



An Overview of Current Cross-border Congestion Management Methods in Europe

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I. Scope

The Regulation 1228/2003 of the European Parliament and the Council of 26 June 2003 on “Conditions for access to the network for cross-border exchanges in electricity” clearly states that the implementation of market based congestion management methods are preferred and should be in force no later than the 1st of July 2004. In this Regulation, the European Commission has laid down preliminary guidelines for the implementation of cross-border congestion management method that should include “non-discriminatory market-based solutions that give efficient economic signals”.

DG TREN has recently provided new detailed Guidelines on Cross-Border Congestion Management, which should be finally approved by the end of 2004.

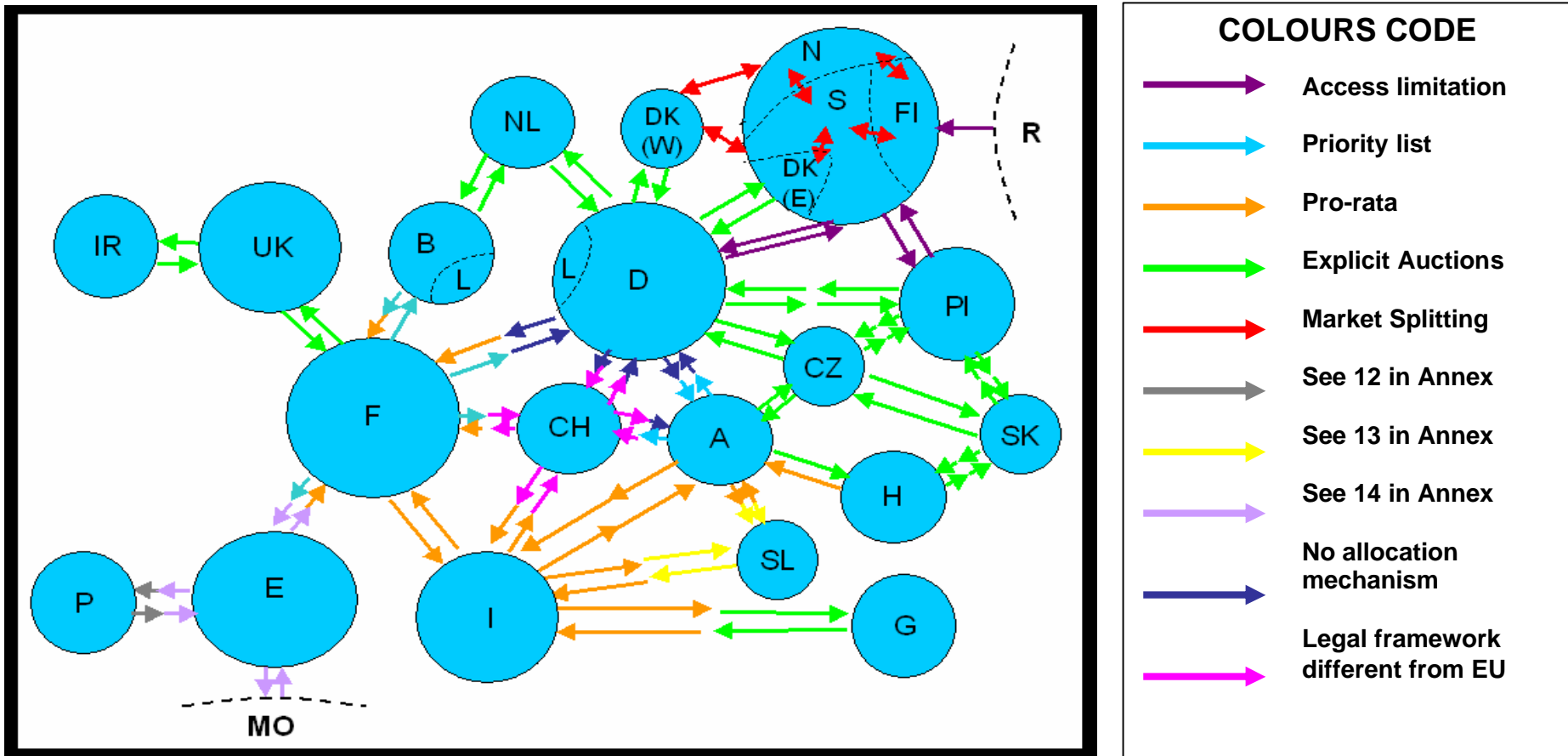
This document has the three following main objectives:

- Present an overview of the methods and processes currently in application in the European interconnections for transfer capacity allocation and congestion management.
- Analyse the main features of each one of those methods, namely whether they comply or not with the criteria expressed in the Regulation 1228/2003 of the European Parliament and the Council of 26 June 2003 and its Guidelines.
- Provide the available information regarding the works (in progress or foreseen) for modifying or substituting the methods currently applied, especially those not complying with the Regulation 1228/2003 and/or its Guidelines to some extent.

In Section II, the document presents a general overview of the methods currently in use in the European interconnections (in the forms of a map and two comparative tables). Section III provides a relation of the most common generic methods currently applied, as well as an analysis of the features of each generic method especially oriented to the compliance with the criteria from the EC Regulation. Section III briefly describes four other European proposals for congestion management not yet implemented. The document ends with an Annex that contains detailed descriptions of the features and particularities of all the methods presented in Section III.

II. Current implementation of different congestion management methods in Europe

The following map shows a general overview of the methods for congestion management currently in place in the European interconnectors, with a special indication of those ones where no joint method is applied:



(1) Two arrows appearing in the same flow sense in a certain interconnection mean that, for that interconnection in that flow sense, there is not a unique capacity allocation method or congestion management mechanism jointly applied by the two TSOs involved.

A much more detailed description of each individual method, including all the existing particularities for each case, is provided in Annex.

The following Tables I and II show the same general information from a different perspective (information classified by country and by general type of method, respectively). Table I also shows the time frames of each allocation method, and indicates which methods are congestion management procedures and must then be considered as counter-measures for congestion solving in real-time. The classification order in both lists is merely alphabetical.

Table I: Congestion management methods in Europe (by country)

COUNTRY	INVOLVED INTERCONNECTIONS	COORDINATED WITH THE OTHER TSO	JOINT WITH THE OTHER TSO	METHOD	TIME FRAMES*
AUSTRIA	TIRAG	YES	YES	PRIORITY LIST	D, I
	VKW-UNG	YES	YES	PRIORITY LIST	D, I
	CZECH REPUBLIC	YES	YES	EXPLICIT AUCTIONS	Y, M, D
	GERMANY	YES	NO	PRIORITY LIST (APG) / No allocation mechanism (German TSOs)	D, I
	HUNGARY	YES	NO	A=>H: EXP. AUCTIONS	Y, M
				H=>A: PRORATA	Y, M
	ITALY	YES (50% SPLIT)	NO	A: PRORATA	Y, W
				I: PRORATA	Y
SLOVENIA	YES (50% SPLIT)	NO	A: PRORATA	Y, W	
			S: SEE 13 IN ANNEX	Y, D	
SWITZERLAND	NO	NO	A=>CH: PRIORITY LIST	D, I	
			CH=>A: Other legal framework		
BELGIUM	FRANCE	NO	NO	B=>F: PRORATA (F) / PRIORITY LIST (B)	M, D
		YES	YES	F=>B: PRIORITY LIST	M, D
	NETHERLANDS	YES	YES	EXPLICIT AUCTIONS	Y, M, D
CZECH REPUBLIC	GERMANY	YES	YES	EXPLICIT AUCTIONS	Y, M, D
	AUSTRIA	YES	YES	EXPLICIT AUCTIONS	Y, M, D
	POLAND	NO	NO**	CZ: EXPLICIT AUCTIONS PL: EXPLICIT AUCTIONS	CZ: Y, M, D PL: M
	SLOVAKIA	YES	YES	EXPLICIT AUCTIONS	Y, M, D
DENMARK (EAST)	GERMANY	YES	YES	EXPLICIT AUCTIONS	M, D
	NORDIC REGION (SWEDEN)	YES	YES	MARKET SPLITTING	D
DENMARK (WEST)	GERMANY	YES	YES	EXPLICIT AUCTIONS	Y, M, D
	NORDIC REGION (NORWAY, SWEDEN)	YES	YES	MARKET SPLITTING	D
FINLAND	NORDIC REGION (NORWAY, SWEDEN)	YES	YES	MARKET SPLITTING	D
	RUSSIA	YES	YES	ACCESS LIMITATION	Y
FRANCE	BELGIUM	NO	NO	B=>F: PRORATA (F) / PRIORITY LIST (B)	M, D
		YES	YES	F=>B: PRIORITY LIST	M, D
	GERMANY	NO	NO	F=>G: No allocation mechanism (G) / PRIORITY LIST (F)	D (F)
				G=>F: PRORATA (F) / No allocation mechanism (G)	D (F)

