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MEDREG is the Association gathering Energy Regulators for Electricity and Gas of 20 Mediterranean countries: Albania, Algeria, the Palestinian Authority, Bosnia-Herzegovina, Cyprus, Croatia, Egypt, France, Jordan, Greece, Israel, Italy, Malta, Morocco, Montenegro, Portugal, Spain, Tunisia and Turkey. MEDREG was established as a permanent “working group” in May 2006 and became a non-profit Association in November 2007. MEDREG permanent Secretariat is based in Milan, Italy.

The main objective of the Association is the promotion of clear, stable and harmonised legal and regulatory frameworks in the Mediterranean region with the aim to facilitate investments in energy infrastructures and support market integration. To this aim MEDREG promotes a permanent exchange of know-how, data collection and diffusion of expertise through comprehensive studies, recommendation reports and specialised training sessions.

MEDREG long term goal is to provide valuable support to energy governance at regional level towards the establishment of a Mediterranean Energy Community. MEDREG activities benefit from the active commitment of all Member Regulators, and have been supported since 2007 by the European Union, and by the Council of European Energy Regulators (CEER). MEDREG has been recently acknowledged by the Committee on Industry, Research and Energy (ITRE) of the European Parliament as the reference Institution for energy regulation in the Mediterranean region.

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Introduction

Since its creation MEDREG has conceived and implemented an ambitious work plan, aimed to build a common vision among its Members based on concrete and in-depth expertise exchange.

Today, the achievements of this period of intense activity are presented to all stakeholders in this unique 5-Year Report. It gathers the executive summaries of all deliverables and technical outputs produced by the Ad Hoc Group on Institutional issues (INS AG), the Ad Hoc Group on Electricity (ELE AG), the Ad Hoc Group on Gas (GAS AG), the Ad Hoc Group on Environment, Renewable Energy Sources and Energy Efficiency (RES AG), and the Task Force on Consumer issues (CUS TF).

The 5-Year Report has been coordinated by MEDREG Permanent Secretariat in close cooperation with the Presidency and the Chairs of the Ad Hoc Groups. The executive summaries are presented in the form of thematic fiches and briefly develop the main contents of each report, highlighting their conclusions and recommendations. This allows MEDREG to better explain and promote the very concrete results of our activities over the last 5 years.

We sincerely believe that this publication, focusing on an extensive range of energy regulatory aspects, would be of real added value to all energy stakeholders and to the research community to further raise the attention and provide concrete proposals on the key problematics at the heart of regulatory harmonization and regional market integration in the Mediterranean basin.

List of acronyms

AG | Ad Hoc Group
BOO | Build Own Operate
BOOT | Build Own Operate Transfer
CDM | Clean Development Mechanism
CEER | Council of European Energy Regulators
CHIP | Combined Heat and Power
CUS TF | Task Force on Consumer issues
DG | Distributed Generation
DSM | Demand Side Management
EC | European Commission
EE | Energy Efficiency
ELE AG | Ad Hoc Group on Electricity
EP | European Parliament
EU | European Union
GAS AG | Ad Hoc Group on Gas
GGP | Guidelines of Good Practice
GWh | Gigawatt-Hour
ICER | International Confederation of Energy Regulators
INS AG | Ad Hoc Group on Institutional issues
ITC | Inter-Transmission system operator Compensation mechanism
ITRE | Committee on Industry, Research and Energy of the European Parliament
kW | Kilowatt
LNG | Liquefied Natural Gas
LSO | LNG System Operator
MEDREG | Association of Mediterranean Regulators for Electricity and Gas
Med- TSO | Association of Mediterranean Transmission System Operator
MPC | Mediterranean Partner Country
NRA | National Regulatory Authority
PPP | Public Private Partnership
RES | Renewable Energy Sources
RES AG | Ad Hoc Group on the Environment, Renewable Energy Sources and Energy Efficiency
SG | Smart Grid
SEE | South Eastern European
SEM | South East Mediterranean
SEMB | South East Mediterranean Basin
SSO | Storage System Operator
SWM | South West Mediterranean
SWMB | South West Mediterranean Basin
TGC | Tradable Green Certificate
TPA | Third-Party Access to Energy infrastructure
TF | Task Force
WACC | Weighted Average Cost of Capital
RECOMMENDATIONS

11. Recommendations on the minimum requirements considered as necessary to ensure independent Regulatory Authorities in the Mediterranean area (November 2008)

MEDREG completed a survey to reference the state of the art of regulation in the different Mediterranean countries, regarding the structure, organization and competences of National Regulatory Authorities.

On the basis of a benchmarking assessment report, this document aims to identify the minimum requirements considered as necessary to ensure independent Regulatory Authorities, which could be shared and implemented throughout the Mediterranean region.


