

The Lisbon component

Regulation of TSO's

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Achieving the 'Lisbon strategy' for electricity and gas market through the new Directive

EU energy directive 2003/54&55/EC

Amended with rules for

- Internal market in electricity and gas
- Conditions for access to electricity and gas



Discussion of Dutch experience along framework of EU directive

Dutch experience in regulation of TSO's to improve efficiency

But first has it been worth it?

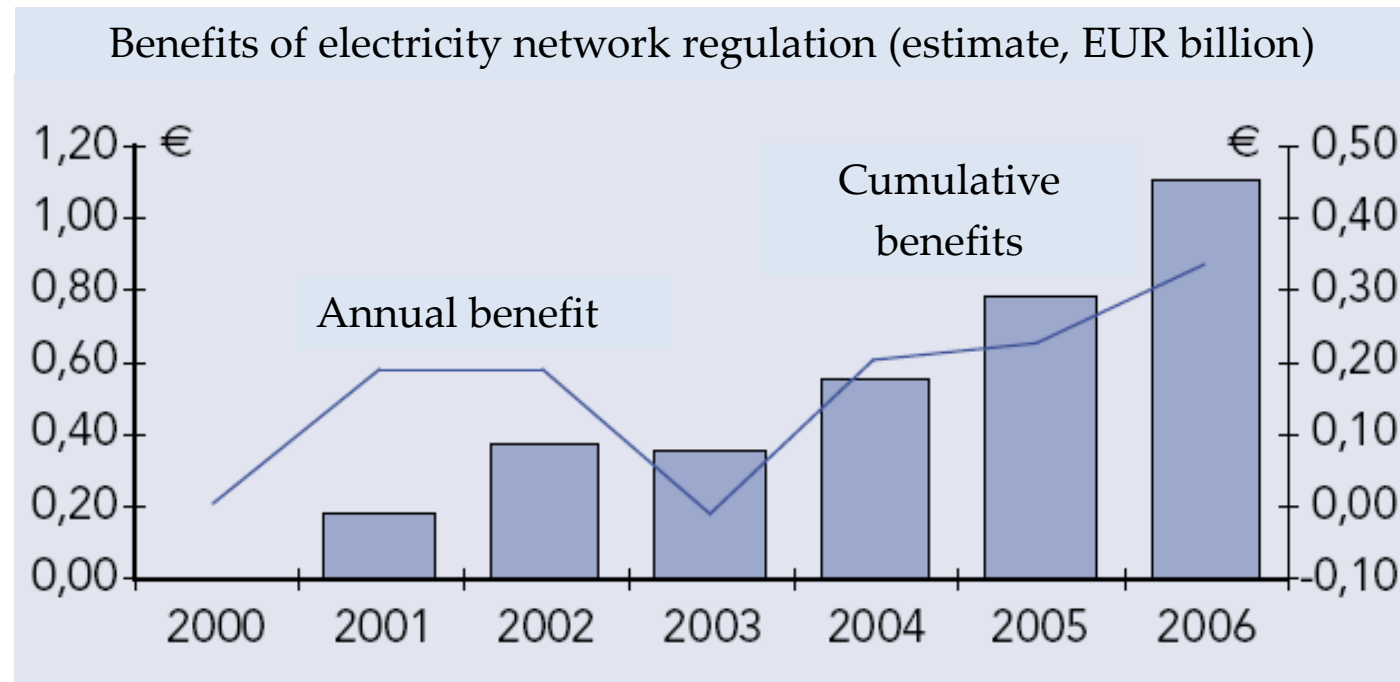
Yes, approximately EUR 1.1 billion over 6 years

Positive effects:

