SUMICSID

TSO Benchmarking, European Regulation and Evolving Roles in the Market

Prof. Per AGRELL

First ECOM+ Workshop
Bruxelles, November 26, 2004

Workshop program

10:00 TSO Benchmarking in the Integrated Market
10:30 ECOM+ Model
11:15 Training / Example V
12:00 LUNCH
13:00 Training / Debrief
13:30 ECOM+ Data Specification
14:30 ECOM+ Model Developments
15:00 Coffee break
15:30 ECOM+ Project Planning
16:00 Closing

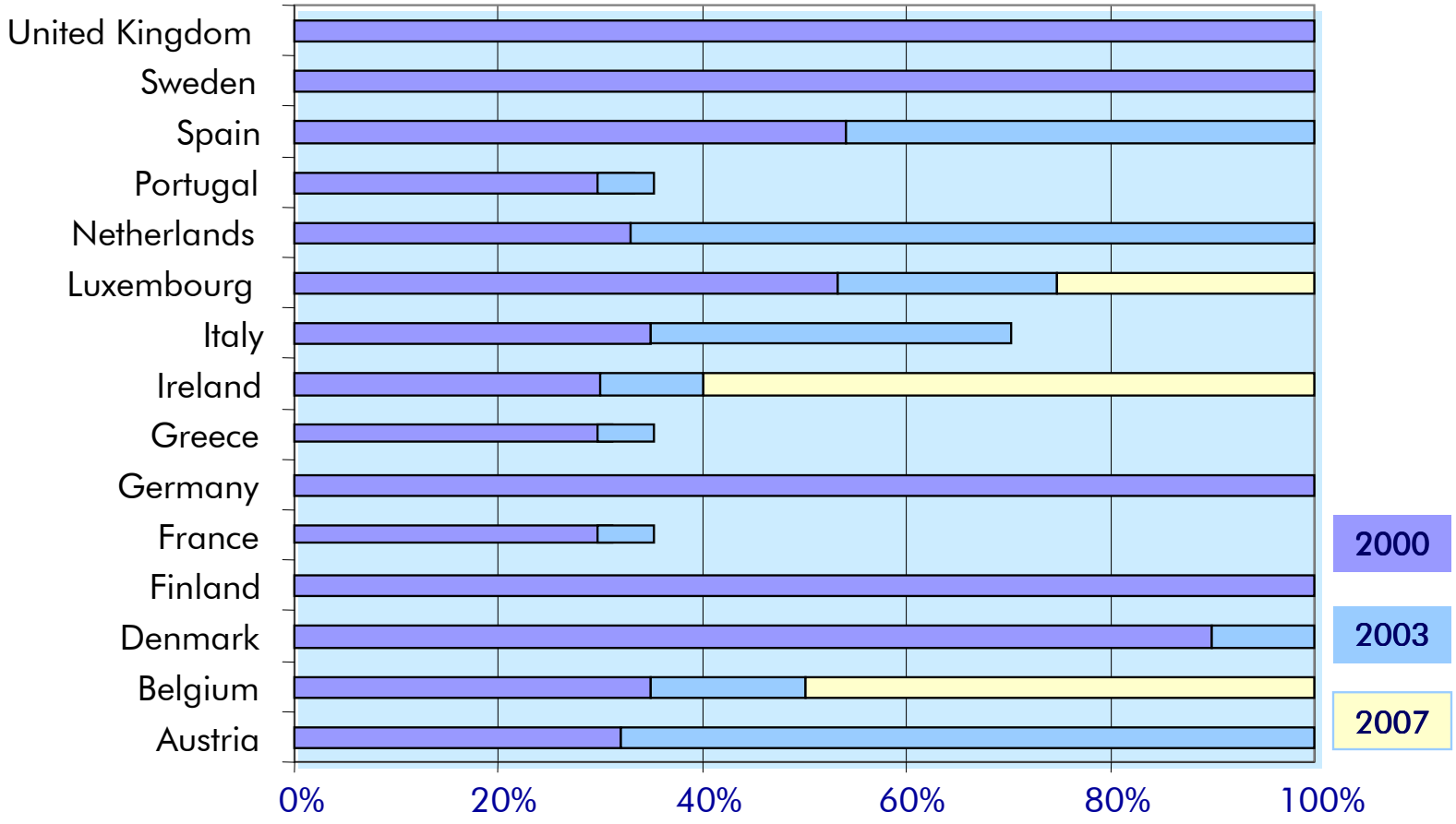
Main objectives

- Changes
  - Data specifications
- Developments
  - Methods for dynamic efficiency
- Processes
  - Project management

Outline

- Benchmarking
- European perspective
- Energy markets
- Regulation
  - Context
  - Benchmarking
- Conclusion

An open energy market?



Regulatory objectives

« Charges applied by network-operators for access to networks shall be transparent, take into account the need for network security and reflect actual costs incurred insofar as they correspond to those of an efficient and structurally comparable network operator and applied in a non discriminatory manner. Those charges shall not be distance-related »

Art 4:1, Regulation (EC) No 1228/2003 on CBT

European credo

Objective:

- Maximal social welfare in Europe

Principle:

- Free mobility (capital, labor)

Means:

- Competitive sourcing
- Deregulation
- Integration of network structures
- Unbundling of network operations

"*The overall goal for the EU and wider market is to function the same way as a national market*."

DG-TREN, 2004.

Whose welfare?

With open competitive markets

- social welfare is international
- regulation is national
  - multiple regulators (sector, region, …)
- risk for perverse incentives

Social welfare impact

Service dimensions

- Temporal
  - Short-run vs. long-run
- Geographical
  - National, regional, system-wide
- Interfaces
  - Supply
  - Demand
  - Interconnecting grids

Revamped directive

Objective

- Full opening of national markets by 07/2007 [07/2004]

Means

- Higher unbundling (ITO, DSO) -07/2007
- TPA
- Independent regulators
- Confirm public service obligations
- Security of supply

Better functioning of the integrated market – what does it require from regulation?