COUNTRY	INVOLVED INTERCONNECTIONS	COORDINATED WITH THE OTHER TSO	JOINT WITH THE OTHER TSO	METHOD	TIME FRAMES*
FRANCE	ITALY	YES	YES	PRORATA	Y (also D for residual import)
	SPAIN	NO	NO	F=>S: PRIORITY LIST (F) / SEE 14 IN ANNEX (S)	D, I (F) D, I, RT (ES)
				S=>F: PRORATA (F) / SEE 14 IN ANNEX (S)	D, I (F) D, I, RT (ES)
	SWITZERLAND	NO	NO	F=>CH: PRIORITY LIST (F) / PRIORITY LIST (CH)	D, I (F)
				CH=>F: ACCESS LIMITATION (CH) / PRORATA (F)	D, I (F)
UNITED KINGDOM	YES	YES	EXPLICIT AUCTIONS	Y, S, Q, M, D	
GERMANY	AUSTRIA	YES	NO	PRIORITY LIST (APG) / No allocation mechanism (German TSOs)	D, I
	CZECH REPUBLIC	YES	YES	EXPLICIT AUCTIONS	Y, M, D
	DENMARK EAST	YES	YES	EXPLICIT AUCTIONS	M, D
	DENMARK WEST	YES	YES	EXPLICIT AUCTIONS	Y, M, D
	FRANCE	NO	NO	G=>F: PRORATA (F) / No allocation mechanism (G)	D (FR)
				F=>G: No allocation mechanism (G) / PRIORITY LIST (F)	D (FR)
	NETHERLANDS	YES	YES	EXPLICIT AUCTIONS	Y, M, D
	POLAND	NO	NO**	G: EXPLICIT AUCTIONS	Y, M
				P: EXPLICIT AUCTIONS	M
	SWEDEN	YES	YES	ACCESS LIMITATION	D
	SWITZERLAND	NO	NO	CH=>G: Other legal framework (CH) // No allocation mechanism (DE)	--
G=>CH: Other legal framework (CH) // No allocation mechanism (DE)				--	
HUNGARY	AUSTRIA	YES	NO	H=>A: PRORATA	Y, M
				A=>H: EXP. AUCTIONS	Y, M
	SLOVAKIA	YES (50 % SPLIT)	NO	H: EXPLICIT AUCTIONS	Y, M
				SL: EXPLICIT AUCTIONS	Y, M
ITALY	AUSTRIA	YES (50% SPLIT)	NO	A: PRORATA	Y, W
				I: PRORATA	Y
	FRANCE	YES	YES	PRORATA	Y (also D for residual import)
	GREECE	YES (50% SPLIT)	NO	I: PRORATA	Y
				G: EXPLICIT AUCTIONS	Y
	SLOVENIA	YES (50% SPLIT)	NO	I: PRORATA	Y
SL: SEE 13 IN ANNEX				Y, M, W, D	
SWITZERLAND	YES (50% SPLIT)	NO	I: PRORATA	Y	
NETHERLANDS	BELGIUM	YES	YES	EXPLICIT AUCTIONS	Y, M, D
	GERMANY	YES	YES	EXPLICIT AUCTIONS	Y, M, D

COUNTRY	INVOLVED INTERCONNECTIONS	COORDINATED WITH THE OTHER TSO	JOINT WITH THE OTHER TSO	METHOD	TIME FRAMES*
NORWAY	NORDIC REGION (DENMARK WEST, SWEDEN, FINLAND)	YES	YES	MARKET SPLITTING	D
POLAND	BELARUS	NO	NO	SEE 11 IN ANNEX	
	CZECH REPUBLIC	NO	NO**	P: EXPLICIT AUCTIONS C: EXPLICIT AUCTIONS	PL: M CZ: Y, M, D
	GERMANY	NO	NO**	P: EXPLICIT AUCTIONS G: EXPLICIT AUCTIONS	M Y, M
	SLOVAKIA	NO	NO**	P: EXPLICIT AUCTIONS SL: EXPLICIT AUCTIONS	M
	SWEDEN	YES	NO	ACCESS LIMITATION	--
	UKRAINE	NO	NO	SEE 11 IN ANNEX	
PORTUGAL	SPAIN	YES	NO***	SEE 12 IN ANNEX***	
SLOVENIA	AUSTRIA	YES (50% SPLIT)	NO	A: PRORATA SL: SEE 13 IN ANNEX	Y, W Y, D
	ITALY	YES (50% SPLIT)	NO	SL: SEE 13 IN ANNEX I: PRORATA	Y, D Y
SPAIN	FRANCE	NO	NO	S=>F: PRORATA (F) / SEE 14 IN ANNEX (S) F=>S: PRIORITY LIST (F) / SEE 14 IN ANNEX (S)	D, I (prorata) D, I, RT (14) D, I (P. list) D, I, RT (14)
	MOROCCO	YES	NO	SEE 14 IN ANNEX	D, I, RT
	PORTUGAL	YES	NO***	SEE 14 IN ANNEX***	D, I, RT
SWEDEN	GERMANY	YES	YES	ACCESS LIMITATION	D
	NORDIC REGION (NORWAY, DENMARK EAST, DENMARK WEST, FINLAND)	YES	YES	MARKET SPLITTING	D
	POLAND	YES	YES	ACCESS LIMITATION	--
SWITZERLAND	AUSTRIA	NO	NO	CH=>A: Other legal framework A=>CH: PRIORITY LIST	D, I
	FRANCE	NO	NO	CH=>F: Other legal framework (CH) / PRORATA (F) F=>CH: PRIORITY LIST (F) / PRIORITY LIST (CH)	D, I (FR) D, I (FR)
	GERMANY	NO	NO	CH=>G: Other legal framework (CH) // No allocation mechanism (DE)	--
				G=>CH: Other legal framework (CH) // No allocation mechanism (DE)	--
	ITALY	YES (50% SPLIT)	NO	CH: Other legal framework I: PRORATA	Y
UNITED KINGDOM	FRANCE	YES	YES	EXPLICIT AUCTIONS	Y, S, Q, M, D
	IRELAND	YES	YES	EXPLICIT AUCTIONS	Y

(*) Y: Yearly; S: Seasonal; Q: Quarterly; M: Monthly; W: Weekly; D: Daily; I: Intradaily; RT: Real-time.

(**) Expected as of the 1st January 2005 to implement joint auction

(***) A new coordinated method foreseen as of the starting date of Iberian Market (MIBEL).