- Direct (lower electricity bills)
- Indirect
 - Larger electricity market

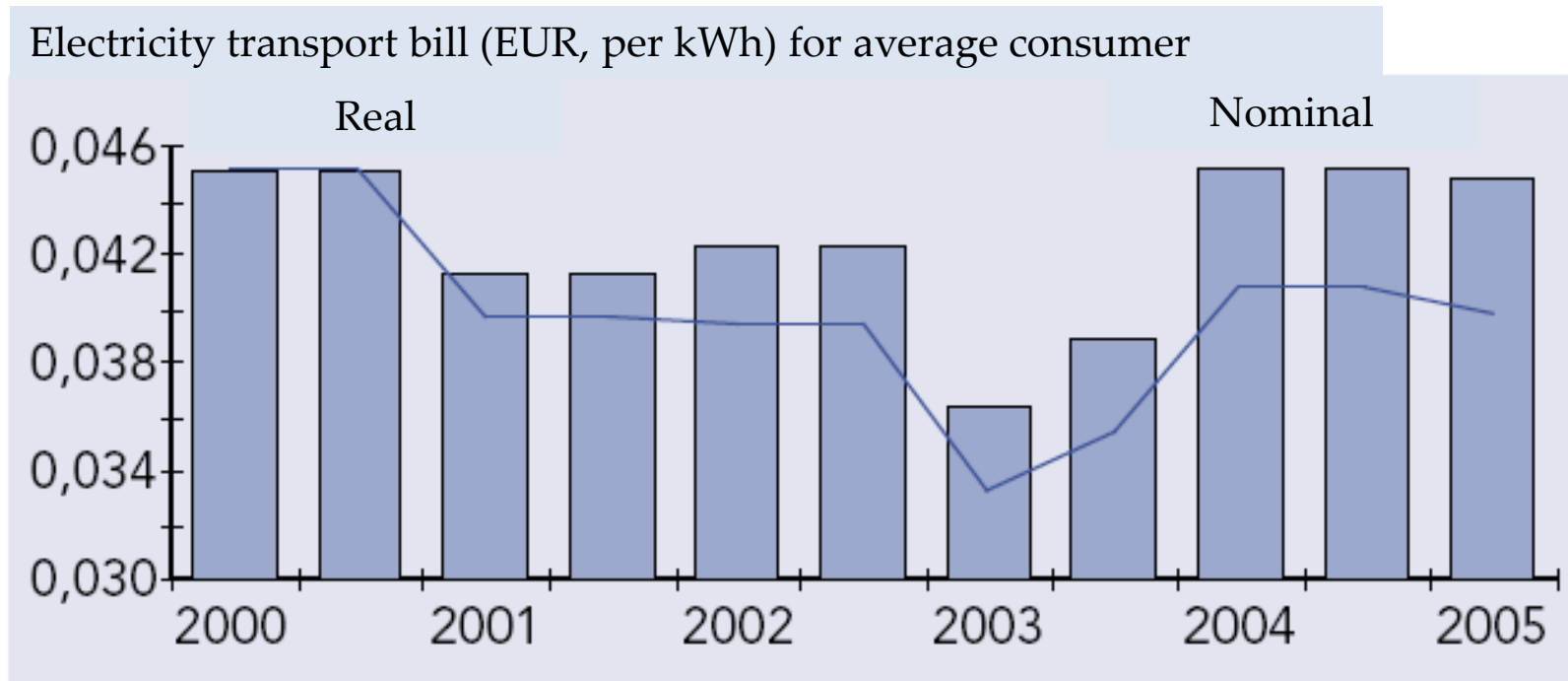
Other indirect effects (not included in calculation)

- *Improved competitive position Dutch industry*
- *Macro economic effects (lower inflation)*



But first has it been worth it?

Yes, also for the individual consumer



Unbundling is key to ensure a well functioning market

Statements of EU

When TSO is integrated

- Possible to release market sensitive information to group members
- No incentive for developing the network
- High regulatory burden to ensure non-discriminatory access

Dutch experience

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- 1998 TSO, 'TenneT' (380 kV network) was formed by joint electricity producers (SEP)
- 1999 Large user filed complaint with competition authority as it was refused rights to import; SEP still controlled investment decisions
- 2000 Temporary full State ownership of TenneT (Ministry of Finance is shareholder with little involvement)
- 2001 Indefinite State ownership
- 2004 Acquisition of small 150 kV network
- 2008 All 150 kV networks to TenneT

Independent system operator is a viable alternative if independence of TSO is guaranteed

Statements of EU

Enables vertically integrated companies to maintain ownership

Dutch experience

- Juridical unbundling of former integrated companies in supply and network
- Some network companies still own 380 kV networks
- TenneT pays a fee for using these 380 kV networks
- Currently a dispute on the level of the fee:
 - TenneT: risk free rate + small addition
 - Owners: towards WACC TenneT
- TenneT runs all risks and is responsible for maintenance and operation (i.e. situation does not differ much between ownership and ISO)

