

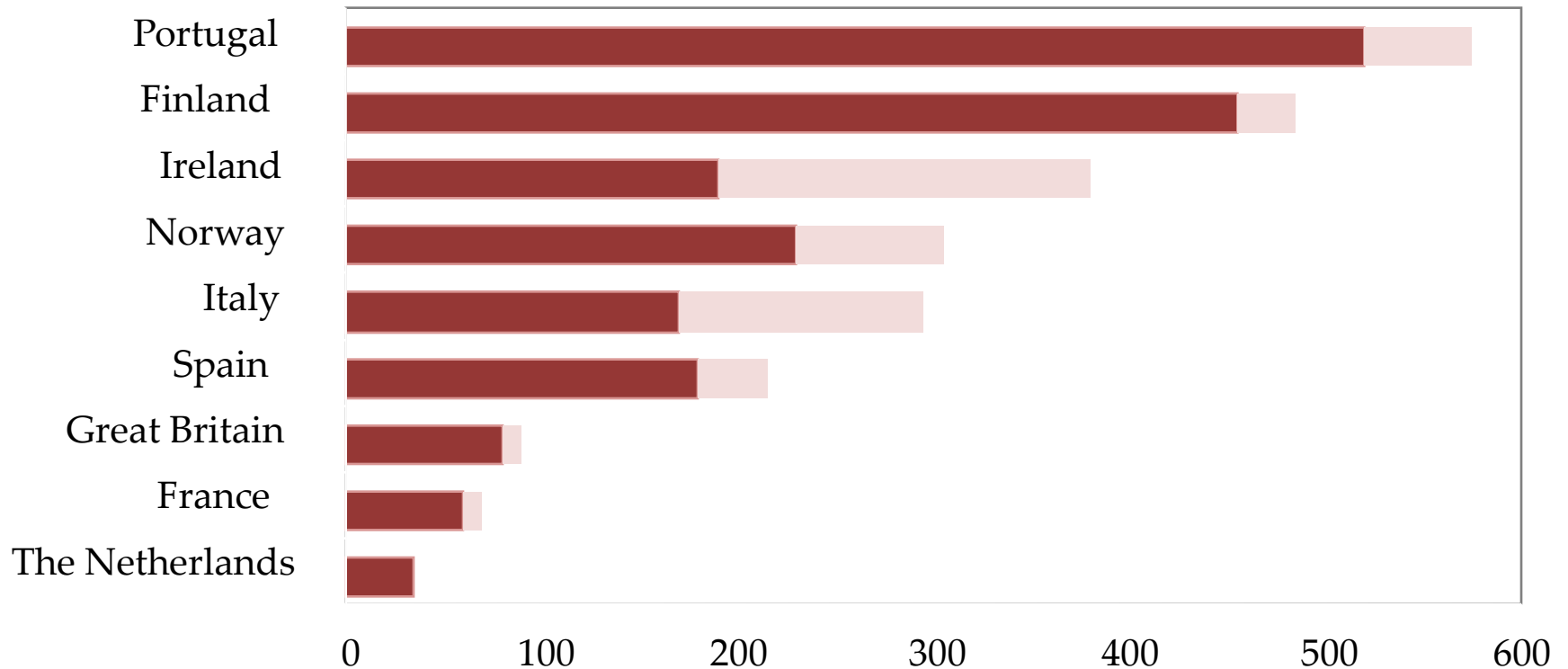
ISO models; the regional answers?

Jan-Peter Heida

Bucharest, April 8, 2008

The Netherlands has a reliable infrastructure

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



Ownership unbundling or Independent System Operator (ISO) model?

Ownership unbundling of TSO

- Network operators can not be affiliated or be part of a group which is active in supply, generation and production.
- Minority stakes in both supply and network companies are allowed

Independent system operator (ISO)

- Second best approach: MS allowed to derogate OU if ISO is designated
- Transmission assets may stay in vertically integrated company
- Technical and commercial operation ISO
- ISO has say on investment decision
- ISO fully independent from supply or production.

