



Federal Ministry
for Economic Affairs
and Energy

Tendering schemes in the EU:

The introduction of competitive tendering schemes for RE support in Germany

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■ Background (History & RE Targets)

- History & RE Targets
- EEG revision 2014

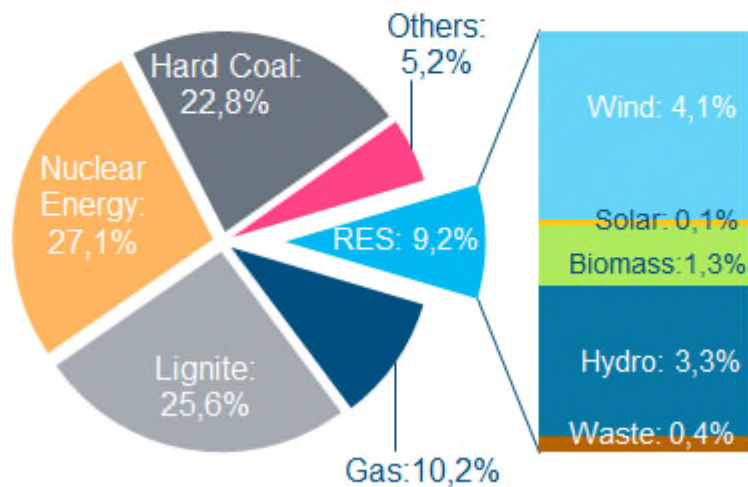
■ Pilot auction for ground mounted PV

■ EEG revision 2016 and the introduction of tendering for other RES

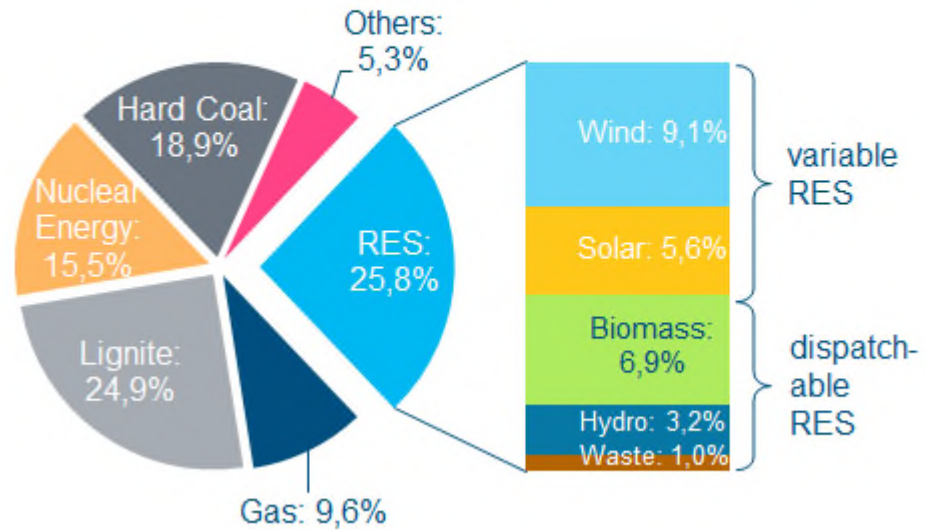
Background: German gross electricity production

Renewables have overtaken each conventional source to become the largest electricity source in just ten years.