Table II: Congestion management methods in Europe (by generic method)

GENERIC METHOD	INVOLVED INTERCONNECTIONS	DIRECTION	JOINTLY BY BOTH TSOs
ACCESS LIMITATION	FINLAND-RUSSIA	R => F	YES
	GERMANY – SWEDEN	BOTH	YES
	POLAND – SWEDEN	BOTH	YES
PRIORITY LIST	AUSTRIA (APG) – AUSTRIA (TIRAG)	BOTH	YES
	AUSTRIA (APG) – AUSTRIA (VKW-UNG)	BOTH	YES
	AUSTRIA - GERMANY	BOTH (A)	NO
	AUSTRIA - SWITZERLAND	A => CH (A)	NO
	FRANCE - BELGIUM	F => B	YES
	BELGIUM - FRANCE	B => F (BE)	NO
	FRANCE - GERMANY	F => G (F)	NO
	FRANCE - SPAIN	F => S (F)	NO
	FRANCE - SWITZERLAND	F => CH	NO
PRORATA	AUSTRIA - HUNGARY	H => A	YES
	AUSTRIA - SLOVENIA	BOTH (A)	NO
	AUSTRIA - ITALY	BOTH	NO
	BELGIUM - FRANCE	B => F (F)	NO
	FRANCE - GERMANY	G => F (F)	NO
	FRANCE - ITALY	BOTH	YES
	FRANCE - SPAIN	S => F (F)	NO
	FRANCE - SWITZERLAND	CH => F (F)	NO
	ITALY - GREECE	BOTH (I)	NO
	ITALY - SLOVENIA	BOTH (I)	NO
ITALY - SWITZERLAND	BOTH (I)	NO	
EXPLICIT AUCTIONS	AUSTRIA - CZECH REP.	BOTH	YES
	AUSTRIA - HUNGARY	A => H	NO
	BELGIUM - NETHERLANDS	BOTH	YES
	CZECH REP. - SLOVAKIA	BOTH	YES
	DENMARK EAST - GERMANY	BOTH	YES
	DENMARK WEST - GERMANY	BOTH	YES
	FRANCE – UNITED KINGDOM	BOTH	YES
	GERMANY – CZECH REP.	BOTH	YES
	GERMANY – NETHERLANDS	BOTH	YES
	GERMANY – POLAND*	BOTH	NO
	GREECE - ITALY	BOTH (GR)	NO
	HUNGARY - SLOVAKIA	BOTH	NO
	POLAND – CZECH REP.	BOTH	NO
	POLAND – SLOVAKIA*	BOTH	NO
UNITED KINGDOM – REPUBLIC OF IRELAND	BOTH	YES	
MARKET SPLITTING	ALL INTERCONNECTIONS WITHIN THE NORDIC REGION (DENMARK EAST & WEST, FINLAND, NORWAY, SWEDEN)	ALL	YES
NO ALLOCATION MECHANISM	AUSTRIA - SWITZERLAND	CH => A (A)	NO
	GERMANY-AUSTRIA	BOTH (G)	NO
	GERMANY - SWITZERLAND	BOTH (G)	NO
	GERMANY-FRANCE	BOTH (G)	NO

GENERIC METHOD	INVOLVED INTERCONNECTIONS	DIRECTION	JOINTLY BY BOTH TSOs
OTHER LEGAL FRAMEWORK	AUSTRIA - SWITZERLAND	BOTH (CH)	NO
	FRANCE - SWITZERLAND	BOTH (CH)	NO
	GERMANY - SWITZERLAND	BOTH (CH)	NO
	ITALY - SWITZERLAND	BOTH (CH)	NO
OTHERS	AUSTRIA – SLOVENIA	A => SL (SL)	SEE 13 IN ANNEX
	ITALY – SLOVENIA	SL => I (SL)	SEE 13 IN ANNEX
	POLAND – BELARUS	BOTH (P)	SEE 11 IN ANNEX
	POLAND – UKRAINE	BOTH (P)	SEE 11 IN ANNEX
	SPAIN – FRANCE	BOTH (S)	SEE 14 IN ANNEX
	SPAIN – MOROCCO	BOTH (S)	SEE 14 IN ANNEX
	SPAIN – PORTUGAL**	BOTH (S)	SEE 14 IN ANNEX

(*) Expected as of the 1st January 2005.

(**) A new coordinated method foreseen as of the starting date of Iberian Market (MIBEL).

III. Main features of the current cross-border congestion management methods in Europe

Method	Description	Analysis, Observations & Financial Implications
Access limitation	Access rationed by vertically integrated utilities or link owned by one or several independent companies which are not the owner of the network the link is connected to	<ul style="list-style-type: none"> • No economic signal • Not market based • Absence of efficient cross-border economic signals for generation/transmission investment • No pan European incentive for <i>social welfare</i> maximisation and <i>least-cost</i> operation • A few users may retain benefits from cross-border trade
Priority List (First-Come First-Served)	<p>The marketer gets capacity in a priority order until the whole ATC is allocated.</p> <p>Examples of priority criteria are: chronological order, past use of capacity, etc.</p> <p>Transparency limited by confidentiality of trade</p>	<ul style="list-style-type: none"> • Selection based on capacity used ratio and not on economic efficiency • Not market based • New entrants less favoured (discriminated) although it can also help to mitigate market power exercise if limitations (maximum purchase) are imposed • Absence of efficient cross-border economic signals for generation/transmission investment • No pan European incentive for <i>social welfare</i> maximisation and <i>least-cost</i> operation • Marketers capture <i>congestion rent</i> and pay capacity price (usually null or low) • Favours exporters (or importers) with a large portfolio of customers (suppliers) • Selection based on capacity used ratio and not on economic efficiency
Pro-rata Rationing	Capacity is allocated in proportion to requests if they exceed the announced ATC	<ul style="list-style-type: none"> • Non-discriminatory • Not market based • No economic signal • Transparent • Simple implementation when compared to other mechanisms • The capacity is arbitrarily priced by the Regulatory authorities at a level not equal to the efficient economic value (which is the 'opportunity cost' of trading between the countries) • No efficient cross-border economic signals for generation/transmission investment • No pan European incentive for <i>social welfare</i> maximisation and <i>least-cost</i> operation • Marketers capture <i>congestion rent</i> and pay capacity price (usually low) • Individual size of transmission right delivered inconsistent with standard trading products • Open to abuse by submission of excessive requests • Selection based in proportion to requests (if they exceed the announced ATC) and not on economic efficiency

Method	Description	Analysis, Observations & Financial Implications
Explicit Auctions (ATC based)	The seller (TSO) determines ex ante ATC considering security analysis, accepts bids from potential buyers and allocates the capacity to the ones that value it the most	<ul style="list-style-type: none"> • Economic signal • Non-discriminatory • Transparent • Often a joint co-ordinated mechanism between the concerned TSOs • Several significant implementation features: <i>uniform clearing price vs. pay as bid</i> • Different allocation products and frequencies (Y, M, D) • With perfect market assumption <ul style="list-style-type: none"> - price reflects cost of using capacity to the <i>social welfare</i> - internal and cross-border trade present the same profit opportunity for participants - efficient signals to market players for the operation and the value of the network
Market Splitting (ATC based)	The energy markets provide initially a common clearing. If ATC reached, markets “split” into pre-determined <i>price areas</i> cleared individually at area prices.	<ul style="list-style-type: none"> • Economic signal • Non-discriminatory • Transparent • Always a joint co-ordinated mechanism between the concerned TSOs • Requires homogenised energy markets • Requires centralised Power Exchange • Requires financial instruments for long term price-hedging and bilateral trade between price-areas • Internal and cross-border trade present the same profit opportunity for participants • Efficient signals to market players for the operation and the value of the network
Different legal framework	<p>CH, Russia and Morocco are not EU member states and EU legislation doesn't apply to them.</p> <p>In the CH case, current legislation is governed by ownership rights. A new legal framework (revision of the so called EleG) is proposed by the government and currently under consultation. It could come effective in 2005.</p>	<ul style="list-style-type: none"> • Not relevant

As a general remark on the above table, there are two common features for all mechanisms:

- ex ante ATC assessment may be inconsistent with market output due to volatility of prices,
- ex ante ATC assessment may be inaccurate due to unpredictable trading patterns.

IV. Other proposals not yet implemented across Europe

There are today in Europe four theoretical proposals that have not yet been implemented.

The first and most general is the Co-ordinated Congestion Management scheme proposed by ETSO which is a practical application of explicit or implicit allocations simultaneously on many interconnections while respecting the effects of loop flows. The assessment of network security limits before energy market clearing is done in terms of physical flow margins and not in terms of ATC. CCM avoids contract path bias. If the network is modelled in detail, it also avoids the need to assume future market conditions when specifying transmission capacity.

The second is the Decentralised Market Coupling proposed by EuroPEX, which is the evolution of Market Splitting (and more generally of implicit auctioning of transmission rights). Decentralised Market Coupling aims at keeping regional energy markets as independent as possible. Additionally, it proposes for meshed networks to accommodate the concepts previously proposed by ETSO Co-ordinated Congestion Management. Therefore it inherits of the quality of efficiency of Market Splitting but its feasibility in highly meshed networks is conditioned by the one of co-ordinated auctioning. Its feasibility is also in question in specific interconnectors between two systems with a lack of a minimum harmonization.

