

CEER

**Council of European
Energy Regulators**



**Regulating modern networks:
Incentive regulation, rate of return
Cost allocation
Facilitating infrastructure investment**

Dr. Annegret Groebel, CEER Vice-President and BNetzA

11th US-EU Energy Regulators Roundtable
Boston, 13 May 2014



Agenda

- ▶ **Regulation of TSOs' revenues**
- ▶ **Enhancing investments:
The EU infrastructure package**



Agenda

- ▶ **Regulation of TSOs' revenues**





Areas of regulatory intervention

| Area of regulatory intervention | Infrastructure planning | Infrastructure financing | Regulation of TSOs' revenues | Cost allocation | |
|---------------------------------|--|--------------------------|------------------------------|----------------------|------------------------------|
| | | | | ... among grid users | ... among zones |
| Involved stakeholders | TSOs + ENTSOs/ACER + regional investm. groups | MS, EU, wide variety | NRA → system operator | TSO → grid users | EU → MS → system operator |



Which projects?



Assure financial
viability



Defining the
allowed
revenues



Recovery of
regulated costs



Compensation
among
stakeholders





Regulation of TSOs' revenues and network charges for infrastructures

- Under national responsibility
- Minor EU involvement and harmonization, mainly interconnection and supply security

Exception: cost allocation

- Inter-regional compensation required to align certain costs with the actual allocation of benefits among MS
- Period of massive investments in EU grids
= efficient alignment of the costs and the benefits of grid investments and operation across MS will influence decisions taken by TSOs and NRAs





Regulatory intervention regulation of TSOs' revenues

- ➔ Necessary to ensure non-discriminatory access to the grid
- ➔ Avoid monopoly pricing of infrastructure use

Main constraint = find the optimal balance between:

- ➔ giving enough economic incentive for reliable grid operation and necessary grid expansion
- ➔ inhibiting the extraction of monopoly profits by the TSO on the other.





Various forms of general price control mechanisms co-exist in EU

“Cost-plus - Rate-of-return - Price-cap and - Revenue-cap regulation”

CEER principles for the regulation of TSOs' revenues: Reasonable return on capital, depreciation should be oriented on the expected economic lifetime of assets, and as the basis for the risk-free interest rate conventional long-term government bonds (5-10 years)

BUT still room for diversity e.g. calculation of the RAB differs in MS in both

1. components included [e.g. fixed assets are always included; working capital might be included at varying levels; 'assets under construction' included or not]
2. their evaluation [using historic costs, replacement value, indexed historic costs or standard cost].
3. Regulatory periods varies also





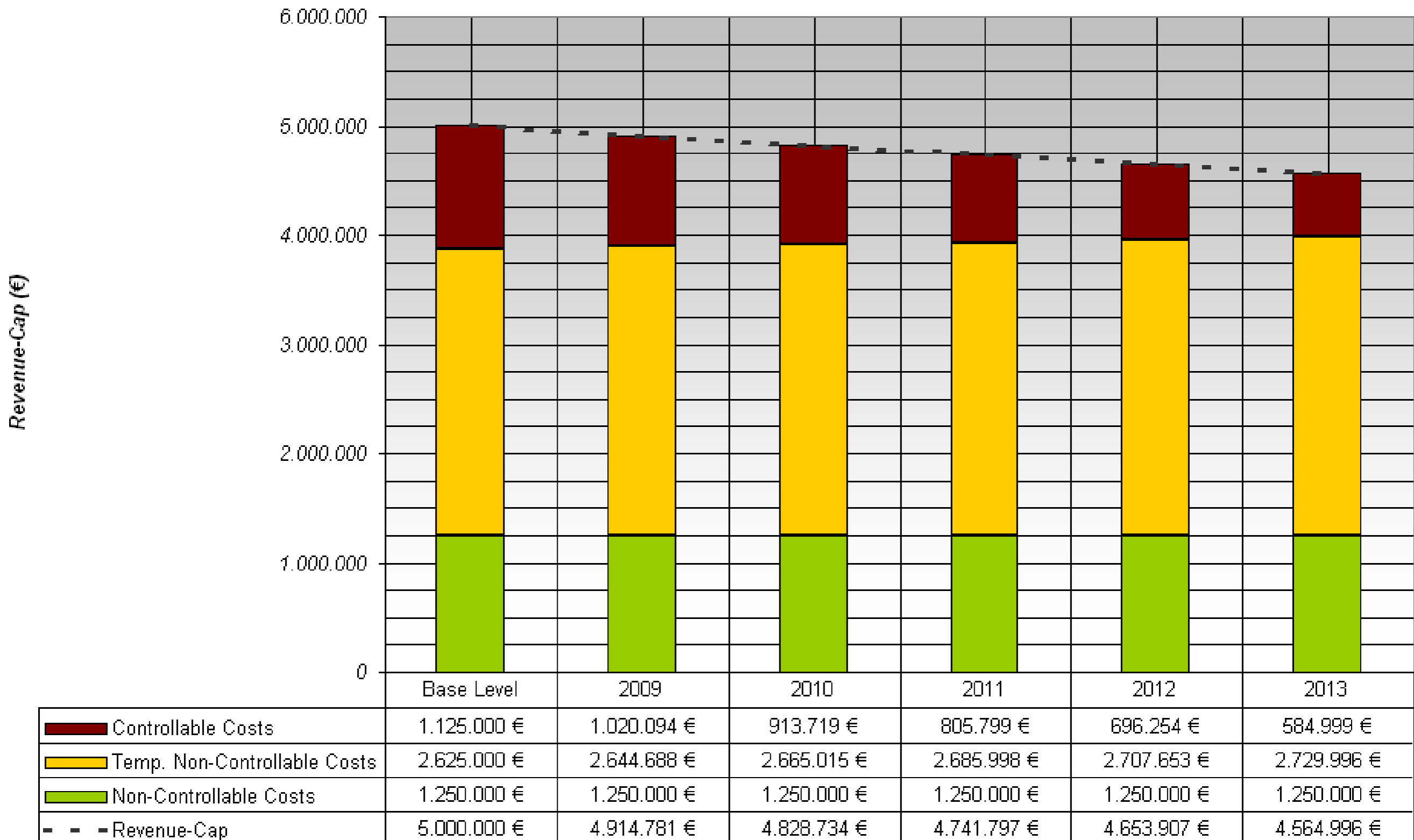
Network tariff regulation in Germany: Incentive regulation (1)

