



## **Electricity Network Tariffs and Benchmarking**

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Astana, 19 June 2014

**BUILDING PARTNERSHIPS FOR ENERGY SECURITY**

# Agenda



- Regional Tariff Study
- Electricity Network Tariffs

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# Tariff Review



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## Regional Review of Tariffs

- Focus on methodologies for Electricity and gas
- Comment on alignment with EU practises

## Tariff Seminar

- Tariff methodologies
- Tariff Design



# Tariff Review

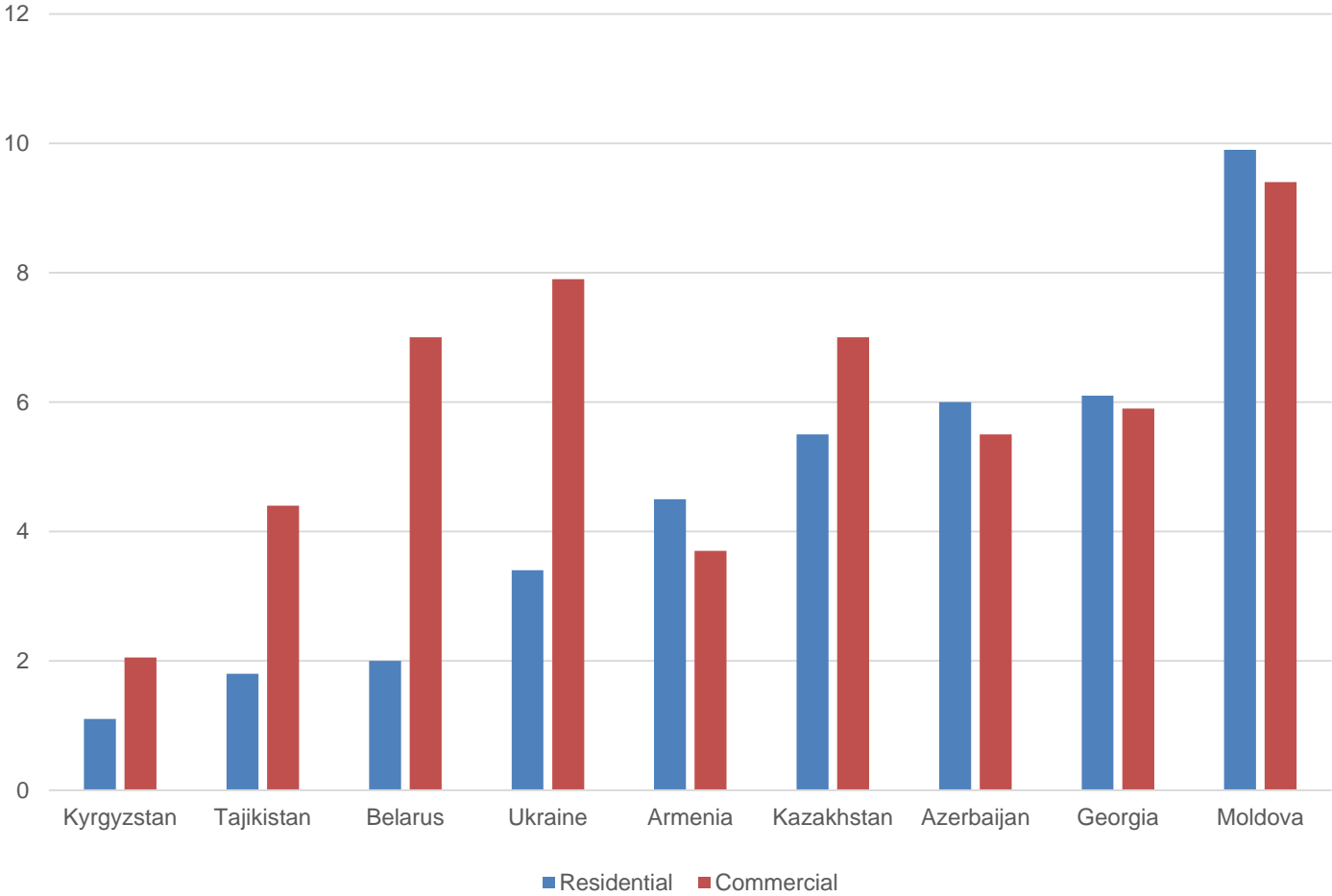


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- All respondents said that their tariffs are cost based
- Most use historical costs for valuing assets and use straight line depreciation
- All say that tariffs are fully cost reflective
- Most say that there are no subsidies in the tariffs
- Some (Georgia, Kazakhstan, Moldova) are contemplating incentive regulation for transmission/distribution

