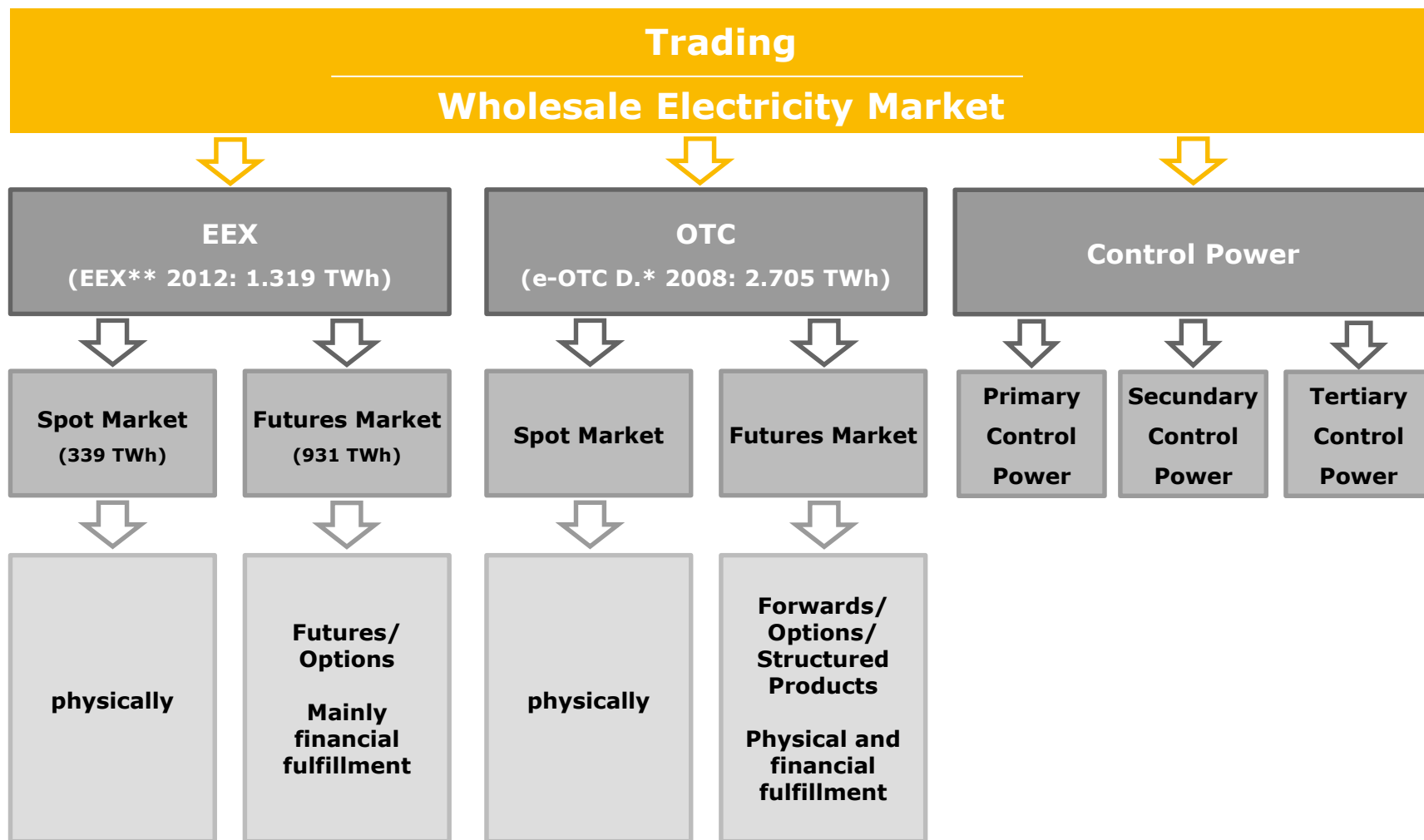


WEMAG/Rudolph-Kramer

## National Support Schemes to Foreign Investment

Germany Trade & Invest  
Heiko Staubitz

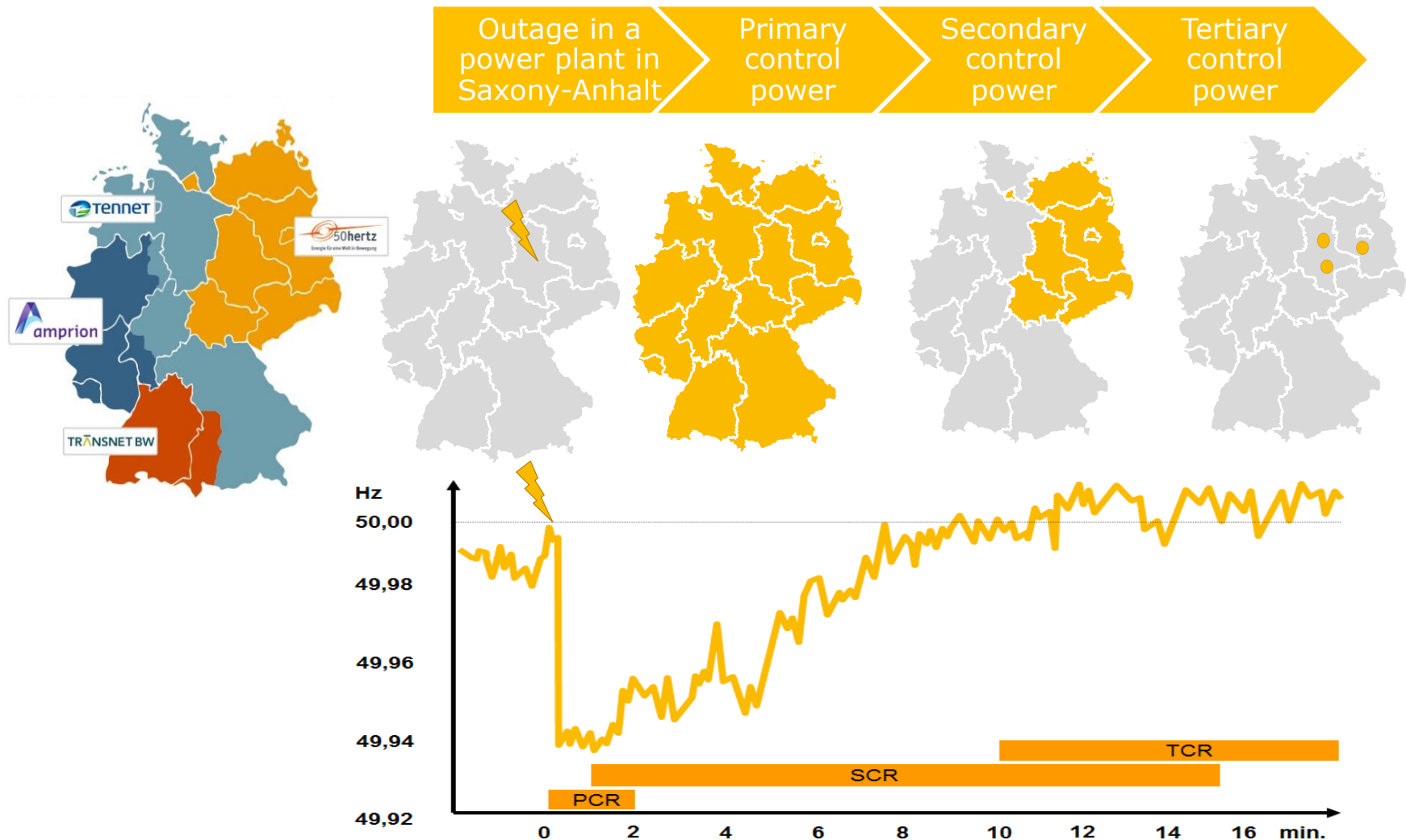
## Functioning of the Wholesale Electricity Market



Notes: \* Excluding