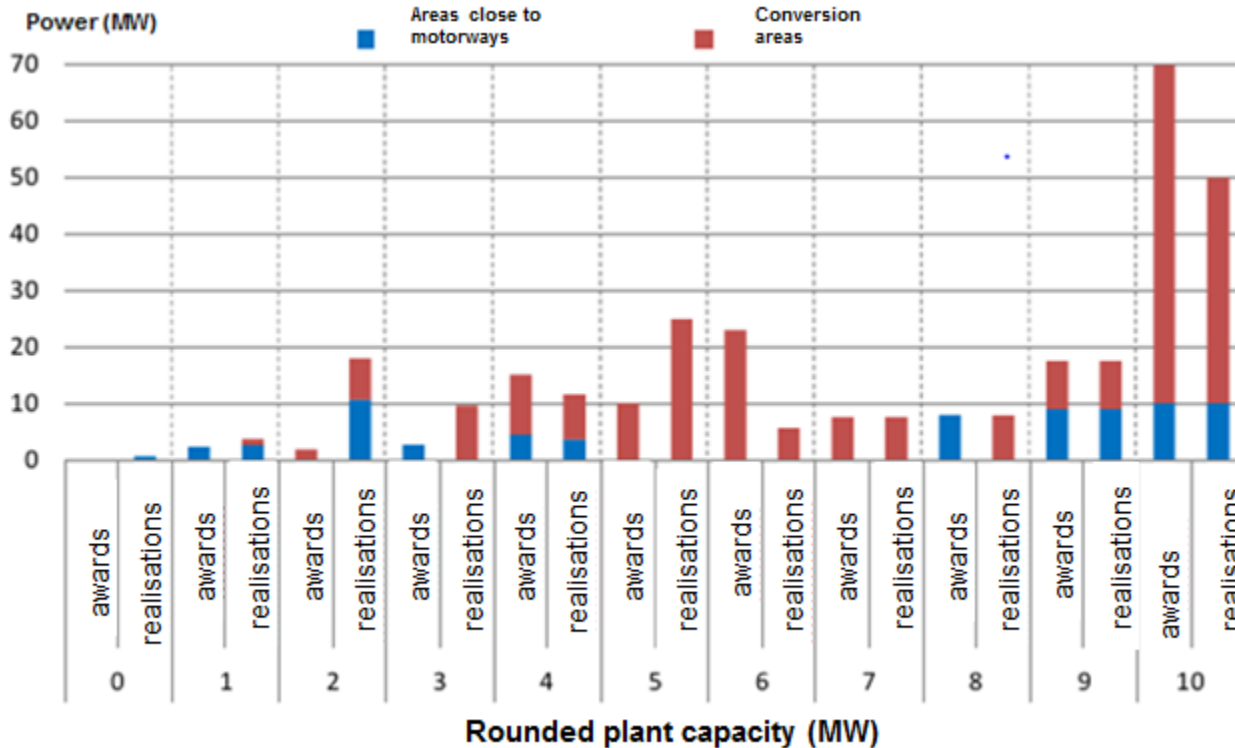
## Stakeholder diversity

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- Objective: Maintaining a **high level of stakeholder diversity**
- This is the intention behind the **750 kW de minimis threshold**:
  - This mainly exempts small and medium-sized PV installations from the obligation to take part in auctions.
- This is also the aim of the **simple and transparent auction design**.
- The Federal Government will also be providing **advisory and support services** for smaller players.