1. Legal Status

Throughout the Mediterranean area, National Regulatory Authorities (NRAs) should be set up on a specific legal basis and be therefore clearly legally separated from their government’s administration. Besides, one single Regulatory Authority should be in charge of the regulation of at least both electricity and gas sectors in each country. 2. Independence

The international model of independent NRAs should be based on organizational, financial as well as management independence, targeted towards having an autonomous discretion in every aspect of their decision-making process. 3. Competences

NRAs should be responsible for ensuring non-discrimination access to the transmission and distribution networks, effective competition and efficient functioning of the market. Procedures • Whenever decisions are taken by board members, they should follow structured voting procedures (majority/unanimity, quorum, etc.). • Appeal to the decisions of NRAs should be possible before national Civil and / or Administrative Courts. • Each NRA should include a dispute settlement body among market participants. Any interested party may refer a complaint to the NRA against a transmission or distribution system operator. • The NRA then should conduct public hearings on such complaints. 6. Transparency

NRAs should conduct public consultations while elaborating their decisions. Transparency requirements also include the implementation of a communication strategy. Enforcement NRAs should have the power to sanction sector participants through different means: • Publication of comparative performance reports. • Recommendations or imposition of fines for failure to comply (licenses, secondary legislation, etc.). • Recommendations or imposition of sanctions. • Revision of access tariffs to the transmission and distribution networks. 7. Accountability

NRAs should implement the following elements: • Issue an annual activity report received by Government and Parliament. • Regularly cooperate with other public bodies. • Have their decisions officially published including on their websites. • Base their decisions upon reasoned conclusions. • Have the ability to appear before parliamentary committees.

CONCLUSIONS

Analyzing the answers to the 187 items of the Regulatory Benchmarking Questionnaire, some essential principles are already shared among a significant number of Mediterranean regulators. However, diverging issues remain as regards organizational and functional criteria. The main points are related to differences in the level of autonomy allowed to regulators, especially regarding the sharing of the missions and competencies with governmental bodies.

As promoting closer cooperation between Mediterranean regulators starts with building a common regulatory approach, this benchmarking study represents a first step toward the identification of shared values and best-practice elements to foster strong and independent regulatory authorities.

RECOMMENDATIONS

First, a legal separation between NRAs and governments’ administrations is essential. NRAs should be provided with autonomous discretion in every aspect of the regulatory decision-making process, with particular reference to their budget and human resources selection. Second, the minimum requirements for effective regulation should include, inter alia, the ability for each NRA to: • Determine tariff setting principles for the elaboration of access tariffs to the networks; • Issuance and licensing; • Elaborate and enforce networks rules and standards; • Monitor the market; • Ensure consumer protection; • Review effective utility unbundling; • Investigate on the activity on operators and sanction failure to comply with standards and codes. Last, NRAs should seek and receive inputs from all relevant stakeholders and build a sound communication and networking strategy based on a transparent regulatory framework.

EXECUTIVE SUMMARY

2.1. Assessment report on smart grid in Mediterranean countries (December 2011)

This report has the aim to map out the existing status and future plans for Smart Grid (SG) in MEDREG countries, to gain insights into the drivers, barriers, and timing for adoption of new technologies, to focus on the financing methodologies, required plans, and necessary regulations that pave the way to SG in MEDREG countries, and finally to conclude, with a general overview, on the future of MEDREG SG.

The structure of the report was divided into two parts: introduction to Smart Grid, and the Smart Grid Survey that was categorized into four sections.

A SMART GRID IS DEFINED TO BE AN ELECTRICITY NETWORK that can intelligently integrate the actions of all users connected to it - generators, consumers and those that do both – in order to efficiently deliver sustainable, economic, and secure electricity supplies as stated by the EU. SG can be achieved by adding two-way digital communication between generation, transmission, distribution and consumption parts of the power grid. The smart grid communicates information about grid conditions to system users, operators, and automated devices. This enables a dynamic response to changes in grid condition and the establishment of new technologies (forms of DGs and smart metering). The communication is carried out by sensing, measurement and control devices, which add intelligent monitoring, analysis, and control capabilities to the national electrical delivery system and appliances at consumers’ sites.

As SG is characterized by many features, its vision and conceptual framework have been surveyed and discussed in this report based on four categories as follows: 1. Benefits, Developments, and Barriers. 2. Technology and Infrastructure. 3. Standards and Regulations. 4. Plans and Regulations. This part looked into the SG benefits to inquire about the perceptions surrounding the SG in the MEDREG countries. Furthermore, this section investigated a country’s specific assessment of development stages of SG through necessary metrics needed to monitor the development progress of SG as well as the foresight barriers for SG development.

CONCLUSIONS

The outcome of this report can be summarized as follows: • There is a huge gap between member countries in many SG-related aspects. • Some MEDREG countries, such as Italy, have advanced networks and applications in terms of SG concepts and implementation; others are now taking action to implement SG. • Governments/stakeholders should give more attention to developing policies and regulatory environments that support investments in SG. • Finally, SG deployment is expected to be similar across MEDREG countries, but the routes and time it takes could be rather different. Therefore, a clear roadmap is required.

EXECUTIVE SUMMARY

4. Plans and Regulations

Accurate timelines for investing in SG projects and necessary changes in the legislation and regulations are essential to spread SG use worldwide. In this part, factors that affect the SG plans and regulations, current plans and regulation status, and their impact on achieving the SG implementation focusing on Smart Meter technology were explored.
2 ELECTRICITY

2.2. Summary assessment: survey on the legal framework for management of electricity interconnection in the Mediterranean region

(December 2011)

The aim of this report is twofold. First, it draws up a comprehensive picture of the management of interconnections in electricity in the Mediterranean region. Second, it provides a basis for developing common recommendations on the regulatory issues related to cross border interconnections in electricity in the Mediterranean Basin. To the purpose, a questionnaire was prepared and circulated to INS and ELEAG members.

