

Incentive Regulation in the German Energy sector – from concept to implementation

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- The German incentive regulation's schedule
- Calculating allowed revenues – the formula
- Central implementation issues
 - Number and duration of regulation periods
 - Initial value
 - General X-Factor
 - Benchmarking / individual X-Factor
 - Exemption rule for small utilities
- Conclusions

BNetzA (Federal Network Agency)

- 30 June 2006 report handover Public comments

BMWi (Federal Ministry for Economics and Technology)

- September/October 2006: Consultation, 1st round Framework
- November 2006: Proposal for the central elements
- December 2006 - today: Consultation, 2nd round
- April 2007: Submission of memorandum to the Cabinet
- May/June 2007: Approval of the bill (?) Bundesländer

BNetzA

- 2007, 2nd half of the year: Regulatory cost audit
- 2008: Cost-plus regulation, Benchmarking
- 1 January 2009: Beginning of incentive regulation in Germany

- Draft ordinance
 - 2008: Adjustment year with cost-plus
 - 2 periods, 4 years each
- Industry (incumbents) complaints:
 - Adjustment time very short: Problems due to long amortisation periods of network assets
 - Reference to § 21a 5 EnWG: Requirements have to be **achievable** and **surpassable** at **reasonable** effort
 - Industry request: 3 periods, 5 years each

The economics behind:

- High uncertainty due to weak database
- Incentive regulation is meant to imitate competition
- Given workable competition, (significant) inefficiencies should not exist or be cut back within short time. Suppliers bear the cost of inefficiencies and the risk of default.
- Persistent inefficiencies cause extra economic costs.
(widely neglected in the current discussion)
- Game of rent distribution: Who bears extra costs?
 - Network operators
 - Customers

The economics behind, cont.:

- The legal terms in § 21a 5 EnWG concerning incentive regulation – achievable, surpassable and reasonable – are neither sufficiently specified nor is it possible to operationalize them appropriately. This
 - induces legal uncertainty and
 - complicates effective incentive regulation

Conclusion: To maximize social welfare in the long run, regulatory pressure should neither be:

- to weak in order to incentivise cost reduction (productive efficiency)
- to strong in order to allow new investments (dynamic efficiency)

Central issues

initial values I

- Draft ordinance
 - Initial values for incentive regulation are based on cost-plus results
 - Limited on ‚cost of efficient production‘
 - Network operators may apply for an extra investment budget on top of the allowed revenue
 - Due to different cost standards (replacement vs. historical costing) and partly very old networks, especially in the western part
 - Max. 1% of overall CAPEX
 - Ex post monitoring of capital actually invested
- Industry complaints:
 - Incentive regulation prevents investment
 - and claims: abandonment of additional cost monitoring in favour of a simple adjustment of capital base and the persistently not influenceable cost

