



Mitigation Enabling Energy Transition in the MEDiterranean region
Together We Switch to Clean Energy

Training Package

SUSTAINABLE ENERGY DESIGN TOOLKIT for Public Authorities



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The meetMED project is a two-year project funded by the EU and jointly carried out by the Mediterranean Association of the National Agencies for Energy Management (MEDENER) and by the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE). Its main goal is to reinforce regional cooperation aimed at fostering the energy transition in Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Palestine and Tunisia under the umbrella of the UfM REEE platform.

The meetMED team in Brussels coordinates the project partners and experts in implementing the project activities, in the following areas of work: assessing EE and RES strategies and policies; advancing vocational training and public awareness; attracting sustainable RE and EE investments; supporting the UfM Renewable Energy and Energy Efficiency Platform.

The meetMED activities target and benefit a wide range of stakeholders, including policy makers, public authorities, investors and financial institutions as well as local communities and final customers. meetMED supports regional cooperation by building the technical capacity and raising the public awareness necessary to implement RE and EE projects and solutions, while creating synergies with other initiatives targeting energy transition in the Mediterranean region.



MEDENER is an international non-profit organization gathering agencies from the northern and southern Mediterranean countries in charge of implementing public policies on energy efficiency and the promotion of renewable energy sources, by implementing regional projects facilitating the sharing of know-how and best practices among its members and international partners, as well as accelerating the transfer of skills, methods and technologies in the field of energy efficiency and renewable energy.



RCREEE is an intergovernmental organization aiming at enabling the adoption of renewable energy and energy efficiency practices in the Arab region. **RCREEE** brings together regional governments and global organizations to initiate and lead clean energy policy dialogues, strategies, technologies and capacity development in order to increase Arab states' share of tomorrow's energy. Its key work areas are capacity development and learning, policies and regulations, research and statistics, and technical assistance.

Foreword



This meetMED publication contains the materials for a professional training, which aims to build the technical capacity of national and local authorities to design, finance and implement EE and RE solutions. It provides in fact the sustainable energy toolkit for public authorities, which can be further replicated for the benefit of all countries in the Mediterranean region.

The package include modules on a variety of topics: the energy policy in general terms, the role of public authorities leading by example in the adoption of EE and RE measures, the energy planning, the role of energy managers, the financing instruments, the role of energy communities and the Covenant of Mayors, the smart cities and the energy intensive sectors, such as lighting, water and public buildings.

Professional training is indeed the central effort made by regional cooperation to fill the institutional and financial gaps and build the technical capacity of national and local authorities to implement strategies, enforce projects, mobilise investments and raise public awareness in the fields of RE and EE - promoting the benefit of implementing sustainable policies at local level as a key contribution in the fight against climate change and to the achievement of the National Determined Contributions (NDCs).

Public authorities, both at national and local level, are at the forefront in the promotion, deployment, and scaling up of renewable energy and energy efficiency solutions (including participatory planning for resilient urban development) that are compatible with climate action and with securing a high quality of life for their citizens. In the short term, they are in the best position to lead by example on the benefits of investing in renewables and energy efficiency, which are consistent with the specificities of national energy markets that affect consequently to the private sector and the civil society.

In this context, the meetMED training materials provide the essential sustainable energy toolkit for public authorities to design and finance sustainable energy projects. Reference for the toolkit is the EU regulation - a comprehensive model of advanced legal frameworks - and the ongoing technical projects of regional cooperation, such as CES-MED, SUDEP, INSMART, Climate South.

This meetMED training package on sustainable energy toolkit for local authorities was designed by meetMED experts from ADENE (Portugal), ANME (Tunisia), CRES

(Greece) and ENEA (Italy). The training materials were first used in a 5-days training held in Algeria in June 2019 and delivered by meetMED experts from ADENE (Portugal), ALMEE (Lebanon), ANME (Tunisia), APRUE (Algeria), CRES (Greece) and ENEA (Italy).

The publication of the meetMED training package is strongly aimed at making it available for replication in the future in order to build the technical capacity of public authorities in the Mediterranean region in implementing EE and RE measures. All the credit goes to the experts from the national energy agencies and ministries of the 13 meetMED countries who prepared and conducted this training - under the restless coordination of CRES (Greece), ANME (Tunisia) and RCREEE.