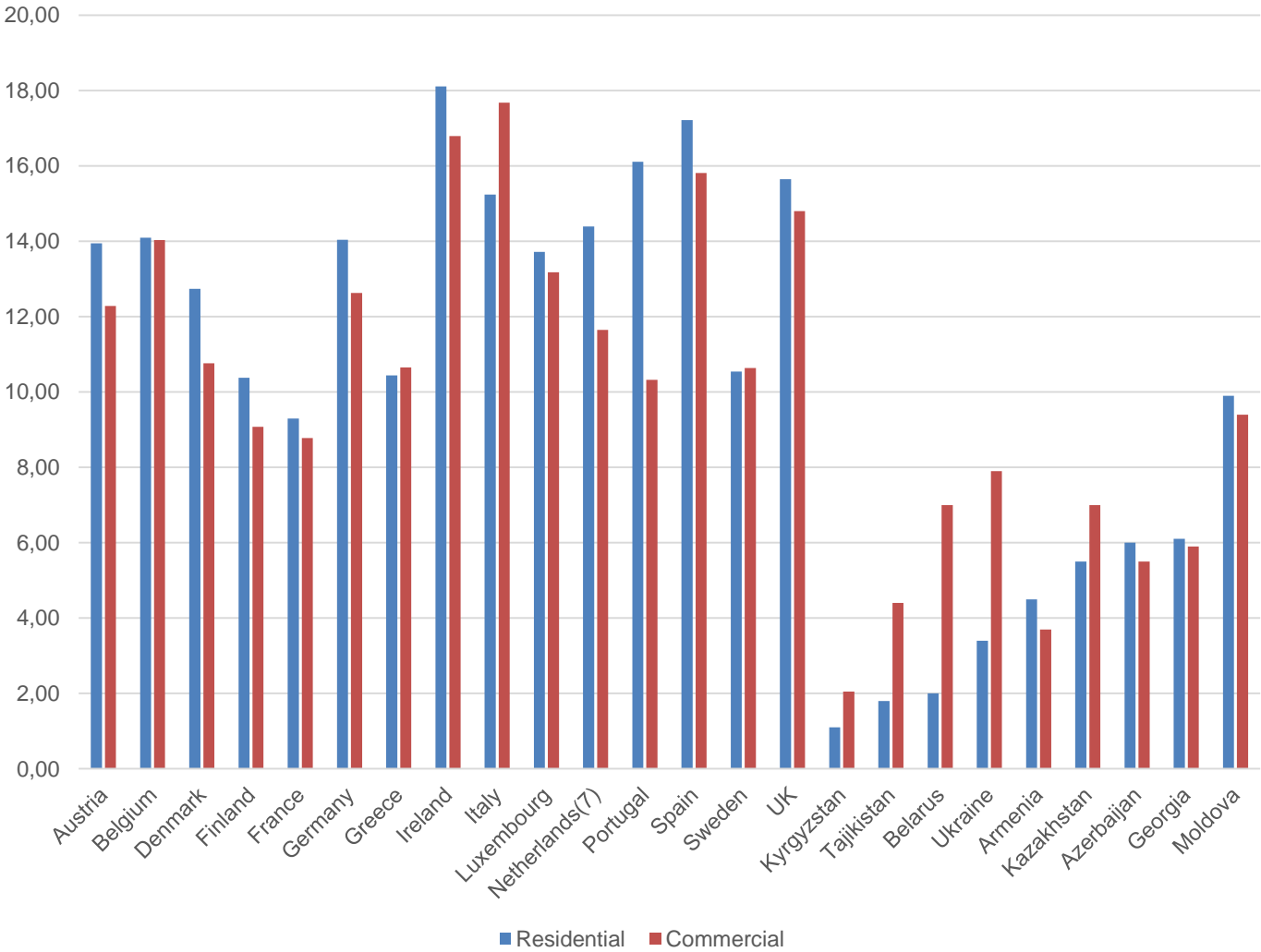


# Commercial & Residential Electricity Tariffs in PCs



# Tariffs in EU15 and PCs

EU 15 and Partner Countries (Excl. Tax)



# Tariff Seminar



- Held in Budapest 29 -31 October
- Representatives from 7 of PCs
- Covered all aspects of tariff setting:
  - OPEX, CAPX and RoA
  - Tariff design
  - Investments
  - Public Service Obligations
  - Network Access