The third is Co-ordinated Cost Plus by IFIEC which aims at tackling some shortcomings of the current methods with the idea that any cross-border marketer should profit in a non discriminatory way from the difference between congestion revenue and re-dispatch cost. In addition to the fact that this method appears not to be market based, it could lead to a counter-effective situation where re-dispatching costs would considerably exceed congestion revenue, the expected profit being turned into a real deficit.

The fourth, called Flow-based market coupling, is the result of a recent collaboration between ETSO and EuroPEX. It seeks to combine the advantages of ETSO's CCM and EuroPEX's DMC, in a manner that is compatible with the wide variety of market mechanisms already in place.

V. References

- Directive EC/54/2003 and Regulation EC/1228/2003, of 26th June 2003
- "Cross-border electricity exchanges on meshed AC power systems" (ETSO, April 2004)
- "Flow-based Market Coupling: A joint ETSO-EuroPEX proposal for cross-border congestion management and integration of electricity markets in Europe, Interim Report" (ETSO-EuroPEX, September 2004)
- "Decentralised Using Implicit Auctions to Manage CB Congestion. Decentralised Market Coupling" (EuroPEX, July 2003)
- "ETSO position on the "Co-ordinated Cost +" cross-border capacity allocation proposal" (ETSO, February 2003)
- "Co-ordinated congestion management. An ETSO vision" (ETSO, February 2002)
- "Definitions of Transfer Capacities in liberalised Electricity Markets" (ETSO, April 2001)
- "Key concepts and definitions for transmission access products" (ETSO, April 2001)
- "Evaluation of congestion management methods for cross-border transmission" (ETSO, November 1999)
- Information provided by the ETSO TF NACM members and other ETSO members
- Information published in ETSO website: www.etso-net.org.

ANNEX: Current cross-border Congestion Management Methods in Europe: Description of each individual method

This Annex provides a description of each one of the congestion management methods currently applied in the international interconnections between European countries, along with all the particular conditions and procedures applicable in each case.

The different methods are presented successively in a list alphabetically ordered by the name of the country (in English).

In those cases where the methods applied by the TSOs at both sides of the interconnection are different or non-coordinated, it is explicitly indicated, and the descriptions of the different methods are provided separately in the subsections corresponding to both TSOs. Otherwise (same methods at both sides), the method is just presented once, in the TSO with alphabetical priority, and a mere reference to this only explanation is made in the subsection corresponding to the other TSO.

1 Austria (Information provided by TSO: Verbund-APG)

1.1 Involved interconnections

First of all, it is necessary to know that in Austria there are three control zones:

- Verbund-APG
- TIRAG
- VKW-UNG

The latter two of them are connected to the German control block. Besides, there is no tie line between Austria and Slovakia. Therefore, this Section will cover the following interconnections:

- Austria (APG) - Czech Republic
- Austria (APG) - Germany
- Austria (APG) - Hungary
- Austria (APG) - Italy
- Austria (APG) - Slovenia
- Austria (APG) - Switzerland
- Austria (APG) - Austria (TIRAG)
- Austria (APG) - Austria (VKW)

1.2 Description for each interconnector

1.2.1 Austria (APG) – Czech Republic: Explicit auctions

The capacity at the border is auctioned by the Czech TSO (CEPS) for both the Austrian and the Czech side. Currently there are **explicit auctions** in yearly and monthly horizons, being envisaged a daily auction for midyear of 2004. These auctions are conducted by an auction office on behalf of CEPS (for more information, see also www.auction-office.at).

1.2.2 Austria (APG, VKW, TIRAG) – Germany (E.ON, RWE, EnBW): Priority list [APG] / No allocation method [E.ON, RWE, EnBW]

Since no congestion problems between APG and Germany have been experienced so far, there are no limitations and **priority list** is the used allocation method between both control blocks from the Austrian side.

From the German side, all nominations that comply with valid rules are accepted. Insofar, there is no allocation method for scarce capacity (see also 7.2.1).

1.2.3 Austria (APG) – Hungary: Coordinated non-joint method

Within the allocation procedure on the border between APG and Hungary (MAVIR), each TSO is responsible for its import capacity. Therefore, APG allocates the import capacity regarding the **prorata** procedure with different quality levels (long term contracts are considered before hydro power) whereas the import capacity to Hungary is allocated through an **explicit auctioning** method.

1.2.4 Austria (APG) – Italy: Non-joint method

Between APG and Italy (GRTN), the NTC is divided 50/50. APG is then responsible for the 50 % of the NTC, for which applies **prorata** with different quality levels (long term contracts are considered before hydropower). The method applied by GRTN for the other 50% is described in Section 10.2.3.

1.2.5 Austria (APG) – Slovenia: Non-joint method

This case is identical to the APG-Italy above. Between APG and Slovenia (ELES), the NTC is divided 50/50, being then APG responsible for the 50 % of the NTC, for which applies **prorata** with different quality levels (long term contracts are considered before hydropower). The method applied by ELES for the other 50% is described in Section 15.2.1.

1.2.6 Austria (APG) – Switzerland: Priority list

There are no congestion problems between APG and Switzerland. Therefore there are no limitations and **priority list** is the used allocation method between both control blocks.

1.2.7 Austria (APG) – Austria (TIRAG): Priority list

There are no congestion problems between APG and TIRAG. Therefore there are no limitations and **priority list** is the used allocation method between both control blocks.

1.2.8 Austria (APG) – Austria (VKW): Priority list

There are no congestion problems between APG and VKW. Therefore there are no limitations and **priority list** is the used allocation method between both control blocks.

2 Belgium (Information provided by TSO: ELIA)

2.1 Involved interconnections

- Belgium - France
- Belgium - the Netherlands

2.2 Description for each interconnector

2.2.1 Belgium – France

- Direction Belgium to France (no joint allocation method)

This direction is usually not congested.

In Belgium capacity allocation for the direction Belgium to France takes place on basis of a priority list (first come, first served). Blocks of 100 MW are contracted on a monthly basis. Insufficient use of the awarded blocks leads to losing the position on the priority list.

- Direction France to Belgium (joint allocation, please refer to section 6.2.1)

2.2.2 Belgium – the Netherlands: Explicit auctions

The involved TSOs are: TenneT (Netherlands), E.ON Netz, RWE Transportnetz Strom (both from Germany) and Elia (Belgium). In autumn 2000 an independent body called “TSO Auction BV” was set up in order to carry out yearly, monthly and daily **explicit auctions** of all cross border interconnectors around the Netherlands (see website: www.tso-auction.org).

Some of the main features of the method are:

- The "Use it or lose it" principle is applied.
- Capacity is offered on a firm basis.
- Capacity is provided at the price of the lowest accepted bid.
- Joint Auctions, run by TSO Auction Office.
- TSO Auction Office is jointly financed by and acting on behalf of the mentioned involved TSOs.
- Capacity is auctioned on a yearly, monthly, daily basis.
- Capacity is resellable.
- The available capacity for the auctions is jointly determined by the involved TSOs and given to the TSO Auction Office.

3 Czech Republic (Information provided by TSO: CEPS)

3.1 Involved interconnections

- Czech Republic - Germany
- Czech Republic - Slovakia
- Czech Republic – Poland
- Czech Republic – Austria

3.2 Description for each interconnector

3.2.1 Czech Republic – Germany: Explicit auctions

The involved TSOs are: E.ON Netz and Vattenfall Europe Transmission (from Germany) and CEPS (from Czech Republic).

In this interconnection, yearly and monthly **explicit auctions** are being applied since 2003 and daily **explicit auctions** since 2004.

Some of the main figures and features of the method are:

- Auctions on a yearly, monthly, daily basis
- Joint Auctions Yearly, monthly and daily , run by E.ON Netz (between E.ON and CEPS)

- Joint Auctions Yearly and monthly run by Vattenfall Europe Transmission and daily run by CEPS (between Vattenfall Europe Transmission and CEPS)
- Approximately 65%, and 35% of capacity is offered in the yearly and monthly auctions; possible remain capacities are offered in daily auctions.
- Capacity acquired in the yearly and monthly auctions can be resold: reselling of yearly and monthly capacity on a weekly base
- Use it or lose it imposed before daily auctions.
- Firmness in sold capacity.
- Efficient price signals to market players.
- Netting in daily auctions investigated/planned

Auction revenue gives TSOs a clear signal on the demand for exchange capacity.

