



Ad hoc Group on Electricity

A MASTER PLAN

FOR

THE ESTABLISHMENT OF A

REGIONAL MEDITERRANEAN

ELECTRICITY MARKET

Med12-13GA-3.2 ELE AG

FINAL

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Introduction

Preamble

Based on the MedReg Action plan (2010-2012), the Electricity Ad Hoc Group (ELEC AG) aims to carry out work needed towards the eventual development of an electricity master plan within MEDREG member countries. This work should be made jointly with the Mediterranean Electricity Ring (MEDRING) and other interconnections projects. Therefore, ELEC AG is to prepare a master plan for energy and interconnection expansion that reflects the approach of Regulators, as agreed among MedReg members.

Objective and Scope of Work

The main objective and scope of this report is to establish a strategy and a master plan for the development of electricity trade among MedReg countries through regional integration which focuses on the regulatory bodies views. It will concentrate on the institutional and regulatory aspects of cross-border trade and electricity market integration among the MedReg Countries. However, the MedReg member countries' posse different levels of internal market structure and design development, as well as various interconnection maturities, which add to the burden of harmonized electricity interconnection in the MedReg territories. Therefore, to achieve this goal, studies had been conducted and others still undergoing to assess the potential of energy integration in the MedReg region based on existing geographical sub-regions; the South (Maghreb Countries), North (EU MedReg Countries), and in between (EIJLLPST Countries). These sub-regions will hopefully integrate to form a regional electricity market based on a harmonized regional market structure and design.

This report is prepared in three chapters as follows:

Chapter One: Lessons Learnt from International Experience

Chapter Two: Strategic Planning Process

Chapter Three: Roadmap for RMEM Integration

Chapter One

Lessons Learnt from International Experience

Developing regional electricity markets worldwide provided helpful lessons over a broad spectrum of market types, from simple bilateral trade between two countries through multi country trading around a set of regional rules with fully integrated competition. However there are common principles that should be taken into consideration in the way towards achieving such markets, the following section tackles some of these principles.

a. *There is no unique approach for regional integration*

Countries aiming to undergo a regional market could have different circumstances that can significantly affect the development of the market. Key differences can be in motivations, levels of reform and development within the electricity sectors, financial capabilities, levels of openness to private sector involvement, and social and environmental perspective. Therefore, the approach to establish or develop a regional market must be suitable to these circumstances. The design, approach, and phasing of regional integration efforts must adapt to local status with considerable space for flexibility and adjustment as conditions and attitudes change. There is no unique regional power market design, institutions, or processes, and no rigid rules about issues like ownership, financing, and pricing that might ensure the success of regional integration efforts.

b. *There are various levels of regional integration*

There are many levels and types of regional power sector integration, ranging from simpler forms that may include individual cross-border exchange projects, to more advanced forms that may include combination of united multinational power markets. Full integration of multiple national electricity systems into one regional market offers the greatest benefits. Substantial benefits can still be achieved at all levels of regional market integration. The time needed to move from no integration to full integration can be measured in decades, but moving from an intermediate stage to higher levels of integration can be relatively rapid. The rate at which progress is made to achieve full power sector integration depends on many factors, including the institutional capacity of the participating countries, political influences and historical evolution of regional arrangements, in addition to the technical and economic factors.

c. *There are Benefits to be gained under any integration scheme*

The optimization of generation and transmission investment on a regional rather than a national basis can offer substantial cost reductions. But these cost reductions often go unrealized when countries follow national priorities, including domestic energy security, economic nationalism, and sovereignty concerns. Recognizing as real and appropriately addressing these and other important national priorities is essential to achieving regional investment optimization and the full benefits of regional integration. Approaches for doing so will differ depending on local circumstances and the combinations of planning and

market forces that drive investment decisions. Few, if any, regions impose mandatory regional planning, although several encourage the use of indicative regional plans with buy-in from politicians to ensure commitment. Explicit mechanisms to share benefits, such as allocating shares in cross-border projects, may help overcome reluctance to implement regional plans.

d. *Regional institutions are crucial*

Regional institutions are vital for regional markets, but there is no single institutional form that is appropriate for all regional power integration schemes. The strongest institutions are those that evolve originally from local initiatives rather than being imposed from outside. Opportunities to build on existing arrangements should be primarily investigated before new institutions are created.