Unbundling is key to ensure a well functioning market

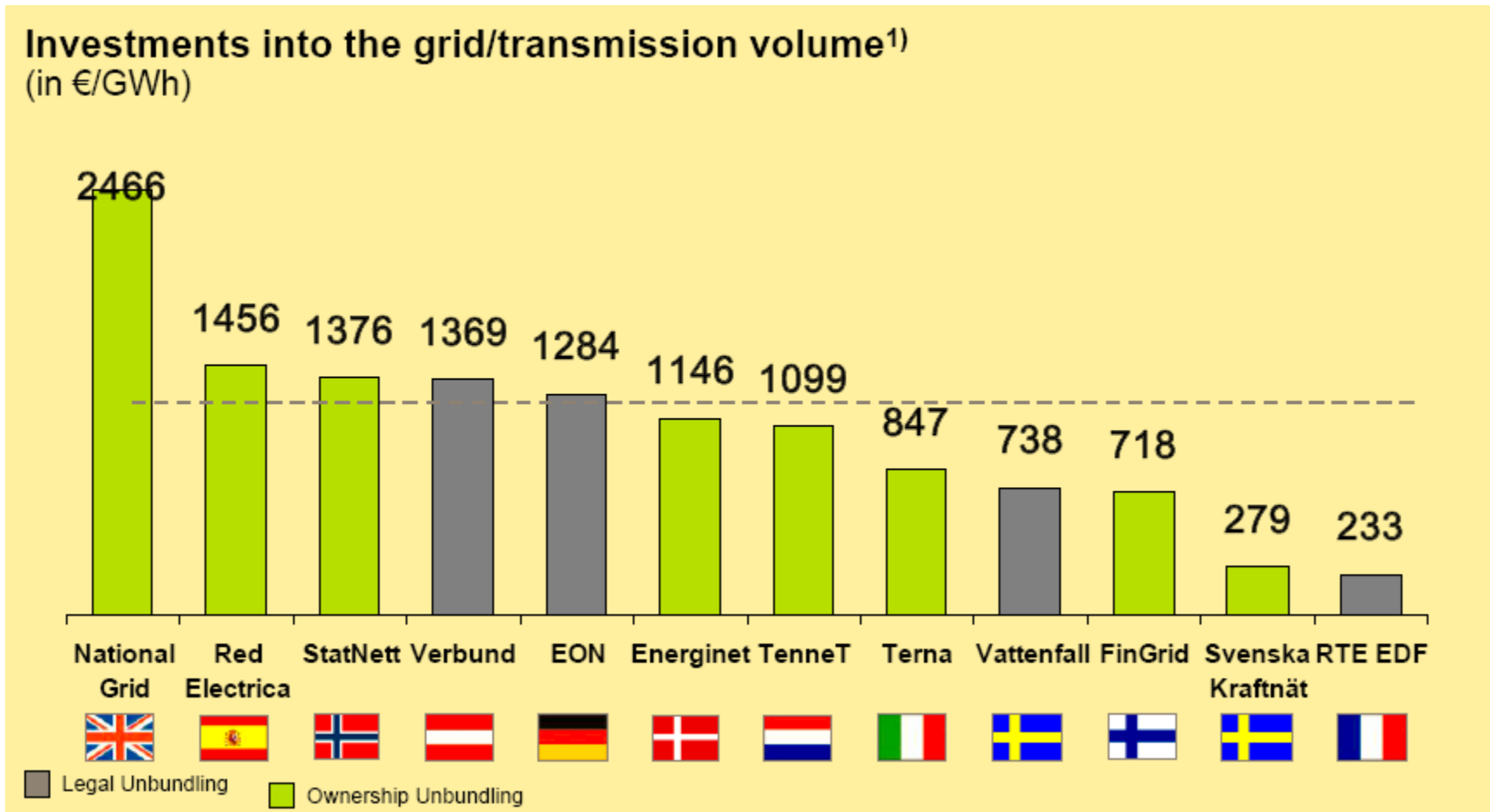
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When TSO is integrated

