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# **TRANSMISSION ACCESS IN EUROPE**

# ISSUES

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- **Review of Access Charges**
- **Proposed new Legislation**
- **Proposals for IEM Harmonisation**

# BENCHMARK STUDY 12/2001

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- **excessively high network tariffs**, which form a barrier to competition by discouraging third party access
- network tariff structures which are **not published in advance or subject to ex-ante approval**, this may lead to uncertainty and create costly and time consuming disputes unless combined with full ownership unbundling,
- **insufficient unbundling**, which may obscure discriminatory charging structures and lead to possible cross subsidy
- a high level of **market power** of existing generation companies combined with a lack of liquidity in wholesale and balancing markets

# BENCHMARK STUDY 12/01 (i)

**Table 1 Implementation of the Electricity Directive**

	Declared market opening	Full opening date	Unbundling of TSO <sup>1</sup>	Regulator	Network tariffs 2001	Balancing market	Biggest three generator share (%)	Obstacles to competition responses mentioning <sup>2</sup>
Austria	100%	2001	L	ex-ante	high	Y	68	X
Belgium	35%	2007	L	ex-ante	medium	N	97 (2)	D, B, R, X
Denmark	90%	2003	L	ex-post	low	Y	75 (2)	D, X
Finland	100%	1997	O	ex-post	low	Y	54	U (for DSOs)
France	30%	none	M <sup>3</sup>	ex-ante	medium	planned	98	D, B, U, X, R
Germany	100%	1998	M <sup>4</sup>	nTPA	high	planned <sup>5</sup>	63	U, R, X, T
Greece	30%	none	M	ex-ante	n.a.	N	100 (1)	no responses
Ireland	30%	2005	L	ex-ante	medium	N	97 (1)	D, B, U, X
Italy	45%	none	L	ex-ante	medium	planned	79 (2)	D, B, X
Neth	33%	2003	L	ex-ante	medium	Y	64	X, D
Portugal	30%	none	L	ex-ante	high	N	85	D, X
Spain	54%	2003	L <sup>6</sup>	ex-ante	high	Y	79	D, X, R
Sweden	100%	1998	O	ex-post	low	Y	77	D, B
UK	100%	1998	O	ex-ante	low	Y	44	D,U (Scot), X (NI)

1 O – ownership, L – legal, M - management

2 R – insufficient regulator power/ delays, U – inadequate unbundling, T – high network tariffs, B–balancing regime, D – dominant incumbent, X – cross border issues. (in order of importance)

3 The TSO submits it's annual report to the Regulator rather than the EDF board

4 A number of network operators, including the two largest TSOs have unbundled on a voluntary basis

# BENCHMARK STUDY 12/01 (ii)

	Customers switching supplier (% dem.)		Average prices to final customers (€/MWh) July 2001	
	Large	Other	Large	Households
Austria	5-10%		n.a.	98
Belgium	5-10%		68	120
Denmark	n.a.		56	68
Finland	30%	10-20%	36	55
France	5-10%		51	87
Germany	10-20%	<5%	61	122
Greece	nil		54	76
Ireland	30%		60	101
Italy	10-20%		77	110
Netherlands	10-20%		62	94
Portugal	<5%		59	106
Spain	<5%		52	88
Sweden	100%	10-20%	34	52
<b>UK</b>	<b>80%</b>	<b>&gt;30%</b>	<b>58</b>	<b>91</b>

## BENCHMARK STUDY 12/01 (iii)

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	Market Opening	Unbundling Transmission	Network Access
Austria	100%	Legal	Regulated
Belgium	35%	Legal	Regulated
Denmark	90%	Legal	Regulated
Finland	100%	Ownership	Regulated
France	30%	Management	Regulated / M
Germany	100%	Management	<b>Negotiated</b>
Greece	30%	Management	Regulated / M
Ireland	30%	Legal	Regulated
Italy	45%	Legal	Regulated
Netherlands	33%	Legal	Regulated
Portugal	30%	Legal	Regulated
Spain	54%	Legal	Regulated / M
Sweden	100%	Ownership	Regulated
<b>UK</b>	<b>100%</b>	<b>Ownership</b>	<b>Regulated</b>

# BENCHMARK STUDY 12/01 (iv)

	Charge vary by location?	Charges vary by time of day?
Austria	no	no
Belgium	no	no
Denmark (E)	no	yes
Denmark (W)	no	yes
Finland	no	yes
France	no	yes
Germany	no	no
Greece	no	no
Ireland	Yes capacity charge	no
Italy	Yes loss charge	yes
Netherlands	no	yes
Portugal	no	no
Spain	no	yes
Sweden	Yes capacity and loss charge	yes
<b>UK</b>	<b>Yes capacity charge</b>	<b>(Yes)</b>
Norway	Yes loss charge	yes