e. *Harmonization of technical and regulatory standards is essential*

Harmonization of technical standards is needed to avoid threatening the reliability of neighboring systems or adding excess costs from one country to another. Harmonization of relevant economic regulations among participating countries is not a prerequisite for initial levels of regional integration, but is increasingly required as cross-border competitive power trade develops. Deepening regional integration will tend to require a gradual move toward uniform approaches by national regulators, creating a common regulatory framework for regional markets, or possibly some form of “regional regulator” with unrestricted powers in the regional market.

f. *There should be a flexible approach to power sector reform*

Competitive power markets are not a prerequisite for initial regional market integration. Different levels of power sector reform among participating countries can be accommodated by careful design of regional integration schemes. Higher levels of integration will tend to require national power markets to be at similar stages of reform to address concerns that the benefits of integration are captured by countries where power monopolies exist. Competitive power markets can facilitate and complement regional market integration, but can also create barriers to electricity trade due to the potential to reduce the market power of stakeholders and added difficulties associated with financing cross-border projects as long-term contracting becomes more challenging.

Chapter Two

Strategic Planning Process

The targeted RMEM is capable of supporting a broad spectrum of market mechanisms, ranging from trading through simple contracts with regulated balancing markets to a highly sophisticated trading with spot markets. These markets might include traders who commercially contribute to the market operation but own no physical assets. Definitely, it takes a considerable time span for the market to develop into a fully competitive regional market, differing from one country to another. Therefore milestones for moving from one stage to the other shall be considered by events rather than by specific dates, although target dates will be useful for tracking progress. The following section sets a proposed strategic planning process for launching RMEM

A. Objective

The vision is to set up a regional electricity market within the Mediterranean region, namely “Regional Mediterranean Electricity Market (RMEM)” that improves systems reliability, reduces reserve margins, supports reactive power, enables energy exchanges that take advantage of daily and seasonal demand diversity and disparities in marginal production costs, and finally facilitates and promotes key regional infrastructure development.

The ultimate objective of an integrated RMEM is to optimize the supply of electricity within a regional framework. Often this is thought to be achievable in a market environment where every party has equal access to all networks (domestic, regional, and international); where market data and information (pricing, market operation, capacity allocation, and so on) are transparent; and where electricity tariffs cover the cost of supply, power-grid codes are harmonized, systems are synchronized, and markets are liberalized. There are some principle milestones that drive market integration. These are:

- **Security of supply;** that is to increase energy security and efficiency and reduce cost of supply to consumer;
- **Sustainability:** that is to improve system reliability and to effectively use the existing infrastructure. Also, to facilitate access to resources, increase renewable energy penetration, and to reduce greenhouse gases;
- **Enable Necessary Investments:** that is to use economy of scale, which facilitates financing new projects

B. Implementation Assessment

I. There are major areas to focus on in order to prepare for a functioning RMEM, these include:

- Analyzing the legal and regulatory framework for the power sectors of the MedReg countries, with particular attention to cross-border electricity trade, including the

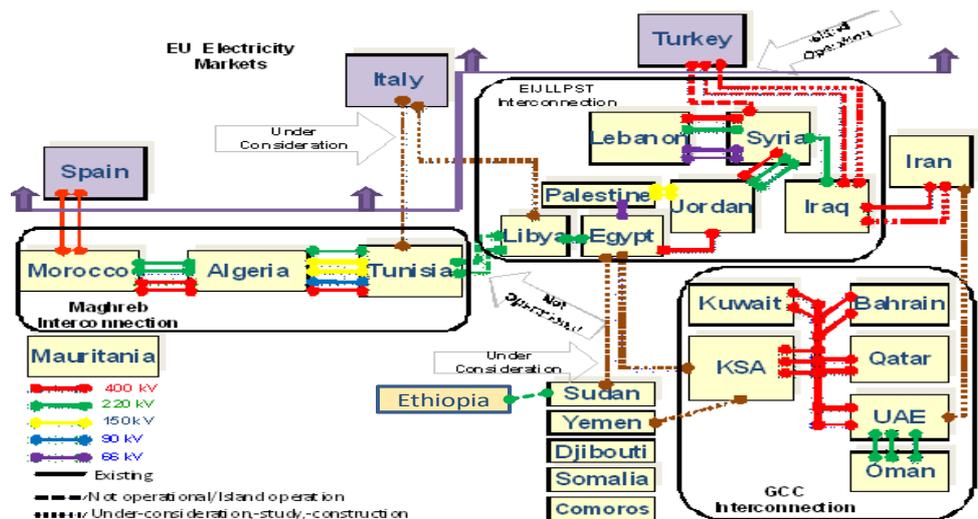
development of required governance documents such as grid code, power exchange, and supply code (market rules).

