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Gas market regulation in Germany

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German gas market metrics (1)

- Natural gas consumption in 2011: 84.4 bcm
- 8th largest market globally

Rank	Country / Region	bcm	Share [%]	
			Country	Cumulative
1	United States	690.1	20.8	20.8
2	Russian Federation	474.3	14.3	35.1
3	Iran, Islamic Republic	153.3	4.6	39.7
4	China	130.7	3.9	43.7
5	Japan	112.5	3.4	47.1
6	Canada	104.8	3.2	50.2
7	Saudi Arabia	92.2	2.8	53.0
8	Germany	84.4	2.5	55.5

Source: BGR

- Domestic natural gas production in 2011: 13.3 bcm (and decreasing)

Rank	Country / Region	bcm	Share [%]	
			Country	Cumulative
1	United States	650.9	19.5	19.5
2	Russian Federation	629.5	18.9	38.4
3	Canada	160.5	4.8	43.2
4	Iran, Islamic Republic	151.8	4.5	47.7
5	Qatar	146.8	4.4	52.1
6	China	103.1	3.1	55.2
7	Norway	101.4	3.0	58.3
8	Saudi Arabia	92.3	2.8	61.0
9	Indonesia	91.7	2.7	63.8
10	Netherlands	80.6	2.4	66.2
34	Germany	13.3	0.4	

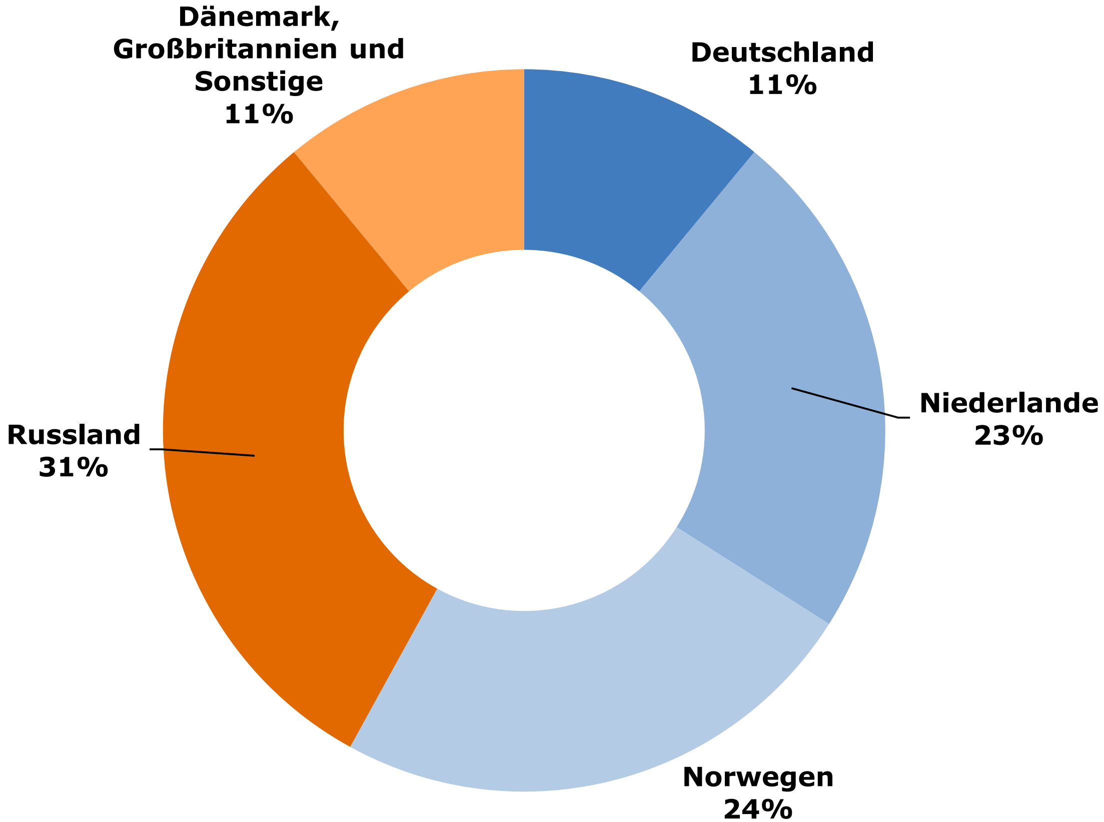
Source: BGR

- Second largest importer of natural gas in 2011: 95.0 bcm

Rank	Country / Region	bcm	Share [%]	
			Country	Cumulative
1	Japan	109.9	10.6	10.6
2	United States	97.8	9.5	20.1
3	Germany	95.0	9.2	29.3
4	Italy	70.4	6.8	36.1
5	United Kingdom	53.4	5.2	41.3
6	Korea, Republic (South)	46.8	4.5	45.8
7	France	46.1	4.5	50.3

