



**MEDREG
Institutional and Electricity AdHoc Group**

INS/ELE TF

**Survey on the legal framework for management
of electricity interconnections
in the Mediterranean region**

Summary Assessment

December 2011

INTRODUCTION

According to the MEDREG Action Plan 2010-2012 the subject of the legal framework for the management of electricity cross-border interconnections should be addressed.

The aim is to draw up a comprehensive picture of the management of interconnections in electricity in the Mediterranean region. In this purpose, a common project dedicated to the legal framework of the management of electricity cross-border interconnections has been set up with the MEDREG AdHoc Groups on Institutional (INS AG) and Electricity (ELE AG) issues.

Beyond presenting a clear picture of the present situation taking into account the studies already carried out by the ELE AG (notably on the ITC mechanisms, congestion management, exchange of data, etc...), and initiative such as the Iberian electricity market (MIBEL) the objective is to provide a basis for developing common recommendations on the regulatory issues related to cross border interconnections in electricity in the Mediterranean Basin.

A draft on "Terms of Reference" (ToR) has been prepared and enriched as a framework for the elaboration of a questionnaire, to be filled by MEDREG's members. The ToR was approved at the 10th MEDREG GA of 29 October 2010 (Rabat, Morocco). Following this approval, a questionnaire has been elaborated by a common drafting team set up within the INS and ELE AG (Egypt, France, Greece and Jordan)

The structure of the questionnaire has been organised in 6 thematic chapters:

1. Legal and institutional framework
2. Capacity Calculation and Allocation
3. Transit Tariff
4. Balancing system
5. Cross Border power Exchange through Bilateral Contacts
6. Other relevant measures or comments

The questionnaire has been circulated to INS and ELE AG members and a 1st deadline for submitting the answers has been set at the end of February 2011 and extended at the end of April 2011.

Answers to the questionnaire have been processed by common drafting team INS/ELE and their assessment discussed within ELE/INS AG .

14 MEDREG member's countries sent back the questionnaire fulfilled.

We thank each contributor for the time he spent on answering this questionnaire

Countries	Regulators	Field
Albania	CERA	Electricity and Gas
Algeria	CREG	Electricity, Gas distribution
Bosnia-Herzegovina	SERC	Electricity
Croatia	HERA	Electricity, Oil, Gas, Heating
Egypt	EGYPTERA	Electricity
Greece	RAE	Electricity and Gas
Spain	CNE	Electricity, Oil, Gas
France	CRE	Electricity and Gas

Italy	AEEG	Electricity and Gas
Israel	PUA	Electricity, Oil, Gas
Malta	MRA	All Energy, Water and Minerals
Montenegro	ERA	Electricity, Oil, Gas
Portugal	ERSE	Electricity, Oil, Gas
Turkey	EMRA	Electricity, Oil, Gas, GPL

A - SUMMARY AND MAIN CONCLUSIONS

The analysis of responses to the questionnaire on the legal framework for the management of electricity interconnections in the Mediterranean region, has led to the following main results summarised as below.

- **Legal and institutional framework**

Primary legislation or secondary regulation is in place in all countries for the management of electricity interconnection.

In most of cases, legislation relating to the conditions for coordinating the action of different players as regards capacity allocation exists.

Procedures for the settlement of disputes linked to cross border issues including appeal procedures and a system for sanctions and penalties are also in place. In several cases, the competence for the settlement or resolution of cross borders disputes belongs, at least partly, to the regulators' remit.

- **Capacity calculation and allocation**

For the majority of the countries reviewed, the assessment of the available capacities is done by TSO. National Regulatory Authorities (NRAs) are merely responsible for assessing or setting the methodology for the calculation of the capacity.

The commercial contracts for cross border capacities exchanges remain an exception and there is no possibility to limit the cross border capacity in order to solve internal congestions.

In general, in the north shore of the Mediterranean, auction mechanisms are in place for the capacity while the system of explicit auction is facilitated in most cases.