Central issues

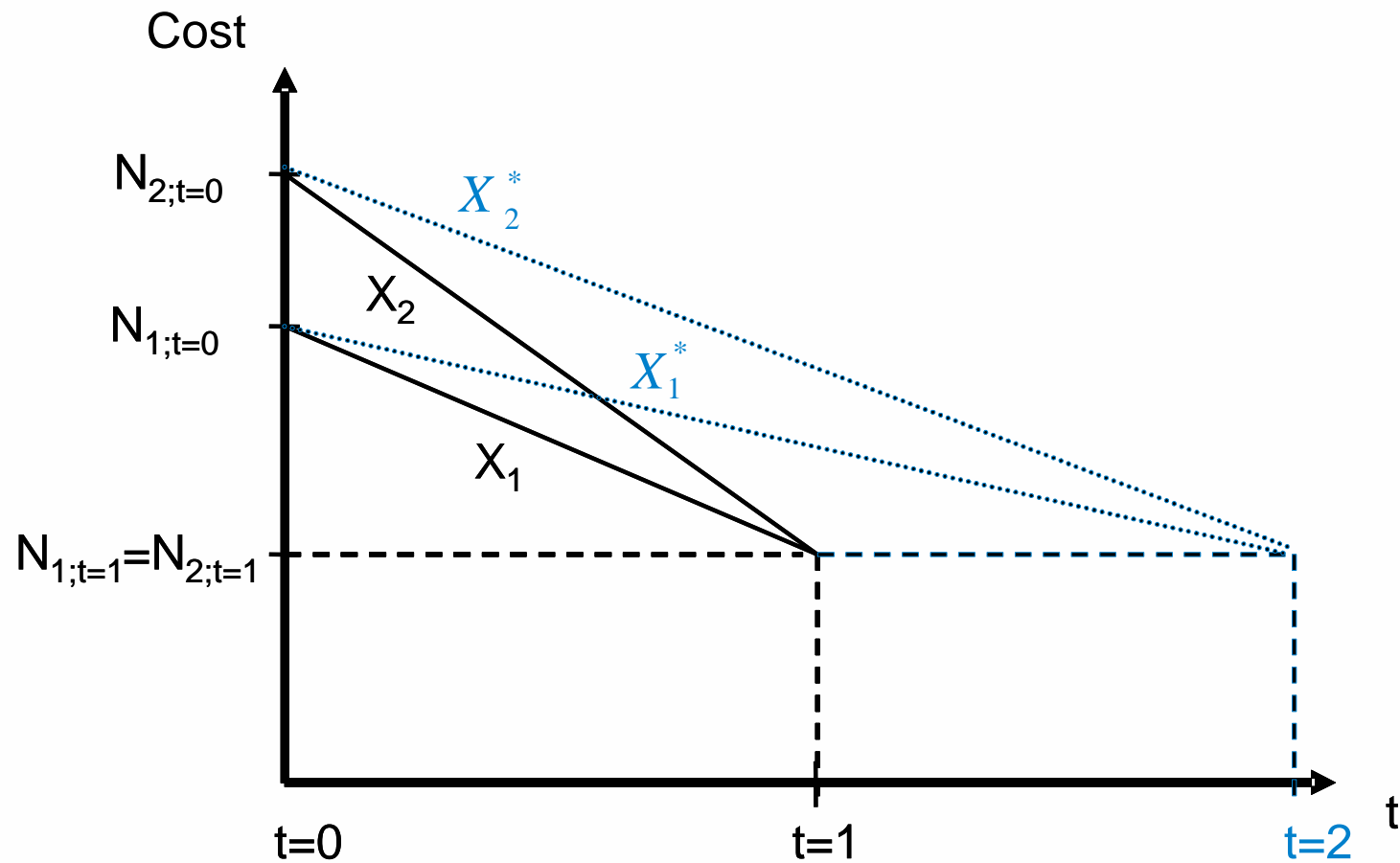
initial values II

The economics behind:

- (Obviously,) initial values are of crucial importance for incentive regulation – and not just for the beginning
- Current cost plus regulation is an inappropriate cost base -> comparability ?
 - Differences in depreciation strategies
 - Differences in capitalisation strategies
 - Two different cost standards for old and new investments)
- ⇒ Cost monitoring – before the beginning of incentive regulation – becomes necessary
 - Including comparisons to identify ‚excessive cost‘
 - However: time-critical process

Central Issues

Initial value, duration and efficiency target



- Draft ordinance
 - Proposal (BNetzA): initial 2.54% (Törnquist-Index)
 - Productivity differential: 2.23%
 - Inputprice differential: 0.31%
 - Period 1977 to 1997, 2 sub-periods (1977 – 1991 and 1993 – 1997), weighed in equal proportions
 - Data provided by Statistisches Bundesamt (Federal Statistical Office)
 - Political decision: 1.5
 - Perspective: Calculation of the general X-Factor by Malmquist-DEA

Central issues

General X-Factor II

- Industry complaints:
 - Incomplete data base
 - Weighing in equal proportions inappropriate
 - Indices applied inappropriate
 - Network sectors cannot achieve higher productivity advances than the economy as a whole – due to long asset amortisation periods
 - claims: $X_{\text{gen}} = 0\%$