The constant support and commitment of MEDENER and RCREEE have ensured the active engagement of the meetMED national experts and of the meetMED team that worked hard for the organization of the meetMED training course and for the preparation of this publication. All credits go primarily to them...

Matteo Barra

meetMED Project Manager

Contents

Foreword	05
About the Training Package	08

TRAINING PACKAGES

0. meetMED Project	10
Training Goals and Program Presentation	12
I. Role of Local Authorities	14
II. Energy Policy in EU and Nationally	17
III. National Energy Policy – Indicators ODYSSEE-MURE	20
IV. Energy Planning Policy Tools	23
V. Covenant of Mayors	27
VI. The Role of Energy Managers	29
VII. Financing Instruments – Funding Mechanisms	32
VIII. Energy Intensive Areas in Municipalities (1)	34
Energy Intensive Areas in Municipalities (2)	36
Energy Intensive Areas in Municipalities (3)	38
IX. Smart Cities	40
X. Energy Communities	43

About the Training Package

This toolkit includes guidelines for public authorities on the use of sustainable energy design and financing tools as well as guidelines for improving multi-level governance in the Mediterranean area in the field of sustainable energy planning and for better adaptation of the EU legislation to local contexts in the Mediterranean countries.

The first meetMED training seminar will take place on 07-11 July 2019 in Algiers, Algeria.

Its purpose is to train public authorities to use a sustainable energy policy design toolkit, which has been jointly elaborated by ADENE, ANME, CRES and ENEA.

Training Packages

0. meetMED Project

About the Author

Matteo Barra – meetMED Project Manager



Mr Barra is currently working as Project Manager for the meetMED Secretariat. His main responsibility is to lead the implementation of the meetMED Project by coordinating the work package leaders and monitoring the organisation of the activities in order to ensure that they will achieve the deliverables of the project. Matteo is also responsible for reporting to the

European Commission on the implementation of the project. In his former experiences, Matteo has worked as senior expert on investments at the Energy Charter Secretariat, acting mainly on ECT investment provisions and dispute settlement. Previously, he was associate with the international arbitration team of a large law firm in Geneva, where he acted in investment and commercial disputes concerning among others the electricity, gas and oil industry. Matteo holds a Ph.D. in International Economic Law (Bocconi) and an LL.M. in International Energy Law and Policy (CEPMLP).

Summary of the Presentation

meetMED project is a two-year project funded by the EU and jointly carried out by the Mediterranean Association of the National Agencies for Energy Management (MEDENER) and by the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE).

Its main goal is to reinforce regional cooperation aimed at fostering the energy transition in Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Palestine and Tunisia under the umbrella of the UfM REEE platform.

meetMED brings together more than 60 experts from national energy agencies and ministries, whose common goal is to exchange best practices, to train professionals and to raise public awareness on sustainable energy choices and investments. The meetMED activities target and benefit a wide range of stakeholders, including policy makers, public authorities, energy stakeholders, investors and financial institutions as well as local communities and final customers at large.

Due to the importance of the Mediterranean region as the key area where energy transition to clean and sustainable energy is possible in the next following years, meetMED supports regional cooperation in the field of RE and EE not only by facilitating the exchange of best practices between all its partners and by raising capacity building and public awareness, but also by creating synergies with other initiatives targeting the Mediterranean region, such as the ClimaMed, SwitchMed, MedStat and EuroMed Cities.

The meetMED team in Brussels coordinates the project partners in implementing the project activities, which concern mainly the following areas of work: assessing EE and RES strategies and policies; advancing vocational training and public awareness; attracting sustainable RE and EE investments in target countries; supporting the UfM Renewable Energy and Energy Efficiency Platform.

The Module's Contents

- Context
- Goals
- Target Countries
- Structure
- meetMED objective and workstreams
- Work Packages - 1 to 4
- Rationale
- Events 2018 / 2019
- Contacts

Preview of some of the slides. This Module has 14 Slides.