- **Incentive based Regulation since 2009**
 - ▶ fixing a **revenue cap** periodically
 - ▶ for a fixed time period (**5 years**), 2nd regulatory period started in 2013 (gas) and 2014 (electricity)
 - ▶ Ensures that operators have an **incentive** to become more efficient and users benefit by paying only efficient costs
 - ▶ Arrangements for small network operators
 - ▶ Special treatment of TSOs (**investment measures**)
- Continue incentive regulation to ensure grid charges cover **efficient costs**, investment measures to ensure financing of necessary new transmission lines etc.
- Evaluation of incentive regulation ongoing in 2014





Network tariff regulation in Germany: Incentive regulation (2)



Investment budgets/measures (1)

The German Incentive Regulation Ordinance (ARegV) provides for the possibility for network operators of including costs for investments in expansion and restructuring in the network tariffs, over and above their approved revenue cap.

Statutory requirements for investment plan approval:

- Application is made no later than 31 March of the year prior to the first cost-effectiveness, e.g. before initial capitalisation of assets under construction or finished plants
- Expansion or restructuring investment and necessary for (at TSO and high voltage levels):
 - Stability of the overall system or
 - Integration into the national or international network or
 - For a targeted expansion of the power supply system according to § 11 of the Energy Act
- **Individual applications will be checked ex ante for costs and the necessity of the project**
- **Approved costs will be treated as “non-controllable costs” for one or two regulatory periods in general, i.e. increasing allowed revenues directly**

Investment budgets/measures (2)