3.2.2 Czech Republic – Slovakia: Explicit auctions

The involved TSOs are: CEPS (from Czech Republic) and SEPS (from Slovakia).

In this interconnection, yearly and monthly **explicit auctions** are being applied since 2003 and daily **explicit auctions** since 2004.

Some of the main figures and features of the method are:

- Auctions on a yearly, monthly, daily basis
- Joint Auctions Yearly, monthly and daily, run by CEPS
- Approximately 65%, and 35% of capacity is offered in the yearly and monthly auctions; possible remain capacities are offered in daily auctions.
- Capacity acquired in the yearly and monthly auctions can be resold: reselling of yearly and monthly capacity on a weekly base
- Use it or lose it imposed before daily auctions.
- Firmness in sold capacity.
- Efficient price signals to market players.
- Netting in daily auctions investigated/planned

Auction revenue gives TSOs a clear signal on the demand for exchange capacity.

3.2.3 Czech Republic – Poland: No Joint method, explicit auctions noncoordinated

The involved TSOs are: PSE-Operator (from Poland) and CEPS (from Czech Republic).

On CEPS side since Aug. 2002 explicit auctions is organized by CEPS on yearly and monthly basis and since Jan. 2004 also on daily basis.

From May 2004 there has been on Polish side ATC non co-ordinated explicit auction on common VET, CEPS, SEPS profile.

TSO's in the region agreed to start 1st January 2005 common regional auctioning procedure for transmission capacities reservation on all borders between them at the same time. The aim of this procedure is yearly, monthly and daily allocation of available capacities on the congested technical profiles in the way which gives to market player a requested transmission capacity reservation on the indicated border.

3.2.4 Czech Republic – Austria: Explicit auctions

The involved TSOs are: APG (from Austria) and CEPS (from Czech Republic).

The capacity at the border is auctioned by the Czech TSO (CEPS) for both the Austrian and the Czech side. Currently there are **explicit auctions** in yearly, monthly and daily horizons. These auctions are conducted by an auction office on behalf of CEPS (for more information, see also www.ceps.cz or for yearly and monthly auction also www.auction-office.at).

Some of the main figures and features of the method are:

- Auctions on a yearly, monthly, daily basis
- Joint Auctions Yearly, monthly run by EXAA in the name of APG and CEPS
- Joint Auctions daily run by CEPS
- Approximately 85%, and 15% of capacity is offered in the yearly and monthly auctions; possible remain capacities are offered in daily auctions.
- Capacity acquired in the yearly and monthly auctions can be resold: reselling of yearly and monthly capacity on a weekly base
- Use it or lose it imposed before daily auctions.
- Firmness in sold capacity.
- Efficient price signals to market players.

4 Denmark (Information provided by TSO: Eltra and Elkraft)

4.1 Involved interconnections

Two different zones must be distinguished within Denmark:

- Denmark East (synchronous with Nordic region) – TSO Elkraft System
- Denmark West (synchronous with Continental region) – TSO Eltra

As a consequence of that, this Section covers the following interconnections:

- Denmark East - Germany
- Denmark West - Germany
- Denmark East - Nordic region (Sweden)
- Denmark West - Nordic region (Norway, Sweden)

4.2 Description for each interconnector

4.2.1 Denmark East – Germany (Vattenfall Europe): Explicit auctions

The involved TSOs are: Elkraft System (from Denmark East) and Vattenfall Europe Transmission (from Germany).

In this interconnection, monthly and daily **explicit auctions** are being applied since 2002. Some of the main figures and features of the method are:

- Approximately 50% of capacity offered in both auctions
- "Use it or lose it" imposed before daily auctions except for capacity linked to an old agreement. This agreement expires by 30 June 2006.
- Netting in daily auctions.
- No firmness in sold capacity. Price reflects the value for the market players.
- Efficient price signals to market players.
- Auction revenue gives TSO's a clear signal on the demand for exchange capacity, and TSO's shall act according to social welfare criteria with respect to investments (congestion rent shall balance costs for interconnector capacity plus redispatch).

The Auction currently in place at the German – Danish (East) border is entirely managed by Elkraft. Auction revenues resulting from transfers in both directions (Germany→Denmark and Denmark→Germany) are collected by Elkraft. Vattenfall Europe does not participate in these Auction revenues.

4.2.2 Denmark West – Germany (E.ON Netz): Explicit auctions

The involved TSOs are: Eltra (from Denmark West) and E.ON Netz (from Germany).

In this interconnection, yearly, monthly and daily **explicit auctions** are being applied since 2000. Some of the main figures and features of the method are:

- Approximately 25%, 50% and 25% of capacity is offered in the yearly, monthly and daily auctions, respectively.
- Capacity acquired in the yearly auction can be resold.
- Use it or lose it imposed before daily auctions.
- Netting in daily auctions.
- Firmness in sold capacity.
- Cross-border redispatch.
- Efficient price signals to market players.
- Danish Statement: Auction revenue gives TSO's a clear signal on the demand for exchange capacity, and TSO's shall act according to social welfare criteria with respect to investments (congestion rent shall balance costs for interconnector capacity plus redispatch).
- German Statement: The auction revenue is used according to EC Regulation 1228/2003.

4.2.3 Denmark East – Nordic region (Sweden) and Denmark West – Nordic Region (Norway, Sweden): Market Splitting

In this case, the interconnections are between price-areas in the NordPool area. The exchange capacity is allocated as an integral part of the day-ahead spot price calculation. Congestion on an interconnection between two price-areas results in price-differences between the areas. When there is no congestion the spot-prices in the two areas will be equal. The simultaneous allocation of energy and capacity ensures maximal utilization of the exchange capacity from low- to high-price areas.

Other main characteristics of this method are:

- Netting.
- Firmness in sold capacity.
- Cross-border redispatch.
- Price reflects the value for the market players.
- Efficient price signals to market players.
- Congestion rent gives TSO's a clear signal on the demand for capacity, and TSO's shall act according to social welfare criteria with respect to investments (congestion rent shall balance costs for interconnector capacity plus redispatch).

5 Finland (Information provided by TSO: Fingrid)

5.1 Involved interconnections

- Finland - Nordic region (Norway, Sweden)
- Finland - Russia

5.2 Description for each interconnector

5.2.1 Finland – Nordic region (Norway, Sweden): Market Splitting

In this case, the congestion management mechanism currently applied is **Market Splitting** (see description in Section 4.2.3).

5.2.2 Finland – Russia: Access limitation

Fingrid's cross-border services from Russia to Finland employs three 400 kV transmission lines. The total capacity of these interconnections is 1400 MW, of which 100 MW has been reserved for the management of the power system.

Until the end of 2004, five customers have reserved 1,300 MW of Fingrid's cross-border transmission capacity between Finland and Russia through fixed transmission contracts.

Upon agreeing on transmission service, the customer reserves a transmission right of a maximum of 300 MW for a period of one to three calendar years. The annual volume of the transmission right may vary.

Capacity which becomes available at the turn of the year together with the terms of transmission are informed to the market parties by the end of the preceding June. The transmission contracts are signed well before the end of the year. The final use of the customer-specific capacity is determined on the basis of purchase contracts signed between electricity importers and the Russian exporter.

The transmission programme is agreed upon between the importer, Fingrid, and the Russian parties through a weekly preliminary programme. The import programme for the next day is confirmed on the preceding day before the reservation moment for the next day on the Nordic electricity exchange.

6 France (Information provided by TSO: RTE, www.rte-france.com)

6.1 Involved interconnections

- France - Belgium
- France - Germany
- France - Italy
- France - Spain
- France - Switzerland
- France - United Kingdom

6.2 Description for each interconnector

6.2.1 France – Belgium: Priority list (monthly and daily)

As of 1 July 2002, RTE and ELIA are setting up a joint mechanism for the allocation and utilization of capacity on the France-Belgium interconnection (direction France to Belgium).