Source: BGR

- Main (import) sources in 2012
- No LNG imports



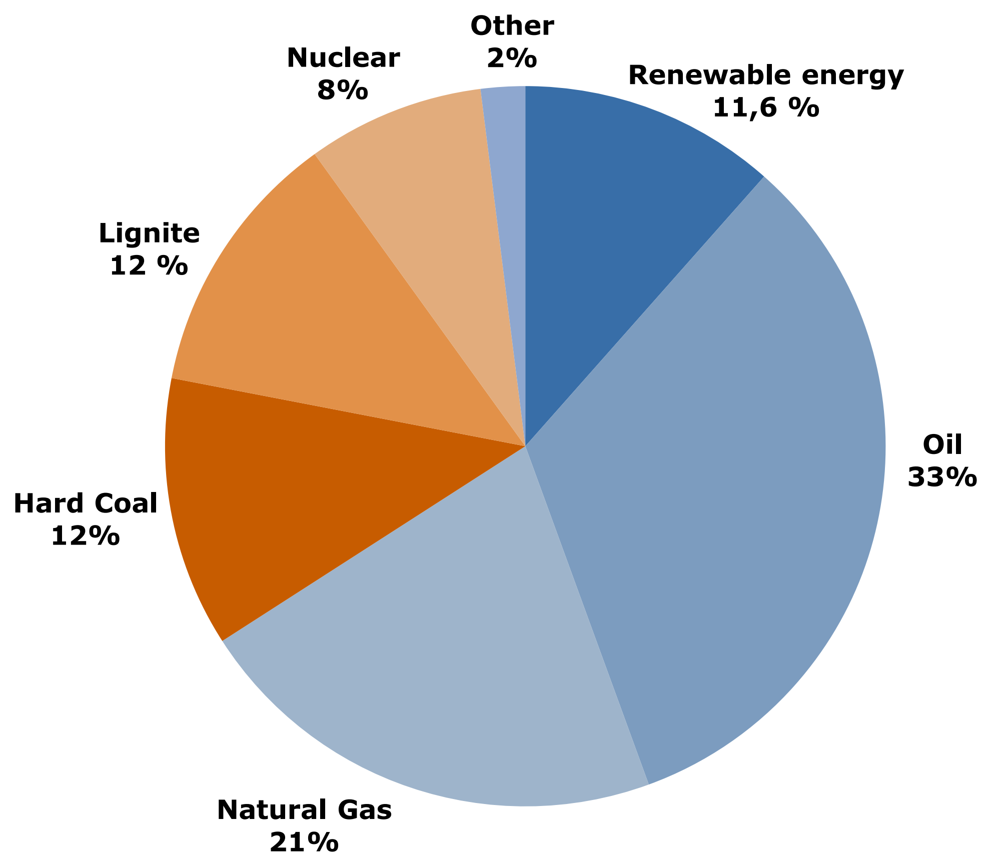
Source: BDEW

German gas market metrics (5)

- Underground gas storage capacity
  - 21.3 bcm working gas volume
  - 4th largest underground wgv globally after US, RF and UA
  - 23 porous storages and 24 cavern storages (60%-40% in volume)
  - Peak withdrawal capacity 370 million cm/day
  - Peak injection capacity 190 million cm/ day