Non-exhaustive catalogue of measures supported

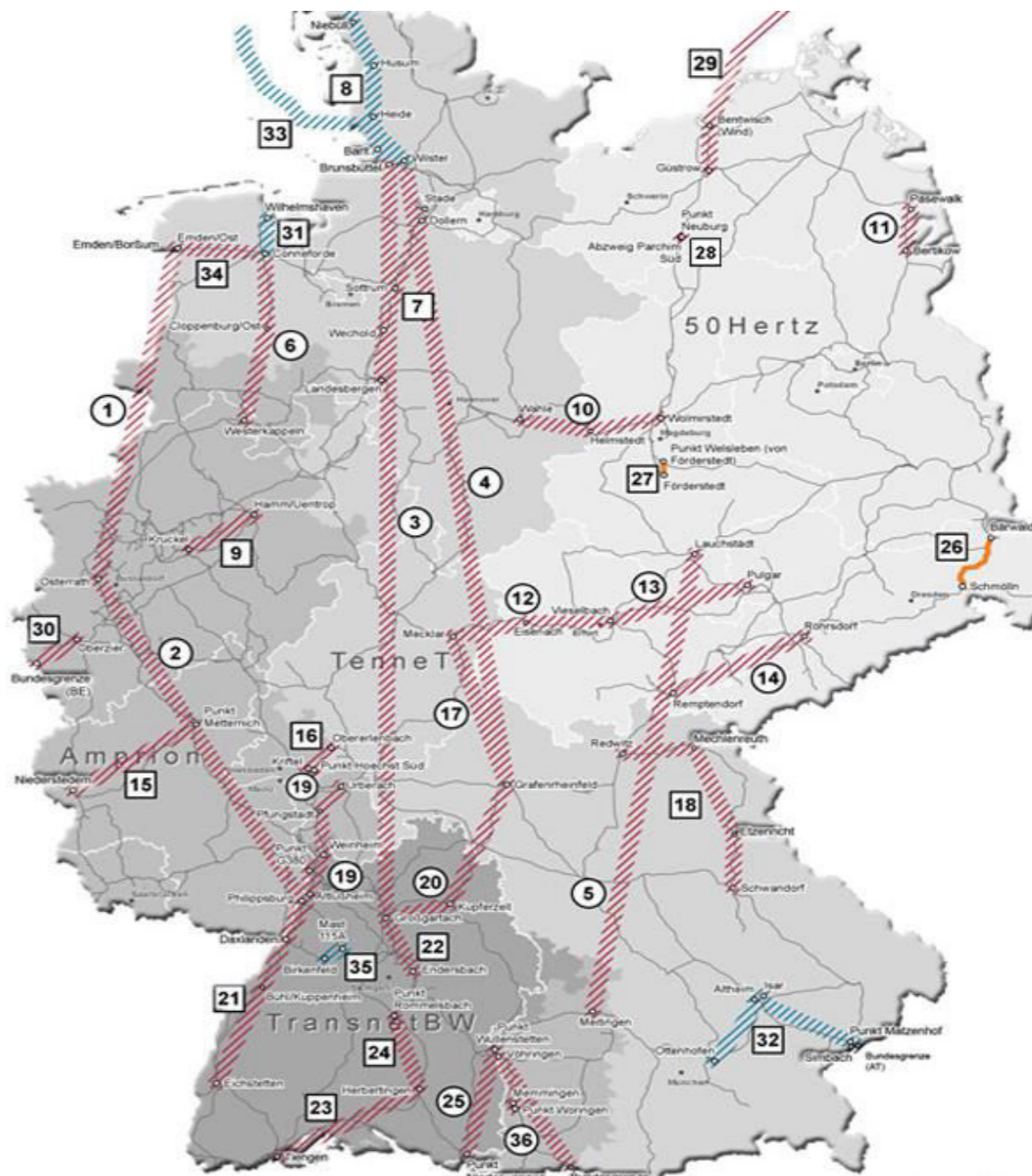
1. Connection of power generation plants
2. Integration of renewable energy and CHP plants
3. Expansion of interconnectors
4. Expansion of gas transmission pipelines between market areas
5. Offshore Wind Park connections
6. 110-kV underground cables
7. Investments to ensure the technical security
8. Monitoring temperature and high-temperature conductors
9. HVDC systems and cross-border HVDC interconnections





Projects in the 2013 Federal Requirements Plan

- Annual transmission network development process
- Triennial codification as a “Federal Requirements Plan”
- 36 transmission projects
- 5700 km of lines
(2800 km new lines
2900 km reinforcements)
- **3 main HVDC corridors**
- BNetzA competent for permitting of 16 projects, remainder with the Federal States
- Network expansion will still take time