- Identifying potential obstacles to the creation of a RMEM as well as enabling factors, and developing operational recommendations to overcome them.
- Identifying barriers to efficient energy trading among the concerned countries and developing possible ways to facilitate trade and regional integration.
- Defining the legal support required for a gradual evolution toward a competitive and efficient RMEM.
- Developing and assessing the general terms under which electricity is to be traded, taking into consideration international constraints such as EU market trading rules, limitations on imports, limitations on long-term price agreements, and environmental rules.

II. There is a great potential that Mediterranean countries enables to steadily establish a the targeted RMEM;

This potential is based on the fact that the Mediterranean region already embraces some form of sub-regional electricity markets (sub-REM). There are primary regional interconnection schemes among South Mediterranean countries that form a considerable foundation for the targeted RMEM. These schemes include:

- The Maghreb regional interconnection, which includes Morocco, Algeria, and Tunisia. This interconnection was initiated in the 1950s and evolved into multiple high-voltage transmission interconnections between the three countries. In addition Morocco was connected to Spain in the late 1990s. As a result Morocco, Algeria, and Tunisia are now all synchronized with the pan-European high-voltage transmission network.
- The eight-country (Egypt, Iraq, Jordan, Libya, Lebanon, Palestine, Syria, and Turkey [EIJLLPST]) regional interconnection, which was initiated in 1988 by Egypt, Iraq, Jordan, Syria, and Turkey as part of an effort to upgrade their electricity systems to a regional standard. Lebanon, Libya, and Palestine later extended the agreement to eight countries. Turkey is expected to fully synchronize to the European grid soon, which further efforts to synchronize the EIJLLPST electricity will network with the grids in Turkey and Europe. The following figure shows the existing and planned interconnections.



Source: The World Bank

The EIJLLPST interconnection resulted in significant benefits. For example, it had enabled Jordan to avoid considerable load shedding in 2007. In addition, Jordan, Egypt, and Syria share spinning reserves. By minimizing spinning reserve requirements in this manner, generation is operated closer to its optimum output level, thus improving efficiency and reducing fuel and maintenance costs. Opportunities for short-term trades have also been realized through the diversity of demand. Syria has a winter peak while Egypt and Jordan have summer peaks. Syria can make sales to Egypt and Jordan during summer when it has surplus generating capacity, while Jordan and Egypt can make sales to Syria in winter when they have surplus generating capacity. These sales are particularly relevant when there are different generation technologies in the countries.

Interconnection among different regions in Mediterranean zone

Existing interconnections

The Maghreb nations have been synchronized with the European Network for Transmission System Operators–Electricity (ENTSO-E) since 1997 via the 2x400 kilovolt (kV) AC interconnection between Spain and Morocco. As a requirement for interconnection of Maghreb and the EIJLLPST, a test of the Libya-Maghreb synchronization in April 2010 failed; future synchronization studies are under way. Mauritania is not interconnected with the Maghreb countries, but there have been studies of a potential interconnection with Morocco.

Future interconnections

Consideration has been given for establishing interconnections between Algeria and Spain, Algeria and Italy, and Tunisia and Italy (Sicily), the one between Tunisia and Sicily being the most promising. The plan is to export electricity generated from a new power plant (3x400 MW gas or 2x660 MW coal) through a 400 kV high-voltage direct current (HVDC) submarine cable (30 kilometers on land and 195 km undersea at a depth of 600 meters). The



capacity of the line would be 1,000 MW, and commissioning is planned for 2016. About 80 percent of the line capacity would be allocated to the new power plant, leaving 20 percent for other parties.