2004 total: 617.5 TWh
renewables share: 56.6 TWh



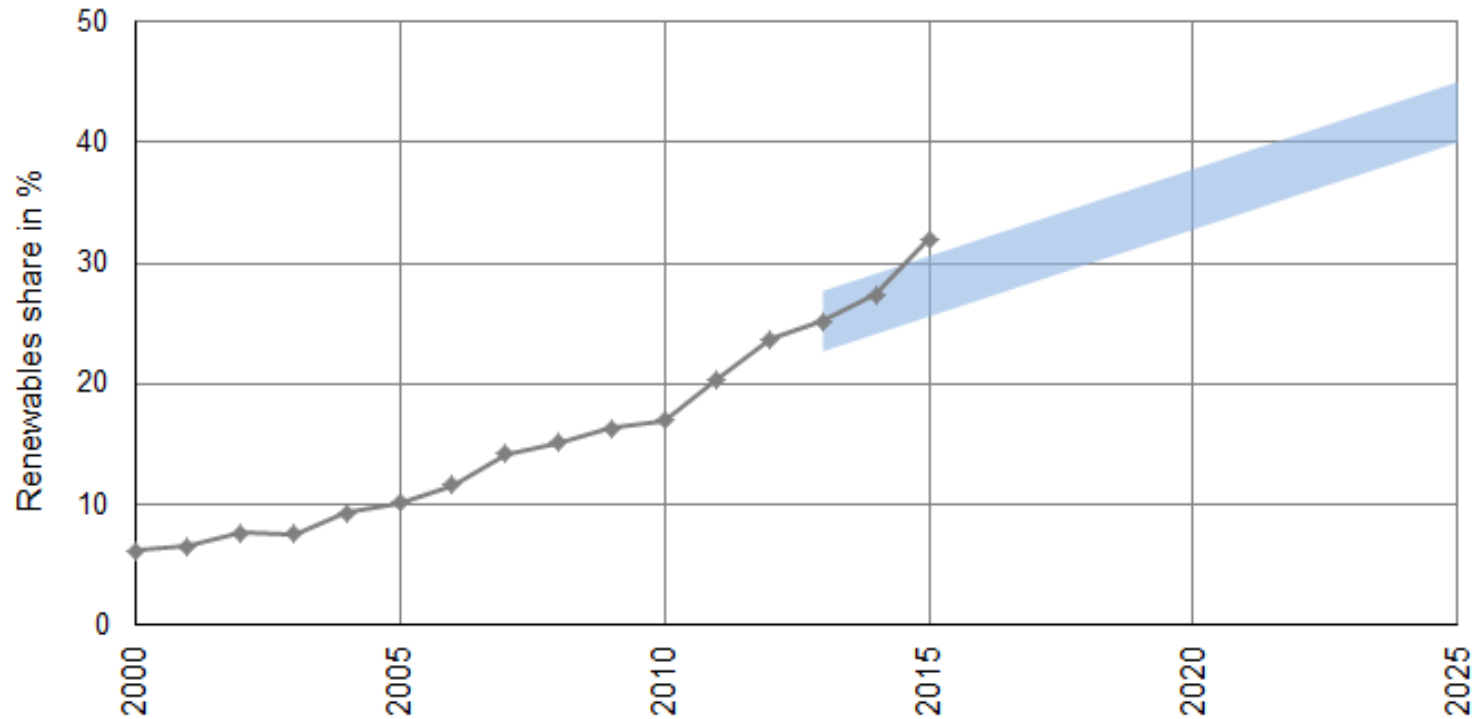
2014 total: 610 TWh
renewables share: ~157.4 TWh



2015: total: 647 TWh
renewable share: 194 TWh

Source: Ecofys 2015, AGEF 2015

Background: RE share in gross electricity consumption



Overall target corridor

- In 2025: between 40% and 45% RES-E
- In 2035: between 55% and 60% RES-E
- Focus on Wind and PV as most cost-effective solutions

Capacity additions

- Onshore wind and PV
2 500 MW (2.5 GW) per year each
- Bioenergy 100 MW per year
- Offshore wind 6.5 GW by 2020,
15 GW by 2030

Background: EEG Amendment 2014



More coordination

- (1) Binding target corridors for RES deployment
- (2) Introducing quantity control mechanisms



More efficiency

- (3) Focus on cost-efficient technologies



More market integration

- (4) Increase market integration through premium system
- (5) Tendering scheme for ground-mounted PV



More diversified distribution of costs

- (6) EEG levy on self-supply
- (7) Adjusted exemptions for the industry



More Europe

- (8) Open auctioning scheme for European neighbours

Affordability

**Environmentally
friendly energy
supply**

**Security of
supply**



Overview

■ Background (History & RE Targets)