OTC-Clearing; \*\* Including OTC-Clearing; Source: RWE Supply & Trading 2010

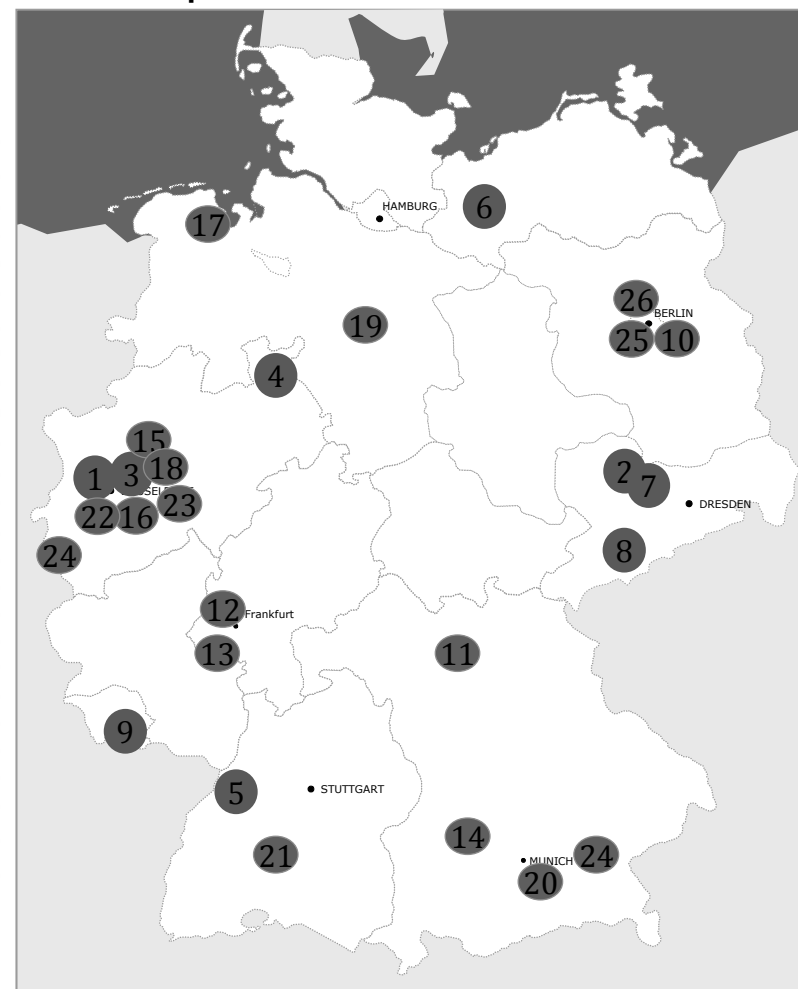
# Control power (Operating reserve)

Interaction between three types of control power in case a generator goes down or there is another disruption to the supply