Assessment to the status in South Mediterranean Sub-regional Electricity Markets

Though the Maghreb and EIJLLPST interconnections have existed for some time, electricity trade among these sub-regions countries has remained at modest levels due to obstacles such as limited generation reserve margins, the absence of a harmonized regulatory framework with clear rules governing electricity trade the limited access to national transmission networks, and the fact that trade is generally limited to a single government-owned entity in each country, the interconnected systems are often not synchronized, meaning that part of a national grid system may have to be isolated from the main grid to accept imports from another country, the lack of surplus generating capacity and generation fuel in the interconnected countries means they often do not have spare energy to trade and institutional weaknesses at both the national and regional level (that is, governing bodies lack the tools, data, and incentives necessary to promote trade). The Maghreb countries agree to pursue actions aimed at harmonizing laws, regulatory frameworks, economic and technical conditions for the creation of a viable market for electricity in and between the three Maghreb countries and integration with the EU. Further, they agree to work toward creating a genuine Maghreb electricity market, with network access provided on a nondiscriminatory and transparent basis and properly priced to promote trade. They also invite the network operators to draft a common set of rules to facilitate cross-border trade in electricity, and the regulators (or public authorities who are currently assuming this position) to present a draft common methodology for pricing and cross-border access to transmission infrastructure for electricity, with reference to the principles used in the EU. They agree to work together toward the improvement and harmonization of market rules for electricity, access to the network, and operating systems. The document emphasizes the importance of developing new and renewable energy, and promoting energy efficiency and environmental conservation in the integration of electricity markets using a sustainable development approach.

III.Despite of the above mentioned potential , there are always challenges that face establishment of RMEM, they can be follows;

There are many challenges which slow progress and reduce the benefits of regional integration, such as : Conflict in time plans and actions in aligning national and regional investment decisions, absence of harmonized regulatory environments between countries, limited scope of regional institutions and financing, and concerns about national sovereignty and energy interdependence. The following section gives more emphasis on such challenges.

Physical challenges

These include:

- interconnecting transmission lines need upgrading exist,



- Unsynchronized systems to be connected,
- Lack of designed minimum standards, that impacts the system reliability and security risks associated with expanding interconnection capacity.

Structural/institutional challenges

- There is minimal coordinated control over many national networks, making it very difficult to determine and verify if international trade transactions are feasible. Further, there is not an agreed dispatch mechanism and software with a consistent set of data for multiple national systems to enable verification of the feasibility of trade transactions by different national control centers.
- There are limited overarching documents representing a commitment by member countries to pursue power market reform and increased regional integration and trade.
- Most of the electricity markets are vertically integrated, state-owned monopolies. There are no “eligible customers” with the opportunity to choose their supplier. As a result, international transactions take a long time to negotiate, are cumbersome in the sense that they are unable to respond to short-term opportunities (such as sudden changes in generation availability), are not transparent, and are often conducted by individuals who do not have a direct stake in the outcome; that is, a government official conducts negotiations rather than an industrial customer whose profitability is impacted by the outcome. Markets that are not liquid (meaning the number of transactions is limited), that are not transparent, and have the majority of trades conducted by government officials, tend to further exacerbate the problem of market liquidity as potential market participants are not trusting that the market price is truly “fair” and governed by market forces. As a result, these potential market participants refuse to participate.
- While there are some regional integration organizations in place, they are few, covering too few countries, and have limited duties and power to enforce their decisions. Regional committees could significantly increase trade among member countries. Committees formed with participants from all countries involved in the regional trade initiative could cover such areas as regulation, technical rules, and operating and planning standards such as those covered by a grid code, tariffs, expansion planning, trade, settlement, dispute resolution, and so on. Committees with the relevant expertise and formed with representatives from each involved country would afford greater acceptance and commitment on the important issues. The ENTSO-E provides an excellent example of such an organization.
- Private sector participation in electricity markets is generally limited to IPPs. While privatization in itself is not necessarily a requirement, it can be a significant contributor to successful regional integration. The private sector can help mobilize the huge amounts of capital necessary to fund projects needed to meet increasing electricity demand. Further, private sector management expertise can significantly improve the operational efficiency of an electricity market.