Download the full module [here](#)

Training Goals and Program Presentation

About the Author

Nadia CHIOUKH – Head of International Cooperation
Department, APRUE



N. Chioukh holds a bachelor's degree in statistics and she is currently completing her professional master's degree in project management at the Algerian Chamber of Commerce and Industry. She started her career as a conductor of technical studies at the Algerian Research Centre for Scientific and Technical Information (CERIST), where she gained an interesting five-year experience in administrative and financial follow-up of the leased line connection and web services, provided by the Network Division of the Centre. In 2010, she joined the Algerian National Agency for the Promotion and the Rationalization of the Use of Energy (APRUE), where she has been appointed as a head of the international cooperation department. In this role, she has been ensuring for almost a decade the coordination of bilateral and regional EE cooperation projects, by primarily acquiring expertise in the development of support programmes and institutional partnerships, particularly related to energy policy and good governance.

Summary of the Presentation

This training is built on a practical approach to provide the participants with a hand-on sustainable energy design toolkit.

Public authorities in charge of planning, municipal authorities, engineers, managers involved in energy issues are the targeted participants to acquire the necessary knowledge and skills to facilitate the planning and the implementation of a sustainable energy policy in a context of improved multi-level governance.

The program of the training is elaborated and animated by experts with a proven

expertise in professional training and the implementation of national and regional operational programmes, it's structured in three main packages treating the general framework of energy policy in EU and nationally with focus on the indicators, the actions for energy planning, programmes, tools and the role of energy managers, then finally, the financing instruments through the funding mechanisms and incentives.

The participants from the South and East Mediterranean countries, namely, Algeria, Jordan, Lebanon, Libya, Morocco and Tunisia are invited to interact amongst themselves and with trainers, to share their experiences, discuss the barriers, seek solutions and thus contribute towards an accurate sustainable energy planning at the local level.

I. Role of Local Authorities

About the Author

Fethi HANCHI – Central Technical Director, ANME



Since 2011, F. Hanchi is the Director of the Division for the Rational Use of Energy at ANME. As such, he has been in charge of the management and coordination of energy efficiency programs and activities in the tertiary, residential, building and transport sectors in Tunisia. His portfolio also includes a national programme for energy efficiency in the public sector, energy efficiency conventions with local authorities, as well as national and Mediterranean cooperation projects. Graduated in mechanical engineering, Mr Hanchi has more than 19 years of experience in energy efficiency. He has been actively involved in the energy sector reform in Tunisia and contributed designing, implementing and evaluating energy efficiency programs in the country. He has a solid track record in the economic and managerial aspects of energy efficiency. Since March 2019, he has been nominated Central Technical Manager at ANME.

Summary of the Presentation

The challenges of cities

Cities are important centres for energy consumption, as they gather many people and activities. The most energy-intensive sectors are buildings and transportation. As modern cities developed and expanded thanks to abundant and cheap energy, they must now keep under control their energy consumption and find efficient and low-polluting supply solutions.

Cities now have a responsibility to lead energy policies at the local level and to implement them.

Fields of intervention of local authorities

Local authorities can also initiate the energy transition through urban planning policies. The four pillars on which their strategies shall be based are:

- The supply dimension: namely, production of energy, infrastructures, supply;
- The demand dimension: namely, consumers, buildings, urban setting
- The social dimension: namely, socio-cultural sensitivity; human, technological and economic resources, acceptability
- The governance dimension: meaning, local regulatory framework, incentives and subsidies, communication.

The success of the energy transition is strictly related to the initiatives of the local authorities. The recent legislative changes towards decentralization have given new skills and new tools to local authorities in the field of energy policy. In this context, understanding each other's roles and fields of action is essential.

International best practices

In this context, many international experiences covering these four pillars have been implemented and have yielded interesting results. Examples include the cold and heat networks (DHC), urban planning in Copenhagen, buses in Curitiba in Brazil and Buenos Aires in Argentina, the creation of a metropolitan transport agency in Montreal and the London congestion charge.

In Tunisia, a program entitled Alliance of Communes for Energy Transition (ACTE), launched in 2015. Focused on Tunisian municipalities, ACTE aims to strengthen the capacity of local communities to contribute at their levels to the national energy transition, by controlling energy and using renewable energies.