In case of **explicit auction**, transmission capacity is auctioned to the market separately and independently from the market places. The capacity is normally auctioned in portions through annual, monthly and daily auctions.

In case of **implicit auction**, transmission capacity allocation is included (implicitly) in the auctions of electrical energy in the market. The capacity is made implicitly available to the market participants via an organised market

There is no deadline for capacity nomination for half of the countries reviewed

The principle of firmness of capacities is applied in European Countries. In those countries, the transmission system operators are required to re-offer unused transmission capacity to market participants according to the principle of use it or lose it or, the principle of use it or sell it.

In case of failure to honour obligations regarding capacity, the TSOs in most cases are faced with financial consequences and submitted to administrative penalties.

- **Transit Tariff**

A Transit Tariff does not exist in majority of countries. In European countries, an inter- transmission system operator Compensation (ITC) Mechanism is applied.

As explained more explicitly after, this mechanism deals with compensation and contribution of costs; Indeed, the fair and transparent remuneration of transits due to cross-border trade has been on the list of major topics in the European discussion since the beginning of electricity market liberalization. The implementation of the ITC mechanism has played a vital role in the development of a liquid electricity market in EU in order to remove “pancaking” and all trading barriers across the borders.

- **Balancing System**

As mentioned hereafter, the aim of balancing is to insure equilibrium between supply and demand in short-term.

The system of gate closure is tools used in the balancing market to determinate the prices and dispatch the existing generation unit. The gate closure represents the deadline for participants to submit their bids and offers for each delivery period.

By gate closure, positions are declared (injection and withdrawal) to the relevant TSO. At the gate closure, TSO becomes in charge of the management electricity flows on the network. If there are differences between supply and demand, there are settled with the TSO.

Generally, market for balancing exists in the countries of the North shore. In this case, TSOs are in charge of the main aspects of the mechanism. The system gate closure remains an exception.

- **Cross Border Power exchange through Bilateral Contracts**

The existence of bilateral contracts used as general framework for the Cross Border Power exchange, remains an exception.

Conclusion

The essential principles identified as shared characteristics are:

1- Competences for the NRAs to

- set or approve rules regarding the management and allocation of interconnection capacity,
- fix or approve methodologies used to assess balancing services,
- require to the transmission operators to modify their congestion and balancing mechanisms to ensure that these are proportionate and applied in a non-discriminatory manner.

2- Regarding the capacity calculation and allocation capacities

- A mechanism of auction for the allocation capacities,
- An assessment of the available capacities realized by the TSOs
- The submission of the capacities rights to the principle of use it or loose it or sell it

4- A mechanism of compensation for transit tariff

5- The existence of market for balancing

However, diverging issues remain, and such divergences can be observed mostly between the North and the South shore of the Mediterranean basin. Those are mostly related to the transit tariff, the balancing market and discrepancies in the capacity calculation and allocation mechanisms (implicit or explicit auction, on yearly, monthly, daily ...)

Moreover, the existence of bilateral contracts which is used as general framework remains an exception.

These issues, including inter- TSO compensations, calculation of available transmission capacities and management and allocation of available transmission capacities, are inter-related, and depend on the manner the energy markets are organized, on a national basis. Overall, close co-operation between the national regulatory authorities is essential to ensure regional convergence of practices and consistency of the interconnection regime. At the present point however, the observed diversity of practices in the MEDREG's area, encourages to develop a process of gradual harmonization with a view to develop a common regulatory framework. In this aim, a step by step approach could be adopted and a prioritization of the recommendations could be proposed.

Recommendations

Based on the conclusions of this report, there exists a need to disseminate knowledge about operation of cross border exchanges in a Market Environment. The organisation of training sessions could be a relevant tool for addressing specific topics.

The EU (The Northern Shore of the Mediterranean) represents the best practice.

In addition, the role of TSOs in the process is crucial (eg: implementation of legal framework, capacity calculation). In this respect, the recent creation of their association "METS0" with the aim to build a link in the Mediterranean region between market regulation functions and electrical system operations, represents a good opportunity to establish contacts and exchange relating to the regulatory issues linked to cross border interconnections.