Revenues from congestion are reinvested in interconnector capacity

Statements of EU

When TSO is integrated

- Less investment of cross border congestion rents into new capacity for im/export

Dutch experience

Fully unbundled State owned TSO

Legal obligation to reinvest congestion rents in cross border capacity regulated assets:

Obligation to invest in interconnector capacity led to large investments

BritNed to UK

- 1000 MW DC
- EUR 600 million
- 2010
- Merchant line

APX spot market

- All imports via APX
- EUR 24 million
- 2003

Cos(phi) compensation

- Need due to extra flows from Belgium
- EUR 46 million
- 2003

NorNed to Norway

- 700 MW DC
- EUR 600 million
- 2008

Interconnectors to Germany

- 2x 1000 MVA
- EUR 28 million
- 2003

- ? 2009 under investigation



Strong cooperation between TSO's is necessary for electricity and gas market integration

Statements of EU

Need for
Development of market
and technical codes
If TSO's don't make them,
the EU will
Coordination of grid
operation
Investment planning

Dutch experience

- Active participation of relevant parties in CEER, ETSO, UCTE, etc
- Pentilateral forum for Northwest Europe
- Market coupling on its way
- So far investment coordination with German integrated TSO's has been cumbersome.

Exemptions for major new infrastructure is possible

Statements of EU

Major new infrastructure may be exempt from regulated third party access rules for a pre-determined period

Dutch experience

Special legislation for gas transit investment

- extra high WACC (7%)
- faster depreciation

TenneT invests in merchant line to UK

Enter disincentives to invest in transmission that may relieve congestion that benefits BritNed ?

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Key tasks of network regulator

Access

Non-discrimination for access of

- producers
- suppliers
- consumers

Networkcosts

Value for money

No monopoly profit

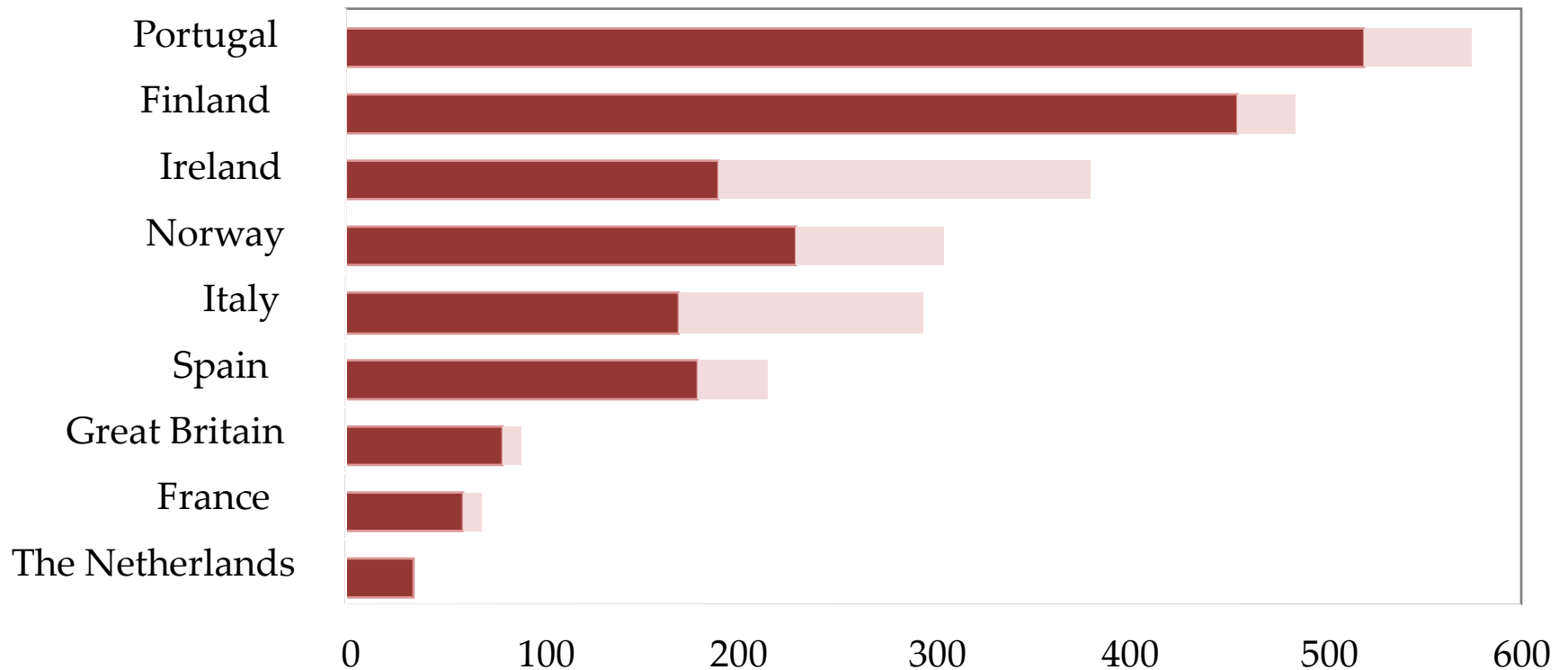
No cross subsidies with liberalized markets