Transmission is the key to the electricity market

The physical grid defines
- the market place for supply and demand

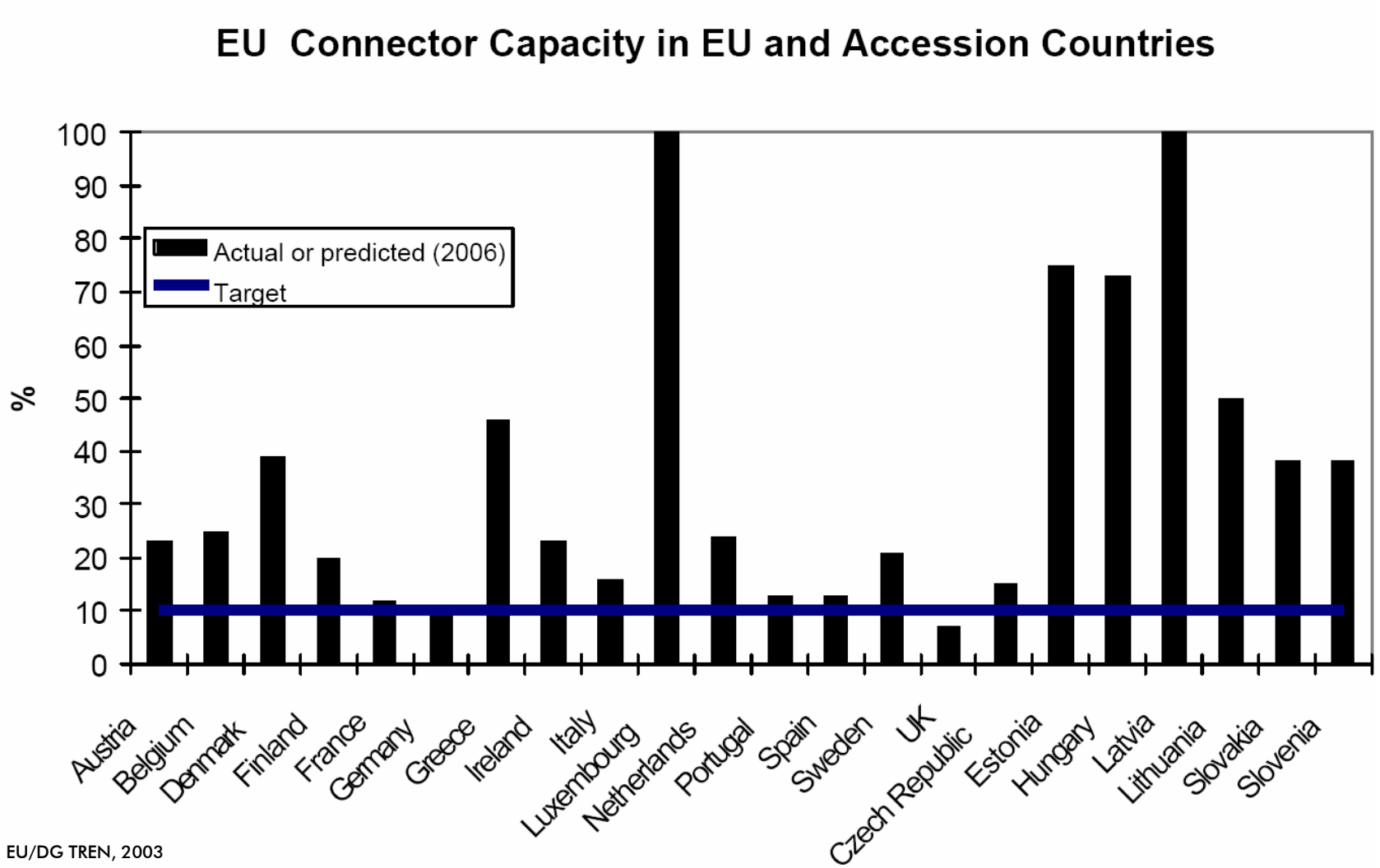
The congestion management defines
- market liquidity, reliability and
- market power

The access pricing defines
- market entry and future capacity

System Challenges

- Capacity investments
  - Interconnections
  - Transmission upgrading/reinforcements
- Long-term financial structure
- Coordinated transmission charges
  - Locational signals
- Coordinated congestion management