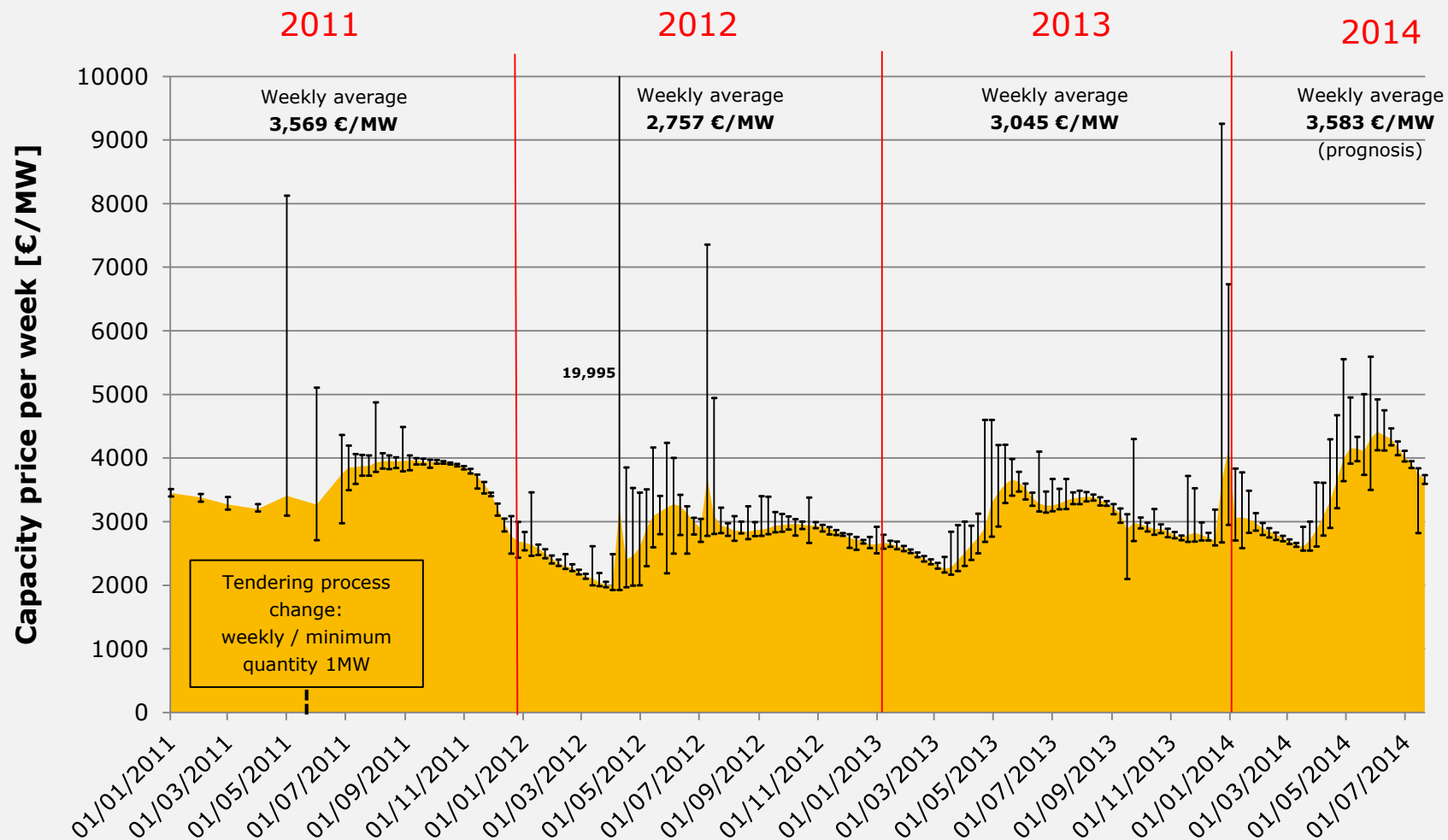
## Prequalified providers of different kind of control power

	Provider	Location	Primary Capacity Reserve (PCR)	Secondary Capacity Reserve (SCR)	Tertiary Capacity Reserve (TCR)
1	<a href="#">Alpiq AG</a>	Düsseldorf	x		
2	<a href="#">Clean Energy Sourcing GmbH</a>	Leipzig		x	x
3	<a href="#">E.ON Energy Trading SE</a>	Düsseldorf	x	x	x
4	<a href="#">E.ON Westfalen Weser Energie-Service GmbH</a>	Herford		x	x
5	<a href="#">EnBW Kraftwerke AG</a>	Karlsruhe	x	x	x
6	<a href="#">Energieversorgung Schwerin GmbH &amp; Co.</a>	Schwerin		x	
7	<a href="#">Energy2market GmbH</a>	Leipzig	x	x	x
8	<a href="#">envia Mitteldeutsche Energie AG</a>	Chemnitz		x	x
9	<a href="#">Evonik Power Saar GmbH</a>	Saarbrücken	x	x	
10	<a href="#">GDF SUEZ Energie Deutschland AG</a>	Berlin	x	x	x
11	<a href="#">Heizkraftwerk Würzburg GmbH</a>	Würzburg		x	
12	<a href="#">Infraserv GmbH &amp; Co. Höchst KG</a>	Frankfurt		x	
13	<a href="#">Kraftwerke Mainz Wiesbaden AG</a>	Mainz		x	x
14	<a href="#">Lechwerke AG</a>	Augsburg		x	x
15	<a href="#">Mark-E AG</a>	Hagen		x	x
16	<a href="#">Next Kraftwerke GmbH</a>	Köln		x	x
17	<a href="#">Nordenhamer Zinkhütte GmbH</a>	Nordenhamer		x	
18	<a href="#">RWE Supply &amp; Trading GmbH</a>	Essen	x	x	x
19	<a href="#">Stadtwerke Hannover AG</a>	Hannover	x	x	x
20	<a href="#">Stadtwerke München GmbH</a>	München	x	x	x
21	<a href="#">Stadtwerke Tübingen GmbH</a>	Tübingen		x	
22	<a href="#">Statkraft Markets GmbH</a>	Düsseldorf	x	x	x
23	<a href="#">Steag GmbH</a>	Essen	x	x	x
24	<a href="#">Trianel GmbH</a>	Aachen		x	x
25	<a href="#">Trimet Aluminium AG</a>	Berlin	x		
26	<a href="#">Vattenfall Europe Generation AG</a>	Berlin	x	x	x