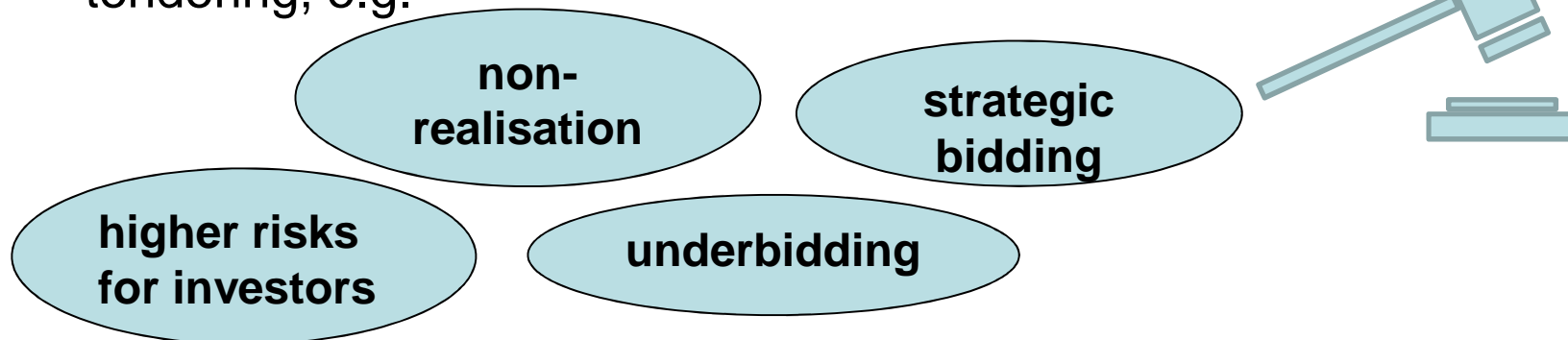
- History & RE Targets
- EEG revision 2014

■ **Pilot auction for ground mounted PV**

■ EEG revision 2016 and the introduction of tendering for other RES

Introduction of tendering schemes: The pilot phase

- General intention: determine support levels through tenders for renewable technologies by 2017 (market instrument)
- First, necessary experience needed to be gained
- The first pilot phase from 2015 will cover 400 MW ground-mounted PV per year (2015: 500 MW, 2014: 400 MW, 2013: 300 MW)
- Several challenges need to be solved before rolling out tendering, e.g.



*Auctions can help to achieve further support cost reductions.
Faster response to market developments*

What is being auctioned?

- Amount of funding is awarded for bids on the lowest reference value
(reference value = market premium + market price)
- Ground mounted PV may only be build on certain types of land, including conversion areas and close to motorways
- Maximum size per project: 10 MW

What does the tendering scheme look like?

- Maximum price
- Administration: Federal Network Agency
- Announcement of tenders 2 months in advance, short time to award contracts
- Trading of contracts is forbidden

What does the tendering scheme look like?

- 3 auction rounds per year
- Volume of PV pilot is on average 400 MW:
 - 2015: 500 MW, 2016: 400 MW, 2017: 300 MW
- Only „price“ is decisive for awarding contracts
- Price rule: „pay-as-bid“, except for 2nd and 3rd tender: „uniform pricing“

Results from the 3 auction rounds in 2015

	15. April 2015	1. August 2015	1. Dezember 2015
Tendered volume	150 MW	150 MW	200 MW
Bids (volume)	170 (715 MW)	136 (558 MW)	127 (562 MW)
Successful bids (awarded volume)	25 (157 MW)	33 (159 MW)	43 (204 MW)
Ø reference value	9,17 ct/kWh	8,48 ct/kWh	8,0 ct/kWh
Corresponding FIT	9,02 ct/kWh	8,93 ct/kWh	No FIT under EEG for ground mounted PV
Price mechanism	Pay-as-bid	Uniform pricing	Uniform pricing

Lessons learned

- Intensive competition
- Volume several times oversubscribed
- Decreasing reference value from 1st to 3rd round (9,17 ct/kWh -> 8,49 ct/kWh -> 8,00 ct/kWh)
- Nearly all bids that were awarded a contract handed in the second bid bond
- Different actors participated, also smaller actors & projects have been successful
- Implementation of projects remains to be seen (two years time)

Overview

■ Background (History & RE Targets)

- History & RE Targets
- EEG revision 2014

■ Pilot auction for ground mounted PV

■ **EEG revision 2016 and the introduction of tendering for other RES**

Tenders for other RES

- Efficiency and success of tendering scheme is defined by level of competition in the respective market:
 - Experiences and design are difficult to transfer to other RES because of different market structures
- But: administration and bidders can learn and gather experiences with the PV pilot tendering scheme