This mechanism combines the monthly allocations, carried out thus far solely by ELIA, with the daily allocations carried out up to now only by RTE, thus jointly proposing these two time periods to the players of the market. The application of the “use it or lose it” principle will serve to maximize the capacity made available to the market by reallocating the unused capacity on a daily basis.

Monthly capacity is contracted by blocks of 25 MW based on a priority list (first come, first served). Insufficient use of the awarded blocks leads to losing the position on the priority list.

ELIA accepts nominations of monthly programs in the direction France to Belgium until 8H00 on D-1.

The remaining capacity is allocated by RTE on a daily basis (use it or lose it).

RTE also accepts nominations of daily programs from Belgium to France, which must be made before 14H00 on D-1. In rare cases where the sum of nominations exceeds available capacity, RTE accepts the programs nominated by reducing them in proportion to requests.

6.2.2 France – Germany (RWE, EnBW): No joint method

In order to declare an export from France, a user must hold export transactions characterised by a destination TSO with a maximum power level limited to 25 MW.

RTE classifies export transactions by taking into account, firstly, the date and time at which it receives the request for new export transactions, and then the rate of use of export transactions.

Every three months, RTE calculates a rate of use for export transactions. For the transactions of a user towards a given country A, RTE takes into account exports nominated by this user towards that country A, minus its imports from country A. In order for the priority range to be carried over to the following period, the rate of use must be greater than or equal to 75%.

RTE allocates capacities on D-1 for day D, depending on the list of priorities of transactions.

RTE accepts nominations of import programmes, which must be made before 14H00 on D-1. In rare cases where the sum of nominations exceeds available capacity, RTE accepts the programmes nominated by reducing them in proportion to requests.

Such rules are subject to the approval of the French CRE and are published under the “Access Rules for Imports and Exports on the French Public Power Transmission Network”.

For exports from Germany to France, no congestions have been experienced so far. Therefore, no allocation mechanism has been required up to now.

6.2.3 France – Italy: Prorata (yearly and daily)

In compliance with the agreement between AEEG and CRE, GRTN and RTE are jointly implementing a prorata mechanism for the annual allocation of capacity on the North-West border of Italy for 2004. The yearly attribution of capacity will be carried out in two steps:

- A first capacity allocation of 550 MW is scheduled for the "interruptible" Italian qualified customers. Capacity allocation will be carried out in proportion to the requests of these customers.
- In a second phase, the remaining MW will be allocated in proportion to the requests.

This number of MW is equal to the difference between 2201 MW and the capacity preserved by the "interruptible" customers to which is to be added the capacity allocated to the Italian captive market. Those who will be able to participate in this second phase are:

- Italian qualified customers
- Players in possession of power trading permits from at least one of the member countries of the European Union.

A guarantee price of 0,3 €/MWh for the transited capacity shall be collected on the French border. This price shall be set by the CRE.

A guarantee price of 0,3 €/MWh for the transited capacity shall be collected on the Italian border. This price shall be set by the AEEG.

Please also refer to section 10.2.1.

6.2.4 France – Spain: Non-coordinated non-joint method

The allocation of capacity performed by RTE is based on a first-come-first-served rule (with a limit of 25 MW per transaction) for exports and a prorata rule for imports. Such rules are subject to the approval of the French CRE and are published under the “Access Rules for Imports and Exports on the French Public Power Transmission Network”.

The allocation mechanism applied from the Spanish side is described in Section 16.2.1.

6.2.5 France – Switzerland: No joint method

In order to declare an export from France, a user must hold export transactions characterised by a destination TSO with a maximum power level limited to 25 MW.

RTE classifies export transactions by taking into account, firstly, the date and time at which it receives the request for new export transactions, and then the rate of use of export transactions.

Every three months, RTE calculates a rate of use for export transactions. For the transactions of a user towards a given country A, RTE takes into account exports nominated by this user towards that country A, minus its imports from country A. In order for the priority range to be carried over to the following period, the rate of use must be greater than or equal to 75%.

RTE allocates capacities on D-1 for day D, depending on the list of priorities of transactions.

RTE accepts nominations of import programmes, which must be made before 14H00 on D-1. In rare cases where the sum of nominations exceeds available capacity, RTE accepts the programmes nominated by reducing them in proportion to requests.

Such rules are subject to the approval of the French CRE and are published under the “Access Rules for Imports and Exports on the French Public Power Transmission Network”.

6.2.6 France – United Kingdom: Explicit auctions

In both directions France - United Kingdom and United Kingdom - France the capacities are allocated by RTE and NGT on an auction mechanism for the following products: year, season (winter/summer), quarter, weekend, day.

Please also refer to section 19.2.1.

7 Germany (Information provided by TSO: EnBW, E.ON, RWE, Vattenfall Europe)

7.1 Involved interconnections

In Germany, there exist four control areas, managed by the following TSOs:

- RWE Transportnetz Strom GmbH
- Vattenfall Europe Transmission GmbH
- E.ON Netz GmbH
- EnBW Transportnetze AG

So far, no congestion between the control areas have been experienced.

This Section will cover the following interconnections:

- Germany (RWE/EnBW/E.ON) - Austria
- Germany (E.ON/Vattenfall Europe Transmission) - Czech Republic
- Germany (Vattenfall) - Denmark East (NORDEL Area, TSO: ELKRAFT)
- Germany (E.ON) - Denmark West (UCTE Area, TSO: ELTRA)
- Germany (RWE/EnBW) - France
- Germany (RWE/E.ON) - The Netherlands
- Germany (Vattenfall Europe Transmission) - Poland
- Germany (E.ON) - Sweden
- Germany (RWE/EnBW) - Switzerland

7.2 Description for each interconnector

7.2.1 Germany (E.ON Netz, RWE, EnBW) – Austria (APG, TIRAG, VKW): no allocation method

See Section 1.2.2. On the German side, since no congestions have been experienced as defined in the German Transmission Code, all nominations are accepted. No allocation method that effects in a selection of nominations is applied.

7.2.2 Germany (E.ON Netz and Vattenfall Europe Transmission) – Czech Republic: Explicit Auctions

The involved TSOs are: E.ON Netz and Vattenfall Europe Transmission (from Germany) and CEPS (from Czech Republic).

In this interconnection, yearly and monthly **explicit auctions** are being applied since 2003 and daily **explicit auctions** since 2004.

Some of the main figures and features of the method are:

- Auctions on a yearly, monthly, daily basis
- Joint Auctions, run by E.ON Netz
- Approximately 65%, and 35% of capacity is offered in the yearly and monthly auctions; possible remain capacities are offered in daily auctions.
- Capacity acquired in the yearly and monthly auctions can be resold: reselling of yearly and monthly capacity on a weekly base
- Use it or lose it imposed before daily auctions.
- Firmness in sold capacity.
- Efficient price signals to market players.
- Netting in daily auctions investigated/planned

Auction revenue gives TSOs a clear signal on the demand for exchange capacity.

7.2.3 Germany (Vattenfall) – Denmark East (Nordic): Explicit Auctions

See Section 4.2.1.

7.2.4 Germany (E.ON) – Denmark West (Continental): Explicit Auctions

See Section 4.2.2.

7.2.5 Germany (EnBW, RWE) – France: No joint method

See Section 6.2.2.

No congestion problems for exports from Germany to France have been experienced so far. Therefore, there are no allocation mechanisms in place.

7.2.6 Germany (E.ON, RWE) – The Netherlands: Explicit Auctions

See Section 2.2.2.

7.2.7 Germany (Vattenfall Europe Transmission) – Poland:

The involved TSO is: Vattenfall Europe Transmission (from Germany).

In this interconnection, yearly and monthly **explicit auctions** are being applied since 2003 as a one side auction.

Some of the main figures and features of the method are:

- Approximately 65% and 35% of capacity is offered in the yearly and monthly auctions.
- Capacity acquired in the yearly and monthly auctions can be resold.
- Firmness in sold capacity.
- Efficient price signals to market players.

Auction revenue gives TSO a clear signal on the demand for exchange capacity.