CONCLUSIONS

Fourteen MEDREG Countries replied to the questionnaire. The essential principles identified as shared characteristics are:

1. NRAs competencies to:
   - Set or approve rules regarding the management and allocation of interconnection capacity.
   - Fix or approve methodologies to assess balancing services.
   - Require the transmission operators to modify their congestion and balancing mechanisms to ensure that these are proportionate and applied in a non-discriminatory manner.

2. Capacity calculation and allocation capacities:
   - Create a mechanism of auction for the allocation capacities.
   - Assess the available capacities realized by the TSOs.
   - Submit the capacities rights to the principle of “use it or lose it or sell it”.

RECOMMENDATIONS

The role of TSOs is crucial (e.g.: implementation of legal framework, capacity calculation). They recently created their association for the Mediterranean region, Med-TSO, which aims to build a link between market regulation functions and electrical system operation. Med-TSO offers the opportunity to establish contacts and discuss regulatory issues on cross-border interconnections.

Consequently, it is recommended to disseminate knowledge and start a capacity building programme on cross-border exchange operations in a market environment. The training program could address:

- Interconnection capacity calculation and allocation.
- Transit fees and ITC mechanisms.
- Auction mechanisms.
- Mechanisms for allocating the remaining capacities.

EXECUTIVE SUMMARY

2 ELECTRICITY

2.3. Report on heading to an integrated Mediterranean electricity market

(June 2011)

This report studies the status of each of specific blocks based on: internal countries market, interconnection infrastructure between the countries, and the regional market under which each of the blocks operates. It focused on the following blocks: Iberian, West Mediterranean, South-East Mediterranean, and South Eastern European.

Furthermore, a follow up survey was circulated among member countries to update the data of previous reports.

CONCLUSIONS

Based on the reply of just eleven MEDREG Member countries, results follow:

- Priority of purpose of international trade: “Security of Supply” had the first priority among all countries, while the “Quality of Supply” had the least, except for France which gave the first priority to “Efficient Long Term Investment Planning”.
- Transmission Rights: among all transmission rights, “central dispatch of an interconnection network, with national dispatchers taking dispatch as instructions as a priority” had the highest priority.
- Regulatory status and market implementation: results showed the progress among member countries with respect to year 2007 benchmarking process.

RECOMMENDATIONS

The expected outputs of this comprehensive report are:

- A master plan for energy and interconnection expansion that reflects the approach of Regulators, as agreed among MEDREG Members;
- A report on the present and future needs on interconnection infrastructures investments necessary to integrate the Mediterranean electricity market;
- Report on the Smart Grids in MEDREG countries;
- Proposals on common rules/guidelines for electricity exchanges among MEDREG Member countries;
- A benchmarking report for internal markets and cross border trade;
- A functional training program.
This report builds on the feedback coming from two survey forms which have been circulated among MEDREG countries, along with the information collected by the task forces. These surveys focus over the principle of energy exchange between the Mediterranean countries; the contracts of energy exchange between the Balkan countries within the Mediterranean area; the contracts of energy exchange of the Mashreq countries; the contracts of energy exchange between the Maghreb countries.

CONCLUSIONS

This report replaces the results of the two surveys circulated among MEDREG participants pertaining the present interconnection infrastructure and the cross-border governing rules and procedures. The report affirms that the first step to the establishment of a regional electricity market requires the harmonization of countries’ governing rules and procedures. The report is composed of four chapters. Chapter 1 illustrates duties and objectives of the ELE AG. Chapter 2 describes the interconnections facilities and operation among member countries. Chapter 3 presents the present rules and practices that govern energy exchange among member countries. Chapter 4 contains conclusions and recommendations.

RECOMMENDATIONS

It is recommended to establish a master plan and an entity responsible for the follow up of the required efforts for the fulfillment of this plan. Moreover, it is recommended to establish a Reliability Council in the Mediterranean region. The Mediterranean Electric Reliability Council is to look at two aspects of bulk power system reliability: system adequacy and system security. A system must have enough capacity to supply power to its customers (adequacy), and it must be able to continue supplying power to its customers if some unforeseen event disturbs the system (security).

EXECUTIVE SUMMARY

2.4. Report on interconnection rules and practices for MEDREG countries
(November 2008)

This report builds on the feedback coming from two survey forms which have been circulated among MEDREG countries, along with the information collected by the task forces. These surveys focus over the principle of energy exchange between the Mediterranean countries; the contracts of energy exchange between the Balkan countries within the Mediterranean area; the contracts of energy exchange of the Mashreq countries; the contracts of energy exchange between the Maghreb countries.

