



## **Powerpoint Presentation**

# **Report on Regulatory Frameworks for European Energy Networks 2023**

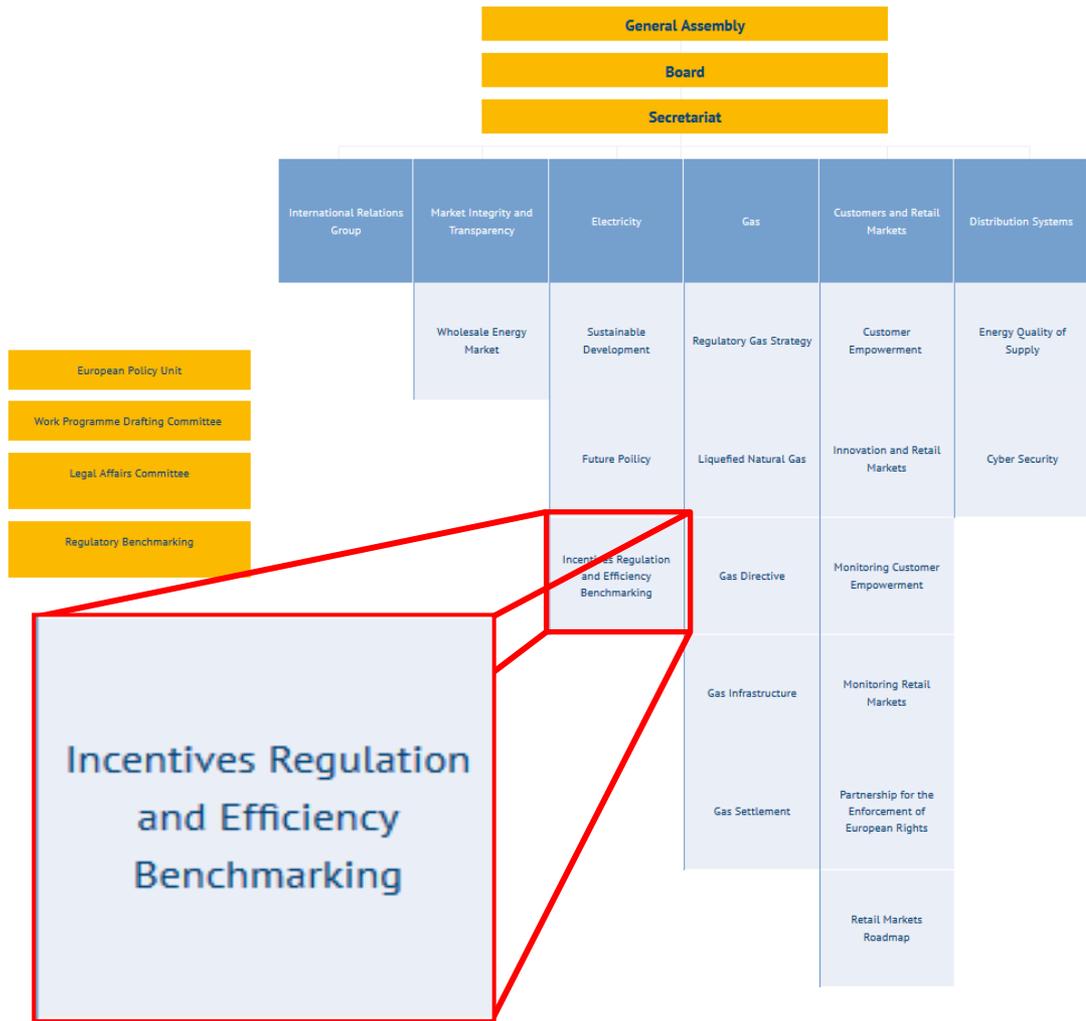
**Marina Furdas, Bundesnetzagentur  
GEODE Online Meeting, 15 March 2024**

## Agenda

- About CEER
- About Bundesnetzagentur
- Regulatory Frameworks Report (in general)
- Regulatory Frameworks Report 2023



# About CEER



Managing level

Working Groups

Work Streams

- Creation of
  - Reports
  - Statements
  - Strategy papers
- Conducting international projects like TSO efficiency benchmarkings
- Training Courses



## About Bundesnetzagentur

- National Regulatory Authority of Germany
- Independent higher federal authority
- Subordinated to the Federal Ministry of Economic Affairs and Energy
- Founded 1998 as Regulatory Authority Telecommunication und Post (RegTP)
- Since 2006: Bundesnetzagentur (BNetzA) regulatory areas telecommunication, post, railways, electricity and gas
- approx. 3.000 employees



## Regulatory Frameworks Report (in general) (1/3)

- Formerly known as Investment Conditions Report
- 2019 first version of the renewed report (RFR 2018)
- Initial version in 2013, dealing with the regulatory situation in 2012
- Publication in 2013 and 2014 only as a summary
- Since 2016 complete publication of the whole report including Q&A-Papers and Summaries
- <https://www.ceer.eu/documents/104400/-/-/bd93ab3b-de76-134d-2374-85d3cd5c3125>