- Some countries have high technical and commercial losses and poor collection rates, adding to the financial woes and creditworthiness of the power companies.

Regulatory challenges

- There should be minimal harmonization of legislation among the member countries with respect to energy, environment, and safety.
- Few countries have what could be considered “independent and informed” regulatory agencies. Independence refers to the ability to make decisions in the absence of political interference. Informed means that the members of the regulatory agency have the background, expertise, and skills to make decisions on behalf of all participants in the power sector. Regulation should be the primary job of the staff of the regulatory agencies, which is often not the case in most countries.
- There is significant subsidization and cross-subsidization of pricing in the power sectors. Retail tariffs are generally well below the cost of supply and there is often cross-subsidization of tariffs by larger industrial customers on behalf of smaller households. It is difficult to find a creditworthy off-taker since many power companies are at or near bankruptcy. It also makes it difficult to find a buyer since potential customers are paying prices for power that are well below cost (that is, a potential customer is unlikely to buy power at international prices when it can purchase power in the domestic market at subsidized prices).
- Most countries do not allow access to their transmission networks under published terms, conditions, and prices—meaning access cannot be considered fair and nondiscriminatory.
- There is very little published information concerning market prices and transmission availability.
- There is excessive diversity of accounting practices and an absence of secure and stable legal framework among countries.

These challenges provide significant obstacles to increased electricity trade, but numerous other jurisdictions have overcome such obstacles. The key to increasing opportunities for trade is to implement a plan that accommodates the challenges by providing the flexibility and time needed to gradually address the challenges and mitigate the risks.

IV. As the number of countries joining the regional integration increases, the number and scope of risks increased:

The level of associated risks varies, such as:

- Technology risks associated with electricity trade are fairly minor;
- The economic risks are minor if either the tariffs reflect costs, or the electricity market is fully integrated.

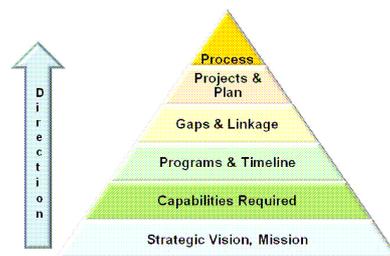
Therefore, developing a regional market with regional coordination and governance would reduce risks because it would optimize generation and transmission planning and operations for the broader region.

Regardless of the type of regional trade, there needs to be a legal, regulatory, and governance structure in place conducive to international trade, even if trade is only bilateral between two countries. The participating countries must have the political will to relinquish a portion of their energy supply responsibilities to the greater good of the region.

C. Strategy Implementation

Strategic Roadmap:

To build up the roadmap for the targeted REM, it is essential to define the “goal” which is to integrate the sub-regions to form a regional electricity market based on a harmonized regional market structure. This will be followed by capacity building in order to build upon the capabilities required from the different entities. Then, a gap analysis study should be carried on figuring out the weak points and ways to solve them.



The strategic road map document should be circulated among the relevant parties, and a final version based on their feedback will then be developed. Moreover, it shall be updated and communicated to be successful, while contributing to answering questions that, in turn, form the basis of a recommendation for future action.

Chapter Three

Roadmap for RMEM Integration

This chapter sets out a roadmap towards establishing RMEM. This could be done through multiple stages corresponding to the national and regional circumstances that drive the process. It has to be mentioned that the transitions between the following proposed stages will be triggered by events rather than by specific dates. However, target dates will be a useful mechanism for tracking progress. The four basic stages forming this roadmap are as follows:

- Preliminary Stage:
This stage involves the design and development of the market trading rules and institutions.