CONCLUSIONS

The main conclusion of this monitoring exercise is that regulated TPA to the infrastructures is linked to the degree of opening of the gas market. The more developed a gas market is in terms of penetration of gas consumption, openness and liberalization, the more likely it is that TPA to the infrastructures is regulated. The rules for access to the infrastructures are published and the regulator competencies regarding the approval of these rules and of the access tariffs to the infrastructures. Generally and as a conclusion per subject it is possible to remark:

• TPA to the infrastructures is normally regulated and the TPA rules as well as the methodologies for capacity allocation and congestion management are published and available to all users. With the exception of Slovenia and Turkey (no information, the tariffs are ex-ante). Both anti-hording mechanisms and mechanisms to promote market opening are in place. With the exception of Spain, in these countries the regulators have competencies regarding unbundling, TPA, tariffs and quality of service. • The second set of countries includes Israel and Croatia. They score between 60% and 80% for the existence and implementation of TPA-related rules. The third group of countries is made of Algerian, Bosnia-Herzegovina, Greece and Jordan. They score between 40% and 60% for the existence and implementation of TPA-related rules. There is no real market opening; nevertheless the TPA to the infrastructures is regulated, with the exception of Bosnia-Herzegovina. The tariffs are postpone stamp, with the exception of Jordan, and there are no mechanisms to promote market opening. In Jordan there is no liberalized market. • In Greece and Israel no answer was given to the 2011 questionnaire and so the information considered regards the 2008 benchmarking questionnaire. • In Albania, Cyprus, Malta and Montenegro there is no relevant gas consumption.

RECOMMENDATIONS

Taking into account the results of this benchmarking study, it can be stated that the situation of TPA to infrastructures in the Mediterranean region gas markets can be improved and some measures can be proposed to pursue this goal. This will be done in the second stage of this work, when the Guidelines of Good Practice (GGP) on TPA for gas in MEDREG countries will be developed. Additionally, and as the participation of all MEDREG countries in answering the questionnaires is of primordial importance to share information and knowledge, the group will ask for stronger contribution from those countries which have not provided sufficient data on their TPA to gas systems. The sharing of information and knowledge remains a key factor to the promotion of wider Gas Markets in the MEDREG countries.

The full report is published online at www.medreg-regulators.org Supported by the European Union

EXECUTIVE SUMMARY

3.1. Status review on Third-Party Access in the Mediterranean region
(December 2011)

This study focuses on the Third Party Access (TPA) status in the Mediterranean region and on the future needs in order to develop an integrated Mediterranean market. This study is the result of a questionnaire that circulated among MEDREG countries with the aim to get a picture as complete as possible of the TPA situation in the whole region. The paper takes into account the different levels of market development in the Mediterranean countries. The participative process of the survey suffered from some countries’ defections. However, it has been possible to generally assess the status of TPA to the infrastructures of the gas markets.

CONCLUSIONS

This report replaces the results of the two surveys circulated among MEDREG participants pertaining the present interconnection infrastructure and the cross-border governing rules and procedures. The report affirms that the first step to the establishment of a regional electricity market requires the harmonization of countries’ internal market rules. Still, reinforcements for the interconnections as the physical medium of the market are in progress in different states. Closing the ring around the Mediterranean is awaiting the removal of the hurdles faced by the SEMB, SWMB and Turkish interconnections. Furthermore, pan-Mediterranean guidelines for cross-border trade still need to be put in place.

RECOMMENDATIONS

The ELECTRICITY AD HOC GROUP has issued a report entitled “Regulatory Status and Market Implementation” to capture the electricity market status in MEDREG countries. The conclusion of this report is that all countries are moving toward the establishment of free electricity markets; their different paces are determined by internal factors. However, the core question that is standing against that transformation is the financial viability of the industry. All the countries which responded to the surveys are still working towards that goal. In fact, cross-border trade has the potential to grow in all MEDREG regions. Similarly to the “Regulatory Status and Market Implementation” study, a report to capture the present rules and practices governing exchanges among member countries has been developed. MEDREG participants agreed to form task forces to collect the required information for this report as follows: • Spain was responsible for providing the principles of energy exchange between the European countries in the Mediterranean region. • Turkey was responsible for providing the contracts of energy exchange between the Balkan countries in the Mediterranean region. • Egypt and Jordan were responsible for providing the contracts of energy exchange of the Mashreq countries. • Algeria was responsible for providing the contracts of energy exchange between the Arab Maghreb countries in the Mediterranean region. Two survey forms have been circulated among MEDREG participants. The first survey form questioned the present and future infrastructure facilities. The second survey investigated the practices that govern cross border exchange in MEDREG regions. The report is composed of four chapters. Chapter 1 illustrates duties and objectives of the ELE AG. Chapter 2 describes the interconnections facilities and operation among member countries. Chapter 3 presents the present rules and practices that govern exchange among member countries. Chapter 4 contains conclusions and recommendations.

The full report is published online at www.medreg-regulators.org Supported by the European Union
One of the most important preconditions to achieve an integrated, competitive and secure gas market in the Mediterranean region is ensuring that participants in the gas markets have easy and non-discriminatory access to all the information they need. The Ad-Hoc Group on Gas (GAS AG) has investigated the transparency status in the gas systems and markets of Mediterranean countries, and has monitored the enforcement of the guidelines and recommendations on transparency contained in the MEDREG Guidelines of Good Practice (GGP) on Transparency. This report presents the results of that survey research, emphasizing the positive advancement of Mediterranean countries in disclosing and publishing information.