Enabling Integration



Source: EU/DG TREN, 2003

TEN-E

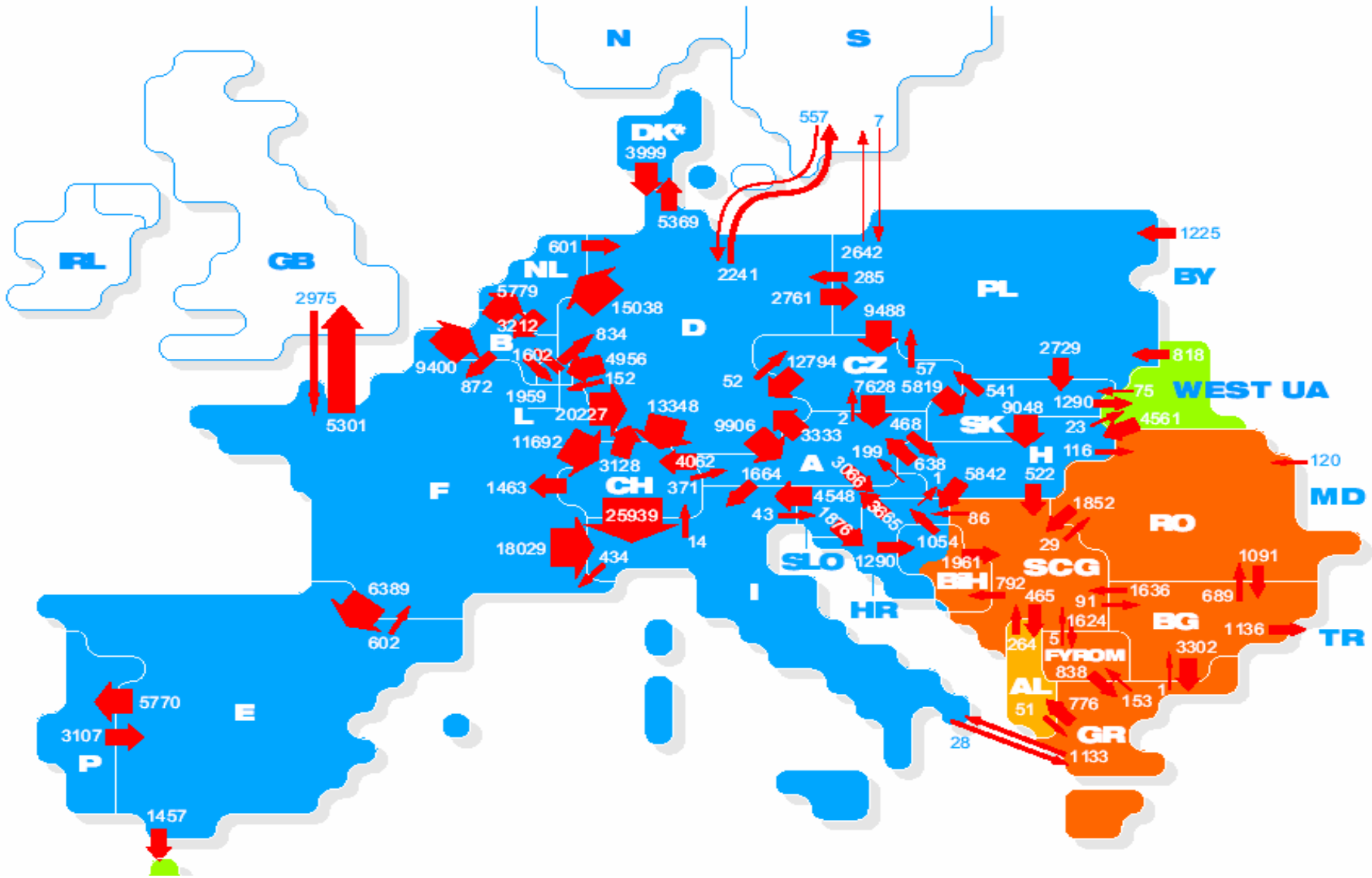
Priority projects

- Support for feasibility studies
- Investment support

Follow up study 2004

- Frequency of studies
- Implementation of projects
- Future policy

Physical electricity exchanges 2003 *



Benchmarking is a key tool for EU/DG TREN

"The European Commission has an important role in promoting and supporting the use of benchmarking as a tool to improve performance and achieve policy objectives."
DG-TREN, 2003

Diversity

- Public owned
- Owned by distributors
- Owned by generators
- The French solution
- Vertically integrated
- Not classified
- Private unbundled

	Declared market opening (%)	Unbundling: transmission system operator\owner	Unbundling: Distribution system operator[4]	Regulator	Balancing conditions favourable to entry	Biggest generators' share of capacity (%)[5]	Biggest 3 generators' share of capacity (%)[6]
Austria	100	Legal	Accounts	ex-ante	favourable	6[7]	33
Belgium	80	Legal	Legal	ex-ante	unfavourable	59	66
Denmark	100	Legal	Legal	ex-ante	favourable	0	25
Finland	100	Ownership	Accounts	ex-post	favourable	11	29
France	37	Management	Accounts	ex-ante	moderate	78	86
Germany	100	Legal	Accounts	planned	unfavourable	23	61
Greece	34	Legal\Mgmt	Accounts	ex-ante	unfavourable	85	87
Ireland	56	Legal\Mgmt	Management	ex-ante	moderate	80	90
Italy	66	Own\Legal	Legal	ex-ante	moderate	43	72
Lux	57	Accounts	Accounts	ex-ante	unfavourable	0	0
Neth	63	Ownership	Legal	ex-ante	favourable	n.k	33
Portugal	45	Ownership	Management	ex-ante	moderate	59	74
Spain	100	Ownership	Legal	ex-ante	favourable	37	79
Sweden	100	Ownership	Legal	ex-post	favourable	16	50
UK	100	Ownership	Legal	ex-ante	favourable	16	37
Norway	100	Ownership	Accounts	ex-ante	favourable	12	24
Estonia	10	Accounts	Accounts	ex-ante	unfavourable	15	21
Latvia	11	Legal	Legal	ex-ante	n.k.	0	0
Lithuania	17	Legal	Legal	ex-ante	moderate	0	29
Poland	51	Management	Accounts	ex-ante	moderate	4	25
Czech R	30	Legal	Accounts	ex-ante	unfavourable	43	53
Slovakia	41	Legal	Legal	ex-ante	moderate	29	40
Hungary	30	Accounts	Accounts	n.k.	moderate	5	41
Slovenia	64	Legal	Accounts	ex-ante	unfavourable	16	43
Cyprus	0	Management	None	ex-ante	not decided	100	100
Malta	0	Derogation	None	n.k.	not decided	100	100