# Tariff Seminar



Positive feedback on

Relevance

Quality

Organisation



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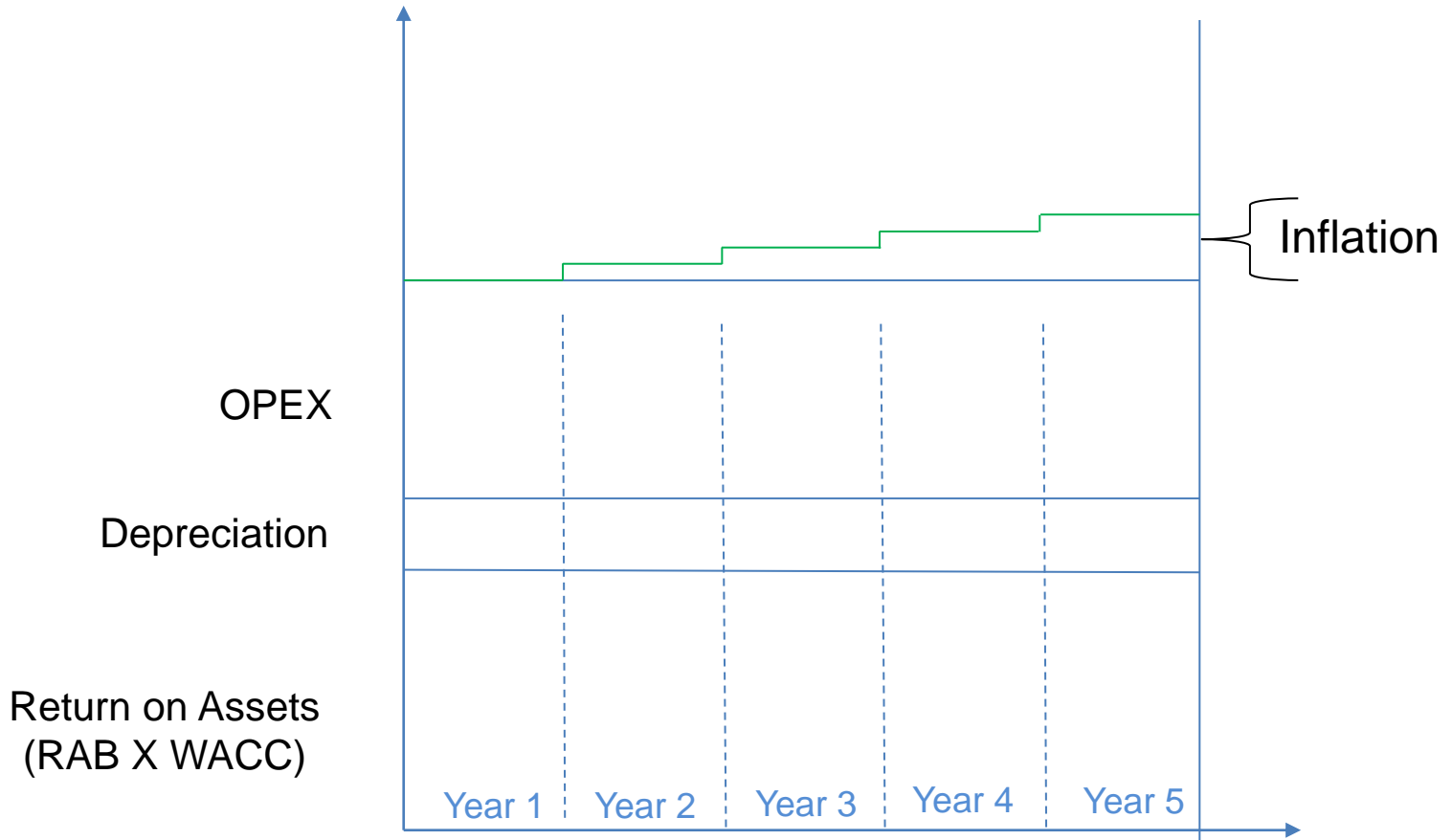