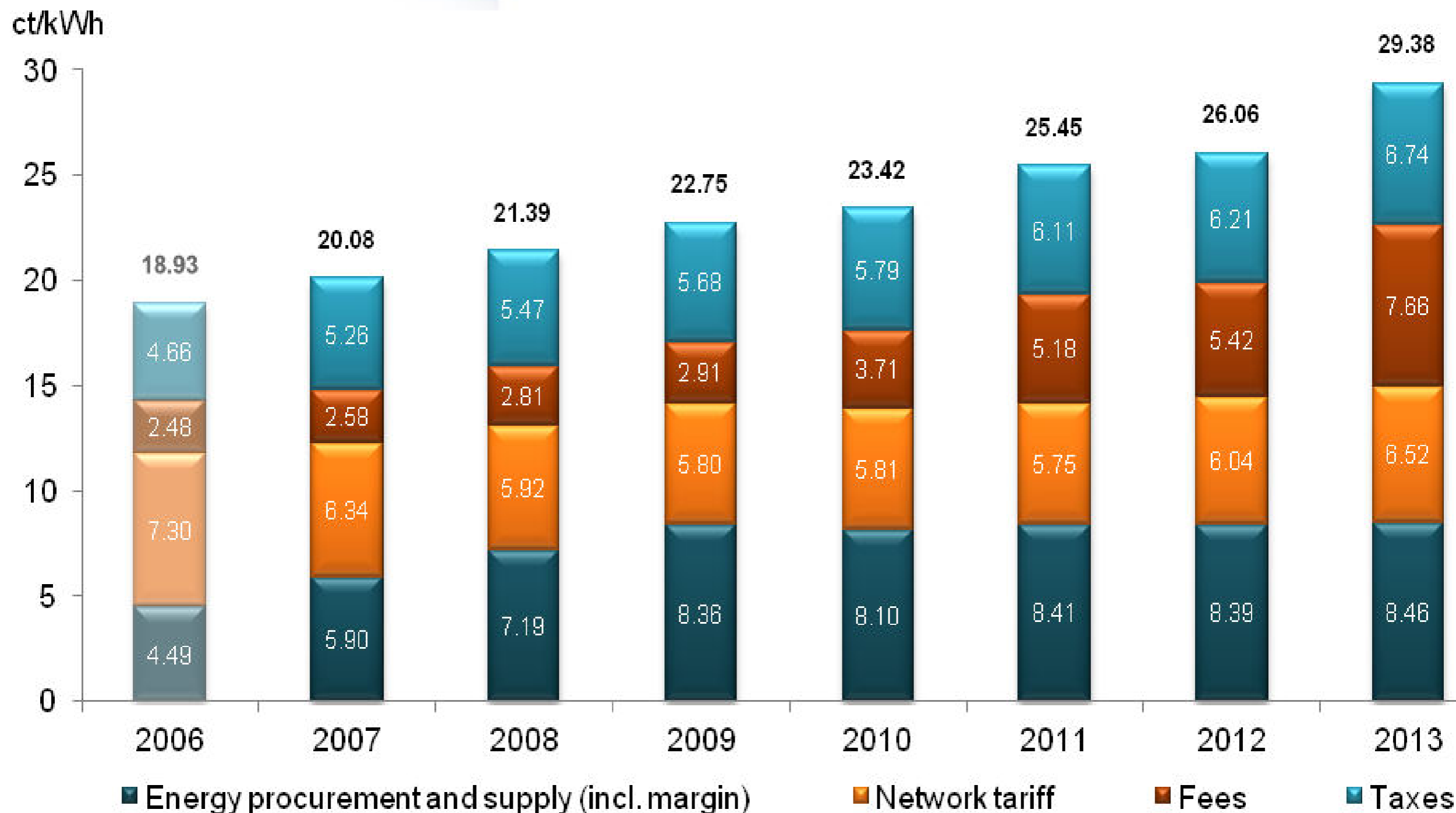
Rate of return – German experience

- Return on equity rates needed to calculate revenue caps for German TSOs
- German grid charges are subject to incentive regulation
- BNetzA must set the rate of return on equity
- Following a public consultation, BNetzA in 2011 set the return on equity at 9.05% for new installations (previously 9.29%) and 7.14% for existing installations, starting in 2013 (gas) respectively 2014 (electricity) using the CAP-M formula.
- These rates will apply for the 2nd 5-year regulatory period





Household electricity price components 2006-2013



Source: BNetzA
Monitoring Report 2013





Network tariff regulation in Germany: Incentive regulation (3)

- **Incentive regulation** works as it can provide **incentives** both for **efficiency** as well as **investments**
- Strict continuation of the calculation methodology ensures **rates of return that are predictable and that can be planned for in the long term providing certainty to investors**
- There is no risk for **German network operators** as a result of the incentive regulation account and individual consideration of the **cost of debt**
- Additionally **investment measures** ensure that new transmission lines can be built (put on top of the revenue cap) which is extremely important for the grid expansion necessary for the “*Energiewende*”



EU involvement on regulation of TSOs' revenues (THINK study)

| Form | Rules regarding | Details |
|--|--|--|
| Definition of general underlying principles | - / - | |
| Harmonization with respect to the choice of regulatory instruments | Unbundling of TSOs | D2009/72/EC, Art. 9 [electricity] and D2009/73/EC, Art. 9 [gas] |
| | Use of congestion revenues | R714/2009 Art. 16(6): “... shall be used for the following purposes: (a) guaranteeing the actual availability of the allocated capacity; and/or (b) maintaining or increasing interconnection capacities through network investments, in particular in new interconnectors. If the revenues cannot be efficiently used for the purposes set out in points (a) and/or (b) [...], they may be used [...] as income to be taken into account [...] when approving the methodology for calculating network tariffs and/or fixing network tariffs.” |
| | Exemptions for major new infrastructures | R714/2009, Art. 17 [electricity] and D2009/73/EC, Art. 36 [gas]: Major new infrastructures (interconnectors, LNG, gas storage facilities) may be exempted for a defined period of time from: rules on use of congestion revenues [electricity only]; unbundling as specified in D2009/72/EC, Art. 9 and D2009/73/EC, Art. 9; TPA; and tariff control through NRAs |
| EU instrument | Public funds | TEN-E, EIB loans, EERP, etc. used to (co-)finance infrastructure projects |

Conclusion (1)

Heterogeneity among national regulatory practices does not hamper adequate investments

Obligatory EU-wide harmonization in methodologies used to calculate allowed revenues have far-reaching implications and the cost of harmonization might substantially exceed benefits!