# % of total charges dependent on:

	GENERATION			LOAD		
	Fixed	kW	kWh	Fixed	kW	kWh
Austria			9		27	64
Belgium		No G			68	32
Denmark (E)		No G				100
Denmark (W)			21			79
Finland			7			93
France		No G			54	46
Germany		No G			81	19
Greece			30		70	
Ireland		17	2		34	47
Italy			13		25	61
Netherlands	2		21		31	44
Portugal		No G			59	41
Spain		No G			28	72
Sweden		22	14		23	41
<b>UK</b>			<b>27</b>		<b>54</b>	<b>19</b>
Norway		38	6		53	3

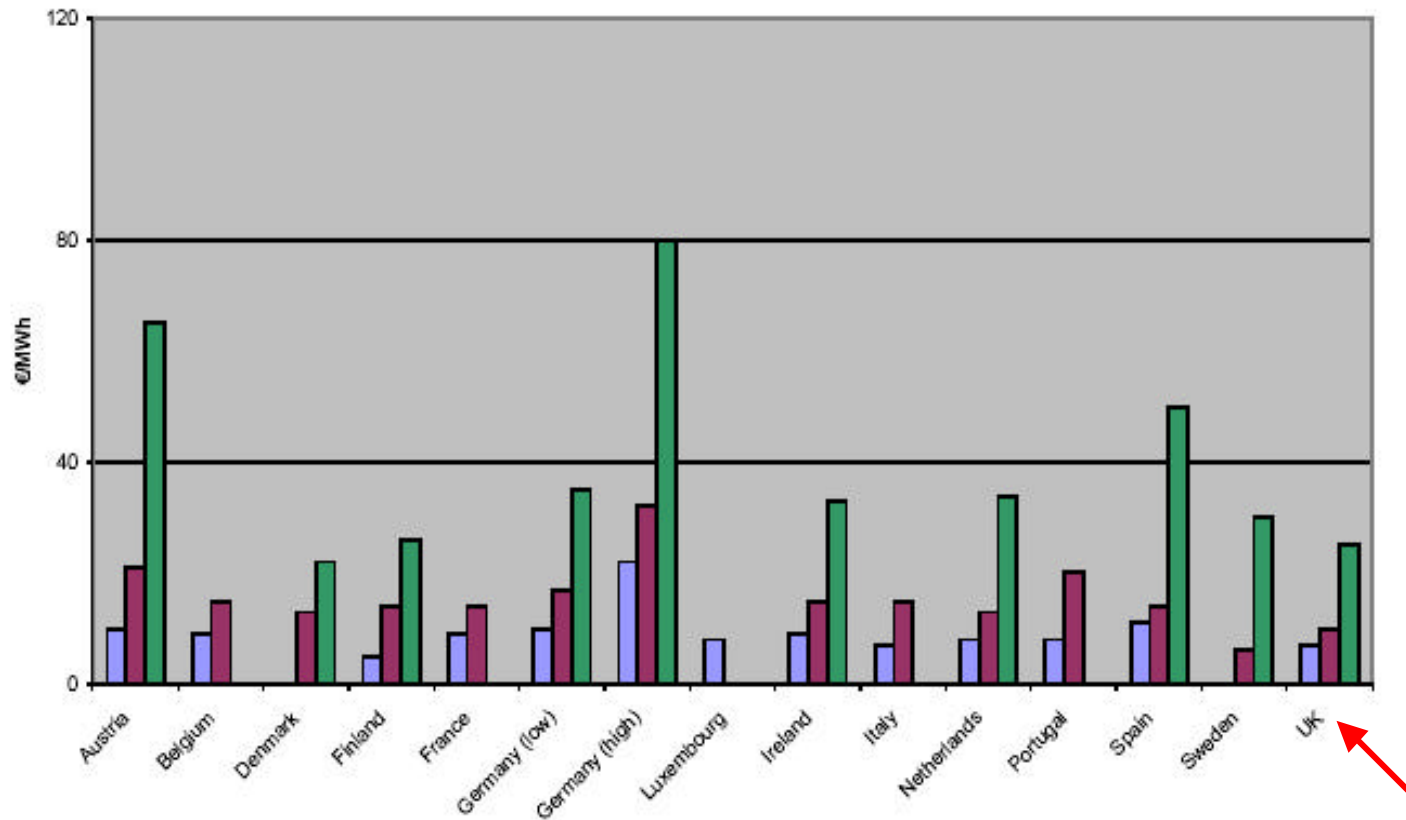
# BENCHMARK STUDY 12/01 (v)