# EU Tariffs

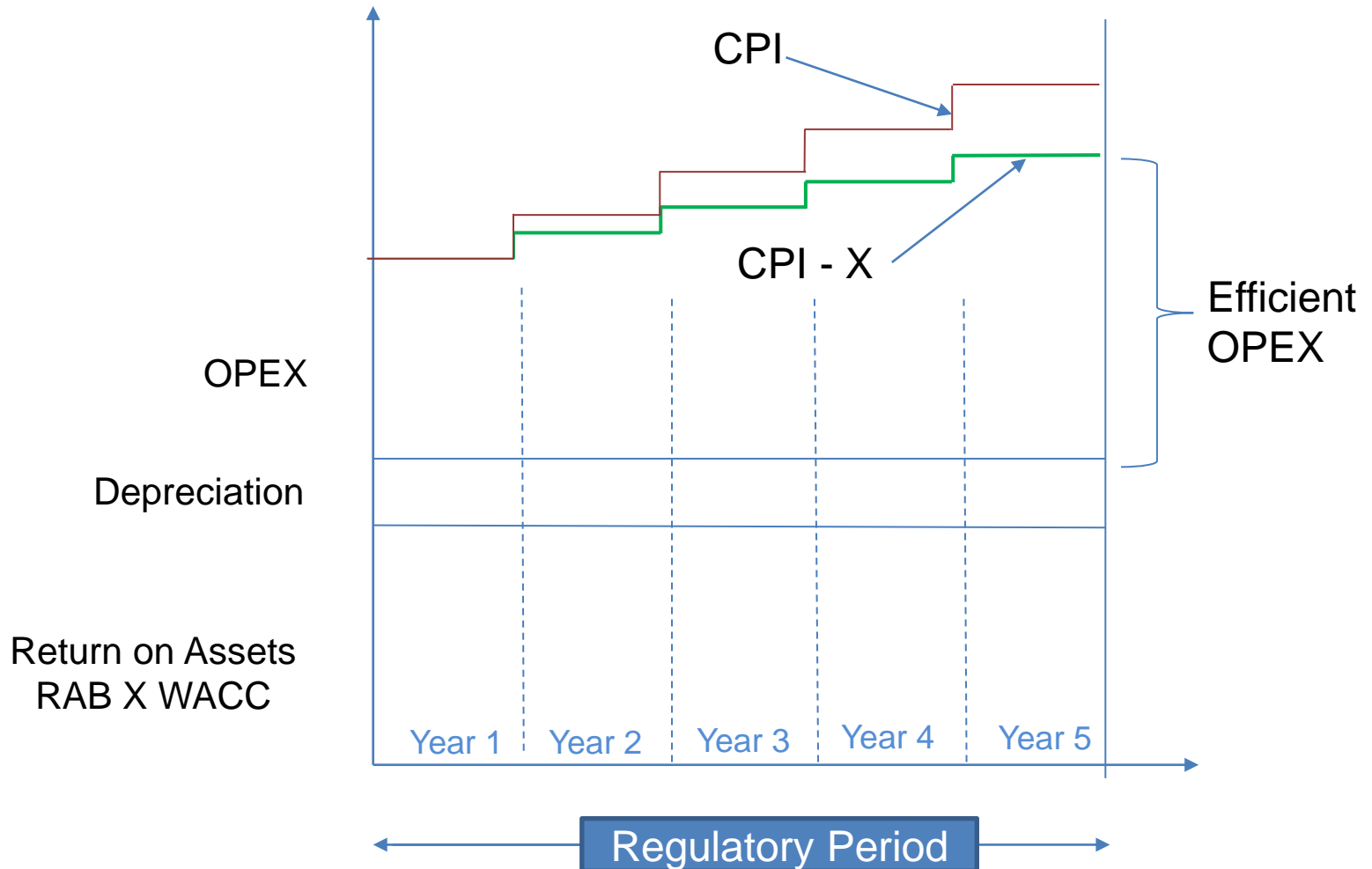


- In most EU countries production and supply are established through markets
- Network tariffs remain under regulation
- Most EU countries use or plan to use incentive regulation for tariffs