Tariffstructure

Tariffs based on cost causation

The Netherlands has a reliable infrastructure

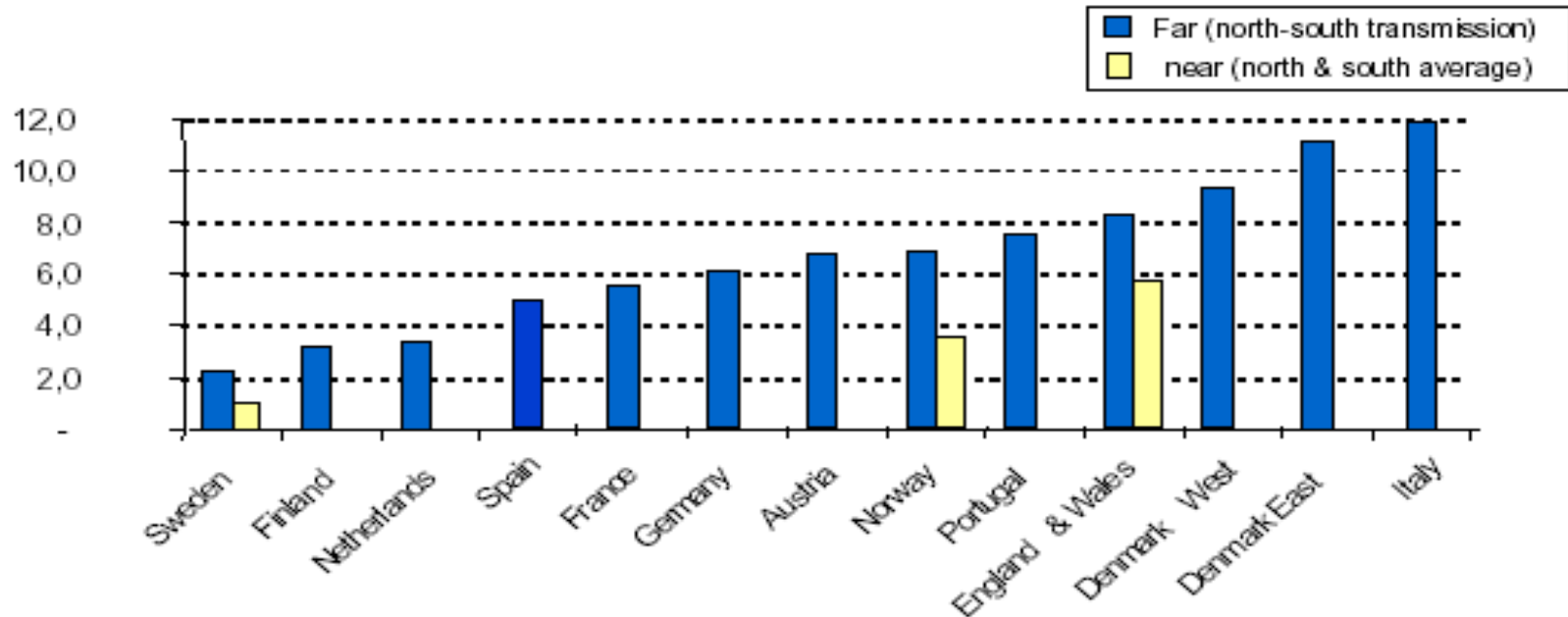
Lost minutes per customer, 2001 (non-notified and notified)