Source: EU/DG TREN, 2004

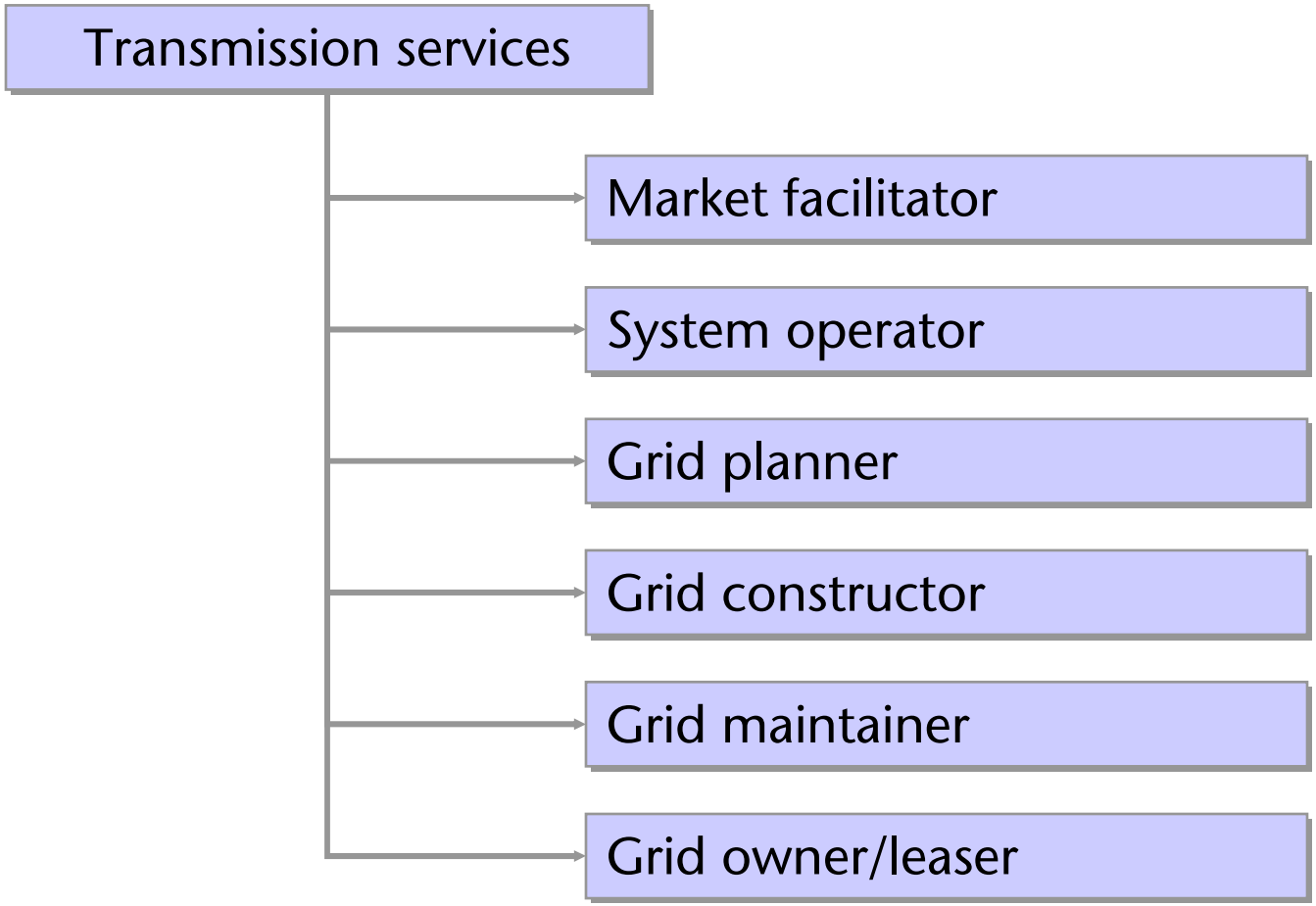
	Balancing period (minutes)	How are charges set	Supernational (S) National (N) or regional (R) balancing	Balancing groups allowed	Intraday market possible	"Gate closure"	Dominant single generator within balancing area?	% of balancing energy supplied by consumers during 2002	% of balancing energy supplied by non national sites during 2002
Austria	15	market	R	Y	N	day ahead	N	1-2%	0%
Belgium	15	TSO/reg	N	Y	planned	day ahead	Y	0%	0%
Denmark	60	market	S	Y	Y	1 hour	N	20%	20%
Finland	60	market	S	Y	Y	1 hour	N	0%	30%
France	30	market	N	Y	Y	n.k.	Y	0%	0%
Germany	15	market	R	Y[33]	Y[34]	day ahead	Y	0%	0%
Greece	60	market	N	N	N	day ahead	Y	95%	5%
Ireland	30	reg/mkt	N	Y	N	day ahead	Y	0%	0%
Italy	60	reg	N	Y	N	day ahead	Y	0%	0%
Lux	15	TSO	R	Y	N	day ahead	N	n/a	n/a
Neth	15	market	N	Y	N	real time	N	<0.5%	<0.2%
Portugal	60	reg	N	n.k.	N	n.k.	Y	0%	0%
Spain	60	market	N	Y	Y	0.5-3.5 hrs	N	0%	0%
Sweden	60	market	S	Y	Y	1 hour	N	n.k.	n.k.
UK	30	market	N	Y[35]	Y	1 hour	N	0%	0%
Norway	60	market	S	Y	Y	1 hour	N	0%	33%
Estonia	60	TSO	N	n.k.	N	day ahead	Y	n.k.	n.k.
Latvia	60	n.k.	S	n.k.	N	day ahead	N	n.k.	some
Lithuania	60	Reg/mkt	N	N	N	day ahead	N	n.k.	n.k.
Poland	60	market	N	Y	N	day ahead	N	3%	0%
Czech R	60	market	N	Y	N	day ahead	Y	n.k.	n.k.
Slovakia	60	reg.	N	n.k.	N	day ahead	Y	n.k.	n.k.
Hungary	15	reg.	N	Y	N	day ahead	N	0.5%	0%
Slovenia	60	TSO	N	Y	N	day ahead	Y	n.k.	n.k.
Cyprus	30	TSO	still under discussion						
Malta			N						

Source: EU/DG TREN, 2004

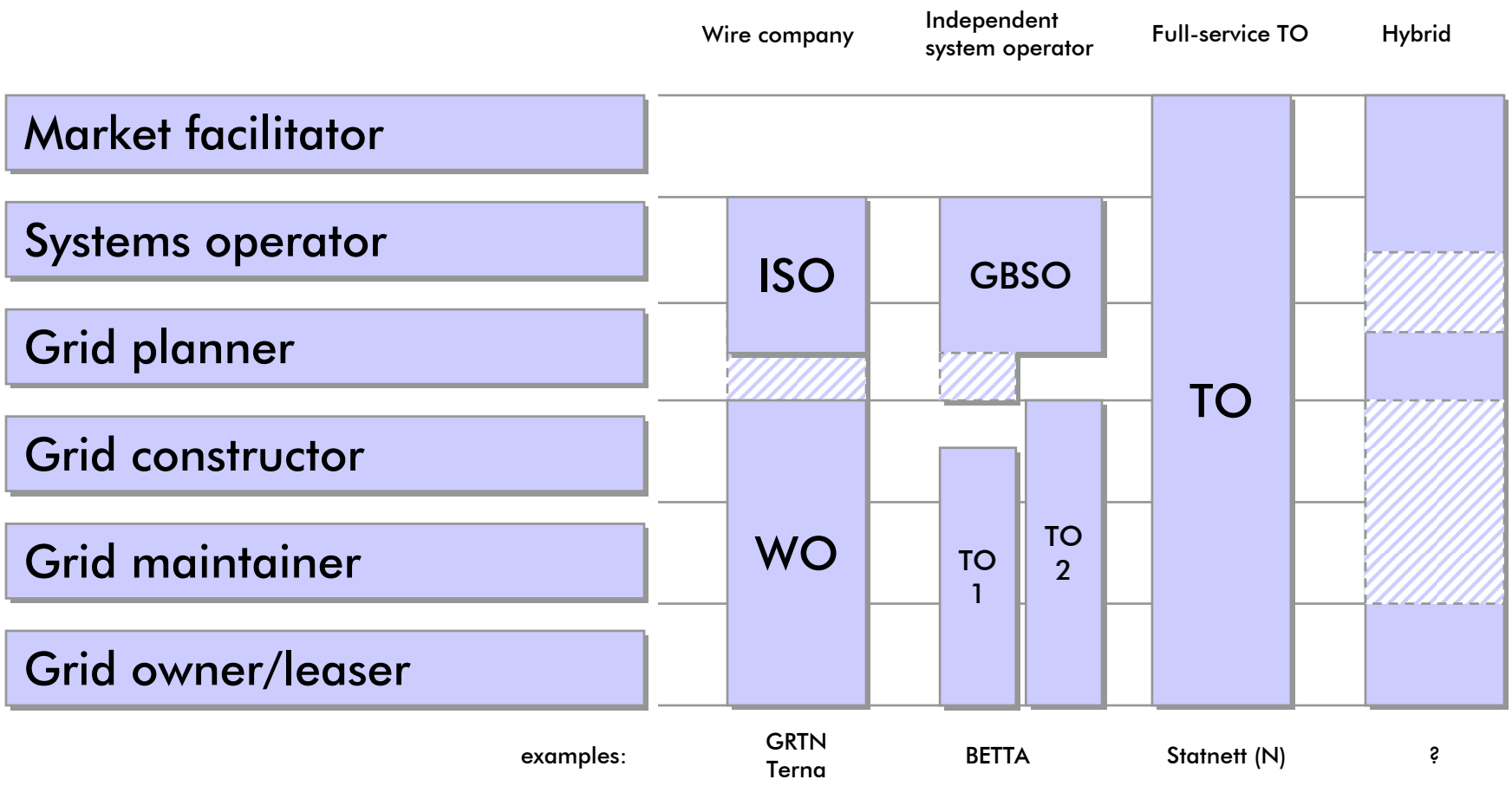
	Supply Demand Position			
	amount of reserve generation capacity GW[37]	as % of generation capacity	import capacity (% generation capacity) [38]	% p.a. increase in peak load
Austria[39]	5.4	30%	44%	+1.2%
Belgium	0.0	0%	29%	+2.1%
Denmark	0.6	8%	51%	+1.5%
Finland	-0.9	-6%	25%	+3.0%
France	10.9	10%	>10%	-0.6%
Germany	5.2	5%	14%	+1.9%
Greece	-0.3	-2%	10%	+3.8%
Ireland	0.0	0%	6%	+4.6%
Italy	1.5	2%	12%	+1.2%
Luxembourg	0.4	24%	90%	+2.8%
Netherlands	0.5	4%	24%	+5.6%
Portugal	1.2	12%	8%	-5.3%
Spain	6.8	11%	5%	+6.5%
Sweden	-0.1	0%	29%	-4.4%
UK	n.k.	5-10%	3%	+5.3%
Norway	1.1	5%	18%	n.k.
NB: NORDEL	0.8	1%	5%	+0.8%
Estonia	n.k.	100%	75%	+0.5%
Latvia	n.k.	60%	>100%	+1.5%
Lithuania	n.k.	100%	50%	+3.0%
Poland	5.4	12%	10%	+1.3%
Czech R	2.4	16%	23%	+3.0%
Slovakia	0.4	5%	44%	+1.5%
Hungary	0.4	5%	22%	+1.5%
Slovenia	0.2	8%	53%	+3.0%
Cyprus	n.k.	26%	-	+5.0%
Malta	n.k.	25%	-	+4.0%