Tenders for other RES

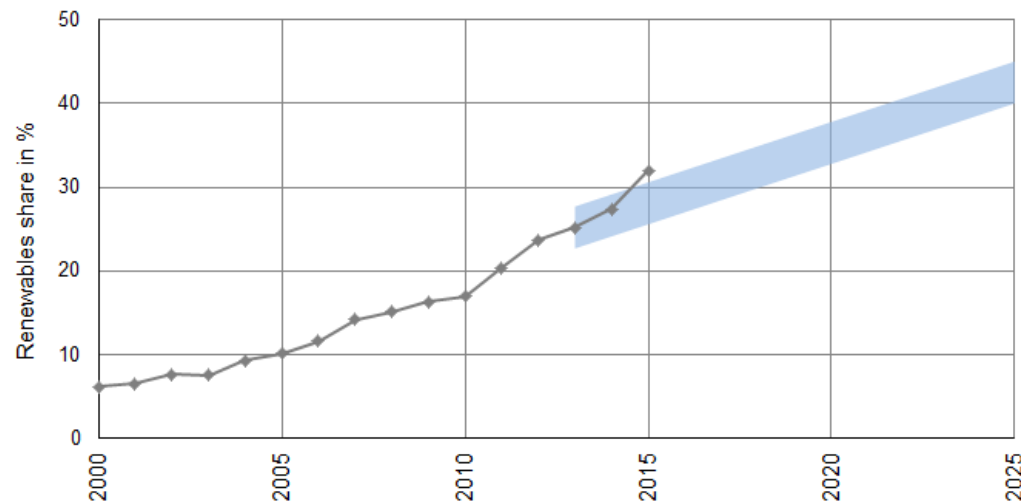
■ What have we done so far:

- Scientific consortium commissioned, close collaboration
- transparent process of
 - Pilot auctions and market analysis for all technologies (public consultation)
 - workshops with stakeholders on specific questions (e.g. platform power markets)
 - Publication of basic principles for other RE technologies in summer 2015 (public consultation)
 - Continuous work on EEG 2016, reflecting consultation
 - Publication of key points amending the EEG 2016
 - Report to the German parliament on pilot auctions (13.01.2016)

Tenders for other RES

■ Guiding principles

- RE development in line with “deployment corridor”
- Cost efficiency (amount of funding should not exceed the amount that is needed in order for the installation to be operated in a way that is economically viable)
- Level playing field for all actors involved



Tenders for other RES

■ Auctions for

- Onshore wind energy
- Offshore wind energy
- Large scale photovoltaic installations (ground mounted, rooftops and PV systems installed on other physical structures (e.g. landfills) > 1 MW)
- 80 % of new RE production will tendered
- No auctions for Water, Geothermal and biomass (auctions for biomass are eventually planned in a second step for existing installations).

Tenders for other RES

- Technology specific but designs have common features
 - 3-4 auctions round per year conducted by the Federal Network Agency
 - Auction rounds open to single, sealed bids
 - Security/ bid bonds necessary to ensure that only serious bids are submitted
 - Bids for floating market premium
 - Bids will be accepted, starting with the lowest, and until the amount of capacity that is being auctioned is reached. In principle, the amount of funding corresponds to the individual bid (pay as bid).
 - Maximum price (published in advance)

Tenders for other RES

■ Large scale PV

- Similar to the pilot auction for ground mounted PV
- Funding for all PV installations > 1 MW will be subject to a collective auction
- All other rules remain unchanged
- No self consumption as it distorts completion
- Ground mounted PV may only be build on certain types of land, including conversion areas and close to motorways

Tenders for other RES

■ onshore wind

- Auctions for onshore wind (Exemptions for installations < 1 MW capacity and prototypes with max. capacity of 100 MW/year)
- Auctions are open to installations that have been approved under the Federal Immissions Control Act (BImSchG). → Late stage auction
- 3-4 rounds per year
- Bids based on the reference value of the market premium using a one-tier reference revenue model at a reference site (100%-site)
- Security/bid bond of 30.000 €/ MW
- Maximum price of 7.0 cents/kWh for 100-per-cent