Dutch customer's transmission bill is relatively low

Comparison of transmission invoices : producer and consumer connected at EHV, for a utilisation time of 5,000 h

Application of transmission tariffs for producer + consumer both connected at EHV (220 kV - 400 kV), tariff scale in Euro per MWh



See appendix, for countries using a zonal tariff system : Norway, Sweden, England.

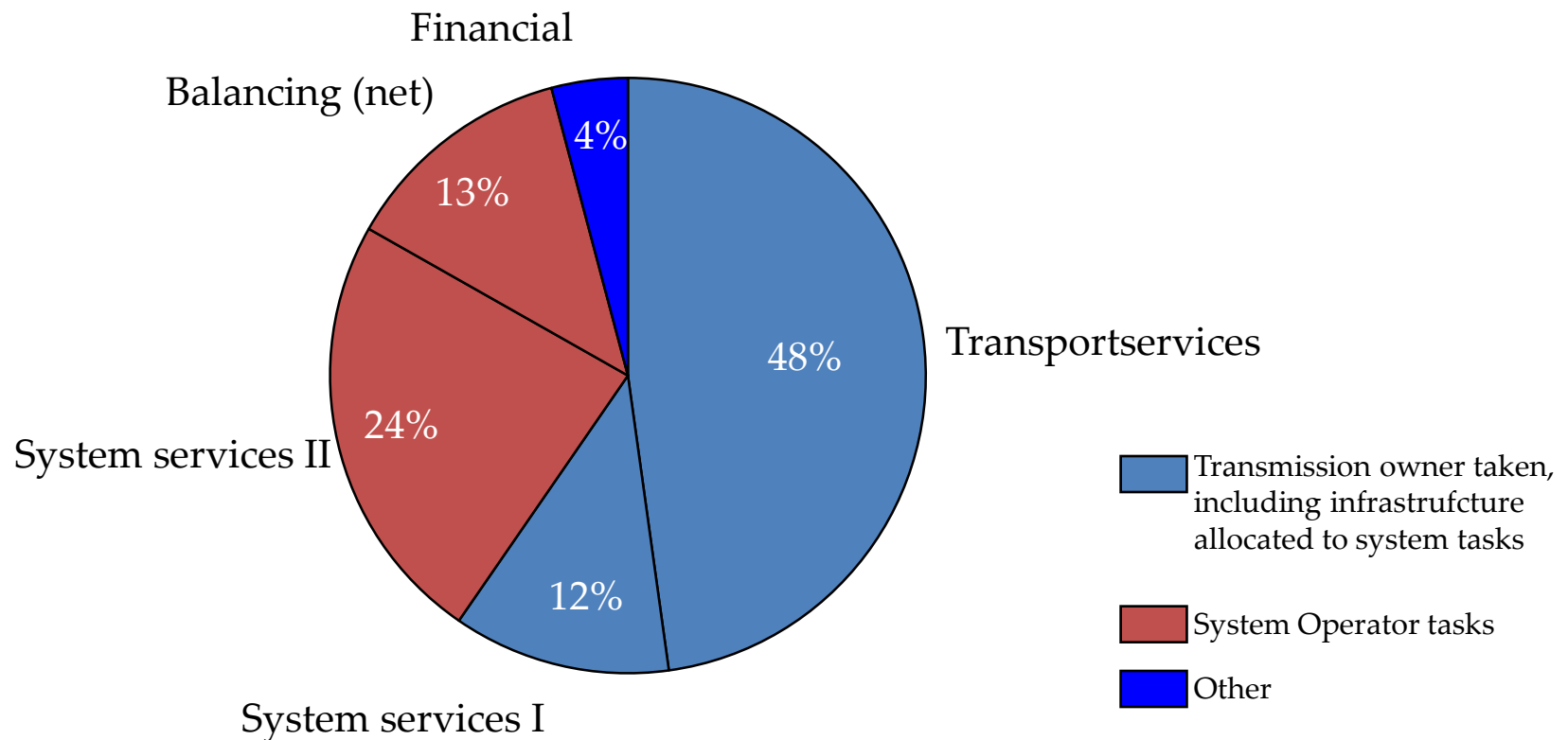
Finland : tariff includes also costs concerning 110 kV network, estimated price for a connection EHV is 1,6 Euro /MWh.