The ACTE program provides for a national financial support mechanism that enables local authorities to benefit from the triple support of (i) technical assistance from ANME and its local relay experts to be deployed on Tunisian territory; (ii) legal and institutional support for the structuring of investment projects; and (iii) financial support for the development of local actions.

As a reminder, the ACTE support system provides triple support to local authorities:

- Direct or indirect technical assistance;
- Legal and institutional support for the structuring of investment projects, the elaboration of energy performance contracts and the development of management methods best suited to the public service concerned;
- Support for the mobilization of financial support.

By choosing six areas of intervention – i.e Urban Planning and Construction, Transport and Mobility, Municipal Heritage, Diversification of Energy Sources, Monitoring and Evaluation, Communication and Cooperation) - ANME decided to align with the

methodological framework of the European Energy Award (eea®), which will serve as a basis for the creation, in Tunisia, of a managing-monitoring system and energy certification at the local level: the label “ACTE”. The eea® is a quality management system for sustainable energy development in municipalities, which is used as a basis for the analysis, planning, monitoring / monitoring and evaluation of municipal energy policies. Adapted to the context of North Africa thanks to its introduction in Morocco, eea® fostered the creation of the “Middle East & Africa Energy Award” (mea), which is likely to bring together the municipalities of Middle East and Africa involved in the same process of sustainable energy development.

The Module's Contents

- Challenges
- Fields of intervention of local authorities
- International best practices



Preview of some of the slides. This Module has 14 Slides.

Download the full module [here](#)

(French Only)

II. Energy Policy in EU and Nationally

About the Author

Simona DE IULIIS – Renewable Energy Expert, ENEA



Simona De Iulius is a physics-electronic engineer, who has been working at ENEA as renewable energy expert and scientific researcher on solar energy technologies since 2009. Her primary role is to support the Department of Energy Technologies and the Technical Divisions to developing strategies and innovative technologies. She is an expert in transferring of knowledge and capacity building and a lecturer for training courses and masters on solar energy. She has been working in more than 20 EU-funded projects and is currently responsible of two of them related to solar energy. She is the technical-scientific representative of the Energy Technologies Department for solar thermal technologies, and ENEA's representative in the Steering Committee of the Joint Programme on Concentrated Solar Power of the European Energy Research Alliance, and in the European Solar Thermal Electricity Association. Furthermore, she is member of the ENEA task force for development cooperation, the Technical Committee of RES4MED-RES4AFRICA association, and of the Task Force for the National Integrated Energy and Climate Plan. She is the Italian representative within the SET Plan Implementation Working Group on CSP and the Italian delegate for IEA Committee on Energy Research and Technology and for IEA Renewable Energy Working Party.

Summary of the Presentation

The first part of the training session was dedicated to the Energy Union: its context, strategy and governance were explained. In particular, the “Clean Energy for All European Package” was examined, with a focus on the policy packages addressing priority 3: “A resilient energy union with a forward-looking climate change policy”. The session particularly dealt with the:

- revised Energy Efficiency Directive 2018/2002/EU;
- revised Energy Performance in Buildings Directive (EPBD) 2018/844/EU;
- revised Renewable Energy Directive 2018/2001/EU.