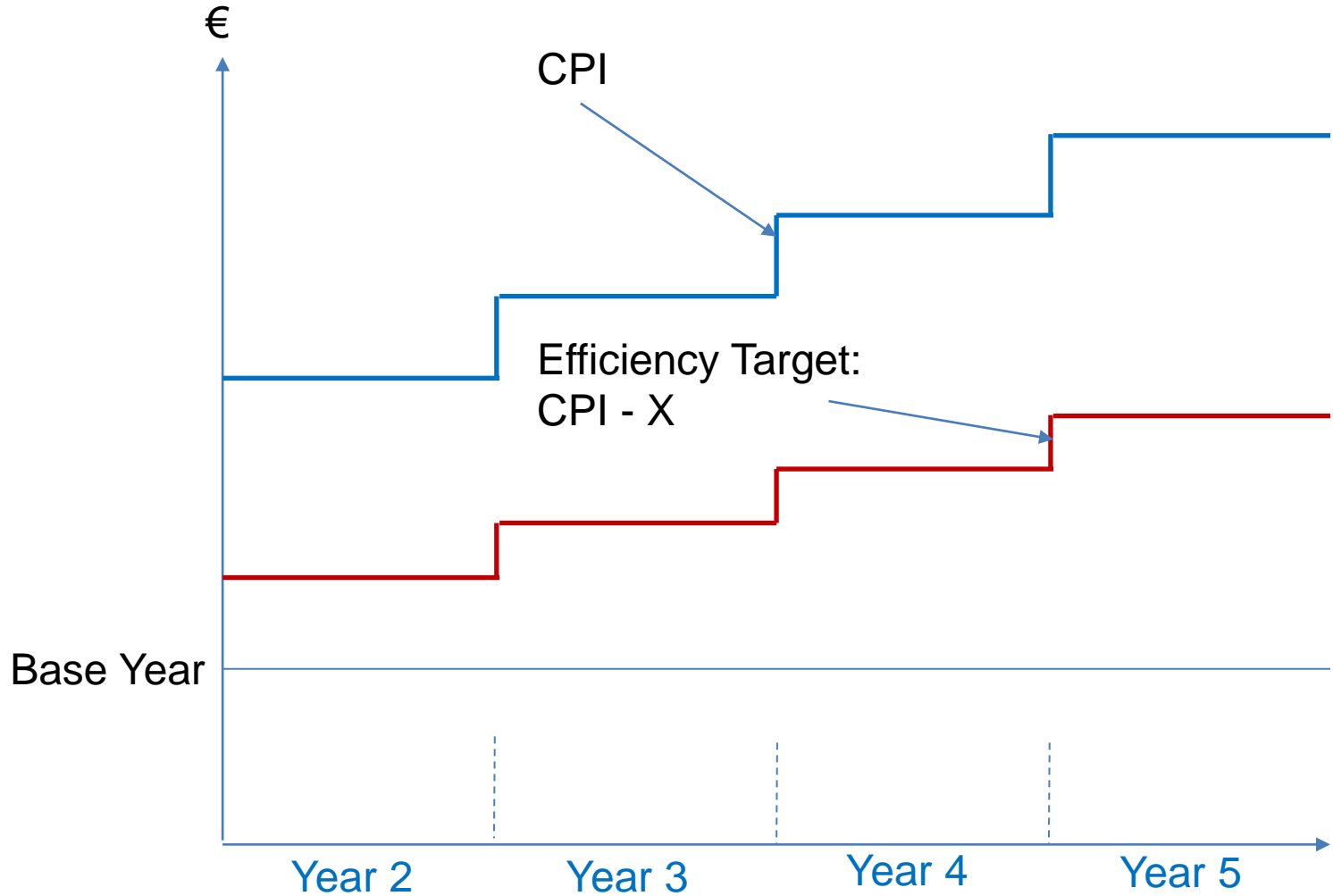
# Costs plus regulation



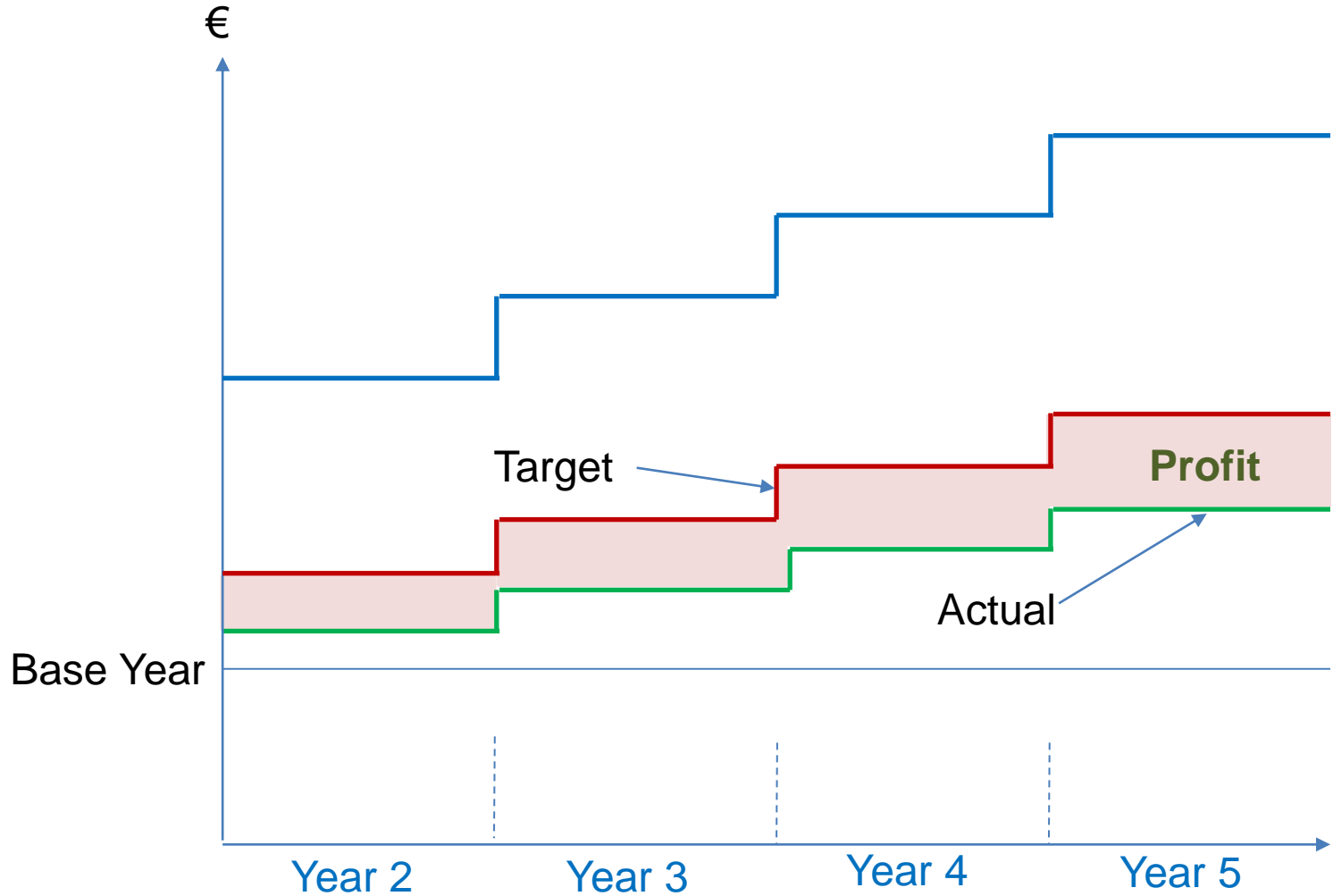
# Incentive Regulation



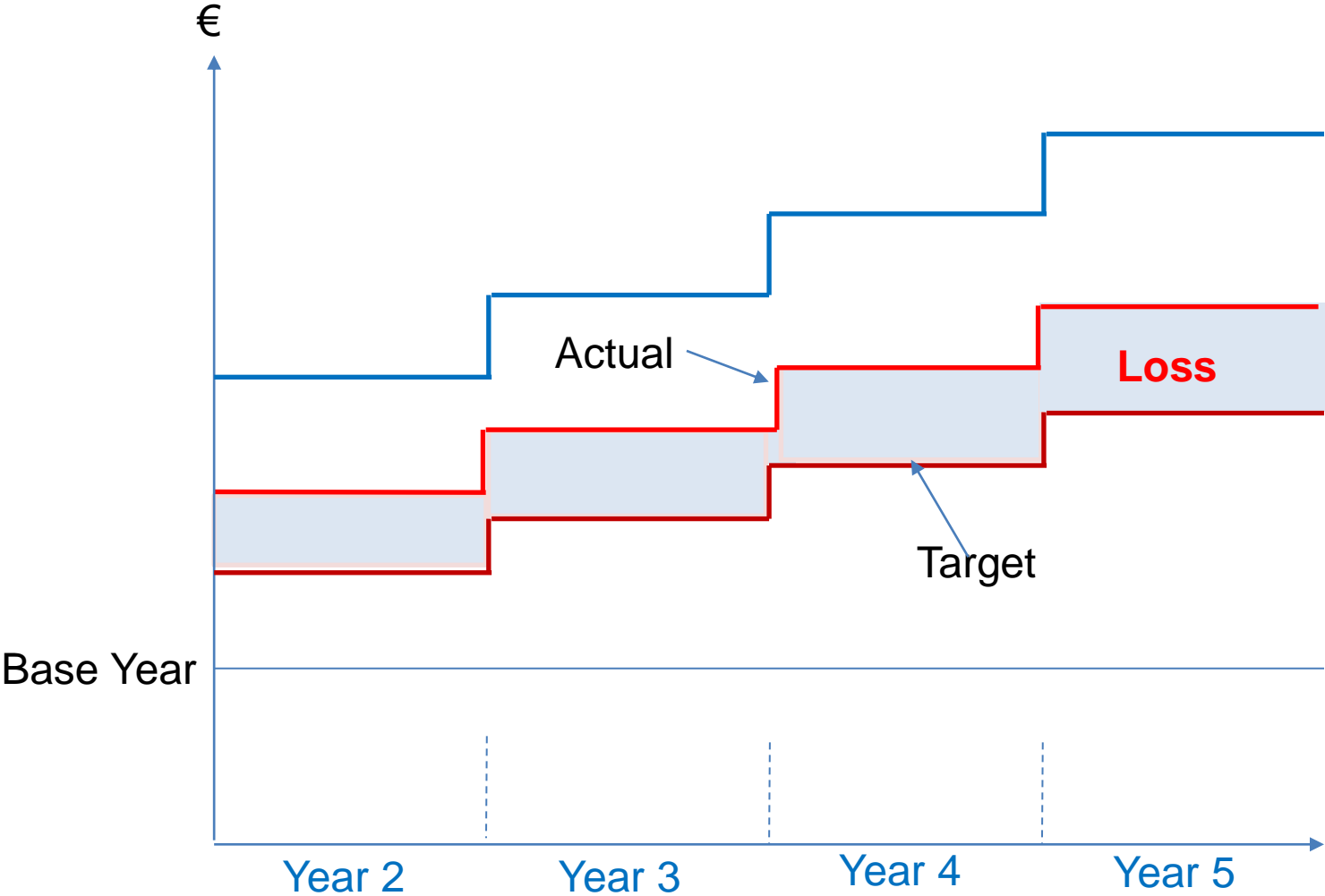
# Incentive Regulation



# Incentive Regulation



# Incentive Regulation



# Benchmarking



A benchmark is:

‘A standard or point of reference against which things may be compared’

*Oxford English Dictionary*

However:

- *There is no standard electricity network*
- *Therefore, network companies are compared against each other and the most efficient in the selected group becomes the benchmark*

# International Benchmarking



## Advantages:

- *Much larger sample to improve accuracy of results*
- *Similar standards applied to interconnected systems*