- Stage 1:
Essential elements of the market implemented and designed to accommodate existing agreements.
- Stage 2:
Introduction of a spot market, full auction based balancing market. Allocation of transmission assets becomes more efficient.
- Stage 3:
Traditional PPAs no longer in evidence, sophisticated hedging instruments and derivatives trading to promote liquidity

<i>Preliminary Stage</i>	
<p>The key achievements of this stage would be as follows:</p> <ul style="list-style-type: none"> ➤ establishment of regional bodies; Regional Market Operator, Regional Regulatory Agency ➤ putting the market documents into practice; this includes Regional Market Rules, Commercial Agreements, Grid Code, and Regional Data Base ➤ making the necessary adjustments on the national and regional levels, in order to manage the cross-border trading activities. 	
<i>Stage One: Start up</i>	
<i>Features</i>	<i>Key achievements</i>
<ul style="list-style-type: none"> ✓ Participation in Bi-lateral Trading <ul style="list-style-type: none"> • Integrated utilities generators, distribution companies, and large consumers. ✓ Commercial Agreements <ul style="list-style-type: none"> • PPAs • Long Term Bilateral Trading Agreements • Medium Term Bilateral Agreements • Short Term Bilateral Agreements ✓ Participation in the Balancing Mechanism <ul style="list-style-type: none"> • Incumbent utilities for participants with an integrated internal market • National System Operators in unbundled or partially unbundled markets. ✓ Balancing Mechanism <ul style="list-style-type: none"> • Offers of electricity from the National System Operator at 	<ul style="list-style-type: none"> ✓ ensuring that the Market Rules and Commercial Agreements are working together efficiently , ✓ regulating the operation and pricing system of power transactions, ✓ improving the functions and responsibilities of the Regional Regulator required for next stages, ✓ continue to create capacity building both in market participant and institutions, in order to be ready for the coming market stages, ✓ enhancement of Regional Data Base System to ensure presence of regular and updated data, and ease of access as well, ✓ reporting Market Monitoring & Surveillance indicators to evaluate the progress of the market.

<p>regulated prices to reduce risk in early stages of the market</p> <ul style="list-style-type: none"> ✓ Transmission Access <ul style="list-style-type: none"> • Allocated with contracts ✓ Transmission Losses <ul style="list-style-type: none"> • Paid in kind by the seller • standard losses calculated for transit each country • contract plus loss percentage injected, and contract placed on the exit point ✓ Transmission Pricing <ul style="list-style-type: none"> • ‘Postage Stamp’ pricing initially set to zero ✓ Ancillary Services <ul style="list-style-type: none"> • Spinning Reserve, Fast Start, Cold Start and Black start ✓ System Operation <ul style="list-style-type: none"> • National System Operator maintain internal security of supply • Informed by Regional Market Operator of interconnector requirements • Co-operates with neighbor countries to maintain stability 	
Stage Two	
Features	Key achievements

<ul style="list-style-type: none"> ✓ Participation in Bi-lateral Trading: As in Stage 1 ✓ Participation in the Balancing Mechanism : As in Stage 1 ✓ Traditional PPAs <ul style="list-style-type: none"> • No new PPAs affecting interconnectors • Legacy PPAs continue to run ✓ Long Term Bilateral Trading Agreements: As in Stage 1, supporting infrastructure projects where necessary ✓ Medium Term Bilateral Agreements: As in Stage 1, but used for most of the traded volume ✓ Short Term Bilateral Agreements: Phased Out in favor of day ahead market ✓ Day Ahead Market <ul style="list-style-type: none"> • Replacing the Short Term bilateral market, providing liquidity for short term deals together with transparent price discovery. ✓ Balancing Mechanism <ul style="list-style-type: none"> • Moves to competitive bids and offers from national System Operators. Regulator monitors the Balancing Market for abuse of market power. ✓ Transmission Access <ul style="list-style-type: none"> • Long Term BTAs take priority on transmission lines. ✓ Transmission Losses: As in stage 1 ✓ Transmission Pricing <ul style="list-style-type: none"> • ‘Auction mechanism introduced for Medium Term BTAs to establish value of transmission infrastructure and to create market signals for investment ✓ Ancillary Services: As in Stage 1. 	<ul style="list-style-type: none"> ✓ Improvement of distribution networks to ensure future smooth trading. ✓ Enhance confidence in regional market by monitoring the market functionality and proposing changes if needed. ✓ Continue with capacity building in financial trading mechanisms and regional trading rules, ✓ Promotion the role of the Regional Market Operator, ✓ Enhancement of metering and communication infrastructure, ✓ Enhancement of Regional Data Base System.
<p>Stage Three</p>	
<ul style="list-style-type: none"> ✓ Participation in Bi-lateral Trading <ul style="list-style-type: none"> • As stage 2 plus load aggregators and forwards and futures traders. 	