Tenders for other RES

■ offshore wind

- BMWi proposes a “centralised model”: authorities will explore sites at which future offshore wind farms are to be established to ensure that there is sufficient competition in the auction
- Bidders will compete for the right to establish a wind farm at the site that has been explored
- Centralised model will ensure dovetailing between site planning, regional planning, approval of installations, EEG funding, grid connection
- Long run-up periods required for planning and approval mean that the centralised model will come into force in 2024

Tenders for other RES

■ offshore wind

- Transitional period from 2021-2023
- EEG 2014 funding scheme will continue to apply for all wind energy installations that start operating by the end of 2020

Tenders for other RES

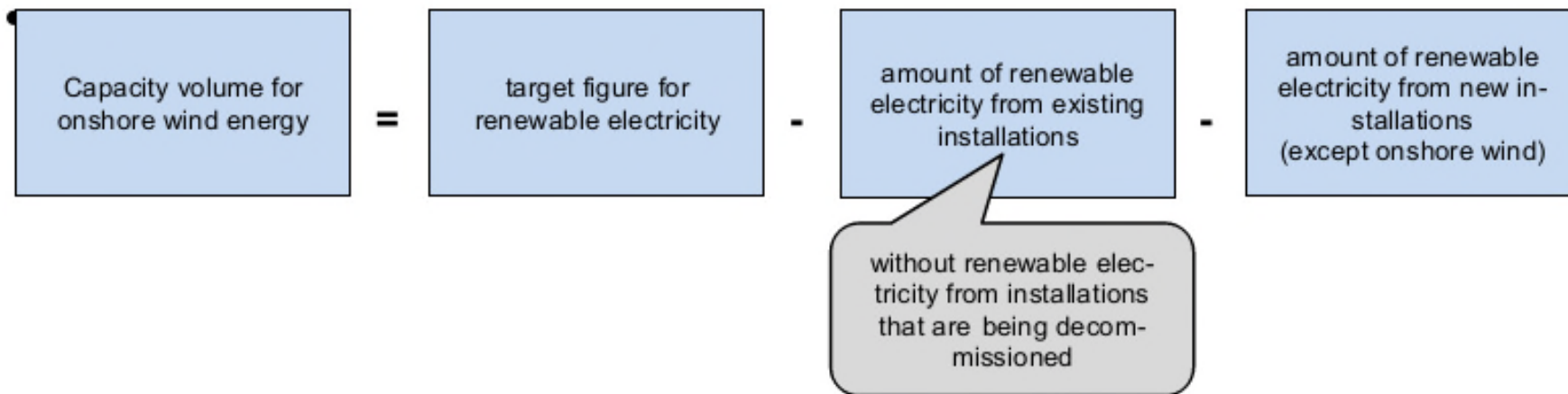
■ Capacity volumes

- Deployment corridor crucial as it provides planning security which is important with regard to development in conventional power, the grid and Germany's neighbours
- For offshore wind, expansion targets set out in the EEG 2014 remain unchanged (6,5 GW 2020, 15 GW by 2030 max. of 11 GW by 2025 → 800 MW capacity per annum.
- PV > 1 MW → 500 MW and rooftops 2.000
- → capacity volume for onshore wind therefore key to ensuring that the rate of expansion does not deviate from the corridor

Tenders for other RES

■ Capacity volumes

- Calculated using a formula that can be illustrated as follows:



Tenders for other RES

■ Capacity volumes

- The formula takes into account the development of the amount of renewable electricity and of gross energy consumption
- This target figure is calculated using the highest percentage that is still within the deployment corridor, i.e. 45 % of Germany's electricity should be RE by 2025
- Capacity volume will be adjusted using the formula every year. → reflecting actual developments
- Formula will not only be used to calculate the capacity volume for the year in question, but will also look at the development up until 2025