Source: EU/DG TREN, 2004

Central grid services



Function and organization



Objectives: example

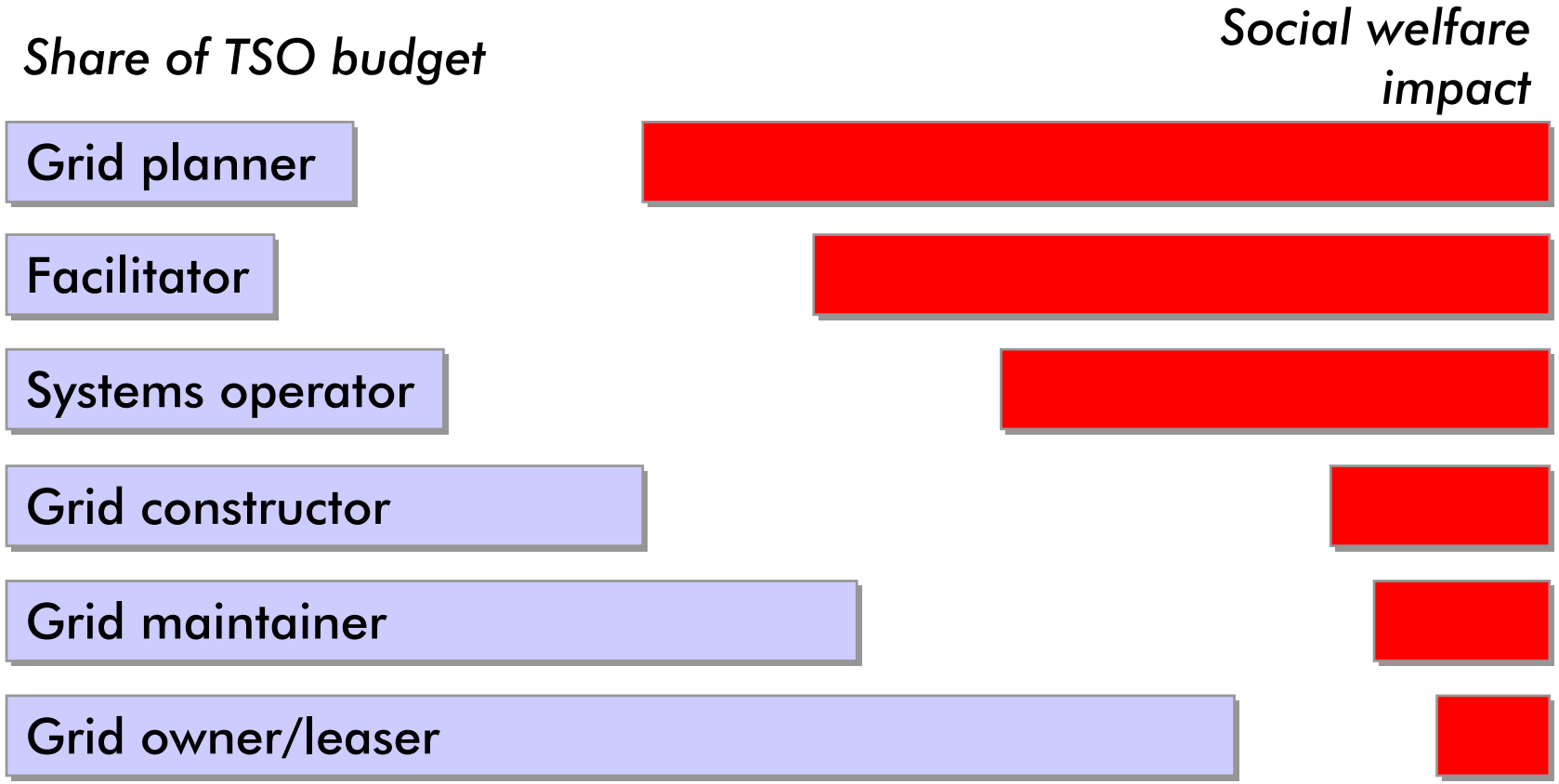
TRANSMISSION
- Reliable,efficient and environmentally-adapted transmission of electricity on the grid,

MARKET SYSTEM
- promoting an open and competitive Nordic electricity market,

SYSTEM OPERATIONS
- cost-effective system responsibility

SUPPLY RELIABILITY
- robust and flexible electricity supply during times of crisis.