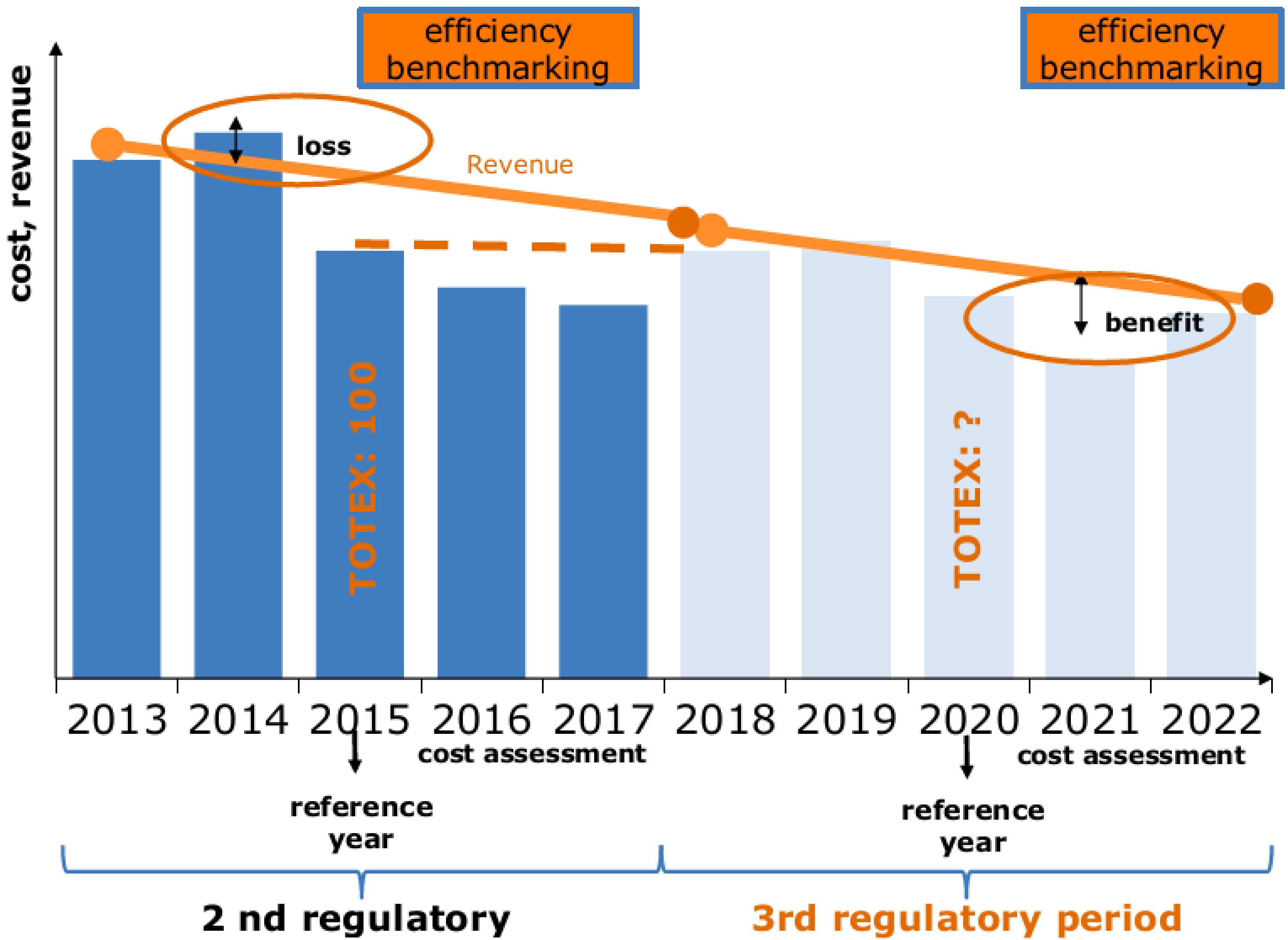
Gas storage sites
(projected sites)

- Share of gas in Primary energy consumption in 2012



Regulatory Approach

- Regulatory objectives:
  - Secure and inexpensive supply with gas
  - enhance the monopolist’s focus on efficiency and quality of supply
- Revenue-Cap-Regulation (not price cap) in combination with Incentive Regulation
  - Reference year with cost assessment and 5 year regulatory period
  - benchmarking
- revenues and costs decoupled for a regulatory period
  - regulator approves **revenues** ex-ante (budget)
  - regulatory periods of five years
  - network operators control **costs** <u>autonomously</u> within regulatory period (losses and benefits)


efficiency benchmarking
efficiency benchmarking
cost, revenue
loss
Revenue
benefit
TOTEX: 100
TOTEX: ?
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
cost assessment
cost assessment
reference year
reference year
2 nd regulatory
3rd regulatory period