Central issues

General X-Factor III

The economics behind:

- X-Factor is a relative value: relationship to economy as a whole
- Aim: ‚competitive‘ price-level
- Calculating the General X: allocative vs. dynamic efficiency. High X-Factors
 - reduce prices (in the short run) and increase allocative efficiency but might
 - prevent investments (inappropriate returns) and decrease dynamic efficiency
- Data base currently incomplete
- Calculating the inputprice differential
 - capital: necessity of applying private-sector data: objectivity?
 - labour: not yet discussed; data supports positive wage differential

- Draft ordinance
 - Best of performance from DEA/SFA
 - DEA with increasing returns to scale
 - Aim: Protection of small network operators
 - Economic outcome might be right the opposite
 - Cap on individual X-factor: max 50% inefficiency over 8 years
 - Standardization of CAPEX
 - 1st period: historical costing and application standard economic lifetime
 - 2nd period: special registry for assets (Technisch-wirtschaftliches Anlagenregister) to avoid potential biases due to differences in depreciation and capitalisation strategies

- Industry complaints:
 - Schedule for registry too ambitious (although the industry claimed for it)
 - claims: additional discounts to best of performance from DEA/SFA
 - claims: benchmark to the average: OLS instead of SFA and DEA
 - claims: capping the individual X-factors due to low data quality – max. 2% p.a., i.e. max. 30% over 15 years

The economics behind:

- Benchmarking might prevent investment: since former depreciation and capitalisation strategies distort benchmarking ranking
- Cost base to be standardized – to the beginning of 2nd regulation period latest
- Registry could serve as interim solution
- Preferable: change to annuity based valuation and standardized cost
- Capping the individual X-factors:
 - seems unnecessary in a best of performance setting but
 - might be acceptable in the 1st period due to low quality of data
 - in order to arrive at the efficient cost level at the end of the two periods

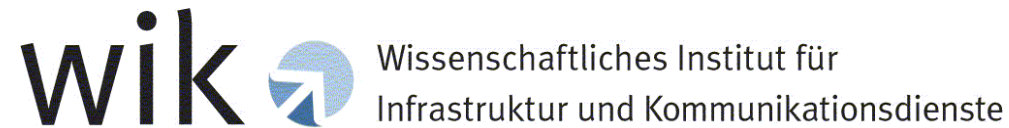
- Draft ordinance
 - Definition ‚small network operator‘:
 - Gas and electricity together less than 20,000 connected customers and
 - Gas only less than 10,000 connected customers
 - Otherwise too few utilities left over for the gas benchmarking
 - Option menu:
 - Full participation
 - Simplified approach: Individual X-factor equal to the average
 - Industry complaints:
 - Regulatory burden too high for small utilities (e.g. data collection); efficiency decrease due to regulatory requirements (additional staff)
 - Diseconomies of scale
 - Reference to § 21a 5 EnWG: Requirements **achievable** and **surpassable**
- ⇒ Claim for special treatment of small companies

The economics behind:

- Avoid setting wrong incentives ⇒ simplified approach better than originally discussed cost-plus alternative
- Self-selection (option rule): order is important to avoid cherry picking:
 1. Choice, then
 2. Benchmarking
- Reasons for exemption rule questionable: No indication for scale economies in explorative benchmarking
- 10,000 connected customers:
approx. 480 electricity and approx. 410 gas utilities
 - ⇒ Reduces the number of benchmarking entities
 - ⇒ Possibly affects results for remaining companies
 - Associated companies should be analysed jointly with their parent utility (as in unbundling de-minimis-rule)

Conclusions

- Postponement of transition period should be used to increase data quality
- Current regulation inappropriate base for calculating initial values
- Instead: Use annuities based on standardized quantifications
- General X-Factor > 0 is justifiable but should be determined with caution
- Exemptions for small companies should not undermine regulatory regime
- Open issues
 - Definition of internal rate of return
 - What comes after 2016 (yardstick competition?)



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