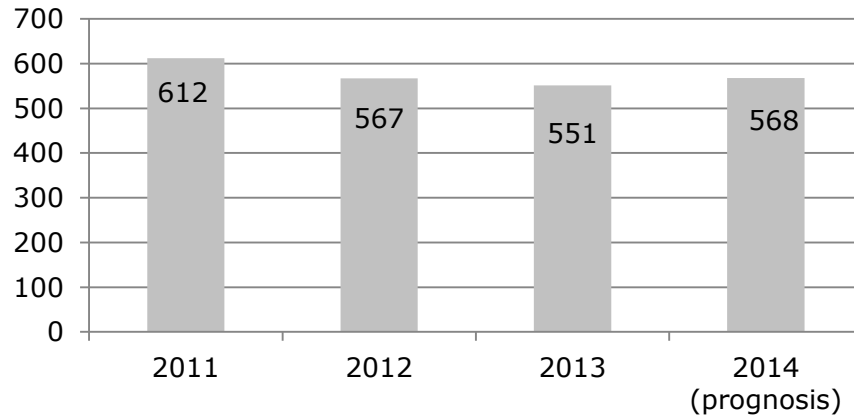


TCR-only providers were not considered.

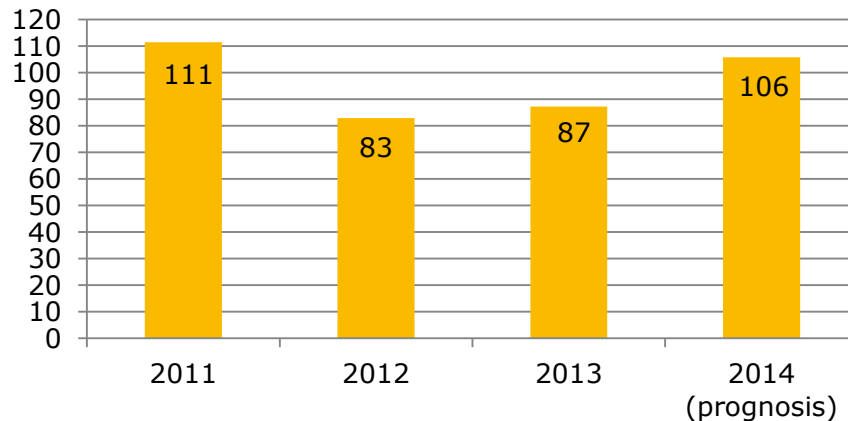
## Primary Control Power Price Development