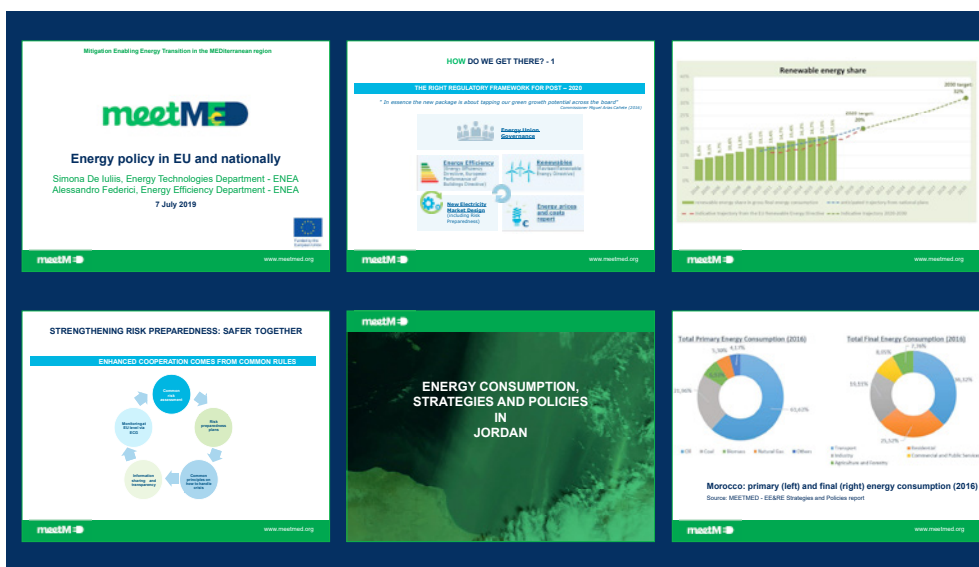
The second part of the training session was dedicated to the National Energy and Climate Plans (NECPs), with a focus on the Italian proposal (as an example), and a final statement on the setting up of a long-term strategy to strongly decarbonise by 2050. During this session, the difficulties to implement specific measures to reach challenging targets has been stressed.

The third part of the training session was dedicated to the beneficiary countries: an overview (2 slides per country) of the energy consumption, strategies, and policies in Algeria, Egypt, Lebanon, Libya, Morocco, Palestine, and Tunisia was given, with a special analysis on Algeria.

The final part of the training session was dedicated to the discussion with the audience.

The Module's Contents

- EU at glance
- Building the energy union
 - The energy union strategy
- Clean Energy for all Europeans
- Energy Efficiency first
- More renewable energy sources
- Energy Union governance
- 2050 long-term strategy
- Energy consumption strategies and policies in Algeria
- Energy consumption strategies and policies in Egypt
- Energy consumption strategies and policies in Jordan
- Energy consumption strategies and policies in Lebanon
- Energy consumption strategies and policies in Libya
- Energy consumption strategies and policies in Morocco
- Energy consumption strategies and policies in Palestine
- Energy consumption strategies and policies in Tunisia
- NECPs – Italy



Preview of some of the slides. This Module has 110 Slides.

Download the full module [here](#)

III. National Energy Policy – Indicators ODYSSEE-MURE

About the Author

Pietro FALCONI – Head of Strategic Support, ENEA



P. Falconi has been working in ENEA since 2014 and he is currently responsible for strategic and technical support in the Energy Efficiency Department. He is involved in the meetMED Project as energy efficiency expert and in the PUBLEnEf project, which aims, on the one side, to assist the EU Member States in implementing effective and efficient sustainable energy policies (focusing on energy efficiency) and, on the other side, to make them take advantage of the best practices and policy processes implemented in other Member States at the national, regional and/or local level. Co-author of the Italian Annual Energy Efficiency Report as required by Directive 27/2012 for the Financial Energy Efficiency Instruments Chapter, he has also carried out activities in the EEFIG Working Group on “Input on energy efficiency to the emerging sustainable finance taxonomy and tagging of energy efficiency loans”. He is also a member of the Italian delegation in the Concerted Action on Energy. Pietro is attending a PhD program in “Circular Economy” at Tuscia University in Viterbo, where he was nominated as subject expert in the field of Energy Efficiency.

Summary of the Presentation

The intervention started by giving an overview of the Odysse – MURE project and the related databases developed as support tools for EE policy evaluation. The main results achieved by implementing the project and the advantages for the public authorities were presented:

- the EU and EE agencies supported the implementation of the project for 22 years;
- the main policy implementers are 32 partners from EU28, Norway, Serbia and Switzerland;

- link between EE Indicators and EE policies:
 - ODYSSEE: 200 comparable EE indicators;
 - MURE: 2500 EE policy measures;
- 2 updates per year (light and definitive);
- trainings for 3000 people.