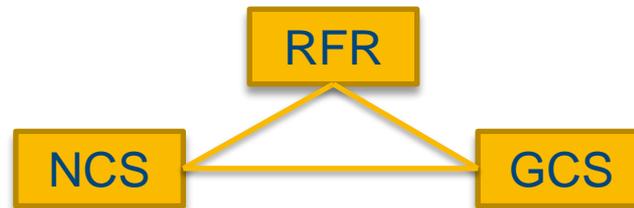
## Regulatory Frameworks Report (in general) (2/3)

- Objective: *Provide a general overview of the regulatory systems of electricity and gas networks in participating European countries, including a detailed look at the regulatory instruments and the conditions for investors*
- 34 European countries
  - 28 CEER members
  - 2023: 5 ECRB members (CEER observers)
- Toolbox of used regulatory components
- Most regulatory regimes are complex and individually adjusted. Therefore, the report cannot give a complete description and comparison of all European regulatory systems



## Regulatory Frameworks Report (in general) (3/3)

- Report is a living document – new ideas lead to annual changes and adjustments
- German regulator BNetzA is not the author of the main part, only the editor. BNetzA evaluates the submitted tables (chapters 3-7)
- RFR as one part of a describing triangle:



- NCS: National Case Studies (Annex 5 – since RFR 2019)
- GCS: General Case Study (Annex 6 – since RFR 2022)



# Regulatory Frameworks Report 2023 (1/7)

- Contents
  - Description of the regulatory framework
    - Including a fact sheet at the beginning
    - Each subchapter of this chapter limited to five pages
  - Economic theory and the regulatory system
  - Calculation of the Rate of Return
  - Regulatory Asset Base
  - Depreciations
  - Incentives and improvements
- Annex 4: Given values and answers of the used questionnaires in Excel format
- Annex 5: National Case Studies: Revenue calculations and further descriptions of the national regulatory system (voluntary)



# Regulatory Frameworks Report 2023 (2/7)

## - Description of the regulatory framework

### - Fact sheet

- One column per network sector
- Topics: market structure, general framework, rate of return, regulatory asset base, depreciations
- Idea was to keep it in one page – most countries were able to stay within this limitation

### - Additional text with detailed description

- No structure was given here before
- Often paragraphs about the historical development, transparency and an outlook were given
- Single figures are used to form a complete regulatory picture
- Limited to five pages (reason for Annex 5)

	Gas TSO	Gas DSO	Electricity TSO	Electricity DSO
<b>Market operators</b>	16	~700	4	~850
<b>Network length</b>	~40.000 km	~500.000 km	~37.000 km	~1.800.000 km
<b>Ownership</b>	Mainly private investors, indirect public ownership	Private and local public ownership	Mainly private investors, indirect public ownership	Private and local public ownership
<b>Authority</b>	Bundesnetzagentur (www.bundesnetzagentur.de)	Bundesnetzagentur and federal state authorities, depending from size and network area	Bundesnetzagentur (www.bundesnetzagentur.de)	Bundesnetzagentur and federal state authorities, depending from size and network area
<b>System Period</b>	Incentive Regulation / Revenue cap			
<b>Base year for next period</b>	5 years, current period: 2019-2022		5 years, current period: 2014-2018	
<b>Transparency</b>	Efficiency scores, efficiency model parameters, specific cost data			
<b>Main elements for determining the revenue cap</b>	Non-controllable and controllable costs, TOTEX efficiency benchmark, general inflation and sectoral productivity factor, volatile costs	Non-controllable and controllable costs, TOTEX efficiency benchmark, efficiency bonus, general inflation and sectoral productivity factor, volatile costs	Non-controllable and controllable costs, TOTEX efficiency benchmark, general inflation and sectoral productivity factor, volatile costs	Non-controllable and controllable costs, TOTEX efficiency benchmark, efficiency bonus, general inflation and sectoral productivity factor, quality element, volatile costs
<b>Legal framework</b>	EnWG, ARegV, GasNEV		EnWG, ARegV, StromNEV	
<b>Type of WACC</b>	No use of WACC			
<b>Determination of the rate of return on equity</b>	Sum of a nominal risk-free rate and a risk premium (market risk premium multiplied with a beta risk factor) multiplied with a corporate tax factor			
<b>Rate of return on equity before taxes</b>	6.91% = (2.49 + 3.8 * 0.83) * 1.225			
<b>Use of rate of return</b>	Granted for existing assets to a maximum of 40% of the imputed necessary business assets. Any available equity capital in the capital structure in excess of this will be subject to another equity interest rate			
<b>Components of RAB</b>	Fixed assets, working capital, assets under construction			
<b>Regulatory asset value</b>	Net substance preservation for business assets capitalised prior to 1 <sup>st</sup> 2006, real capital preservation for business assets as from 1 <sup>st</sup> 2006			
<b>RAB adjustments</b>	By the ordinance defined investments after the base year, e.g. expansions, lead to an adjustments of the non-controllable costs and therefore of the revenue cap	Investments in new assets after the base year lead to an adjustment of the CAPEX. No distinction between replacements and enhancements or expansions	By the ordinance defined investments after the base year, e.g. expansions, lead to an adjustments of the non-controllable costs and therefore of the revenue cap	The assets of the base year are used as RAB. No general adjustments after the base year
<b>Method</b>	Straight line			
<b>Depreciation ratio</b>	Depending on asset type. Ratio between 1.5% and 4% e.g. lines & cables: ~2%, stations: ~4%			
<b>Consideration</b>	Part of the examined controllable costs			