## Needed power per week [in MW]



## Size of the market [in million €]

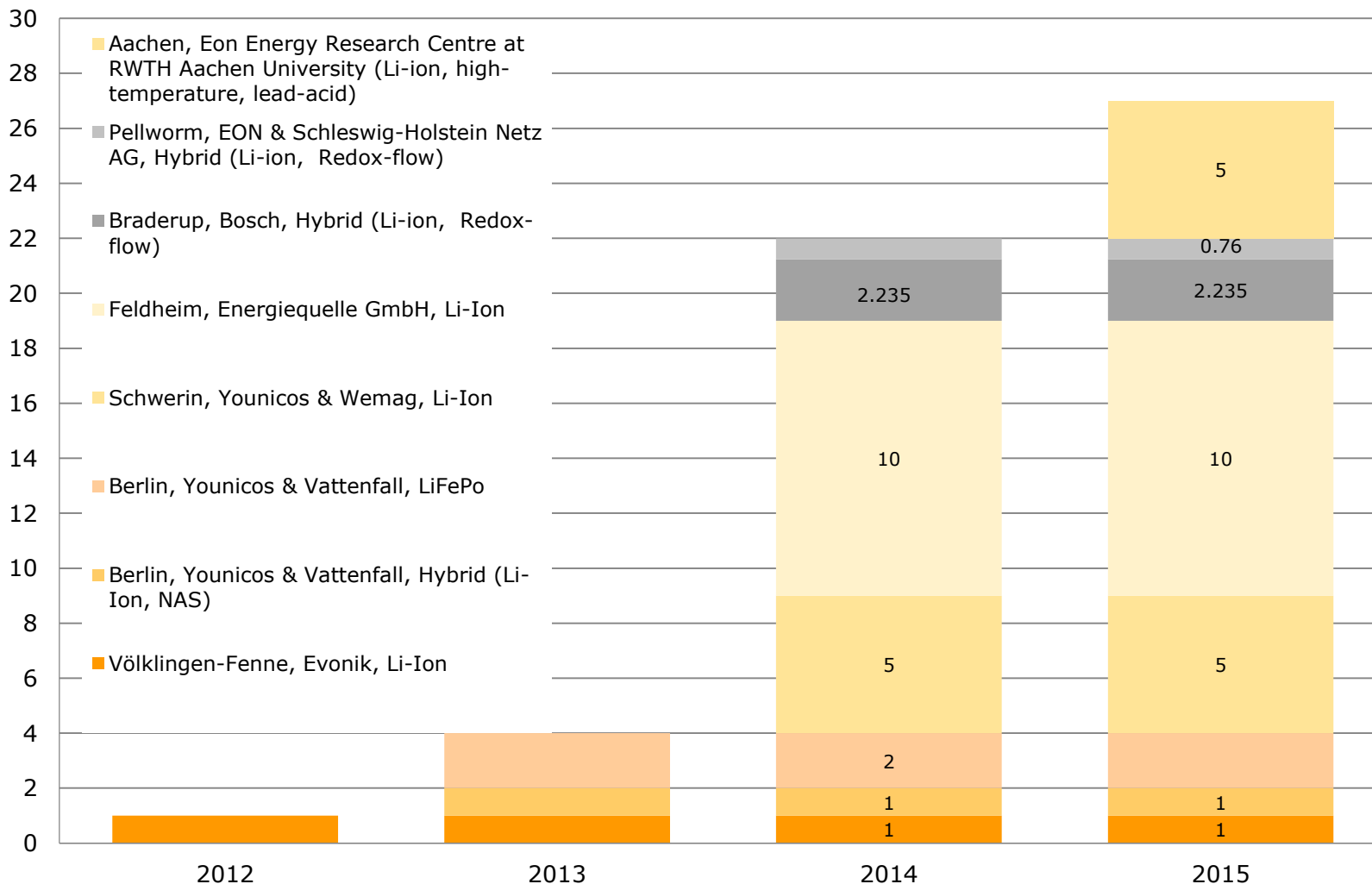


## Calculation of break even CAPEX for new battery systems:

- Mean specific capacity price payment per year:  
 $\approx 165,000 \text{ €/MW}$
- Interest rate: 5 %
- Operation costs: 2 %/a from CAPEX
- Amortization period: 10 a
- Energy/Power ratio: 1:1

**→ max. CAPEX:  
 $\approx 1,100 \text{ €/kWh}$**

## Installed battery capacity in Germany for primary control provision



Introduced in May 2013

## OpEx incentive



## CapEx incentive

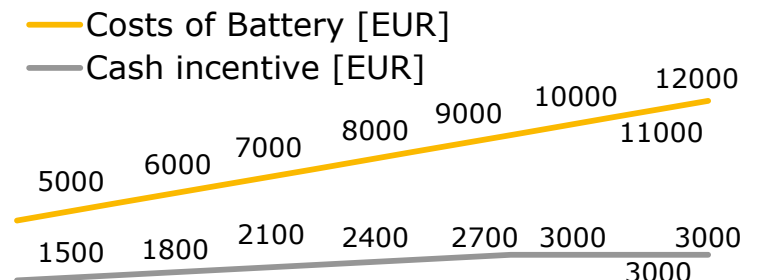
- KfW program with interest-reduced loans
- For PV systems up to 30 kWp
- For batteries providing min. 7 years present value guarantee
- Battery management system must have open interface for external control
- Max. PV output at grid-connection point must be reduced by 40%
- Conditions:
  - Up to 100% of net investment
  - 5/10/20 year loan with 1/2/3 years of free redemption
  - Fixed interest rates
  - Application through client's „house bank“

- Cash incentive on purchase price
- To be cleared with KfW program → loan reduction
- Calculation scheme:

$$\frac{\text{Cost of Battery [EUR]}}{\text{PV capacity [PV-kWp]}} \times 0.3 \times \text{PV capacity}$$

→ Max.: 600 EUR/PV-kWp

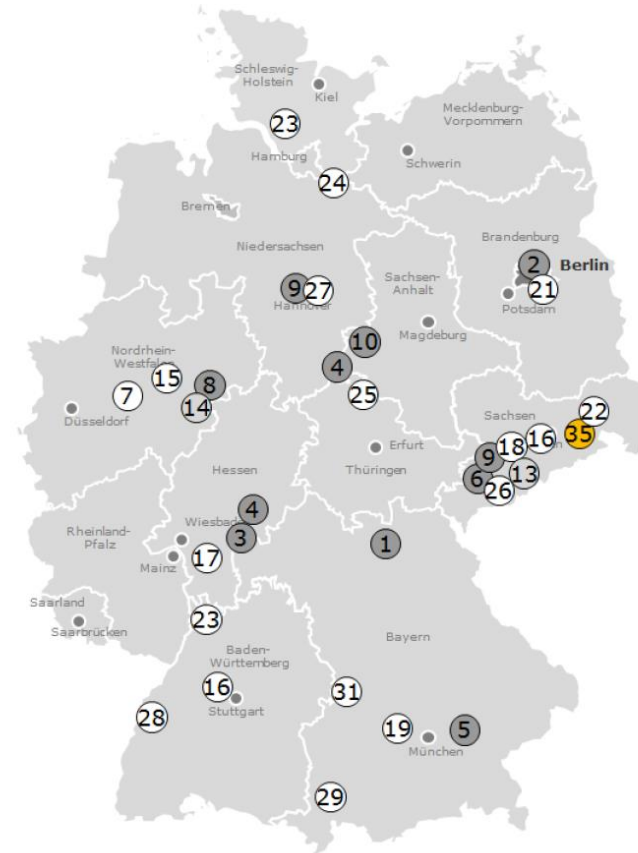
→ Example for a 5 kWp PV system:





## Battery Manufacturers Produce in Germany

Type of battery	No.	Company <sup>1</sup>	Locations	Empl. <sup>2</sup>
Lead-acid	01	Akkumulatorenfabrik Moll GmbH + Co. KG	Bad Staffelstein	230
	02	BAE Batterien GmbH	Berlin	160
	03	BMZ Batterien-Montage-Zentrum GmbH	Karlstein	550
	04	Exide Technologies GmbH	Büdingen, Bad Lauterberg	1618
	05	F.X. Mittermaier & Söhne GmbH & Co. KG	Isen	50
	06	GAZ Batterie GmbH	Zwickau	56
	07	Hawker GmbH	Hagen	424 <sup>3</sup>
	08	HOPPECKE Batterien GmbH & Co. KG	Brilon	625
	09	Johnson Controls Inc. Autobatterie GmbH	Zwickau, Hannover	1700
	10	Werbath GmbH	Wernigerode	50
Nickel-Cadmium	11	BMZ Batterien-Montage-Zentrum GmbH	Karlstein	550
	12	GAZ Batterie GmbH	Zwickau	56
	13	GAZ Geräte- und Akkumulatorenwerk GmbH	Zwickau	120
	14	HOPPECKE Batterie Systeme GmbH	Brilon	160
Lithium-ion battery production	15	Accusysteme Transwatt GmbH	Soest	15
	16	ads-tec GmbH	Wilsdruff, Leinfelden-Echterdingen	250
Lithium-ion cell production	17	AKASOL GmbH	Darmstadt	40
	18	Axxellon GmbH	Sankt Egidien	20
	19	Be Power GmbH	Königsbrunn	20
	20	BMZ Batterien-Montage-Zentrum GmbH	Karlstein	550
	21	DAN Tech Energy GmbH	Berlin	8
	22	Deutsche ACCUmotive GmbH & Co. KG	Kamenz	125
	23	Dispatch Energy Innovations GmbH	Itzehoe, Heidelberg	35
	24	ECC Repenning GmbH	Geesthacht	60
	25	GAIA Akkumulatorenwerke GmbH	Nordhausen	8
	26	HOPPECKE Advanced Battery Technology GmbH	Zwickau	60
	27	Johnson Controls Inc. Autobatterie GmbH	Hannover	1300
	28	Leclanché SA	Willstätt	67
	29	Sonnenbatterie / PROSOL Invest	Allgäu	50
	30	VARTA Storage GmbH	Nördlingen	40
Lithium-ion cell production	31	Dispatch Energy Innovations GmbH	Itzehoe, Heidelberg	25
	32	ECC Repenning GmbH	Geesthacht	60
	33	GAIA Akkumulatorenwerke GmbH	Nordhausen	8
	34	Leclanché SA	Willstätt	67
	35	Li-Tec Battery GmbH	Kamenz	360
Others e.g. Lithium-based / Polymer-based	36	AKASOL GmbH	Darmstadt	40
	37	BMZ Batterien-Montage-Zentrum GmbH	Karlstein	550
Battery Management Systems	38	Dan-Tech Energy GmbH	Berlin	8



1) This list is not intended to be exhaustive.

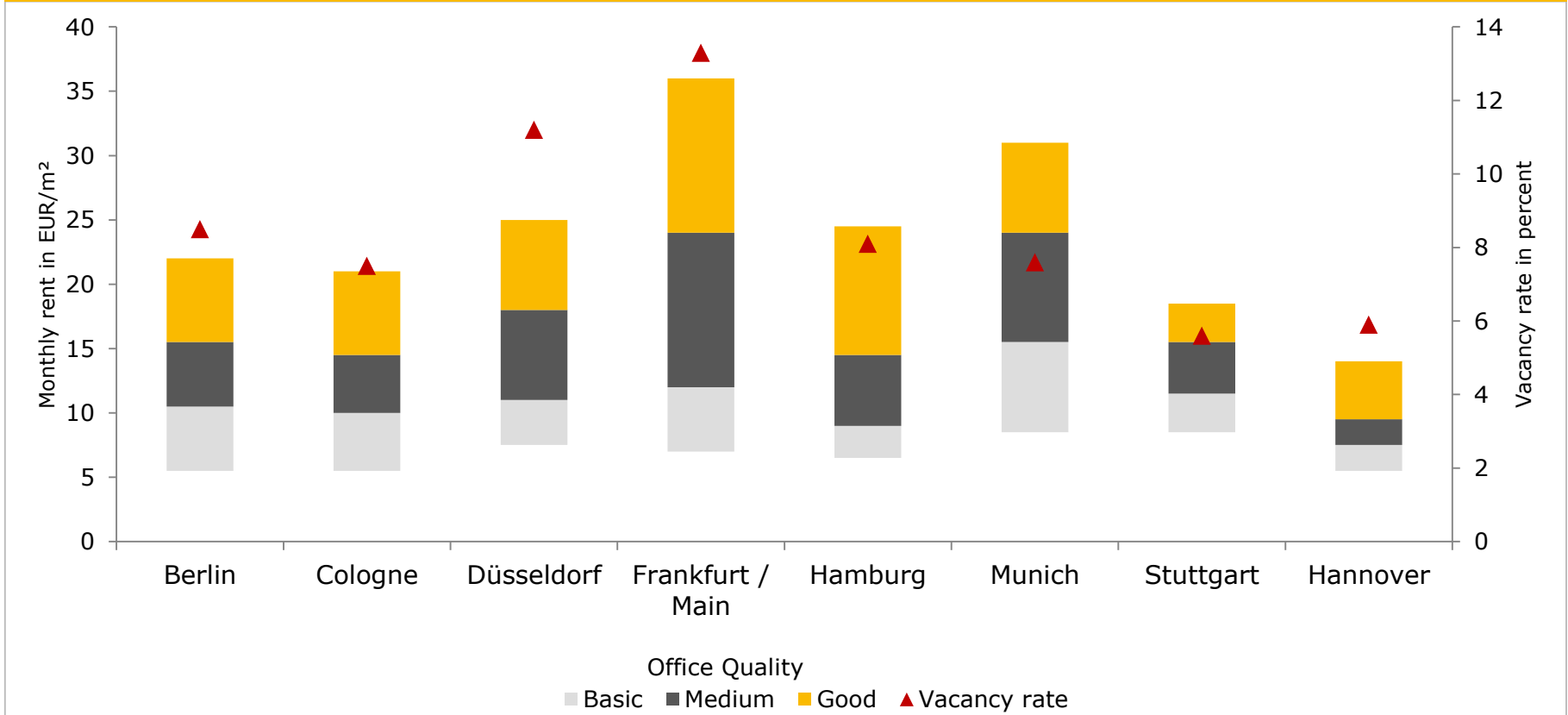
2) Total number of employees at respective locations