The transparency requirements analysed in the Status Report are:

1. **System and Services**
   - A detailed description of the gas system of each TSO, identifying all entry and exit points, including maps, or a detailed description of the LNG and storage facilities operated by the concerned LSO/SSO concerned.
   - Detailed and comprehensive information about all services offered.
   - Detailed and comprehensive information about the agents that have access to the services offered.
   - The different types of contracts available for the services offered and the contracting processes.
   - The flexibility and tolerance levels included in transportation and other contracted services.
   - Applicable network code and/or the main standard conditions outlining the rights and responsibilities for all users of the gas system of the TSO.
   - The capacity allocation, congestion management, anti- hoarding and risk mitigation procedures.
   - The rules applicable for capacity trade on the secondary market.
   - Gas quality and pressure requirements.

2. **Capacity Situation**
   - The maximum technical capacity (Million m³/h or GWh/day).
   - The total contracted firm and non-firm capacities (kldem).
   - The available firm and non-firm capacities (kldem).

3. **Regulatory Framework**
   - A description of the LNG and storage facilities operated by the concerned LSO/SSO concerned.
   - Detailed and comprehensive information about all entry and exit points, including maps, or a detailed description of the LNG and storage facilities operated by the concerned LSO/SSO concerned.

The transparency requirements are usually not as widely fulfilled as expected. As the GGPs are to be implemented on a voluntary basis, actions must be taken to institutionalize cooperation between the regulatory bodies of the Mediterranean region.

The assessment of new investment needs is one of the first steps taken to institutionalize cooperation between the regulatory bodies of the Mediterranean region. The scope is to achieve a consistent, harmonized and investment-friendly regulatory framework, to benefit the MEDREG Countries’ energy consumers. Through the cooperation of the MEDREG Members, the Ad Hoc Group on Gas has produced this study, providing the assessment of the current status of gas markets and sector regulation in the MEDREG countries and its expected evolution.

**CONCLUSIONS**

The transparency situation of gas markets in the Mediterranean region can be improved and some measures can be proposed. The basic recommendation to disclose information in a meaningful, quantitatively clear and easily accessible way, and free of charge, is almost unanimously respected. However, the recommendation to publish information in English, in addition to the national language(s), is not as widely fulfilled. As the GGPs are to be implemented on a voluntary basis, actions must be taken to institutionalize cooperation between the regulatory bodies of the Mediterranean region.

There is a majority of countries where the infrastructures belong to State-owned companies. Licenses are normally required to build and exploit regulated activities (i.e. transmission, distribution, LNG and storage). On the unbundling, although there are some countries where there is an explicit requirement to this matter, the majority of them have enforced at least an accounting unbundling. There is a majority of countries where the TPA regime to the gas infrastructures is regulated. Nevertheless, the capacity allocation mechanisms and congestion management procedures are not very developed. Hence, the Regulated Third Party Access has not still translated into a significant competition level in their natural gas markets. In some countries the grid code has not been defined yet or is in drafting process. Nevertheless, those markets in which the competition is developed in a greater degree usually have already issued a grid code that in some cases is regularly updated.

**RECOMMENDATIONS**

- Increase contribution in providing information on transparency.
- Work in collaboration with the TSOs’ associations in order to spread the conclusions of the transparency study and broaden the application of the GGPs’ learnings.
- Support the online publication of the relevant transparency information in English.

**EXECUTIVE SUMMARY**

**3. Status review on transparency in the Mediterranean region and monitoring of the MEDREG guidelines of good practice**

(June 2011)

The full report is published online at www.measuring-regulators.org

**Supported by the European Union**

**3.3. Benchmarking assessment**

(June 2009)

This Benchmarking Assessment on gas markets and infrastructures is one of the first steps taken to institutionalize cooperation between the regulatory bodies of the Mediterranean region. The scope is to achieve a consistent, harmonized and investment-friendly regulatory framework, to benefit the MEDREG Countries’ energy consumers. Through the cooperation of the MEDREG Members, the Ad Hoc Group on Gas has produced this study, providing the assessment of the current status of gas markets and sector regulation in the MEDREG countries and its expected evolution.

The full report is published online at www.measuring-regulators.org

**Supported by the European Union**
**EXECUTIVE SUMMARY**

**4.1. Report on the effects of the introduction of successful mechanisms to promote RES and CHP in non-EU countries**

(May 2010)

Regulation plays a fundamental role in guiding the energy model towards a path of sustainability, especially in liberalized energy frameworks, so that market failures are reduced or minimized when regulatory mechanisms are introduced.

EU countries have an important backup of framework setting in the promotion of RES and CHP. The target of this document is to provide some ideas to take advantage of this regulatory experience in order to introduce successful mechanisms to promote Renewable Energy and CHP in non-EU countries.

**CONCLUSIONS**

Some lessons can be learned from the RES experiences in the EU countries. There are several EU examples where it is possible to find good guidelines in order to select the right mechanisms for each country, according to the particular economic and social situation.

**RECOMMENDATIONS**

The definition of realistic but ambitious targets in the national legislation is a key point for each Member. According to these targets, the second step would be the definition of promotion mechanisms based on transparency and stability of the national legislation.

Also, it is essential to develop connection procedures for RES and CHP facilities. Non-discriminatory access rules and priority of dispatch need to be established. Finally, developing countries must receive external financing to increase their renewable capacity, through public and private initiatives under the framework of Flexibility Mechanisms in Kyoto and post-Kyoto Protocol, or flexibility mechanisms in the Directive 2009/28/EC.