Different regulations are justified:

**Individual sector characteristics,
Historical evolution of the regulatory design,
National policy priorities
National regulators' responsibilities etc.**





Agenda

- ▶ **Enhancing investments:
The EU infrastructure package**



Regulation on Trans-European Energy Networks

- Regulation 347/2013/EU on Guidelines for trans-European energy infrastructure (TEN-E)
- Selection of "Projects of European Interest" (PCIs)
- PCIs will benefit from:
 - ▶ Faster permit granting (max. 3 ½ years, one-stop-shop)
 - ▶ Improved regulatory treatment through cross-border cost allocation and risk-related incentives
 - ▶ Access to financial support through "Connecting Europe Facility" (additional filter, 5.85 bn euro in 2014-2020 for electricity, gas and oil projects via grants and financial instruments)





The EU infrastructure package (Regulation 347/2013)

Around 200 Projects of Common Interest (PCIs) have been identified:

Electricity, gas, Smart grids, CO2 transport that will be privileged to foster roll-out of a European wide energy infrastructure for the development of the internal market and for enhancing the security of supply

**Accelerated
permit
granting**

**Regulatory
measures
Criteria / CBA**

**EU financial
assistance**

Identification of Projects of common interest

- **General criteria**
 - PCI contributes to the implementation of the infrastructure priorities
 - Economic, social and environmental viability
 - Involves at least two Member States:
 - Cross-border infrastructures
 - Infrastructure with significant cross-border impact
- **Specific criteria**
 - Market integration
 - Security of supply Diversification Secure system operations
 - Sustainability Integration of RES GHG avoidance
 - Cost-benefit analysis





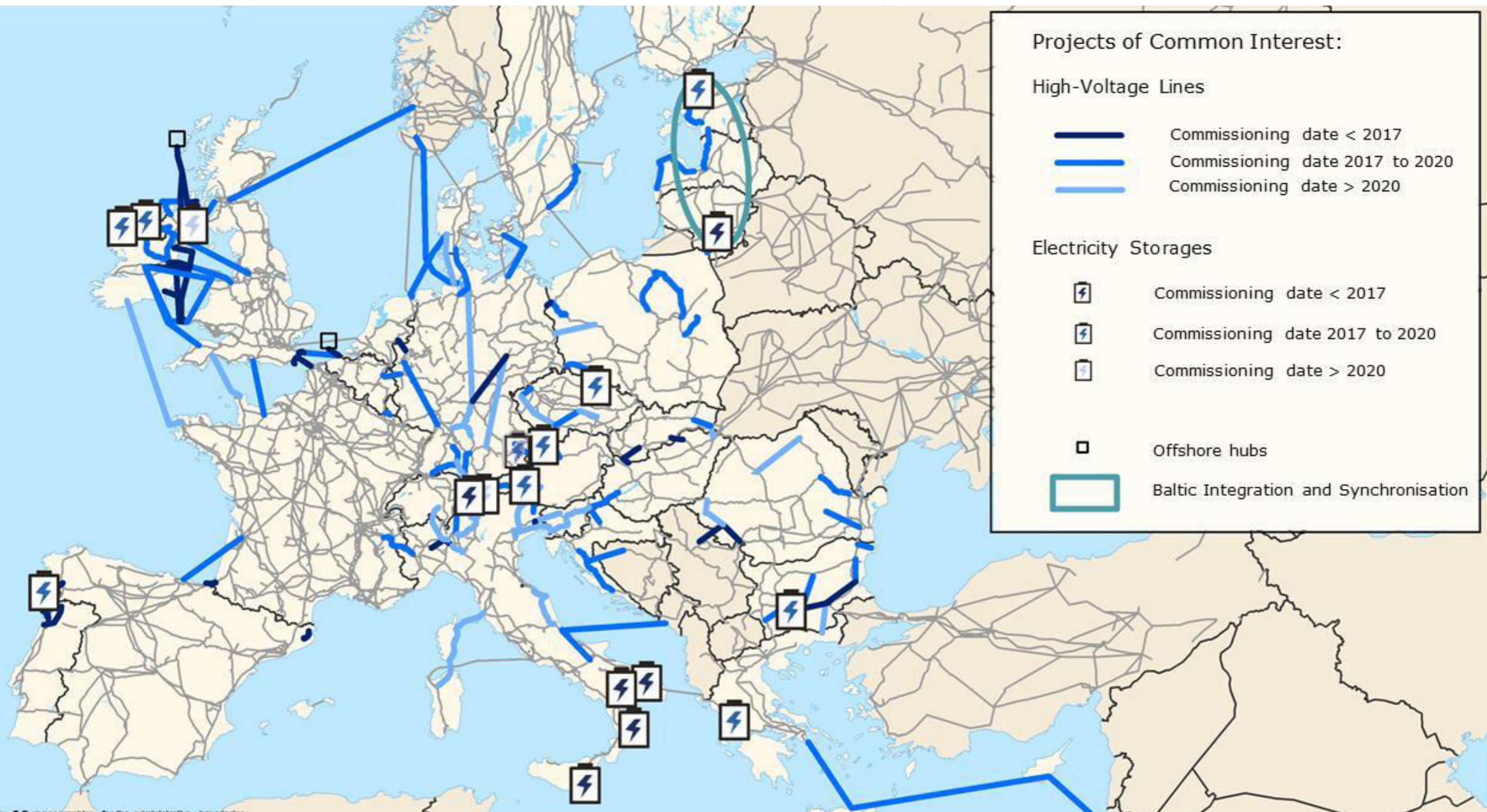
Financing: Connecting Europe Facility 2014-2020