3) Markus Database, July 2013

Source: Germany Trade & Invest; Information provided by the respective company, July 2013

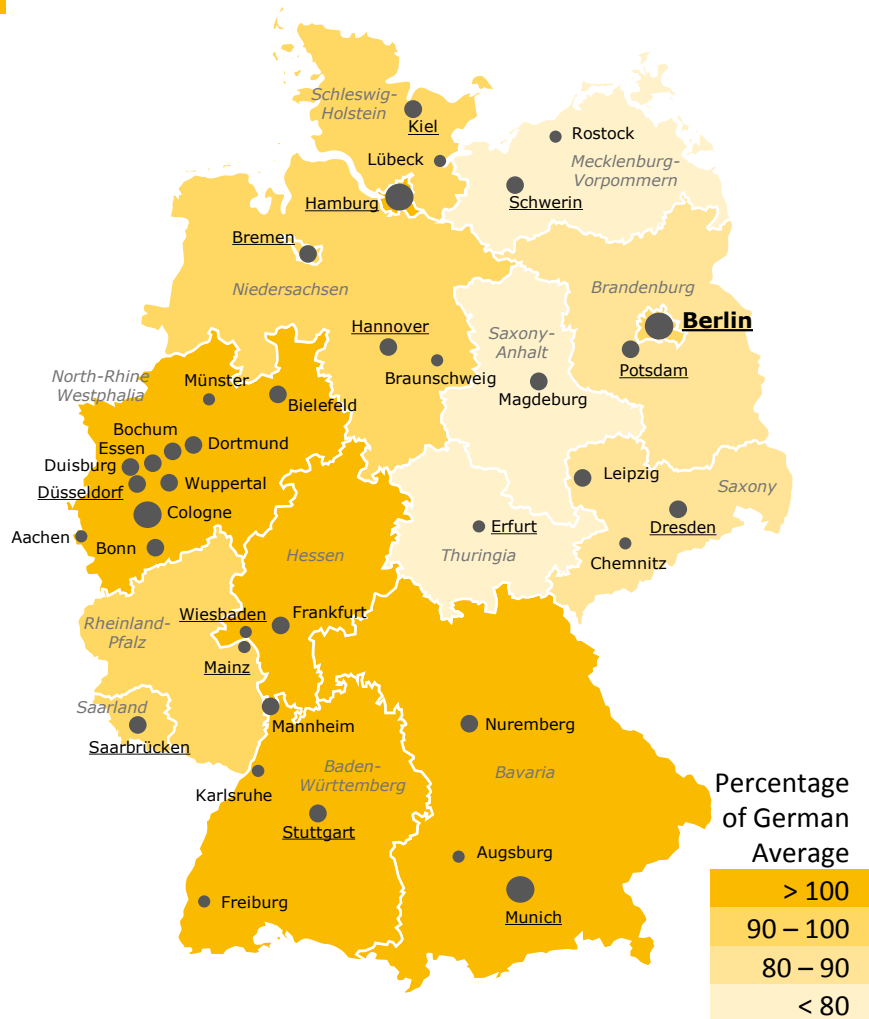
Prices and availability of office space vary considerably between individual cities.

## Monthly Office Rent and Vacancy Rates in Major German Cities (2013, in EUR per m<sup>2</sup>)

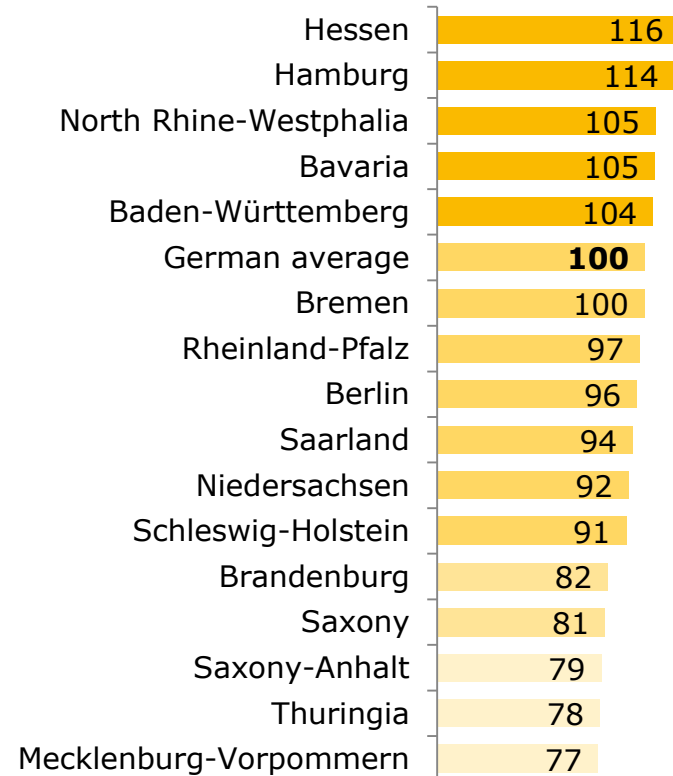


Note: without ancillary costs; Source: Plötz Immobilienführer 2014, IVD 2014

Germany offers a broad spectrum of wage levels in the service sector.



## Average Gross Monthly Salary Level Index in the Service Industry (2013, incl. extra payments, German average = 100)



Note: Please be aware of strong labor cost/salary variations within German regions. For detailed salary information, please contact Germany Trade and Invest  
Source: Federal Statistical Office 2014

Germany offers various public funding instruments for different business activities.