Budget and impact



A New TSO Agenda

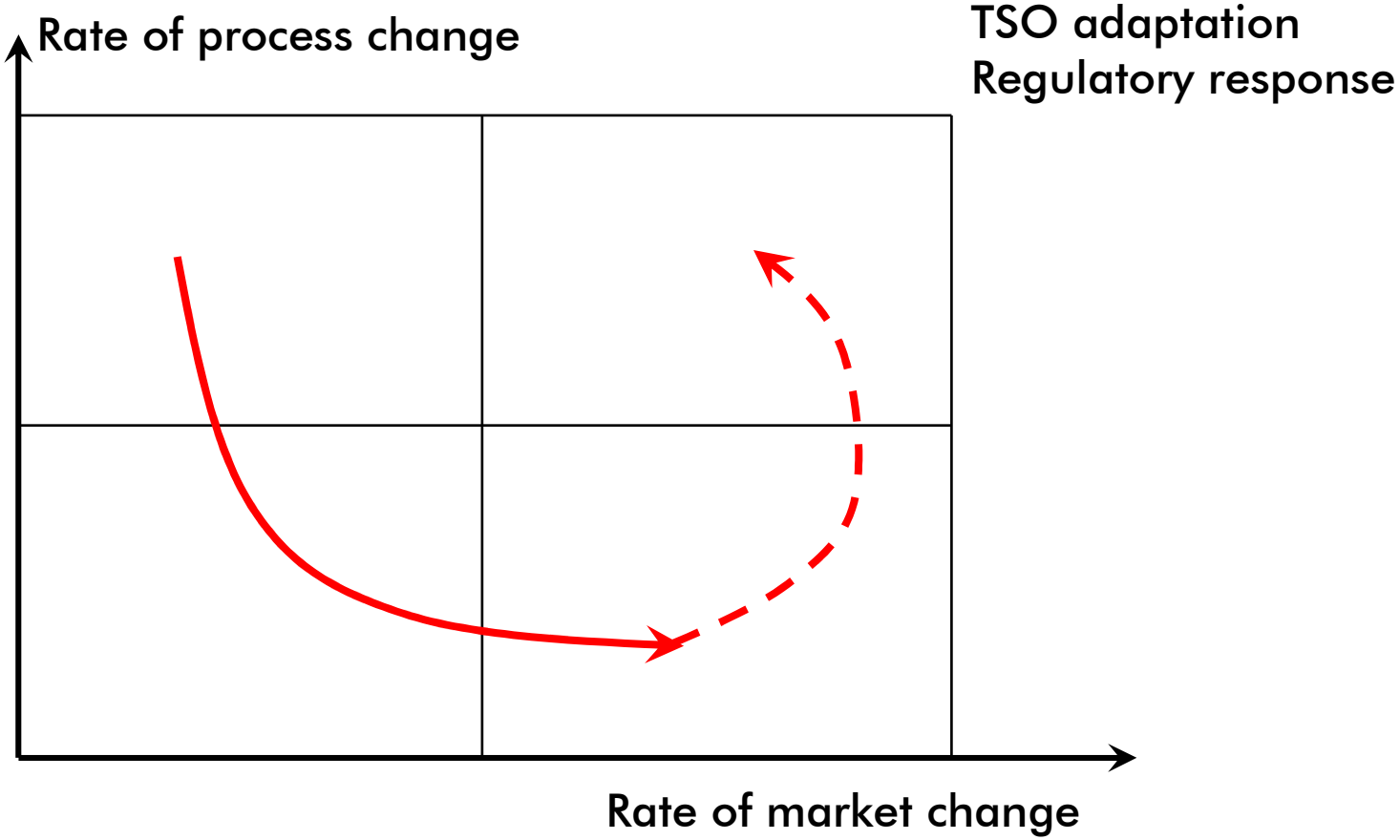
From

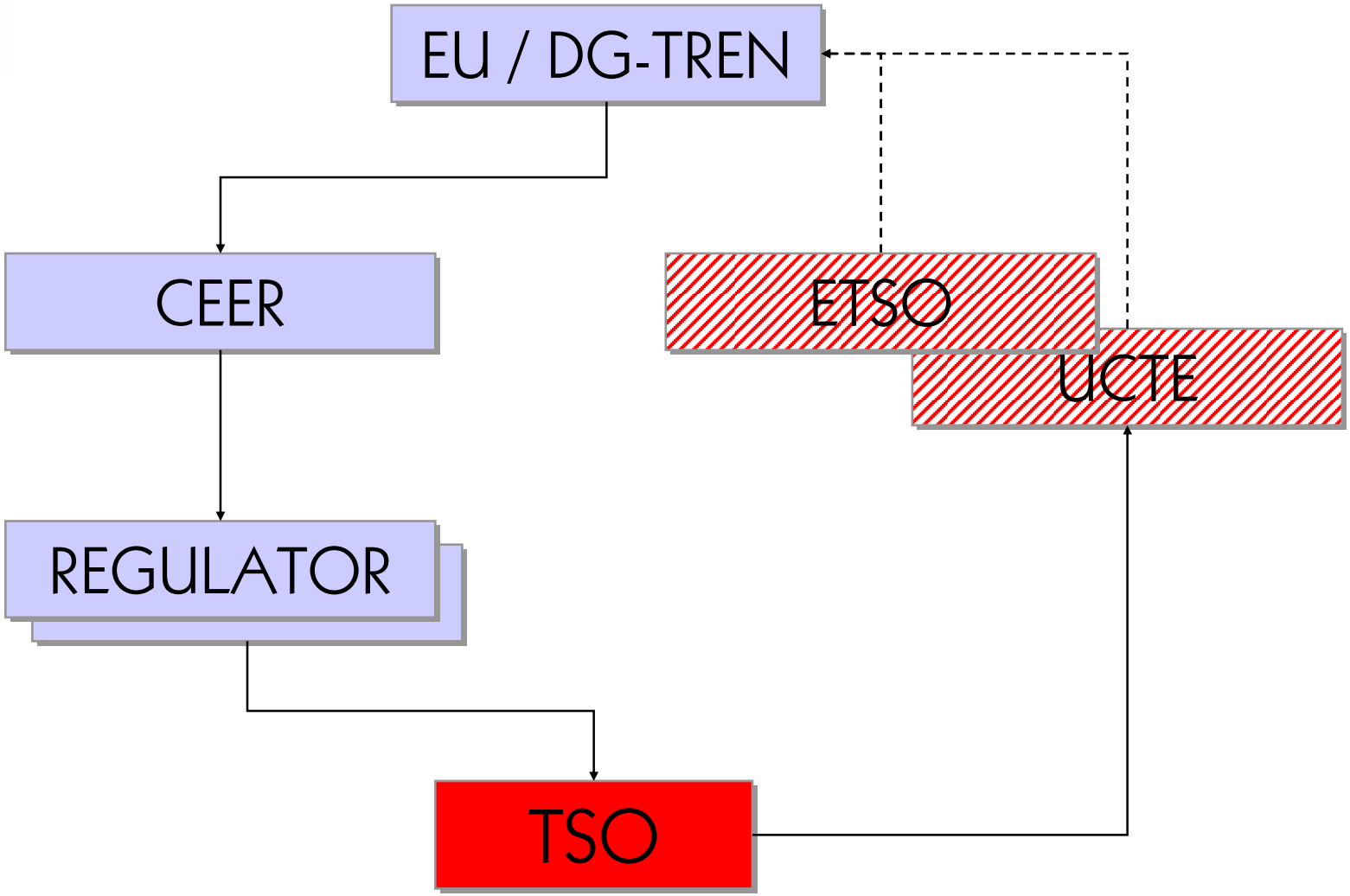
National infrastructure to support national reliability by central planning