- **€ 50 bn for transport, energy (prop. €9.12 bn) and ICT projects**
 - **Financial Instruments (equity/debt incl. project bonds in cooperation with IFIs) and**
 - **grants for studies and works**
- **Eligibility criteria (in Guidelines):**
 - **Grants for studies and financial instruments: Available to all PCIs**
 - **In exceptional cases, grants for works for PCIs provided that:**
 - **CBA shows positive externalities**
 - **Commercially not viable**
 - **Cost-allocation decision done**



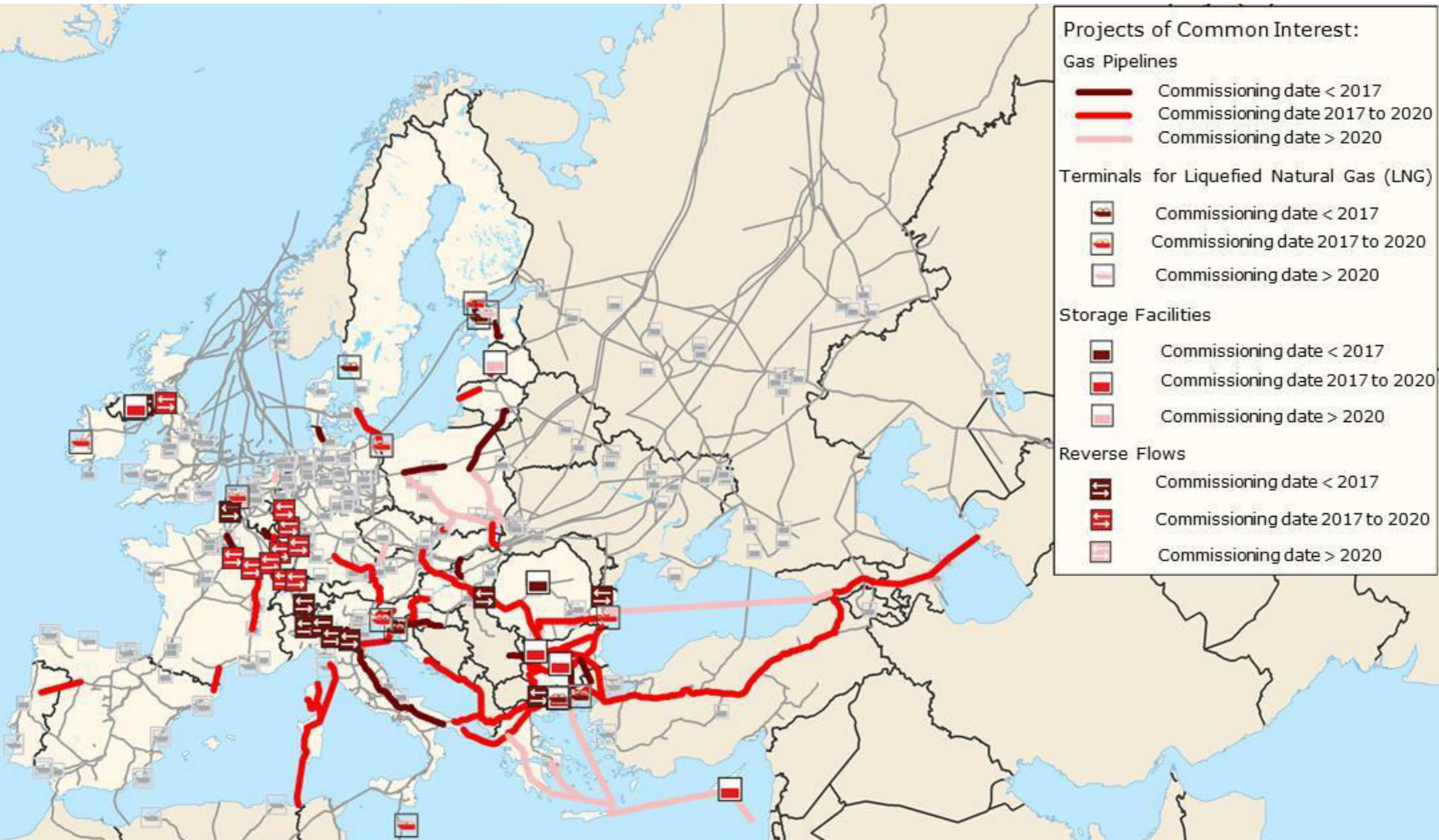


Projects of Common Interest in electricity





Projects of Common Interest in gas



Regulatory framework: Measures

Energy system-wide cost-benefit analysis (CBA)

- Proposal by ENTSOs, ACER opinion, Commission approval

Enabling investments with cross-border impact:

- Cross-border cost allocation (CBCA)
- NRA joint decision on investments and cost allocation
- ACER decision if no agreement after 6 months

Long-term incentives for investment (Art. 13):

- NRAs to grant appropriate risk-related incentives
- ACER guidance on best practices of NRAs + common methodology
- Commission can issue guidelines on incentives



A pan-European Cost Benefit Analysis (CBA) methodology (Art. 11)

Address major changes and challenges in the electricity sector (climate change, RES, market integration, SoS...)

- **Common benefit framework reflecting today's challenges**
- **Highlight projects which have a particular value in achieving certain targets, such as RES integration or completing the Internal Market**
- **Identify robust projects, taking into account uncertainties linked to future system evolution**
- **Common scenarios and joint grid planning**

Enhance dialogue with stakeholders

- **Huge investment needs**
- **Need for social acceptance**





ACER Recommendation on cross-border cost allocation requests

ACER Recommendation 07/2013 specifies for the first list of PCIs:

- Requirements for completeness of request
- Criteria for PCI maturity
- High-level principles for providing compensation:
 - Available only to countries hosting a project
 - Countries are compensated only if they are deemed to incur negative net benefit
 - Countries compensate only if they are deemed to incur significant positive net benefit

Recommendation highlights need for sound Cost-Benefit-Analysis (CBA) and calls for a monetisation of :

- Socio-economic welfare
- Variation in losses
- Security of supply (load)
- Relieving national constraints
- Variation in generation curtailments