7.2.8 Germany (E.ON Netz) – Sweden: Access limitation

Baltic Cable: Link owned by private companies, both not owner or affiliated to the adjoining TSOs. Proprietary allocation. E.ON Netz and Svenska Kraftnät not involved in capacity allocation.(see also 17.2.1).

7.2.9 Germany (EnBW, RWE) – Switzerland:

Up to now, no congestion problems between Germany and Switzerland have been experienced. Therefore, there is no allocation mechanism in place.

8 Greece (Information provided by TSO: HTSO)

8.1 Involved interconnections

- Greece - Italy
- Greece - Albania
- Greece - Bulgaria

8.2 Description for each interconnector

8.2.1 Greece-Italy

In 2004, for the direction Greece to Italy the eligible participants are the owners of the local generating capacity and, for the time being, the available capacity of this particular direction is allocated to Public Power Corporation, as the only generating capacity owner in Greece.

9 Hungary (Information provided by TSO: MAVIR)

9.1 Involved interconnections

- Hungary - Austria
- Hungary – Slovakia
- Hungary – Croatia
- Hungary (II. UCTE zone: Serbia-Montenegro; Romania)

9.2 Description for each interconnector

9.2.1 Hungary – Austria: Coordinated non-joint method

See Section 1.2.3.

9.2.2 Hungary – Slovakia: No joint method

The NTC is divided 50/50 % between SEPS and MAVIR. On both sides there is a yearly and monthly explicit auction.

9.2.3 Hungary – Croatia: No joint method

The NTC is divided 50/50 % between CRO-ISMO and MAVIR. On Hungarian side there are yearly and monthly explicit auctions. Croatian side: No information.

9.2.4 Hungary – II. UCTE synchronous zone:

The NTC values have been calculated for the case of synchronous connection I. and II. UCTE zones. The NTC-s will be split 50/50 % and, on the Hungarian side, allocated by yearly and monthly explicit auctions.

10 Italy (Information provided by TSO: GRTN)

10.1 Involved interconnections

- Italy - France
- Italy - Switzerland
- Italy - Austria
- Italy - Slovenia
- Italy - Greece

10.2 Description for each interconnector

10.2.1 Italy – France (RTE):

On French- Italian border GRTN and RTE will apply a joint yearly capacity allocation approved by the relevant National Institution. This allocation will include all the available capacity on the French-Italian border and the 50 % to be allocated by the GRTN on the Swiss-Italian border (joint allocated North-West). The mechanism is **prorata**.

Long term contract, capacity reserved (Republic of San Marino, Vatican City, Corsica) have a **dedicated** amount of **capacity**.

If there is some free capacity (no allocated annual capacity, no good used from Allocation Recipient or a reduction from User) RTE, jointly and on behalf of GRTN, manage a **daily allocation mechanism** to optimise the import capacity.

10.2.2 Italy – Switzerland (ATEL, BKW, NOK, EGL, EOS):

On the Swiss-Italian border the cross-border capacity is allocated with a different method.

The 50 % of capacity of GRTN is allocated yearly in the same allocation of the France capacity (see Section 6.2.3).

The other share of 50 % of capacity is allocated directly by the Swiss TSOs, owner of capacity, so they give all information to GRTN.

10.2.3 Italy – Austria (APG):

The cross-border capacity, Italian side, is allocated yearly with **prorata** mechanism. The other rate of 50 % of capacity is allocated directly by APG.

10.2.4 Italy – Slovenia (ELES):

The method is the same as for Austria (see Section 10.2.3).

10.2.5 Italy – Greece (HTSO):

On the Greece-Italian border GRTN allocates yearly the 50 % of cross border capacity, using a **prorata** mechanism.

The other share of 50 % of capacity is allocated directly by HTSO .

11 The Netherlands (Information provided by TSO: TenneT)

11.1 Involved interconnections

- The Netherlands - Belgium
- The Netherlands - Germany

11.2 Description for each interconnector

11.2.1 The Netherlands – Belgium: Explicit Auctions

See Section 2.2.2.

11.2.2 The Netherlands – Germany: Explicit Auctions

See Section 2.2.2.

12 Norway

12.1 Involved interconnections

- Norway - Nordic region (Denmark West, Sweden, Finland)

12.2 Description for each interconnector

12.2.1 Norway – Nordic region (Denmark West, Sweden, Finland): *Market Splitting*

The congestion management mechanism currently applied is **Market Splitting** (see description in Section 4.2.3).

13 Poland (Information provided by TSO: PSE)

13.1 Involved interconnections

- Poland - Belarus
- Poland - Czech Republic
- Poland - Germany
- Poland - Slovakia
- Poland - Sweden
- Poland - Ukraine

13.2 Description for each interconnector

13.2.1 Poland – Belarus: No joint method

Between Poland and Belarus there is no synchronous operation, but only a separate single 220kV line subject to island operation. The flow is predictable based on schedule and contract.

13.2.2 Poland – Czech Republic: No joint method

Two 400 kV lines and 220 kV ones exist on that border. From May 2004 there has been on polish side ATC non co-ordinated explicit auction on common VET, CEPS, SEPS profile TSO's in the

region (including CEPS) agreed to start 1st January 2005 common regional auctioning procedure for transmission capacities reservation on all borders between them at the same time. The aim of this procedure is yearly, monthly and daily allocation of available capacities on the congested technical profiles in the way which gives to market player a requested transmission capacity reservation on the indicated border.

13.2.3 Poland – Germany: No joint method

There is one 400 kV double circuit line and also one 220 kV double circuit line between Poland and Germany. From May 2004 there has been on polish side ATC non coordinated explicit auction on common VET, CEPS, SEPS profile.

TSOs in the region (including VE_T) agreed to start from 1st January 2005 the common regional auctioning procedure for transmission capacities reservation on all borders between them at the same time. The aim of this procedure is yearly, monthly and daily allocation of available capacities on the congested technical profiles in the way which gives to market player a requested transmission capacity reservation on the indicated border.

See also German explanation on this interconnection in Section 7.2.7.

13.2.4 Poland – Slovakia: No joint method

There is one 400kV double circuit line between Poland and Slovakia. From May 2004 there has been on polish side ATC non co-ordinated explicit auction on common VET, CEPS, SEPS profile. TSO's in the region (including SEPS) agreed to start from 1st January 2005 the common regional auctioning procedure for transmission capacities reservation on all borders between them at the same time. The aim of this procedure is yearly, monthly and daily allocation of available capacities on the congested technical profiles in the way which gives to market player a requested transmission capacity reservation on the indicated border.

13.2.5 Poland – Sweden: Access limitation

There is one 400KV DC line between Poland and Sweden. In this interconnector, the access is limited, and there is no congestion expected.

13.2.6 Poland – Ukraine: No joint method

Between Poland and Ukraine there is no synchronous operation, but only a separate single 220kV line subject to radial operation. The flow is predictable based on schedule and contract.

14 Portugal (Information provided by TSO: REN)

14.1 Involved interconnections

- Portugal - Spain

14.2 Description for each interconnector

14.2.1 Portugal – Spain:

The congestion management method currently in application for this interconnection from the Portuguese side is based on the following aspects:

1. The exporting country, Portugal or Spain, is responsible for the resolution of the congestion;

2. In case of transit flow from Spain to Portugal the adopted method is as described in Section 14.2, except for the explicit auction mechanism that is not applied for Physical Bilateral Contracts (PBC);
3. In case of transit flow from Portugal to Spain, the established schedules are reduced pro-rata.

The considered time stages are in accordance with the information provided by REE (Section 16.2.2).

As of the kick-off date of the new Iberian Market (MIBEL), initially foreseen for the 20th April and finally delayed for some time, it is foreseen to adopt a new method with the following main features:

- Coordinated between both TSOs (REN and REE).
- Providing an efficient economic signal.
- Firmness of transactions from the scheduling issuing from the daily market (through coordinated balancing actions in both systems, e.g. coordinated redispatch or counter-trading).

The definition of this future method is still pending of the modification of current Portuguese and Spanish legislations, being possibly applied a mechanism combining **Market Splitting** (see general description in Section 4.2.3) with **Counter Trading**.