- ✓ Participation in the Balancing Mechanism
- ✓ Recognizing that unbundling and commercialization is not appropriate for all countries, the stage 2 method of accommodating different internal market models should persist.
- ✓ Traditional PPAs
 - Phased out. No longer required to support investment plans, but legacy contracts continue to run.
- ✓ Long Term Bilateral Trading Agreements
 - Fall into disuse. By this stage investment opportunities should be able to rely on the integrity of the market for their credit risk and the market signals for their investment case.
- ✓ Medium Term Bilateral Agreements: As in Stage 2
- ✓ Spot Market: As in phase 2
- ✓ Forwards and Futures Market
 - Fully functioning futures market to improve risk management and to bring further liquidity into the market
- ✓ Balancing Mechanism
 - Fully functional balancing market based on bids and offers from participants and with dual part pricing
- ✓ Transmission Access
 - As phase 2 except that all rights are now auctioned except for those reserved for legacy Long Term BTAs
- ✓ Transmission Losses
 - As stage 1 except that increased meshing of the network will require more accurate estimations of losses through load flow calculations.
- ✓ Transmission Pricing

As stage 2, except that pricing methodology for wheeling contracts may have become more accurately reflective of cost

Establishment of Regional Bodies

The Regional Regulator

The Regional Regulatory Agency shall have representatives from all of the participating countries. It should have the power to apply sanctions to enforce its decisions or to penalize parties that breach any regional regulations which have been approved.

Features of the Regional Regulator:

- **Independence:** it is important to assure that the regulatory body can give a credible commitment to investors and consumers.
- **Capacity:** the regulator should possess adequate and capable staff and systems to fulfill its mandates. Its capacity could be determined by its information systems and the competence of its professionals, as well as its ability to respond, fairly, technically and quickly to different types of industry problems.



- **Transparency and fairness:** The regulator should be transparent and fair in the context of specifying the rules and explaining the decisions.
- **Predictability:** The regulator should provide written rules in terms of defining methodologies and tariff structures so that they guarantee non-discrimination in tariff determination as well as a reasonable rate of return to the industry.
- **Efficiency of the Regulator as a decision-maker:** This is needed for the sake of accountability. There should be definite procedures for decision making within the organization, consultation with participants in the sector and with consumers, and internal performance.

Responsibilities of the Regional Regulator:

- Endorses and ensures compliance with the regional-market governance documentation (market rules and grid code),
- Monitors the performance of the market and guarantees that it operates in a non-discriminatory way.
- Advises on generation-reserve criteria,
- Advises on rules governing allocation of cross-border transmission capacity to eliminate contingencies,
- Promotes common standards in the member countries with respect to the safety, security, reliability, and quality of service in the generation and supply of electricity to consumers,
- Reviews proposals for expansion of international and regional interconnections
- Disputes Resolution between members,

Participates in regional planning, and

Decides / implements the transition between stages.

The Regional Market Operator

The Regional Market Operator shall be responsible for system operation co-ordination, market administration, market operation, and settlement as follows:

System Operation Coordination

- ✓ Scheduling pool interconnectors
- ✓ Monitoring load flows and taking action on variances
- ✓ Balancing market counterparty for imbalance settlement

Market Administration

- ✓ Market Monitoring and surveillance
- ✓ Administration of contracts
- ✓ Dispute Management
- ✓ Membership Administration

Market Operation

- ✓ Managing the Balancing Market
- ✓ Managing the Day Ahead Market

Settlement

- ✓ Meter Read administration



- ✓ Balancing Market billing
- ✓ Day Ahead Market Settlement
- ✓ Payment

The Regional System Operator

The Regional System Operator shall basically be responsible for:

- Providing oversight on technical aspects of the REM.
- Ensuring fair and nondiscriminatory access to grid and international interconnections.
- Coordinating the efforts of national TSOs to dispatch electricity through the international interconnectors.