# Regulatory Frameworks Report 2023 (3/7)

- Economic theory and the regulatory system
  - In most cases: incentive based approaches
  - Mixture of revenue (or price) cap and specific rate of return
  - Response to the drawbacks of former cost-plus regulation
  - Inefficiencies have to be reduced during the current regulatory period (x-factor)
  - In most cases the reduction has to be on the OPEX layer
  - Focus on System Operators shows no big differences compares with transport functions



# Regulatory Frameworks Report 2023 (4/7)

- Calculation of the rate of return
  - Mostly a WACC factor is used
    - Weighted Average Cost of Capital
    - Simplified Formula:  $WACC = \frac{Equity}{(Equity+Debt)} * Cost\ of\ equity + \frac{Debt}{(Equity+Debt)} * Cost\ of\ debt$ 


  - *Cost of equity (post tax, nominal) = risk free rate (nominal) + market risk premium \* equity beta*
  - *Cost of equity (pre tax, nominal) =  $\frac{Cost\ of\ equity\ (post\ tax)}{(1-tax\ rate)}$*
  - *Cost of debt (nominal) = risk free rate (nominal) + debt premium*



# Regulatory Frameworks Report 2023 (5/7)

- Calculation of the rate of return
  - Risk free rate ~ 1,32 % on average,
  - Market risk premium ~ range 3,7 % – 8,0 %
  - Equity beta ~ range 0,6 – 1,3
  - Debt premium ~ 1,39 % on average
  - Gearing ratio ~ mostly 40 – 60 %
  
- Often different values per network sector and per CEER or ECRB members



# Regulatory Frameworks Report 2023 (6/7)

- Regulatory asset base
  - Very important at the tariff calculation (multiplied with WACC for calculating the allowed revenues)
  - Fixed assets are part of the RAB – Working capital is often not a part of the RAB
  - Contributions from third parties and leased assets are mostly not part of the RAB
  - Mostly RAB is not based exclusively on historical costs
  - Adjustments of the RAB because of new investments or depreciations



# Regulatory Frameworks Report 2023 (7/7)

- Depreciations
  - Straight line concepts are used
  - Depreciation rate depending on the type of asset
    - Mostly between 2 and 5 %
    - E.g. lines & pipes ~ 45 years of lifetime
- Incentives and Improvements
  - Regulatory consequences of the energy crisis
  - The installation of incentive elements in the national regulatory regimes are assessed as one main element
  - Examples: incentives for a better quality and security of supply or the integration of renewable energies and smart technology
  - Trending hot topics: the integration of renewable energies or new tasks caused by changes in energy markets and climate change



# Regulatory Frameworks Report 2023, Annex 6

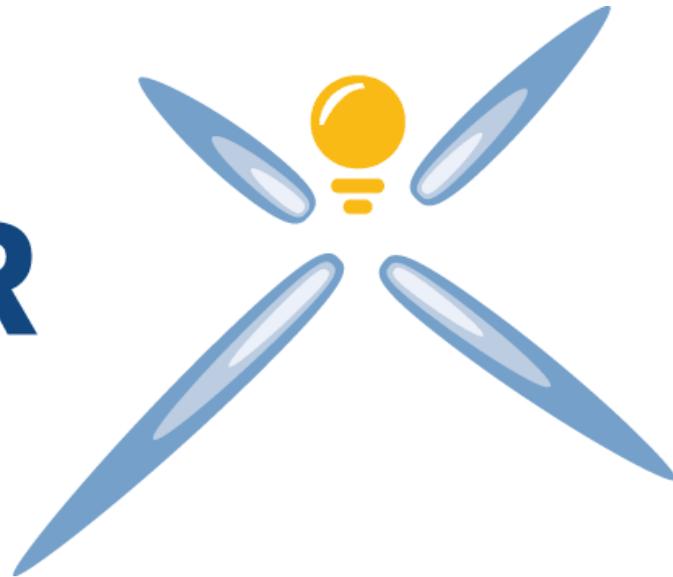
- General Case Study as a new annex since 2022
  - Idea: show differences between the single regulatory systems
  - Focus on common regulatory corridor
  - Fictional electricity DSO with assets and costs
  - Question board about regulatory system
    - Depreciation
    - RAB
    - WACC
  - Comparison for Germany, Austria, Spain, Sweden, Greece
  - Important: No judging comparison



# Thank you for your attention!

## CEER

Council of European  
Energy Regulators



[www.ceer.eu](http://www.ceer.eu)