Time Schedule

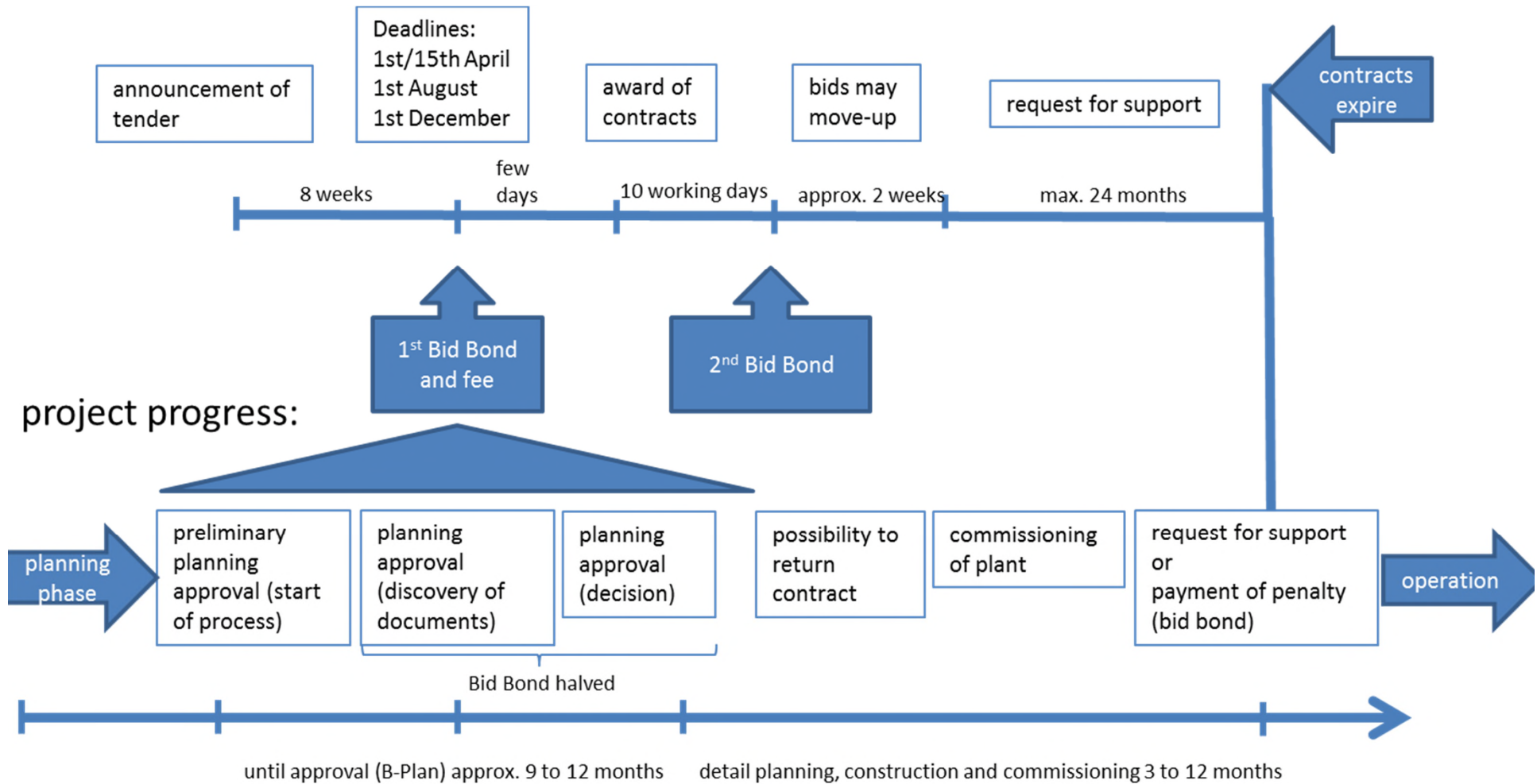
- Time schedule for revision of EEG:
 - Revision process started
 - BMWi Draft version of EEG 2016 just finished
 - Interdepartmental coordination between the relevant ministries started this monday (e.g. Environment, Finance, agriculture)
 - Hearing of stakeholders, unions and Länder after that
 - Parliamentary procedure completed before the summer break
 - Notification of EEG 2016 with EC
 - End of 2016 / 2017 first tenders for other RES

■ Thank you for your attention!