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**REPORT**

**4.2. Report on the effects of the introduction of successful mechanisms to promote energy efficiency in non-EU countries**

(May 2010)

The objective of this paper consists in verifying the possibility of extending successful energy efficiency policies to other MEDReg countries, analyzing potential obstacles and main factors of success to their implementation.

Efficient mechanisms have been identified, including white certificates markets, tender mechanisms, time-based pricing, and energy audits. Through specific case studies, some conclusions and recommendations are provided for those countries interested in introducing similar measures in their national context.

**CONCLUSIONS**

White certificates market, tender mechanisms and the adoption of smart metering resulted to be all successful policies for the promotion of energy efficiency.

Before any implementation of energy efficiency measures, a careful evaluation of expected benefits and costs of such measures in the context of the eligible country should be carried out; the introduction of these policies has not to be considered an objective in itself.

The experience to date in Europe with white certificates and tender mechanisms is still quite limited. Implementation of these policies is generally successful where mature infrastructures and experienced market players are in operation. Moreover, liberalized electricity markets and development of energy services companies enable to promote energy efficiency more effectively. With respect to the white certificate scheme, the experience of countries such as Flanders and UK demonstrated that even without the benefit of full trading mechanisms, there are still significant financial benefits related to the introduction of saving obligations.

**RECOMMENDATIONS**

For developing countries approaching the issue for the first time, it is advisable to initially introduce energy efficiency obligations placed on energy utilities. Later, they can progress toward more complex systems, such as the white certificates mechanism. Regarding smart metering, it is recommended to introduce interoperable meters from the beginning, and comply with minimum functional requirements. This will allow the switching of consumers from one supplier to another when markets are mature for the development of competition.
4.3. Assessment of the effects of extending the functioning of national mechanisms to a supra-national level - RES and CHP

(December 2011)

In general, EU MEDREG countries display a higher share of renewable energy than non-EU MEDREG countries. However, Southern MEDREG countries usually have the best natural resources to install renewable generation plants. This contradiction can be explained through the national support mechanisms to renewables, which considerably vary among countries.

The objective of this report is to analyze benefits, risks and possible solutions to expand successful national mechanisms supportive of RES (Renewable Energy Sources) and CHP (Combined Heat and Power).

1. Potential benefits • Optimization of natural resources. • Improved efficiency: comparison between the total amount of support received and the generation cost. • Improved effectiveness: ability to increase the share of renewable electricity according to a potential of reference. • Development of non-EU countries: advantages concerning the creation of a local industry, employment, local and regional development, trade balances, security of supply, etc.

2. Analysis of Potential Difficulties and Risks • Delay of some EU countries in fulfilling the EU regulation. • Difficulty in designing an adequate supra-national support scheme. This is a complex task, with the possibility of over-pricing and creating windfall profits for generators and extra costs for consumers. • Increase in electric energy prices. • Insufficient network infrastructures; currently, there is only one interconnection in the West part of the Mediterranean Sea, and some interconnections in the East part. • Geopolitical barriers: energy is usually considered as a sensitive national issue. • Convergence in the institutional framework.

RECOMMENDATIONS

The regulatory mechanisms at the supra-national level could contribute to overcome those barriers. Some of these provisions are the flexibility mechanisms included in the 2009/28/CE Directive and in the Kyoto protocol.


The Directive facilitates cross-border trade of RES energy in order to facilitate the reaching of national mandatory targets. These flexibility mechanisms are statistical transfers, joint projects between Member States and with third countries, and joint support schemes. Key points for the success of these key mechanisms are: • Agreement between countries: relevant authorities should establish a dialogue to transfer RES knowledge and experiences. • Share of the RES energy: the projects must divide which part of the generated electricity is for internal consumption and which part can be exported. • Interconnections: this is a key point to facilitate integration of electricity from renewable sources. • Certification bodies: it is necessary to set up certification organizations in the participating countries.

4. Flexibility Mechanisms in Kyoto and Post-Kyoto

One of the flexibility mechanisms defined in the Kyoto protocol is the Clean Development Mechanism (CDM). Currently, CDM constitutes a financial tool that is seldom used in the region.

CONCLUSIONS

Renewable resources in non-EU countries could be used by EU countries with great advantages for both parts in terms of efficiency, effectiveness, economic growth and social development.

The Directive 2009/28/CE allows non-EU countries to receive investments for the development of RES installations in their territories. The energy produced can be used domestically or exported to the EU. The EU countries can profit of these exports to fulfill their national targets for renewable energy.

4.4. Assessment of the effects of extending the functioning of national mechanisms to a supra-national level - Energy Efficiency

(December 2011)

The report addresses the question of whether a more aligned approach in the energy efficiency field is possible and which initiatives can be undertaken to foster energy efficiency in the Mediterranean context. The objectives of this paper are to assess the possibility for enhanced cooperation on energy efficiency policies among MEDREG countries; to carry out a comparative analysis of national energy approaches and identify gaps and areas with potential for energy savings; to provide recommendations to foster energy efficiency more effectively.