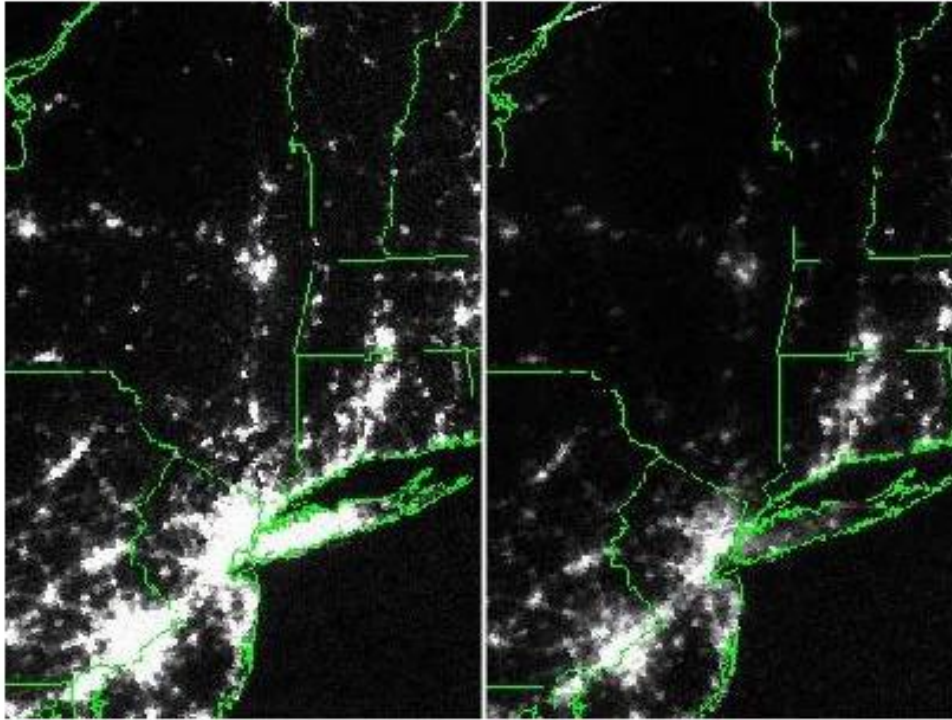
- Possible to release market sensitive information to group members
- No incentive for developing the network
- High regulatory burden to ensure non-discriminatory access



No correlation between unbundling and investment



Balance stimulating investment for TSO and incentives for efficiency



Satellite images show the New York City area about 20 hours before (left) and 7 hours after the blackout of Aug. 13, 2003.

The most spectacular example
Canada/US Blackout August
2003

Sources: MIT, US Canada
Power System Outage Task
Force: August 14 Blackout

The recommendations below focus on changes of many kinds that are needed to ensure reliability, for both the summer of 2004 and for the years to follow. Making these changes will require higher and broader awareness of the importance of reliability, and some of them may require substantial new investments. However, the cost of *not* making these changes, i.e., the cost of chronic large-scale blackouts, would be far higher than the cost of addressing the problem. Estimates of the cost of the August 14 blackout range between \$4 and \$10 billion (U.S.).⁴

The risk of the ISO model is insufficient authority of the ISO over investments needed for the market

Table 7.1. Changing Conditions That Affect System Reliability

Previous Conditions	Emerging Conditions
Fewer, relatively large resources	Smaller, more numerous resources
Long-term, firm contracts	Contracts shorter in duration More non-firm transactions, fewer long-term firm transactions
Bulk power transactions relatively stable and predictable	Bulk power transactions relatively variable and less predictable
Assessment of system reliability made from stable base (narrower, more predictable range of potential operating states)	Assessment of system reliability made from variable base (wider, less predictable range of potential operating states)
Limited and knowledgeable set of utility players	More players making more transactions, some with less interconnected operation experience; increasing with retail access
Unused transmission capacity and high security margins	High transmission utilization and operation closer to security limits
Limited competition, little incentive for reducing reliability investments	Utilities less willing to make investments in transmission reliability that do not increase revenues
Market rules and reliability rules developed together	Market rules undergoing transition, reliability rules developed separately
Limited wheeling	More system throughput

Unbundling is key to ensure a well functioning market

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When TSO is integrated

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Dutch experience

- 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

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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

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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



Exemptions for major new infrastructure is possible

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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 ?

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

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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.

The Pentalateral forum takes on serious form

Pentalateral forum

Belgium,
France,
Germany,
Luxemburg,
The Netherlands



Central-West

Parties involved:

- Ministries
- Regulatory authorities
- TSO's
- Power exchanges
- Market parties platform

Activities

- Flow based market coupling between the 5 countries through single region wide implicit auctioning system for interconnection capacity
- Joint TSO company is now being set up
- Security of supply issues (improved regional system adequacy forecast)
- Harmonized incident classification scale
- Emergency communication platform
- Platform for 'non-real time' communication of TSO experts
- Regional transmission capacity plan

The end

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

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