■ Backup



Overview of the PV tendering pilot



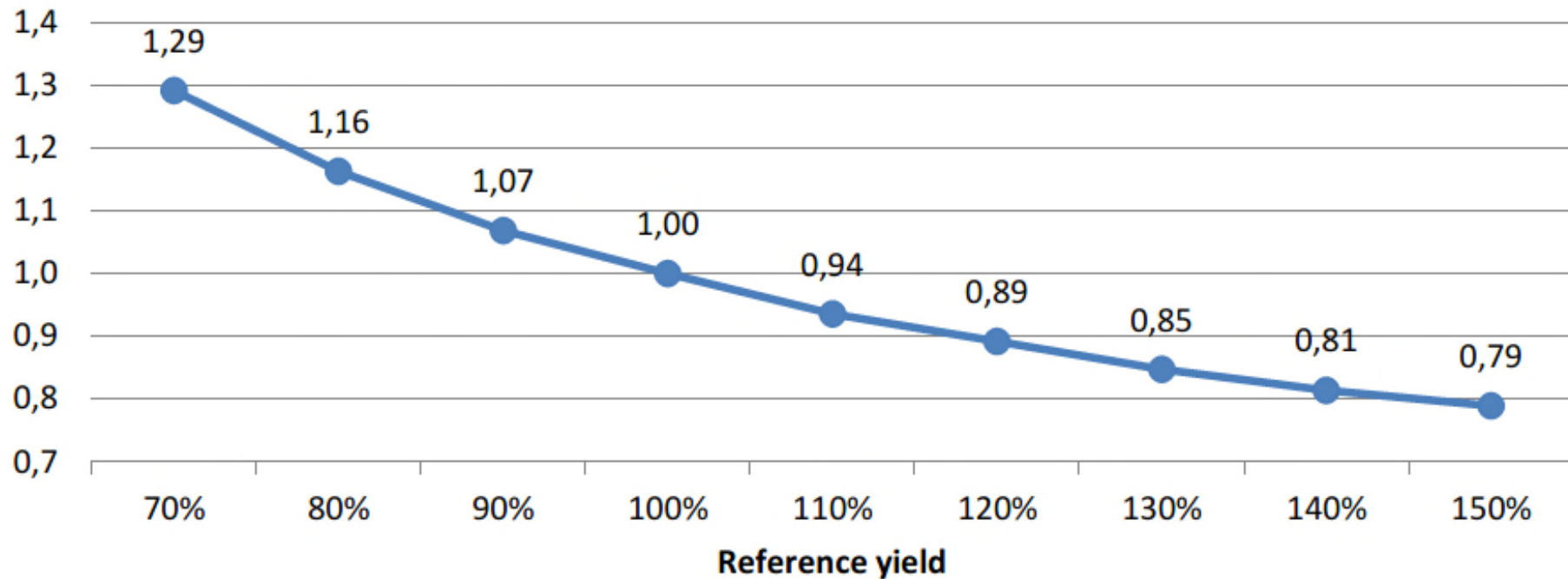
Tenders for other RES

■ One-tier reference value

- Model to level the playing field across Germany and provide incentives for the construction of efficient installations on different sites with different wind conditions
- Reference value assumes wind speed at 100 m above the ground is 6.45 m/s
- Operators will submit bids based the assumption of a 100%-site
- The actual reference value expected for the installation is multiplied by a adjustment factor and thus converted into a reference value of a 100%-site
- This makes it possible to compare bids