To

Co-manager of a common market place for European security of supply

Reorientation

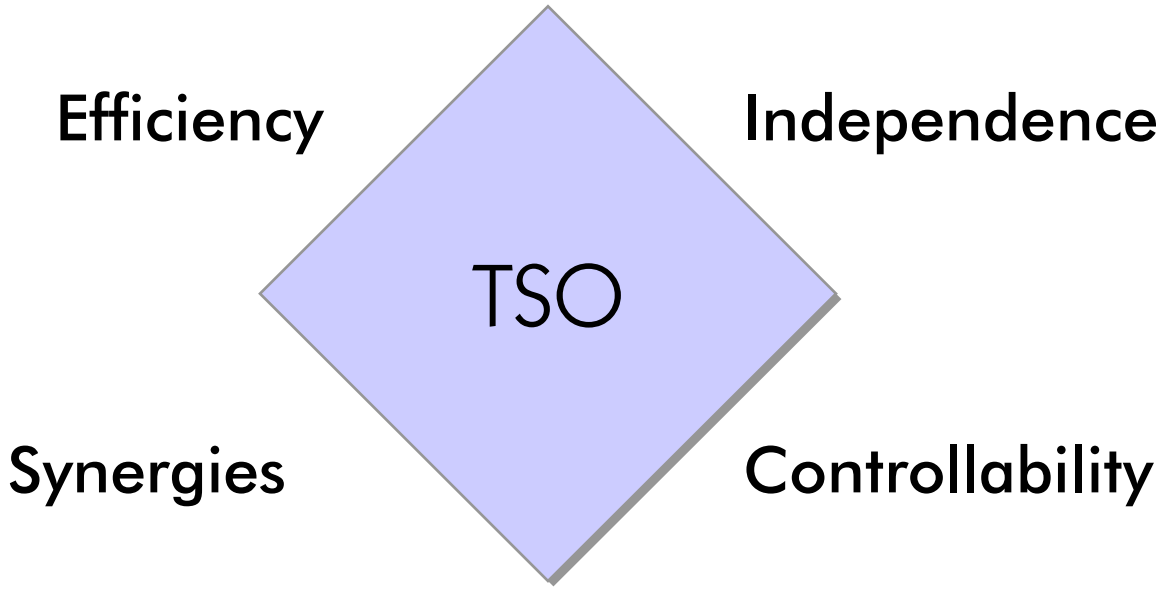




Regulation instruments

- Controls
- Incentives
  - Revenues
  - Costs
- Delegation
  - By objectives
  - By output
  - By inputs

Institutional compromise



Accountability

An obligation or willingness to accept responsibility or to account for one's actions

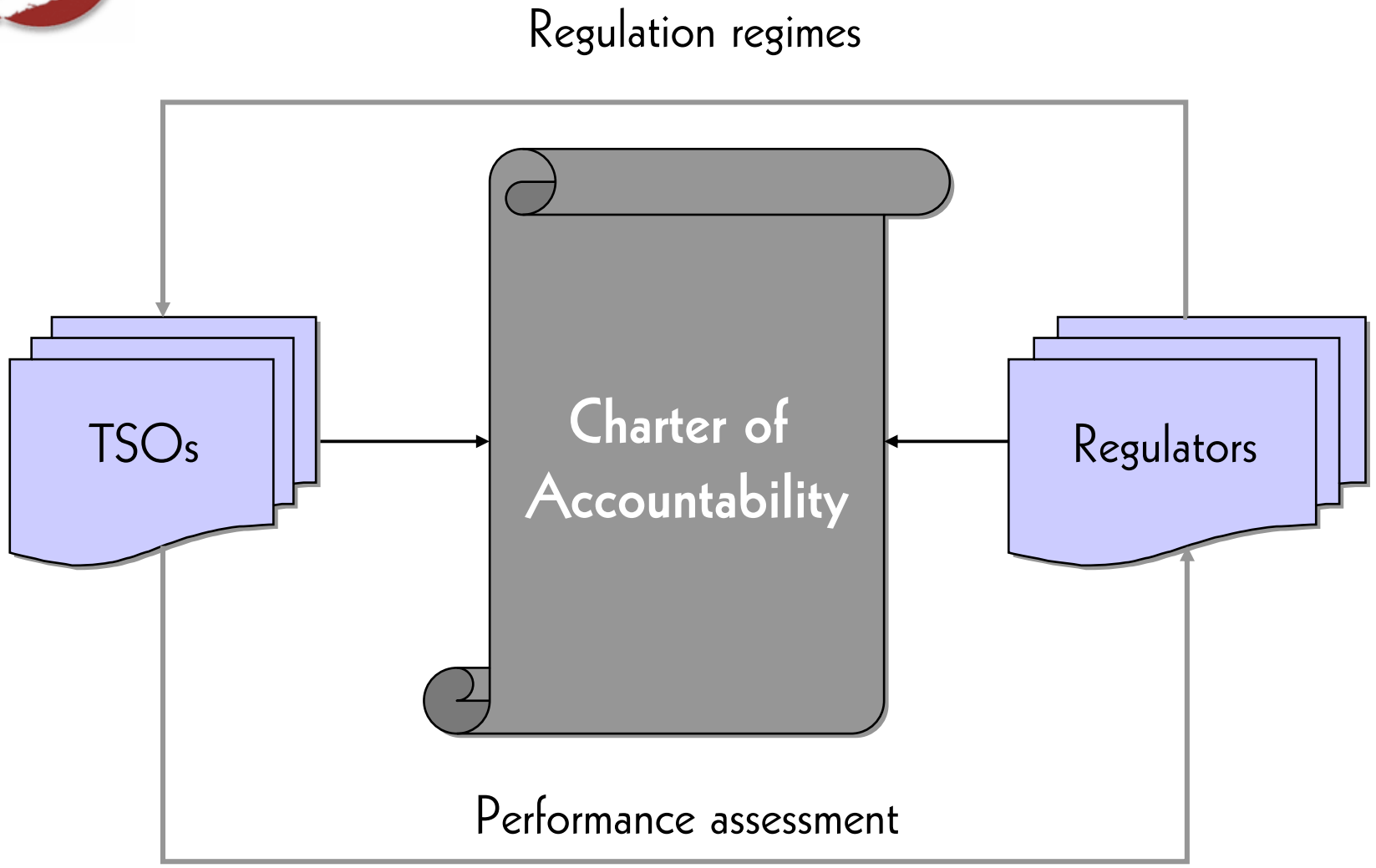
- Compare account for vs. be accused of
- Common ground for information exchange