Germany : preliminary estimation due to major changes in the German power control market.

Denmark : tariffs include only costs concerning 400 kV network.

Approximately 60% of revenues of Dutch electricity TSO is linked to asset owner task

Distribution of regulated income TenneT, 2005 [%]
[%]



Dutch experience with TSO regulation of revenues

Parts of regulation

Efficiency of asset base

Efficiency of operational costs

Systems services

Cost of Capital

New investments

Dutch experience

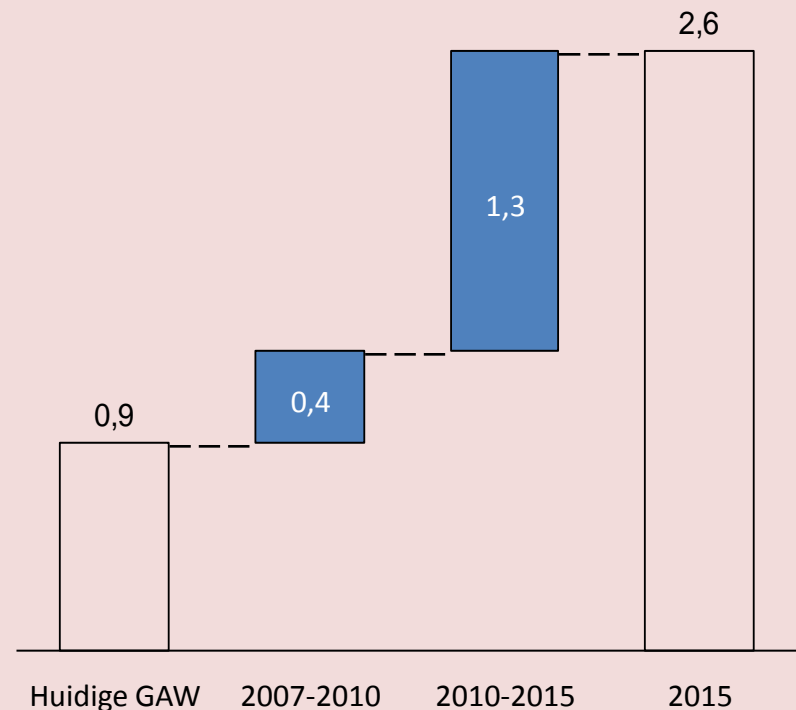
- All assets before 2001 declared efficient
- Other assets are benchmarked with other TSO's
- International TSO benchmark
- Frontier shift
- Pass through for energy and power
- CAPModel widely accepted
- Fights over value of parameters in the model
- Whether costs are covered in tariffs is only legally established after the investments
- Cumbersome proces with diffuse roles leading to changes in the law
- Need for clear roles of Ministry and Regulator

Between 2008 and 2015, large investments are planned for the 380 kV network

Reasons for new investment

- Closing ring structure in Randstad (most densely populated area)
- Increasing wind power on sea
- Investment plans for large new coal power plants
- Increased consumption