Consequently, it is recommended to start a capacity building programme on cross border exchange operation. The training program could be composed of a series of workshops addressing:

- interconnection capacity calculation and allocation,
- Transit fees and ITC mechanisms
- Auction mechanism (implicit and explicit)
- Mechanism for allocating the remaining capacities

B - QUESTIONNAIRE ANALYSIS

The analysis of 14 answers received to the questionnaire, highlights for every point, the following aspects:

1 - Legal and institutional framework (actors and institutions)

A general legislation or secondary regulation is in place for the management of electricity interconnection in all countries and a legislation relating to the conditions for coordinating the action of different players as regards capacity allocation exists in most cases (10).

In Turkey, the Regulator defines rules through secondary legislation and the TSO manages interconnections. The market players bid for allocation of interconnection capacity, or even may ask for construction of interconnection facility. Regulator issues licences to allow wholesale companies to participate in the TSO capacity allocation auctions.

In Italy, each year, a Ministerial decree sets the general framework for cross border capacity management, leaving to the regulator the adoption of specific rules (e.g. auction rules).

For the majority (10), the regulatory authority is responsible for the management of electricity interconnections. He also has the power to set or approve rules regarding the management and allocation of interconnection capacity (9).

It should be highlighted that in **Spain**, the regulator does not have competences relating to the management and allocation of interconnection capacity and congestion management rules (setting or approving rules) as the Ministry is competent. This issue should be resolved with the implementation of the third package.

More than a half (10) regulatory authority also has competences regarding congestion management rules. Regulator has the power to fix or approve methodologies used to assess balancing services in majority cases (10).

Several regulatory authorities (8), have the power to require transmission operators to modify their congestion and balancing mechanisms to ensure that these are proportionate and applied in a non-discriminatory manner.

In Algeria, the regulator has the power to approve the system operator rules. In addition he also has the power to ask modifications before approval.

In Croatia, the regulator can when is necessary, ask implementation of specific measures in order to comply with the principles of transparency, objectivity and non-discrimination related to cross-border allocation and congestion management issues.

Only a few countries (3) do not have procedures for the settlement of disputes linked to cross border issues including appeal procedures and a system for sanctions and penalties. In most of cases, regulators are competent (5)

In Algeria, arbitration is used and in Montenegro, the regulator issues rules for the settlement of disputes by arbitration.

In majority, there is no limit on the generation and interconnection capacities foreseen **in the country energy strategy or in other regulation (10)**

2 – Capacity calculation and allocation

Usually, there is a framework for the capacity calculation and allocation.

Regarding the assessment of the available capacities, it is done by TSOs (9) or regulator (2).

In European Countries, the Union for the Co-ordination of Transmission of Electricity (UCTE) rules are used for doing this assessment.

In Italy, the assessment is performed each year by the Italian TSO together with the bordering TSOs. The calculation method is a classic Net Transmission Capacity (NTC) calculation based on snapshots of the interconnected grids and considering the maximum possible exchanges preserving the system security. The methodology is approved by the regulator.

In Portugal, Croatia and Turkey, the methodology for calculating capacities is proposed by the TSOs and approved by the regulator.

In Spain, TSOs calculate the exchange capacity and take into account security system criteria. The regulator does not have specific competences.

In Bosnia, the available transmission capacity represents the difference between Net Transmission Capacity (NTC) and those already allocated transmission capacity (ATC). The NTC values are determined individually for each boundary, every direction and cannot be summed (netting is not allowed). NTC is published on the TSO web site.

In Montenegro, the determination of the value of available cross-border transmission capacities is done in accordance with the methodology defining bilateral contracts or in other way by the agreement made with the TSO. The regulator approves the “Rules for issuing available remaining capacity at interconnection links of the Montenegrin control area with neighbouring control areas” previously set by the TSO.