Cost assessment: Overview

TOTEX

OPEX

based on income statement

CAPEX

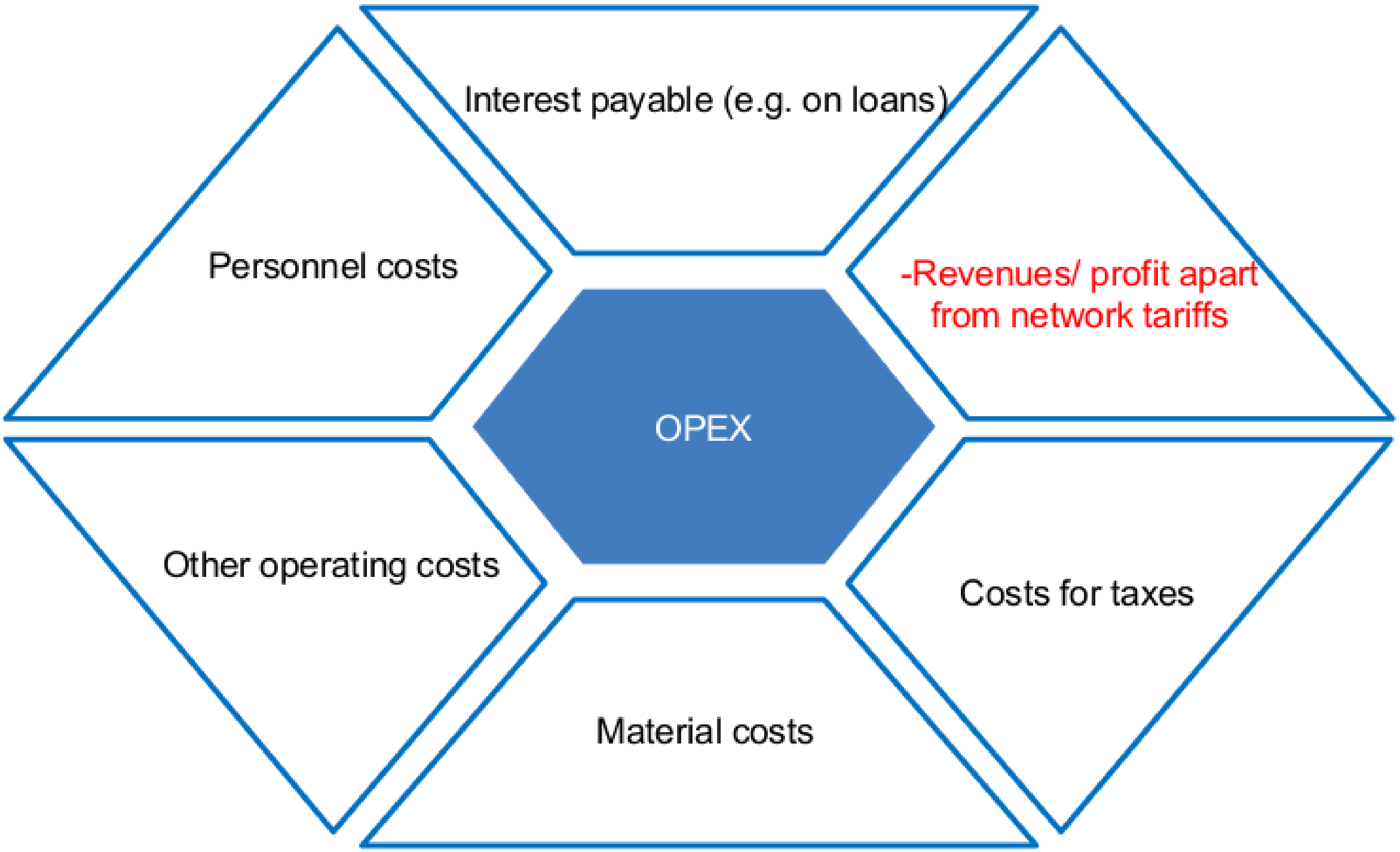
\+ **imputed depreciation**
based on regulatory asset base

\+ **imputed rate of return on equity**
based on regulatory asset base and capital structure