## Realisation after first auction – sorted by installation size and types of area

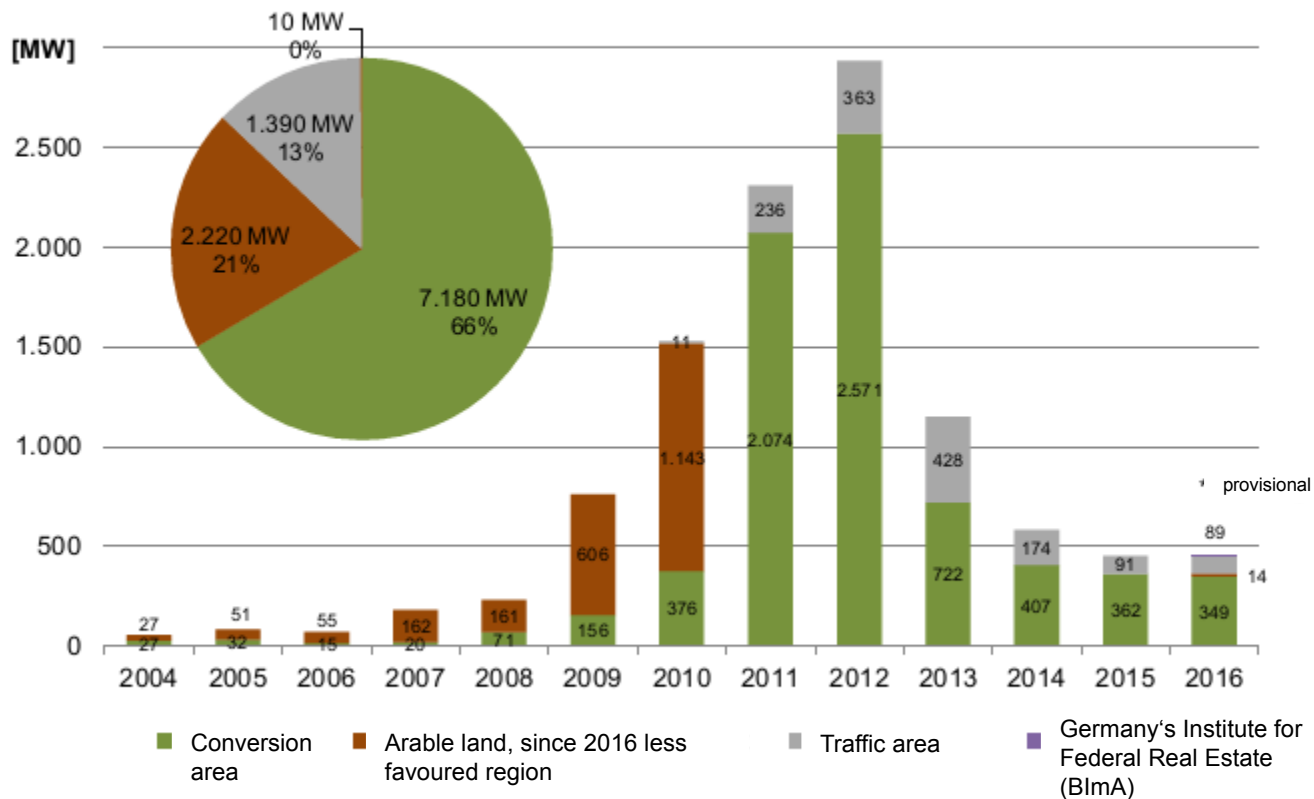


- about 23 % areas close to motorways
- about 77 % conversion areas



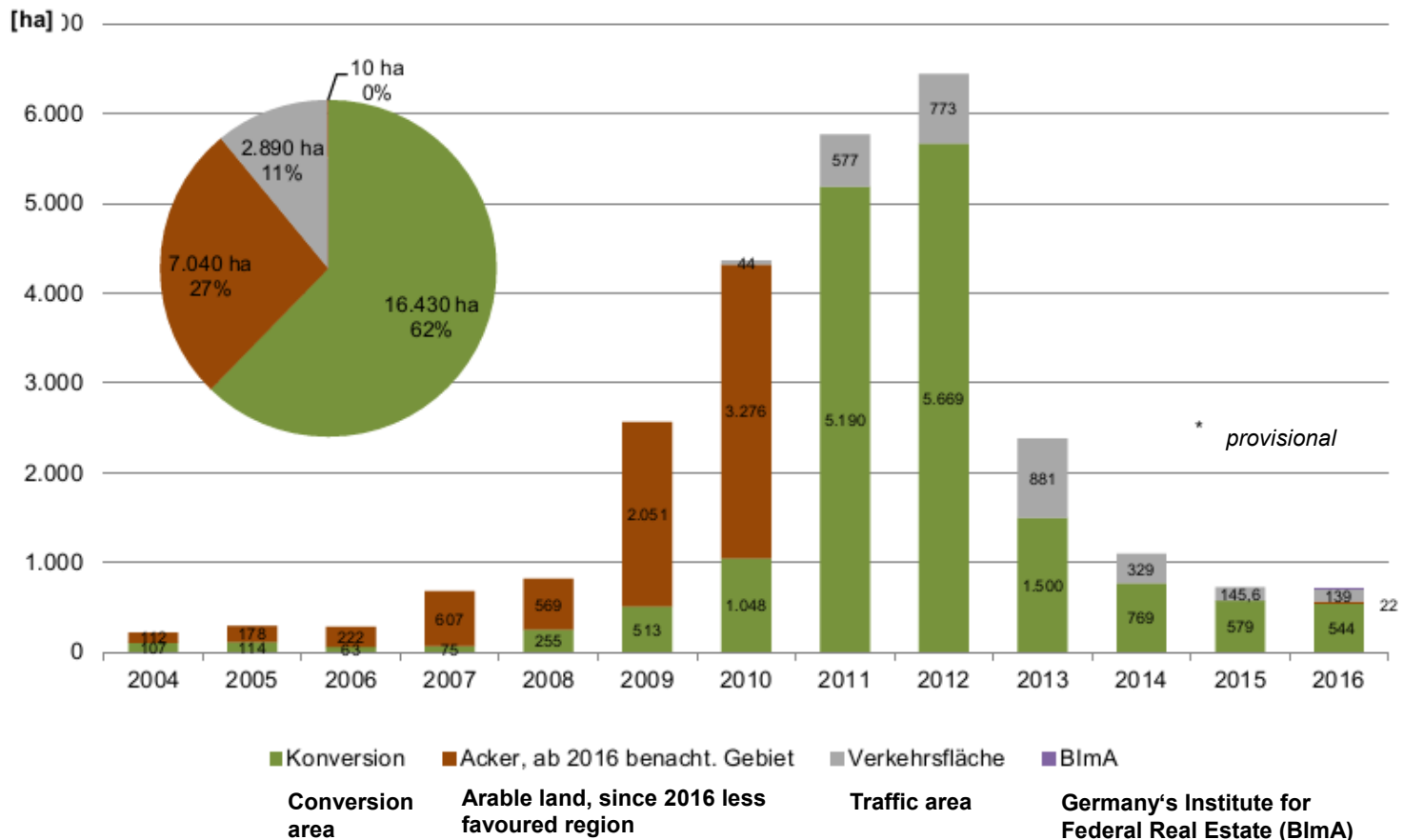


# Installed capacity and annual realisation - sorted by types of area





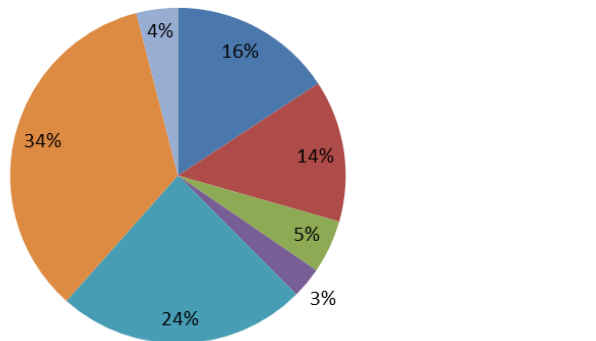
# Types of areas and land use under EEG 2016 (old system)





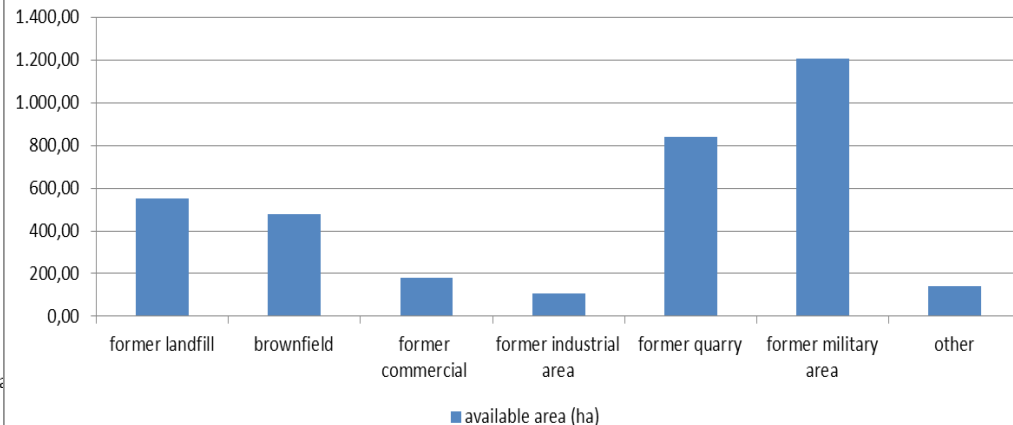
# Potential of conversion areas

- In the end of 2016, 16.400 hectares were already used by ground mounted pv installations
- Total potential of conversion areas: 3.503,4 ha
- Results of the OSM-data analysis for available conversion areas



■ former landfill    ■ brownfield    ■ former commercial    ■ former industrial area  
■ former quarry    ■ former military area    ■ other

Available conversion areas (ha)





# Potential of areas close to motorways

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- 22.400 hectares are still available
- Above all: areas close to railways



# The expiry of subsidy

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- By the end of the year 2020, the FITs for approx. 70 MW installations will expire.
- From 2024/25, the FIT of the first generation ground mounted installations will expire
- Possibilities and conditions for continuing the operation have to be considered



# Outlook

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- EEG 2017 in force on 1.1.2017, state aid approval until 2021
- As of 2017 opening for cross-border auctions for PV systems (DE-DK)
- As of 2018: Technology-neutral pilot tender about 400 MW/yr (2018-2020)
- As of 2018: Innovation pilot about 75 MW/yr (2018-2020)
- March 2018: Ordinance on the determination of a grid expansion zone



Thank you for your attention.

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