Tenders for other RES

■ Illustration of adjustment factors

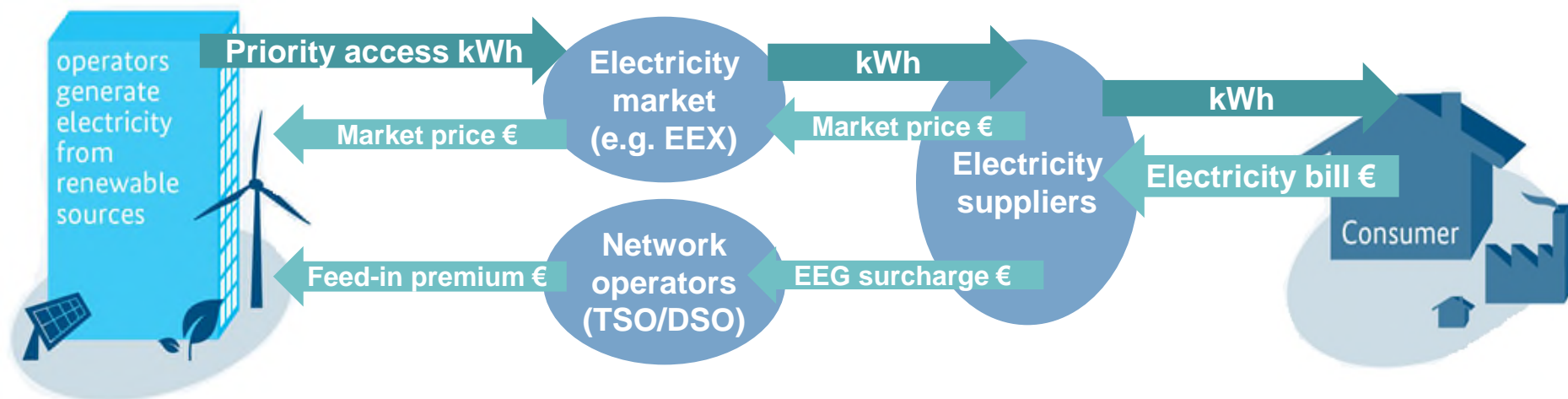


Cornerstones of the Renewable Energy Sources Act

- **Guaranteed grid access; priority transmission and distribution**
- **Fixed price (tariff or premium) for every kWh produced**
- **Tariffs are set for each type of technology and with regard to further provisions (e.g. site and size)**
- **Additional costs for renewable energy production are offset through the EEG levy (2016: ~ 6,354 ct/kWh), with reductions for energy-intensive industries**
- **Additional costs are offset via grid operators and independent of the public budget**
- **Regular monitoring and evaluation; accompanying research**

Renewable Energy Sources Act Amendment 2014

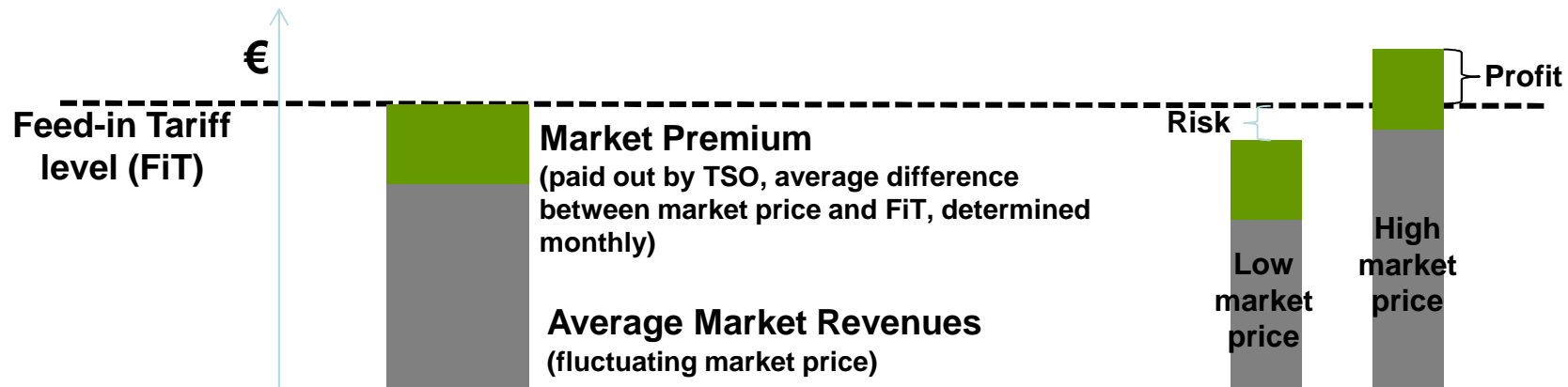
- Renewable energy sources have priority access to the grid.
- Currently, operators can decide between FiT and FiP.
- All electricity from RES installed after August 2014 will have to be traded (FiP).



Priority access, feed-in tariffs and long-term security ensure success.

Increase market integration through premium system

- Market price signal reaches RES-E generators, who thus react to market needs
 - RES-E generators can create additional profit by adjustment to market prices
 - Efficient market integration, incentives improved prognosis and balancing



The market premium bears new opportunities and incentivises flexibility.