The first part of the training session was dedicated to the ODYSSEE database and its monitoring tools; particularly, it was stressed that having an easy access to reliable and very well updated information regarding EE indicators trends facilitates a good governance for the public authorities. It was explained that the instruments provided by the ODYSSEE database could facilitate a periodic monitoring and evaluation of the impact of the policies implemented. An overview of the main ODYSSEE EE indicators used to assess the progress in EE and to measure energy savings have been illustrated and some empirical examples of measuring EE progress have been identified and discussed. A special focus was dedicated to benchmarking tools, whose objective is to enable a specific country to compare itself with another country(-ies) of its choice by adjusting the different indicators to its own characteristics.

The second part of the training session was dedicated to explaining how MURE database contributes to shaping policy measures and how its policy tools were developed. During this session, it has been stressed that the database has been elaborated to help public authorities to easily have access to all the EE measures implemented by sector and by specific area as well as to identify which are the most successful measures and what their impacts are. It was pointed out that the MURE database includes a semi-quantitative impact assessment for almost all policy measures, classified as having a low, medium or high impact.

The final part of the training session was dedicated to answering some questions on Odyssee – MURE projects by the participants.

The Module's Contents

- The Project
- EE indicators – ODYSSEE
- MURE
- Some examples
- Conclusions

The screenshots show the following content:

- Slide 1:** Title slide for "National Energy Policy Indicators ODYSSEE-MURE" by Pietro Falconi, ENEA, dated 07/07/2019.
- Slide 2:** "Principle of calculation of energy efficiency index*" with a table showing specific and energy consumption for Chemical, Steel, and Sector indices from 2010 to 2013.
- Slide 3:** "How to analyze trend in EEI? (1/2)" with a line graph showing two periods and a bar chart summarizing the trend.
- Slide 4:** "Benchmarking tool" showing the ODYSSEE-ALPINE interface with various data tools and publications.
- Slide 5:** "Scoreboard: country position (3/3)" showing a radar chart comparing Portugal's position to EU averages and best countries for transport.
- Slide 6:** "Conclusion: indicators and policies (1/2)" discussing the need for data and the importance of permanent and cost-effective ways to collect it.

Preview of some of the slides. This Module has 78 Slides.

Download the full module [here](#)

IV. Energy Planning Policy Tools

About the Author

Fethi HANCHI – Central Technical Director, ANME



Since 2011, F. Hanchi is the Director of the Division for the Rational Use of Energy at ANME. As such, he has been in charge of the management and coordination of energy efficiency programs and activities in the tertiary, residential, building and transport sectors in Tunisia. His portfolio also includes a national programme for energy efficiency in the public sector, energy efficiency conventions with local authorities, as well as national and Mediterranean cooperation projects. Graduated in mechanical engineering, Mr Hanchi has more than 19 years of experience in energy efficiency. He has been actively involved in the energy sector reform in Tunisia and contributed designing, implementing and evaluating energy efficiency programs in the country. He has a solid track record in the economic and managerial aspects of energy efficiency. Since March 2019, he has been nominated Central Technical Manager at ANME.

Summary of the Presentation

The decline of conventional energy resources and the emergence of renewable energy technologies make energy planning necessary to better choose the most appropriate options.

Energy planning involves all stakeholders, public and private, and constitutes a concrete PPP exercise. However, it must be led by governmental entities and must follow a continuous process, including political commitment and clear strategic vision, the promotion of the Public-Private Partnerships, mobilization of funding, capacity building for public and private stakeholders, promoting dissemination and information sharing.

For a successful energy planning, private and public stakeholders must play complementary roles by engaging at different levels:

- Design and pilot: Government;
- Consolidate and support: the technical and territorial governmental agencies;

- Orienting and influencing: professional organizations and bodies, NGOs and universities.
- Implementation: financial stakeholders and local authorities.

Energy policy is based on 6 essential and complementary instruments, namely:

1. Institutions: creation of a dedicated body that is responsible for coordinating and implementing state policy. This organization is endorsed by sectoral organizations and utility providers.
2. Regulatory and legal framework: guides the market towards high-performance technologies and contributes to the development of certain sectors. This tool is generally used to introduce binding measures (Energy Audit, Thermal Regulation of Buildings, Labelling, MEPS, etc ...) but also to boost certain technologies (Cogeneration, ER, ESCO, etc ...)
3. Technical support: aimed at providing a range of services and technologies for the development of EE and RES (Energy auditors, Energy managers in companies, Applicators and installers of EE solutions, ...).
4. Financing: offers investors (citizens and enterprises) innovative and integrated financing solutions in order to make investments in EE projects and RES more attractive.
5. Taxes: used to reduce (or eliminate) taxes on the imports and the marketing of equipment for the EE and RE sectors, whilst taxing energy-intensive equipment (cars, air conditioners, lamps, etc ...).
6. Communication: cross-cutting tool to make consumers aware of the benefits of EE and RES and to help influence their behaviour through promotional campaigns.