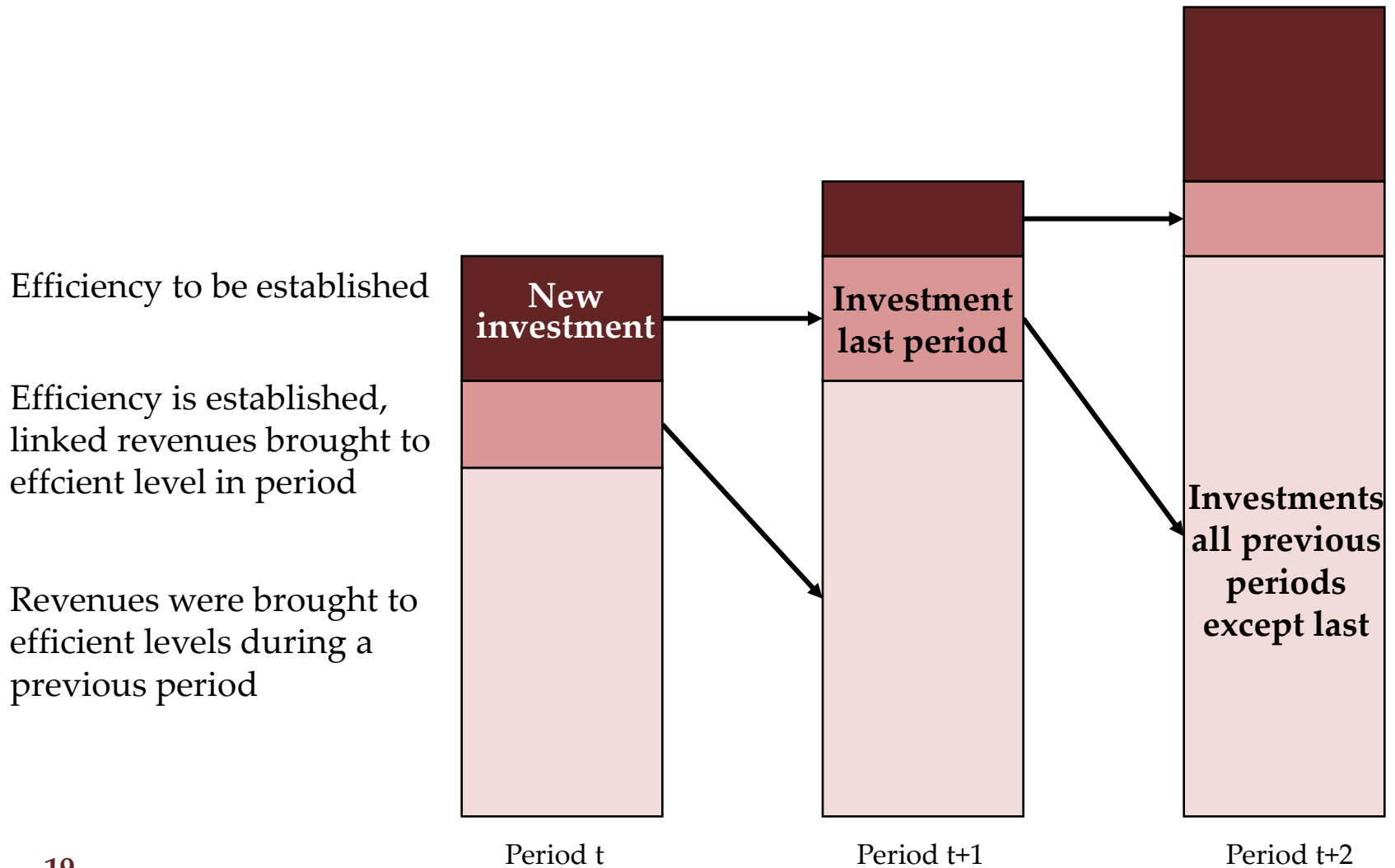
Estimate of needed investments in 380 kV infrastructure [EUR, billion]



The three key decisions with investments should be approved by the relevant government body

Decision	Government body	Discussion
<ul style="list-style-type: none">- Need for investment	<ul style="list-style-type: none">- Ministry of Economic Affairs	<ul style="list-style-type: none">- Complex societal business case with large political impact
<ul style="list-style-type: none">- Implementation	<ul style="list-style-type: none">- Min. Economic Affairs- Min. For spatial planning- Local governments	<ul style="list-style-type: none">- Complex urban/rural planning implications with national and local trade-offs beyond TSO and electricity regulator
<ul style="list-style-type: none">- Costs	<ul style="list-style-type: none">- Regulator	<ul style="list-style-type: none">- Regulator should focus on costs

All assets of a TSO go through a regulatory cycle of three steps to avoid repetitive reduction of asset base



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The Dutch experience:

Learning by doing

The end

- Thank you for your attention
- Feel free to ask questions; now or later

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