\+ **imputed trade tax**
based on imputed ROR on equity

− **income apart from network tariffs**
based on income statement

Cost assessment: OPEX



Assets

- **Fixed assets**
  - ***Fixed tangible assets***
  - Fixed intangible assets
  - Fixed financial assets
- **Current assets**
  - Inventories
  - Receivables
  - Cash and securities

Fixed tangible assets

I. General assets/ installations

II. Gas containers (45-55 years)

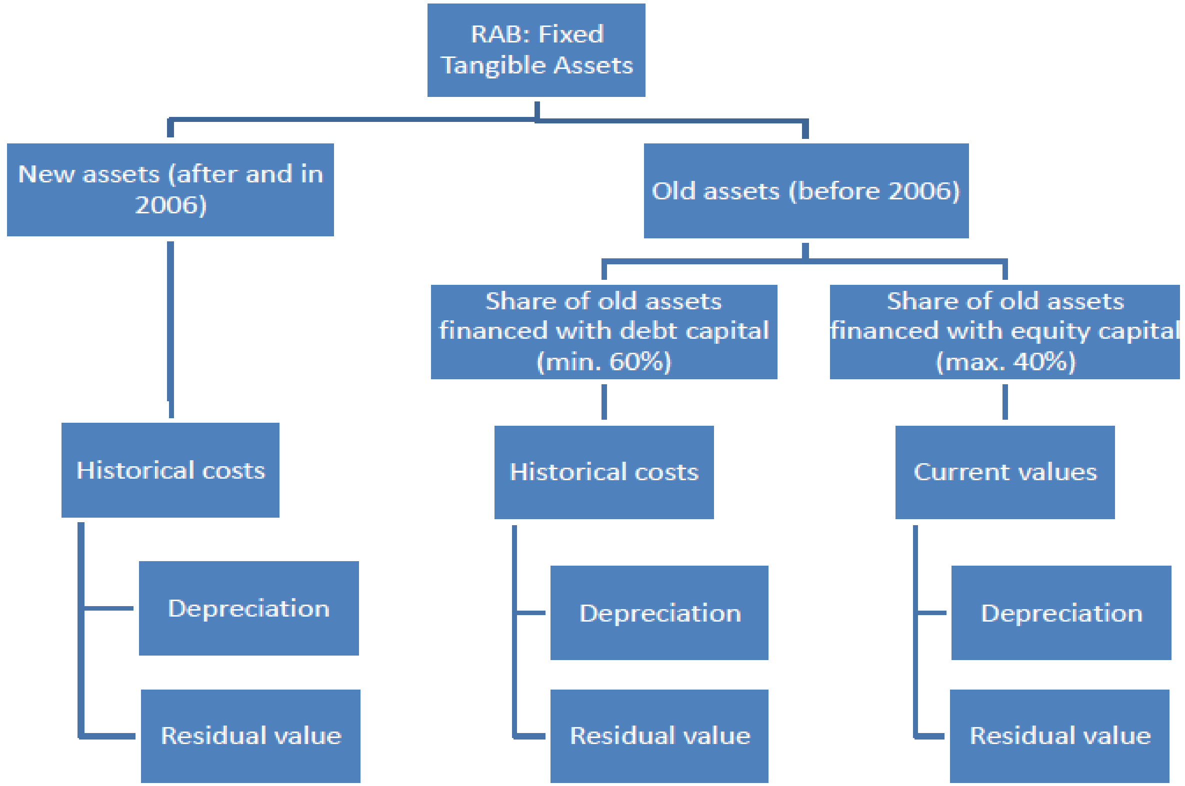
III. Gas Compressors (20-25 years)