## Disadvantages:

- *Differences in underlying costs (Labour, Finance etc)*
- *Differences in reporting regulation, tax etc. creates difficulties in comparing accounts*
- *Physical differences (terrain, climate etc) make direct comparisons difficult*
- *Differences in historical investment in maintenance and repair may distort costs.*



# International Benchmarking



## Cost drivers:

- Maximum Demand
- Length of overhead wires
- Length of underground cables
- Number of transformers
- Number of customers
- Connection density
- Reliability

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# International Benchmarking



Comparison of results of different benchmark models:

	DEA-1CRS	DEA-1VRS	DEA-2CRS	DEA-2VRS	COLS-1LL	COLS-1TL	SFA-1LL
DSO 1	60.50%	100%	70.50%	100.00%	62.10%	69.90%	68.30%
DSO 2	50.40%	85.20%	49.30%	94.10%	55.10%	59.60%	60.00%
DSO 3	43.20%	76.80%	79.10%	100.00%	46.70%	49.70%	47.70%
DSO 4	50.40%	77.50%	48.30%	75.90%	54.60%	57.90%	59.10%
DSO 5	58.10%	98.30%	56.20%	100.00%	63.80%	68.50%	69.20%
DSO 6	49.50%	70.30%	40.90%	85.70%	51.00%	55.40%	55.30%
DSO 7	34.60%	55.40%	51.80%	97.80%	36.80%	39.80%	39.90%
DSO 8	65.80%	100%	87.60%	100.00%	68.50%	73.60%	73.00%
DSO 9	58.50%	100%	87.40%	100.00%	64.10%	69.20%	69.70%
DSO 10	35.10%	48.40%	38.10%	82.70%	37.10%	39.10%	39.90%
DSO 11	60.50%	83.40%	56.60%	100.00%	100.00%	71.50%	98.30%
DSO 12	100%	100%	35.10%	38.70%	91.60%	89.80%	100.00%
DSO 13	88.10%	94.80%	100.00%	100.00%	97.40%	62.50%	86.50%
DSO 14	100%	100%	100.00%	100.00%	82.90%	100.00%	82.10%