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- Most Countries use **Postage Stamp** methodology (no locational signals)
- FR, GE, BE, DK, PT, SP: **G = 0**  
(**0.24 – 2.32 €/ MWh**)
- **L > 70%** (except Norway)
- Bulk of charges on **Capacity** (kW) Basis

# Average Levels of Network Charges

Graph 1 Estimated Level of Network Charges 2001: Electricity<sup>23</sup>



# BALANCING ARRANGEMENTS

	Market Opening	Liquid Wholesale Market for Balancing period	Method used to determine charges
Austria	¼ hour	No	M
Belgium	¼ hour	No	T
Denmark	1 hour	Yes	M
Finland	1 hour	Yes	M
France	½ hour	No	R / M (from 2002)
Germany	¼ hour	No	M (from 2002)
Greece	n.a.	No	-
Ireland	½ hour	No	M (spill) R (top-up)
Italy	n.a.	No	M
Netherlands	¼ hour	No	M
Portugal	½ hour	No	R
Spain	1 hour	unclear	M
Sweden	1 hour	Yes	M
<b>UK</b>	<b>½ hour</b>	<b>Yes</b>	<b>M</b>

# Postage Stamp (TenneT)

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- **Connection Rate** (Investment – Maintenance)
- A national uniform **Transmission Rate** (Infrastructure, Constraints, Losses, Reactive)
- **25%** allocated to G on a kWh “fed into grid” basis
- L is allocated **50%** on a kW “contracted capacity” and **50%** on a kW “max/monthly” basis
- A uniform **System Service Rate** (frequency control, spare capacity, black-start, system o&m costs) on a kWh consumption basis

# Postage Stamp (TenneT)

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- **Duration** 1 year
- **Quantity** (50% RC, 50% max. demand)
- **Non – Tradeable**
- **Firm?** (new generation has to wait)

## Germany (VV II)

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- **System Connection Agreement**
- **Use of System Agreement** (including frequency control, voltage support, black start, system operation)
- **Each TSO publishes rules, criteria and prices (cost basis) allocated on kW peak basis (coincidence factors)**

# SVENSKA KRAFTNAT (i)

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- **Point of connection tariff (nodal)**
  - **An annual “Capacity Fee” (G high in the North) - which accounts for approx. half of revenue**
  - **An hourly “Usage Fee” which accounts for the other half and is dependent upon the marginal transmission losses (coef. for each node, price of loss energy)**
  - **An initial connection fee (new investments required by single player)**
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## SVENSKA KRAFTNAT (ii)

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- **Market adapted methods for Congestion Management**
- **Market Splitting** between 5 “spot markets” North / South Norway / Sweden / Finland / Jutland
- **Counter Trading** internally in Sweden. Costs charged to SVENSKA and provide signal that network reinforcement is needed

# PROPOSED LEGISLATION

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- **Proposed Directive amends 96/92**
- **Creates independent TSOs**
- **TSOs shall be compensated for loop flows created by CBT (G & L)**
- **G < L**
- **Network charges should provide**  
**Locational Signals**

## Florence Forum (CEER – EC – ETSO)

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- transmission tariffs shall consist of **input** and **exit** charges (G and L) and shall be independent of commercial transactions;
- there shall be no extra tariffs for import, export or transit, providing that appropriate and efficient **locational signals** are in place;
- tariff **harmonisation** should be pursued, including with regard to G and L charges in national tariffication systems (tariff structure).
- **Domestic network tariffs: access to entire IEM**

## Florence Forum (CEER – EC – ETSO)

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- **G to be harmonised + National & International locational signals**
- **Harmonisation in percentage terms or fixed value of G (25% of an average European Transmission tariff) 50% kW/kWh**
- **Locational Signals to be (+ or -) to the basic G. Additional charge to G in exporting countries and corresponding reduction of L**
- **Create locational signals through the interaction of the inter TSO compensation mechanism with national G and L**

# Cross Border Transactions

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- **Inter TSO payment mechanism for transit flows. Exporting/Importing TSOs will compensate TSOs hosting transits. Calculations based in physical flows.**
- **No cross border charges. The net costs or incomes for TSOs should be transferred to G&L. Losses, appropriate levels of existing investments, new investments**
- **Congestion Management is not part of this mechanism. All EU + Norway/Switzerland. Definition of HN + losses**

# CONCLUSIONS

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- **Look to the other side of the Atlantic**
- **Balancing & Congestion Management as a bid-based security-constrained economic dispatch with voluntary participation by generators and loads, LMP at each node**
- **combined with Long-run Financial Transmission Rights - FTRs**