In Algeria, the system operator assesses, in a transparent and not discriminatory way, the capacities. The procedure should be published on its website. The system operator has to mention the forecasts of capacities:

- Every day for the next day;
- Every week for the next week;
- Every month for the next month.

The regulator approves the rules proposed by the system operator.

Commercial contracts regarding cross border capacities exchanges remain an exception (4). In Algeria, bilateral contracts exist between the incumbent operators.

In most case (9), there is no limitation of cross border capacity in order to solve internal congestions.

In European countries and according to European regulation (EC) No.1228/2003 on the conditions for access to the network for cross-border exchanges in electricity, the TSOs shall be guided by principles of cost-effectiveness and minimisation of negative impacts on the Internal Electricity Market. In this respect, TSOs do not limit interconnection capacity in order to solve congestion inside their control area, except for reasons of operational security and reasons of cost-effectiveness and minimisation of negative impacts on the internal Electricity Market.

The existence of auction mechanisms is widely shared (8/12) except in the south shore (Algeria for instance), where this kind of mechanisms is not in place.

In EU countries, explicit allocation methods are in place on all interconnections for yearly and monthly auctions except in the Nordic region where only day-ahead implicit auctions are applied. As regards day-ahead capacities, approximately two thirds are explicitly auctioned and the remaining third follows an implicit scheme.

In France, explicit allocation is applied for yearly and monthly auctions except in the central west region where day-ahead implicit auctions.

In Spain, implicit auction is used for the Spain-Portugal interconnection. The “Spanish Pole” of Market Operator (OMEL) manages day-ahead and intraday markets and capacity is allocated jointly with nominated generation. “Portuguese Pole” of Market Operator (OMIP) manages MIBEL derivatives market and Spanish Ministry issues financial hedges. Market players make their bids in day-ahead and intraday markets (generation and capacity jointly).

For the Spain-France interconnection, explicit auctions is used These capacities allocation rules deal with the way of acquiring and using long, medium, day-ahead and intra-day products. A new version of the rules in force since June 2009 includes the compensation scheme based on price spread with caps in the case of curtailments and cancellation of daily auction, as well as automatic resale of non nominated capacity in day-ahead timeframe.

Interconnection with Morocco is managed weekly via day-ahead market programming.

The capacities are attributed according to different time period: long or short term, yearly, (8) monthly (6) or day ahead, and intraday (5).

In France, long- and short-term allocations are possible. TSOs have to describe the reasons for having or not having, both long- and short-term transmission capacity allocations and they can not include an option for reserving a minimum percentage of interconnection capacity for daily and intra-day allocation.

In majority (8), there is a deadline for capacity nomination.

The principle of firmness of capacities is applied for half of countries (7).

Holding long-term capacity is one of the main ways for market players to have a strong position on market. An increasing consensus emerged between European regulators on the importance of guaranteeing firmness of interconnection capacity rights in order to develop exchanges and market integration.

The capacities rights are submitted to the principle of use it or loose it or use it or sell it in several countries (9).

For most of countries (9), mechanism for allocating the remaining capacities exists (auction or transfer).

In Albania and Bosnia, the remaining capacity is allocated within intra-day allocation according to principle first come-first serve.

In France, the fraction of the remaining capacity not previously allocated or any capacity released by capacity holders from previous allocations, is sold back at the next auction or transfer between capacity holders.

In several cases (8), the TSO, in case of failure to honour obligations regarding capacity, is submitted to financial consequences or penalties. Often, the system of compensation is used, (4) and the TSO is not responsible for damage occurred due to unpredicted circumstances.

In Italy, in case of curtailment, the TSO reimburses the right holder the price paid at the auction.

3 – Transit Tariff

Transit of electricity takes into account the amount of imports of electricity and the amount of exports of electricity on interconnections between TSOs.

In majority of countries (9), this kind of tariff does not exist. In European countries, an inter-transmission system operator Compensation (ITC) Mechanism is applied.