Accountability and interdependency

If regulation allows full exploitation of externalities, the TSO performance is gauged across the tasks.

If regulation constrains externalities, TSO performance is gauged in subtasks.

– *A challenge for integrated TSOs!*



Some insights

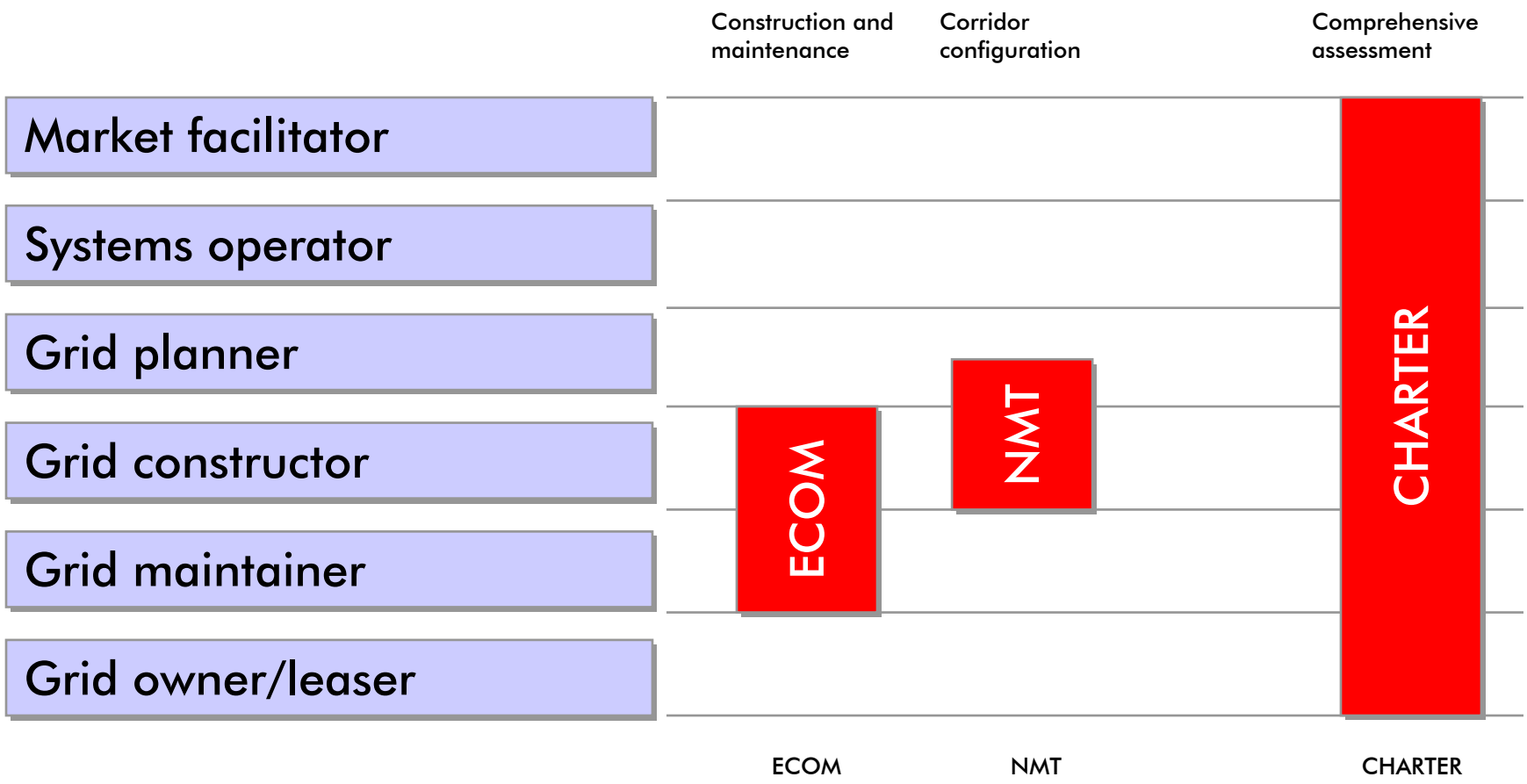
Benchmarking lowers asymmetric info, but also

- Accountability: Signal of priorities
- Validation services: least cost processing for learning
- Limits opportunism: firm consistency
- Even simple models can structure information gathering

However,

- Public benchmarking may limit process development
- Benchmarking can create myopic decision making

TSO Benchmarking



Benchmarking Success Factors

Management Support
Clear objectives
Choice of scope
Training of staff
Planning and recording
Credible recommendations
Good communication flows
Integrated management process

Summary

Facing new tasks, TSOs should

- acknowledge their pivotal integrative role
- be aware of the importance of task efficiency information as a signal of overall managerial efficiency

Regulators should use

- international benchmarking to national monitoring of the TSO
- a wider scope for overall performance assessment

Overall

- Regulatory benchmarking is primarily a tool to objectively detect, promote and monitor managerial change
- Regulatory benchmarking of TSO is also a transparency tool, it reduces some risks due to asymmetric information.

www.sumicsid.com