IV. Pipe/ Pipelines (30-65 years)

V. Measurement equipment/ Meters/ Control plants

VI. Remote control systems (15-20 years)

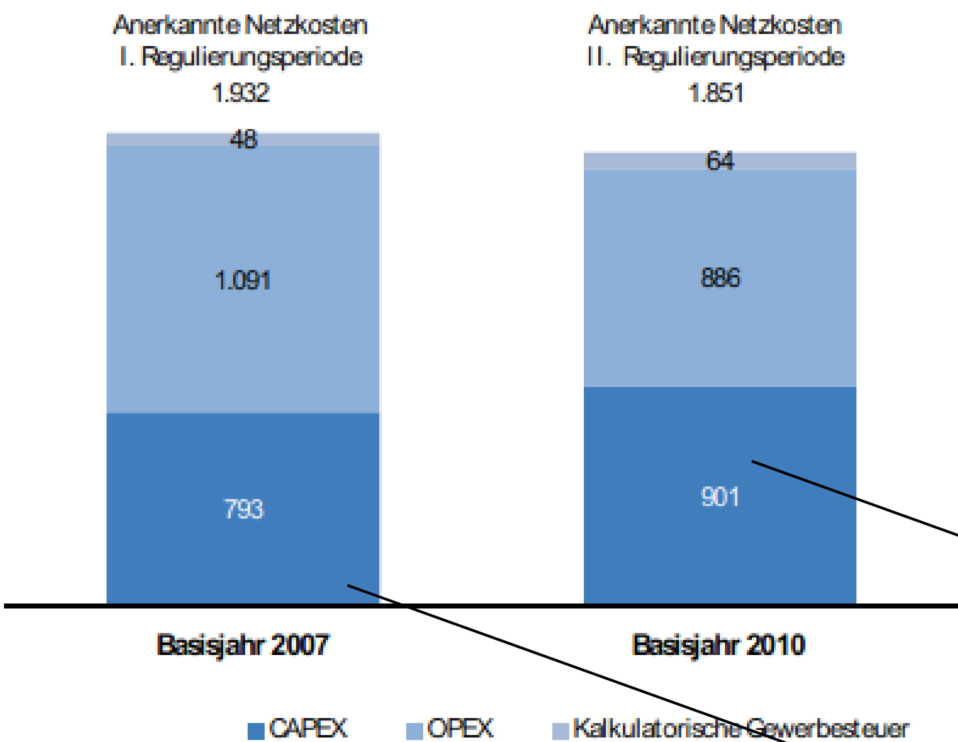
- Old and new assets
- Straight-line depreciation



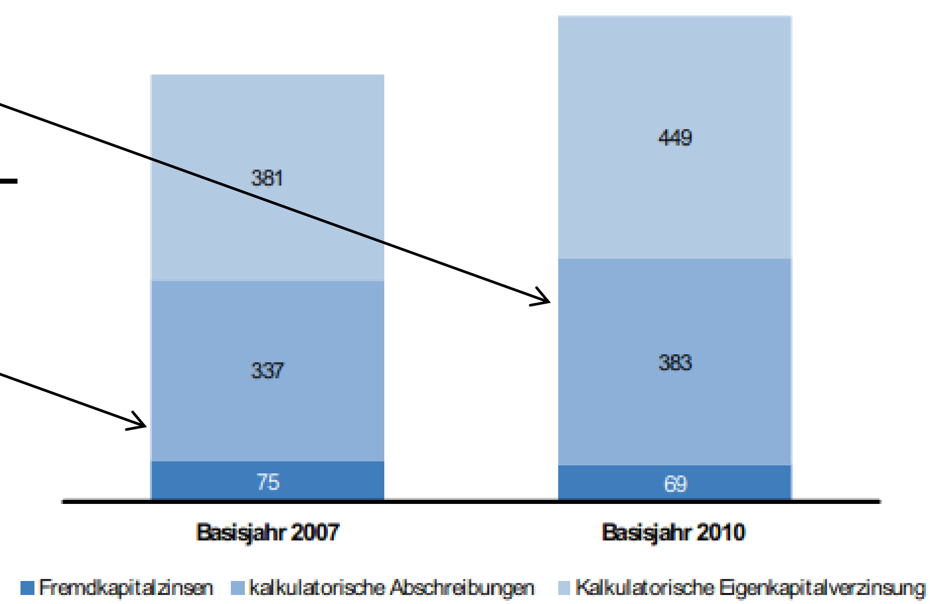
- How do we achieve our regulatory objectives?

Inexpensive Tariffs	Security of Supply	Efficiency
• Cost assessment • Benchmark • Revenue path + pass-through of efficiency gains • Appropriate RoE	• Incentives to invest: appropriate RoE • Incentives to invest: investment measures	• Benchmark • Revenue path + incentive to lower costs in order to gain extra profits

Costs of the reference year of all German TSOs



CAPEX



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Thank you for your attention.

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