According to regulation No 774/2010 of 2 September 2010 on laying down guidelines relating to inter-transmission system operator compensation and a common regulatory approach to transmission charging, the mechanism provides for compensation for the costs of hosting cross-border flows of electricity including providing cross-border access to the interconnected system.

In this framework, transit of electricity is calculated, normally on an hourly basis, by taking the lower of the absolute amount of imports of electricity and the absolute amount of exports of electricity on interconnections between national transmission systems.

In Algeria, the transit tariff is set by bilateral negotiations.

4 – Balancing system

The purpose of balancing markets is to secure balance between supply and demand of the system in short-term in an economically-efficient manner.

A market for balancing exists for half of countries (6).

In general, balancing markets differ from other market timeframes as TSOs are a sole counterparty while in day-ahead and intraday timeframes market participants openly trade between themselves to adjust their physical positions.

In Greece, balancing is based on the bids of the Day-Ahead market.

In Turkey, balancing service is provided to TSO by the generators connected to transmission and distribution grid. All the market participants are required to enter the real time with a balanced portfolio. However, in case they are in imbalance during real time operation, TSO buys necessary balancing power to maintain system frequency, and the parties' imbalance are charged for their imbalances by market operator after real time.

In general (8), TSOs **are in charge of the main aspects of the balancing system** as they ensure a continuous balance between supply and demand and can undertake balancing actions.

In several countries (6) a **gate closure does not exist**.

5 – Cross border Power Exchange through Bilateral contracts

This situation appears when a common interconnection agreement involving several Mediterranean countries exists and stands as the contractual framework for all bilateral cross border exchange contracts. Most of countries do not have this specific agreement (12).

In Egypt, there is a general framework for the bilateral contract linked to the EIJLLST Interconnection Project.

This project began in 1989, where it included (Egypt, Iraq, Jordan, Syria and Turkey). Lebanon acceded officially to the project in 2000 while Libya joined the project in 2001. In 2008, Palestine officially joined the project that bringing the project to “the eight electric interconnection project”

In this respect, regional codes and specific market rules are in place. Markets for balancing and ancillary services do not exist. The transit tariff is based on the framework agreement between countries, and a constant value is predetermined.

The general framework is following:

Errore. L'origine riferimento non è stata trovata.

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Committees of the 8 interconnections projects

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Since the nature of **power trading** in the south Mediterranean is between the different national power systems, therefore the focus is putting on bilateral coordination which includes:

- Defense plans,
- Transit energy compensation among different TSOs,
- Information provision on interconnection capacities,

- Transit charges

In this framework, the **settlement of disputes** deals with: the invoicing of agreed scheduled commercial agreements, the calculation of actual energy flows, the calculation of inadvertent energy and the compensation in case of inadvertent energy.

Several benefits could be noticed since the launching of this project. The importing countries achieved a significant economic savings as a result of the use of cheap energy sometimes or face the shortage in generating capacities in the other times. The intermediate countries and exporting countries also achieved financial return from the sale of excess capacity and the transition fees. There were also a reduction of the new investments needed and having benefits of economy of scale.

The future plans are related to

- The re-calculating transit fees between countries and estimate the losses due to the passage of this energy in the transit networks,
- A mechanism to activate the means of communication between the operators in the connected countries,
- The review defensive plans between connected countries continuously in order to accommodate the exchange of energy between these countries,
- The various types of electric power exchange between countries leading to the establishment of a sub-regional electricity market

Besides this project and in order to develop the interconnection capacities, the IMME Project has been launched.

Indeed, the project for the Integration of Maghreb Electricity markets (IMME) entered into an implementation phase through the “Déclaration d’Alger”, a joint statement signed on 20 June 2010 by the Ministers in charge of Energy of Algeria, Morocco and Tunisia. This project aims at strengthening regional and sub-regional cooperation within the Mediterranean Basin, as already announced as a priority by the EuroMed conference of Naples on December 2003, the Rome agreement of 2 December 2003 and the Ministerial Declaration of Limassol of 17 December 2007.

6 - Other measures or comments