15 Slovenia (Information provided by TSO: ELES)

15.1 Involved interconnections

- Slovenia - Austria
- Slovenia - Italy

15.2 Description for each interconnector

15.2.1 Slovenia – Austria: No joint method

As explained in Section 1.2.5, between Austria-APG and Slovenia (ELES) the NTC is divided at 50%. For its 50%, APG applies the method described in Section 1.2.5, while for the other 50% ELES is currently applying:

- In the long term: **prorata**
- In the short term: **explicit auctions**

As of the 1st July 2004, according to the new draft guidelines on congestion management of the 1228/2003 EC Regulation, the Slovenian proposal for the congestion management methods on the border between Slovenia and Austria is:

- In the long term: **explicit auctions**
- In the short term: **implicit auctions**

This proposal is in the process of harmonization with APG and is currently under discussion.

15.2.2 Slovenia – Italy: No joint method

From the Italian side, the method currently in application is described in Section 10.2.4.

From the Slovenian side, ELES is currently applying:

- In the long term: **prorata**
- In the short term: **explicit auctions**

As of the 1st July 2004, according to the new draft guidelines on congestion management of the 1228/2003 EC Regulation, the Slovenian proposal for the congestion management methods on the border between Slovenia and Italy is:

- In the long term: **explicit auctions**
- In the short term: **implicit auctions**

This proposal is in the process of harmonization with GRTN and is currently under discussion.

16 Spain (Information provided by TSO: REE)

16.1 Involved interconnections

- Spain - France
- Spain - Morocco
- Spain - Portugal

16.2 Description for each interconnector

16.2.1 Spain – France: Non-coordinated non-joint method

The method currently in use for congestion management in the Spanish system consists of the following stages:

- Congestion management in the day-ahead market:
 - First of all, market bids/offers are submitted and physical bilateral contracts (PBCs) are communicated to the Spanish Market Operator (OMEL);
 - A first matching process is developed by OMEL, considering “infinite” capacity values in all interconnectors;
 - Once this first iteration is completed, OMEL compares the cross-border schedules issuing from the matching result in each interconnector with the available commercial capacity values provided by REE: if congestion appears in any interconnector, then the available capacity in it is split into two blocks, one for the matched market transactions and one for PBCs, prorata to the total amount of each type of transactions;
 - Then the capacity for market transactions is allocated according to the priority order of bid/offer prices, without a further charge for the agents who obtain capacity;
 - And finally the capacity for PBCs is allocated to them through an explicit auction (involving thus a specific charge at the auction marginal price for those PBCs obtaining capacity).
- Congestion management in the intradaily market:

In this market, the matching of certain bids and offers in the market is restricted according to available capacity value, in order not to cause congestions.
- Congestion management in real-time:

In case of congestion in real-time in an interconnector, the schedules established in this interconnector are reduced prorata (but the Long Term Contracts EDF-REE, which are reduced the last), being economically compensated for that schedule reduction, and being exempt of any imbalance payment.

Finally, the congestion revenues collected from the Spanish side are applied for reducing the access tariffs.

From the French side, the method currently in application is described in Section 6.2.4.

16.2.2 Spain –Portugal:

The congestion management method currently in application for this interconnection from the Spanish side is the same as described in Section 16.2.1.

As explained in Section 14.2.1, as of the kick-off date of the new Iberian Market (MIBEL), initially foreseen for the 20th April and finally delayed for some time, it is foreseen to adopt a new method with the following main features:

- Coordinated between both TSOs (REN and REE).
- Providing an efficient economic signal.
- Firmness of transactions from the scheduling issuing from the daily market (through coordinated balancing actions in both systems, e.g. coordinated redispatch or counter-trading).

The definition of this future method is still pending of the modification of current Portuguese and Spanish legislations, being possibly applied a mechanism similar to **Market Splitting** (see general description in Section 4.2.3).

16.2.3 Spain – Morocco:

In Morocco there is one single buyer (ONE) who executes one single transaction in the Spanish market. In practice, ONE accepts the congestion management method applied from the Spanish side, which is the same as described in Section 16.2.1.

17 Sweden (Information provided by TSO: SvK)

17.1 Involved interconnections

- Sweden - Germany
- Sweden - Nordic region (Norway, Denmark East, Denmark West, Finland)
- Sweden - Poland

17.2 Description for each interconnector

17.2.1 Sweden – Germany: Access limitation

There is one 400 kV DC interconnector owned by Baltic Cable AB, who exclusively sets the commercial conditions for the cable. Baltic Cable offers, in case of free physical capacity, on request, transmission short term on the link on a day-by-day basis. The cable is connected to the National grid with ordinary tariff. SvK is not involved in the management of capacity.

17.2.2 Sweden – Nordic region (Norway, Denmark East, Denmark West, Finland): Market Splitting

The interconnectors are between the Nord Pool price areas in the Nordic countries. There are DC links to Denmark West and AC links to the remaining neighbours. Congestion on an interconnection between two price areas results in price differences between the areas. When there is no congestion the spot prices in the two areas will be equal.

(For a detailed description of the **Market Splitting** method, see Section 4.2.3).

17.2.3 Sweden – Poland: Access limitation

There is one 400 kV DC interconnector owned by SwePol Link AB, who exclusively sets the commercial conditions for the cable. The company is owned by SvK (51 %), PSE (1 %) and

Vattenfall (48 %). Free capacity is offered on an annual basis. The cable is connected to the National grid with ordinary tariff. SvK is not involved in the management of capacity.

(See also Section 13.2.5).

18 Switzerland (Information provided by TSO: ATEL)

18.1 Involved interconnections

- Switzerland - Austria
- Switzerland - France
- Switzerland - Germany
- Switzerland - Italy

18.2 Description for each interconnector

18.2.1 Switzerland - Austria: No allocation method. Other legal framework

18.2.2 Switzerland - France: No allocation method. Other legal framework

18.2.3 Switzerland - Germany: No allocation method. Other legal framework

18.2.4 Switzerland – Italy: Prorata (I) / Other legal framework (CH)

GRTN and the Swiss TSO allocate each 50% of the ATC. The Swiss share is allocated by the Swiss TSOs and the Italian share by GRTN using a prorata method to the Italian consumers.

19 United Kingdom (Information provided by TSO: NGT)

19.1 Involved interconnections

- United Kingdom - France
- United Kingdom - Ireland

The above two interconnectors are the only ones that link the UK with other Member States (i.e. France and the Irish Republic). There are, however, two further interconnectors within the UK, linking England with Scotland, and Scotland with Northern Ireland.

The England-Scotland interconnection consists of AC circuits. The capacity is currently allocated as a separate interconnector between the Scotland and England-Wales markets. This will, however, change when these are integrated to form a single Great Britain market.

The Scotland – Northern Ireland link is a DC sub-sea cable, whose capacity is allocated by explicit auction.

19.2 Description for each interconnector

19.2.1 United Kingdom – France: Explicit auctions

The England-France interconnector is a DC sub-sea cable with a total capacity of 2 GW. This capacity is allocated jointly by NGT Interconnectors and RTE through explicit tenders and auctions. Capacity in each direction is sold separately, with no netting.

Auctions are held on a variety of timescales ranging from three years in advance to day-ahead, but the basic product is a daily right to nominate capacity for use up to the allocated volume. Allocated capacity that is not nominated is lost without compensation ('use-it-or lose-it').

The portion of the link owned by NGT Interconnectors is operated under 'merchant' commercial arrangements, but these are subject to 'reasonable rate of return' regulation. Rights to use the DC link itself are offered on a non-firm basis, but in practice availability of auctioned capacity is high. The right of interconnector users to use England and Wales infrastructure is, however, firm.

(See also Section 6.2.6).

19.2.2 United Kingdom – Republic of Ireland: Explicit auctions

The interconnection used for trade between Northern Ireland (UK) and the Irish Republic consists of two double-circuit 275 kV AC lines. North-to-South capacity is auctioned by the Northern Irish TSO (SONI), currently annually. Secondary trading is permitted.

Currently, no physical South-to-North capacity is available for most of the time, so no auctions are held in this direction. There is, however, a superposition arrangement whereby South-to-North transactions can usually be accommodated by netting them against nominated North-to-South flows.