## Incentives in Germany

### Required funding for:

**Investments**

**Working  
Capital**

**Research &  
Development**

**Specific  
Purposes**

**Personnel**

**Financing available by any of the following public funding instruments (combinations of instruments usually possible)**

### Public funding instruments:

**Grants**

**Loans**





**Guarantees**

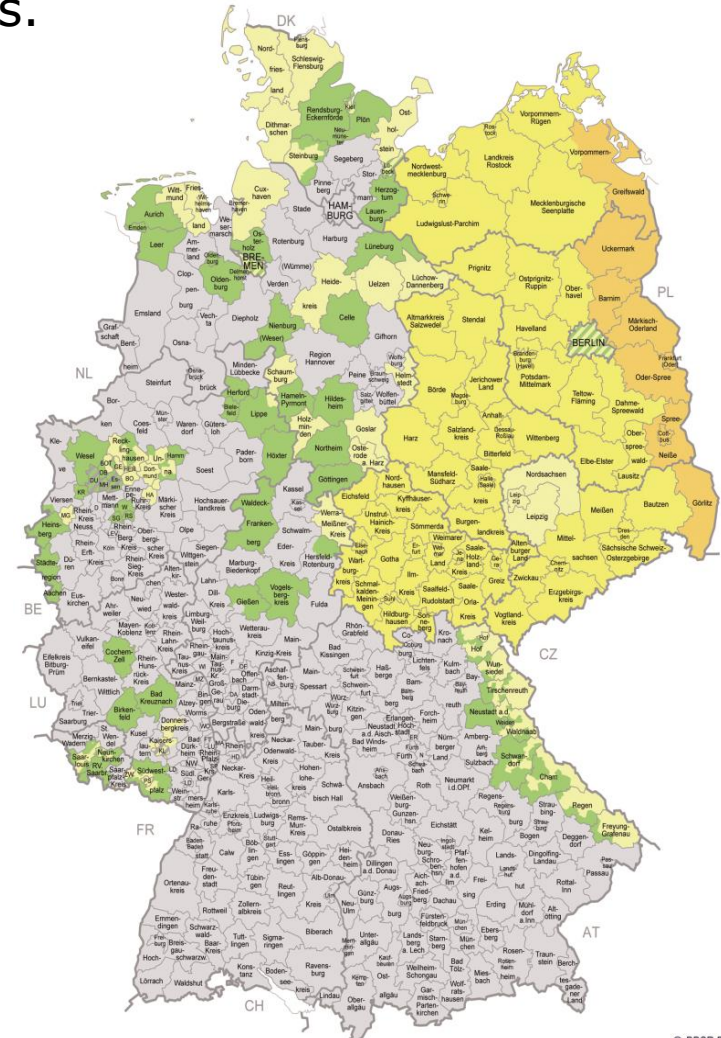
**Equity  
Capital**

**Mezzanine  
Capital**

# Grants → Investments/Personnel

To reduce cap-ex, Germany offers **Grants for Investments** of up to 40%, depending on the region, the company size, the investment volume, and on respective state regulations.

Timeframe 01.07.2014-31.12.2020	Small enterprises	Medium-sized enterprises	Large enterprises
 <b>Predefined C Region</b> (until 31.12.2017, aid intensity 2018-2020 as in Non-predefined C Regions)	max. 35%	max. 25%	max. 15%
 <b>Border area to Poland</b>	max. 40%	max. 30%	max. 20%
 <b>Non-predefined C Region</b>	max. 30%	max. 20%	max. 10%
 <b>D Region</b>	max. 20%	max. 10%	max. EUR 200,000



The bonus of 20% for a small enterprise and of 10% for a medium-sized enterprise is not granted to large investment projects with eligible investment costs > EUR 50 million. An additional aid intensity reduction would apply in these cases.



Depending on the scope of the planned R&D project grants are available at the European, national and/or regional level.

## European Level:

- Horizon 2020 - The EU Framework Program for Research and Innovation:
  - Projects require transnational cooperation
  - EU periodically calls for project proposals mainly targeted for specified research topics

## National Level:

- High-Tech Strategy: calls for proposals focusing on 6 “future priorities”
- Technology-open programs also available, i.e. Central Innovation Program for SME (ZIM)

## Regional Level:

- Programs available in all German states
- Programs usually technology-open

- Aid intensity depends on: size of company, research category (fundamental or industrial research or experimental development), and degree of partnership cooperation
- Multiple applications in any R&D funding program possible
- R&D project results: to be commercialized in the region of the program’s source, e.g. Europe, Germany, German federal state



Complete your project management needs from our range of investment and one-stop project consultancy services.

**Strategy**

**Evaluation**

**Decision & Investment**

## Project Management Assistance

Business opportunity analysis and market research

Market entry strategy support

Project partner identification and contact

Joint project management with regional development agency

Coordination and support of negotiations with local authorities

## Location Consulting/Site Evaluation

Identification of project-specific location factors

Cost factor analysis

Site preselection

Site visit organization

Final site decision support

## Support Services

Identification of relevant tax and legal issues

Project-related financing and incentives consultancy

Organization of meetings with legal advisors and financial partners

Administrative affairs support

Accompanying incentives application, establishment formalities

The foreign trade and inward investment promotion agency of the Federal Republic of Germany



**German Parliament**  
Resolutions for Founding/Financing

## Federal Government

Federal Ministry of Economics and Energy - Shareholder



Federal Ministry  
of Economics  
and Energy

Federal Government  
Commissioner for the  
New Federal States



GERMANY  
TRADE & INVEST

## Company Tasks

Investment  
Attraction

Export Promotion

Location Promotion



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