SETTING OUT AN ENERGY EFFICIENCY POLICY at a supra-national level is a sensitive and complex task. Energy efficiency measures necessarily need to be tailored to the specific context of each country, requiring the direct involvement of local and national bodies. Therefore, any approach aimed to apply the same “recipe” to the different national contexts is clearly not appropriate. Also, this is an area with a large number of players: national and local governments, regulators, industrial agents, consumers. In view of that, relevant changes in the energy efficiency field over the long-term are not easy to obtain and the mechanical extension of national energy efficiency mechanisms to other countries is void of sense. However, an enhanced co-ordination at the regional level could help to remove some of the existing barriers, as well as to improve the effectiveness of the national energy efficiency interventions.

The paper primarily focuses on the scopes of enhanced cooperation in the context of the Mediterranean basin. On that respect, some energy efficiency indicators have been chosen to facilitate cross-country comparisons. Moreover, the European experience is presented as it represents the most ambitious attempt to promote energy efficiency on a regional scale.

A second part is devoted to the comparative analysis of national energy efficiency policies to identify existing gaps and areas of intervention where a relatively higher potential for energy saving improvements exists. This chapter reviews the main efficiency policies in place in Mediterranean countries.

This report provides an overview of the rational for coordinating policy interventions on energy efficiency in the MEDREG context. In particular, it reviews the main efficiency policies in place in Mediterranean countries, grouped by main categories, and assessing for each of them the main bottlenecks and consequent justifications for enhanced cooperation.

Conclusions and Recommendations

This report provides an overview of the rational for coordinating policy interventions on energy efficiency in the MEDREG context. In particular, it reviews the main efficiency policies in place in Mediterranean countries, grouped by main categories, and assessing for each of them the main bottlenecks and consequent justifications for enhanced cooperation.

The lessons provided by the European experience and by the first implementation of National Action Plans on energy efficiency suggests that a more holistic approach, based on the balance between different types of interventions, is more effective than focusing on individual measures.

CONCLUSIONS

In order to foster energy efficiency and international cooperation among Mediterranean countries, a set of recommendations has been formulated, suggesting to:

- accelerate the preparation of future national strategies for energy efficiency in order to achieve improvements where there is more potential for energy savings;
- establish a partnership to provide technical assistance in the design of national plans/strategies;
- monitor results, share experiences and lessons, agree on good practices and use them as a guide for future actions;
- reduce the financial barriers to scale up the potential of energy savings interventions.

RECOMMENDATIONS

From the MEDREG perspective, one of the key points to promote RES is to set a clear and stable regulatory framework at the international level. First, this framework would push EU countries to fulfill EU legislation on RES on time.

Second, such a framework could facilitate energy investments in non-EU countries, which would take advantage of their considerable potential resources and avoid the aforementioned risks.

It is highly recommended to take into account all the wide range of different flexibility mechanisms: Directive 2009/28/CE, and Kyoto and Post-Kyoto protocols.
The objective of this document is to promote the exchange of information, knowledge and experiences about Environment protection, promotion of RES, CHP and Energy Efficiency. Every year this report aims to give an overview of the situation and the evolution of each MEDREG Member in terms of Renewable Energy Sources, Energy Efficiency, CO2 and other pollutant emissions, power generation structure, demand evolution, and market organization. The information is based on responses to a questionnaire and on other sources.

CONCLUSIONS
In almost all MEDREG countries, there is an independent regulator (or the existence of a Ministry), which includes its own funding and appropriate appointment procedures. It is also ensured that the regulator works under the definition of regulatory principles. Overall, it is possible to determine that all examined countries have a mix of technologies to cover their electricity needs. As for RES, the most extended is hydro, followed by wind and biomass. Taking into account electricity needs. As for RES, the most extended is hydro, followed by wind and biomass. Taking into account electricity needs, several countries have developed sector-specific regulation and objectives. To achieve the objectives agreed upon in the Kyoto Protocol, several countries have set up a programs and plans related to the reduction of CO2 emissions, to achieve the objectives agreed upon in the Protocol. 5. RES and CHP Market Access: All countries have developed connection procedures, competition management rules and non-discriminatory operation rules for RES and CHP. 6. Promotion Mechanisms: Promoting systems for electricity produced from RES and CHP are mainly divided between a fixed price system (Feed-in Tariff/Fixed-in-Premium) and a Tradable Green Certificates (TGC) system. 7. Eligibility for Consumers: Definition of eligible consumers to participate in a competitive market and future targets. 8. Tracking/Disclosure of RES Electricity: Overview about tracking/disclosure systems for RES electricity, tracking certificate (Guarantee of Origin, Renewable Energy Certificates, etc.), compliant issuing body, disclosure system mandatory for suppliers, etc.

RECOMMENDATIONS
This document is a useful tool to overview the evolution in Mediterranean countries in relation to RES, CHP and Energy Efficiency issues. Best practices in specific areas, and the results of these practices are updated every year, so the analysis of the “Benchmarking Assessment” can give important ideas to learn from successful experiences in other countries. Sharing these experiences, the information and also the mistakes can be the best guide to advance in the sustainability of our electricity systems.