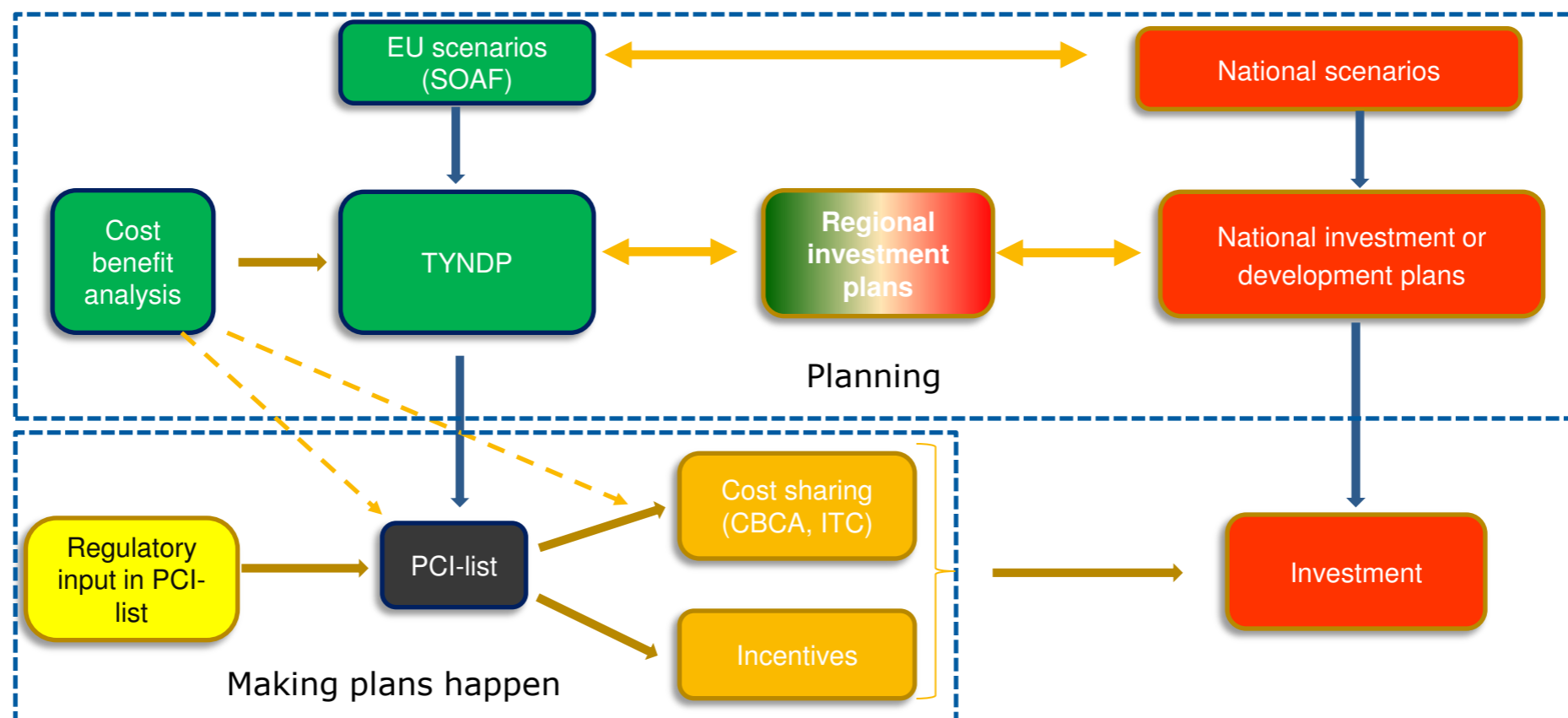


Cross border cost allocation (CBCA) requests (Art. 12): Process

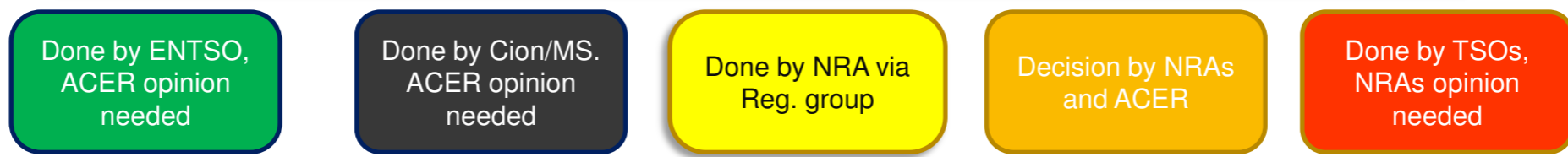
- **Electricity PCI investment requests so far – in Germany**
 - **3 requests, for 4 PCIs geographically located in 3 countries / 1 region**
- **Are project promoters incentivised to ask for CBCA and thus make investments with uneven distribution of benefits happen?**
 - **CBCA is one of the priorities in the “regulatory treatment”**
 - **NRAs take coordinated decisions within 6 months**
 - **To prevent delays in implementation of new investments, NRAs must engage into CBCA agreements containing:**
 - **cost-sharing agreement,**
 - **payment details (one-time,**
 - **date(s), linked to construction phases ... etc.**



Decision making processes and involved parties



Clarification for colour scheme



Source: ACER



Conclusions (2)

- Investors need to be clear that only **efficiently incurred costs** will be allowed by national regulators for cost recovery from network tariffs in order to ensure the effective use of capital.
- We do not want to delay commercially sound projects by suggesting that they may be eligible for incentive that they don't actually need. Nor do we want to allow the costs of investments to spiral inefficiently. It is essential that incentives should be proportionate to the risk incurred by investors.
- National Regulatory Authorities have the core expertise in ensuring that investments in infrastructure are made, and are made efficiently. However, the critical issue is whether the framework within which regulators operate helps them to work effectively – or hinders them.
- The Energy Infrastructure Regulation provides a sufficient set of instruments to ensure investments in PCIs is made timely





Final thought

***“Not everything that counts can be counted,
and not everything that can be counted
counts”***

Albert Einstein



Thank you for your attention!

CEER

**Council of European
Energy Regulators**





Time horizon and discounting method

Benefit figures

- Year 2020 (mid-term)
- Year 2030 (long-term)

Interpolate/extrapolate:

- Before 2020: use mid-term value
- Between 2020-2030: linear interpolation
- After 2030: use long-term value

ACER deemed Frontier Economic's short-term approach reasonable :

- a common discount rate of 4% (real)
- a common time range of 25-years lifetime for all projects
- a common reference year (present year) for discounting



Adequate investments
Nor only refer to the level of investments
But also to their scope and quality

=

take into account the growing importance of RD&D