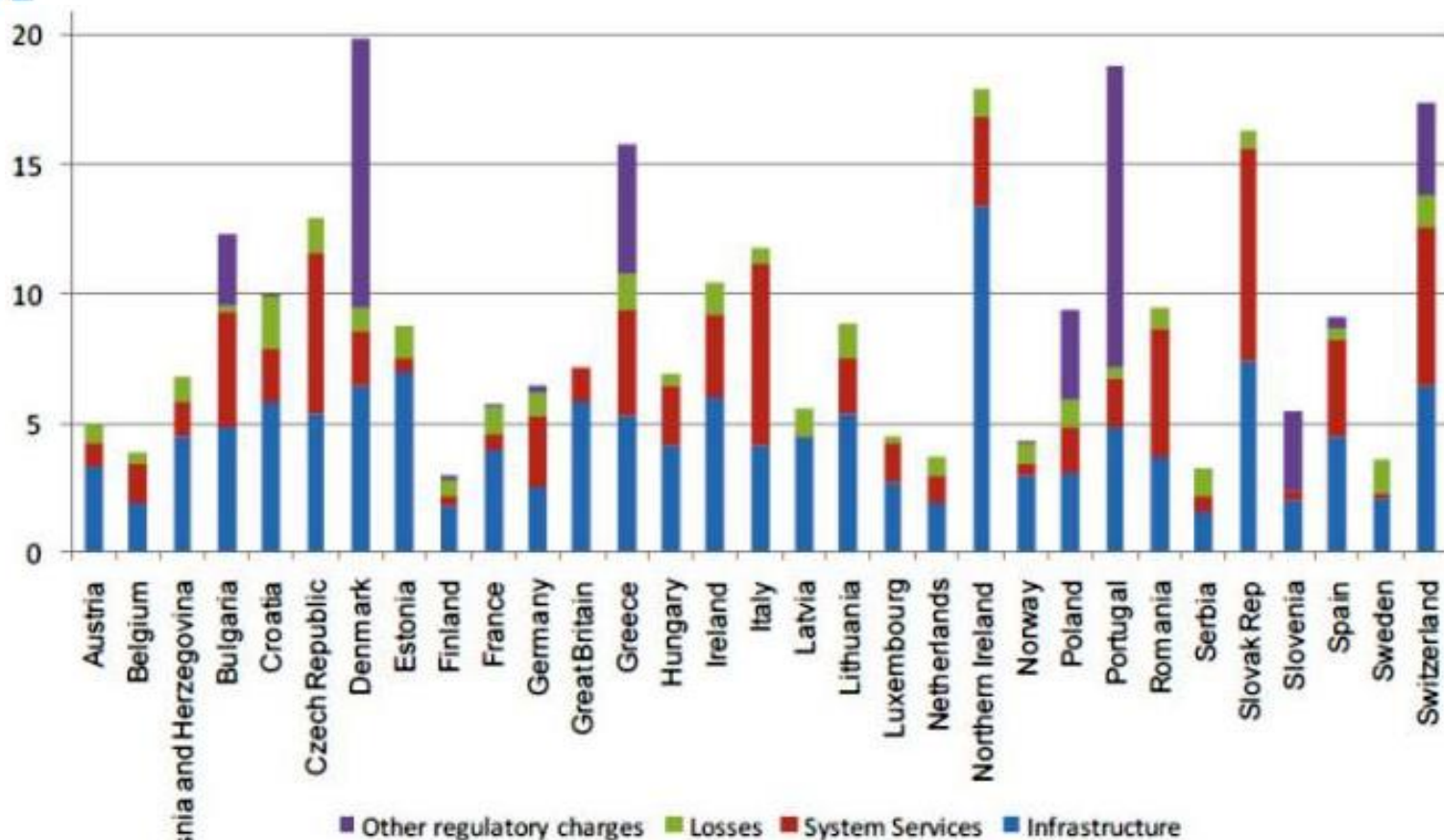
Source: International Utility Benchmarking & Regulation:  
An Application to European Electricity Distribution Companies  
Department of Applied Economics, University of Cambridge



PROGRAMME FUNDED BY THE EU

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## Cost elements of the electricity transmission tariffs in Central and Eastern European EU countries (in €/MWh)



Source: ENTSO-E 2012

# Conclusions



- No longer widely used in transmission
  - Sample too small
  - Cost distortions caused by support for RES
- Used in distribution networks
  - Large sample size
  - Choice of the most relevant cost drivers not always obvious
  - Choice of model is important (DEA most common)
  - Used as a confidence test on tariffs rather than as a tariff setting methodology

# Demand can be difficult to predict...



## England Vs Germany 1990, World Cup Semi-Final, Kick Off 19:00