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CONCLUSIONS
In almost all MEDREG countries, there is an independent regulator (or the existence of a Ministry), which includes its own funding and appropriate appointment procedures. It is also ensured that the regulator works under the definition of regulatory principles. Overall, it is possible to determine that all examined countries have a mix of technologies to cover their electricity needs. As for RES, the most extended is hydro, followed by wind and biomass. Taking into account the data about demand evolution, it is possible to observe that electricity demand was rapidly increasing until 2008 in all countries. On the other hand, in 2009 and 2010 some countries show a downward trend due to the economic crisis. Finally, promoting systems for electricity produced from RES and CHP plants are mainly divided into fixed price systems (Feed-in Tariff, Fixed-in-Premium) and Tradable Green Certificate (TGC) system. The majority of the RES AG Members have established a fixed price mechanism.

RECOMMENDATIONS
It is important to remove the existing bottlenecks in some congested corridors. Non-discriminatory access rules and priority of dispatch have to be properly defined for electric energy from RES. Each country shall ensure the possibility of the high voltage transmission and distribution of electricity produced from RES. International rules shall clearly define any technical specifications that must be met by RES equipment and systems to be connected to the grid. The TSOs have the responsibility to guarantee the security and the adequacy of the power systems installations; new generators have to comply with grid codes and technical specifications prior to being connected to the grid. Therefore, tools to expedite permitting procedures should be supported. In this context, the identification of national contact or coordination authorities on cross-border projects, as long as they do not cause additional bureaucratic, might result beneficial to ensure acceleration of the procedures.

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5.1. Recommendations on the minimum requirements considered as necessary to ensure consumer protection in the field of Electricity and Gas in the Mediterranean region (June 2011)

This document identifies the minimum criteria considered as necessary to ensure consumer protection that could be shared by MEDREG members. Similarities have been identified in the fields of legal framework on competition; consumer protection; access and connection to networks; and regulatory role. Differences exist in the sphere of market design; organization and function; and processes and procedures (such as the handling of complaints, appeals and mediation, the relationship between operators, regulators and consumers, the policies towards vulnerable consumers).

4. Consumer Protection and Transparency:

Regulators should act in order to:
- Allow the establishment of service quality standards ensuring harmonization.
- Introduce incentives within the tariff structure, including possible sanctions in case of failure.
- Improve the information given to consumers (readability of bills, information, prices, etc.).
- Allow consumers to be compensated if the operator fails or causes damages.
- Be entitled to access to financial/technical information regarding regulated activities.
- Have a dedicated department that supports complaint handling and an established decision-making power.
- Have an international cooperation program on issues related to the consumer protection interests.

5. Accessibility

Connection to the networks shall be made within a reasonable amount of time and at reasonable prices.
- Regulators should monitor the switching process and ensure its smoothness.
- Regulators must coordinate with authorities to protect vulnerable consumers face to prices and tariffs.
- Regulators should identify a supplier of last resort.
- Energy demand forecast should be a statute responsibility for all regulators.

6. Education and Information

Institutional actors should use a sound communication strategy to educate, train, advise and assist consumers on important aspects related to their protection and the energy environmental impact.

7. Invoicing, Payment and Power Cuts

- To reduce disagreements between operators and consumers, clear procedures about bill invoices, time of payment and suspension/withdrawal of supply should be disseminated.

CONCLUSIONS

The success of cooperation between MEDREG’s member countries depends on the establishment of a common approach for consumer protection. This study represents a first step that has identified a set of values and best practices to be shared among MEDREG member countries with the aim to improve the effectiveness of mechanisms to protect consumers.

RECOMMENDATIONS

- All interested stakeholders, including MEDREG institutional partners, should circulate this report through different communication channels.
- It is advisable to perform a follow-up about the evolution of the electricity and gas consumer protection framework in the MEDREG countries.
- An update of this report and of its recommendations is expected every two years.

5.2. Summary assessment: survey on consumer protection in the electricity and natural gas sectors in the Mediterranean region (October 2010)

In 2008, MEDREG INS Ad Hoc Group set up a Task Force on consumer issues to present a clear picture of the consumer protection condition in the Mediterranean region, with a specific focus on vulnerable customers.
Following the first five years of MEDREG fruitful and successful activities, the key strategic challenges faced by Mediterranean countries imply the need for more regulation as an essential instrument for economic and social development, enhanced trade and exchanges, market opening to competition, security of energy supply, and development of new financing tools and mechanisms.

The objective of MEDREG is to implement strong, transparent and stable legal and regulatory frameworks and requires a long-term vision to 2020, designed at regional level. Continuous efforts are necessary to achieve a step-by-step and holistic approach towards regulatory harmonization. This approach may take into account not only market liberalization, but also investment in trans-Mediterranean infrastructure, climate change and the environment, innovative financial support schemes for renewable energy sources and energy efficiency, consumer protection, capacity building, information exchange and technology transfer.

MEDREG is firmly positioned in the long-term perspective towards the progressive integration of Euro-Mediterranean energy markets into a Mediterranean Energy Community, based on a bottom-up and inclusive process leading to a strengthened institutional setting. This 2020 target shall be reached with the decisive support of Energy Regulators, through the consolidated activities of MEDREG permanent Ad hoc Groups and Task Forces, and thanks to the continuous support provided by the European Union, the CEER and all the MEDREG partner institutions.