Case of Tunisia

Tunisia needs an ambitious energy goal to build a better future. The energy system faces multidimensional challenges: strategic, economic, societal and environmental, hence the need for a global vision that proposes innovative solutions.

This new vision is based on a balance of three fundamental dimensions: energy security, equitable energy distribution and governance as well as sustainable political and economic development.

The main objectives are securing and diversifying energy supply in the country, boosting programmes promoting energy efficiency and integrating renewable energy

in the energy mix as well as reforming price structures and subsidies.

The choice of multiple time horizons allows to influence the societal trends and to consider the technological breaks:

- **2020:** launch of RE projects and the regulation of the energy sector;
- **2030:** development of clean energies, production of hydrocarbons and upgrade of energy infrastructures.
- **2050:** possible social and technological disruptions as well as possible convergence towards a model for sustainable energy.

In 2016, Tunisia adopted an energy transition strategy that sets out the conditions for a gradual change in the current energy model. This strategy sets the goals to be achieved by 2030: reducing energy demand by 30% and increasing the share of RES in the electricity mix up to 30%.

In parallel with this strategy, Tunisia adopted ambitious climate targets by ratifying the “Paris Agreement in October 2016 (Law No. 2016-72). As part of its implementation, Tunisia plans to reduce the carbon intensity of the Tunisian economy by 41% in 2030 compared to 2010 levels.

To achieve these objectives, Tunisia has adopted a set of innovative measures, programs and mechanisms, including: energy audits, thermal regulation of new buildings, energy labelling of household appliances, self-production of electricity from the RES, cogeneration, Energy Service Establishments (ESCOs), the program for the promotion of the insulation of roofs of individual housing – PROMOISOL, the program of Promotion of solar energy for the production of domestic hot water - PROSOL Thermique, the Solar Power Promotion Program for Generating Electricity for Low Voltage Subscribers - PROSOL Electrical, the Energy Transition Fund (ETF), monitoring indicators (i.e. the elasticity between economic growth and primary energy consumption and primary energy intensity).

The Module's Contents

- **PART I: GENERALITIES**
 - The Process
 - The Instruments
- **PART II: CASE STUDY – TUNISIA**
 - The vision
 - The evaluation of what is already existing
 - Goal setting
 - Financing solutions
 - Commitment of the action plan
 - Monitoring indicators



Preview of some of the slides. This Module's Part I has 5 slides, Part II has 21 slides.

(Part I) Download the full module [here](#)

(French Only)

(Part II) Download the full module [here](#)

(French Only)

V. Covenant of Mayors

The Author

Kamel DALI – Projects Director, APRUE

Summary of the Presentation

The Covenant of Mayors for Climate and Energy

Developed by the EU Commission in 2008, the initiative now supports 9600 local and regional authorities in 50 countries (326 million citizens) to achieve climate change and sustainable energy objectives according to their Sustainable Energy and Climate Action Plans (SECAPs) in the area of energy access, mitigation and adaptation. In the Mediterranean region, the CoM is active in Algeria, Jordan, Lebanon, Morocco, Palestine, Tunisia. In order to achieve the new (2015) objective of -40% CO₂ by 2030, the CoM provides its members with administrative, institutional, technological, scientific and financial support.

Inventory of greenhouse gases (GHG)

The inventory of GHG emissions (T/year) is the central tool to monitor the current level of direct global emissions and their variations, to test policies and measures as well as to formulate scenarios for the future in relation to buildings, public lighting, waste, water treatment, transport, agriculture and industry.

Some examples of Sustainable Energy Action Plan (SEAP) and Sustainable Energy and Climate Action Plan (SECAP)

The SECAP of Sid Bel-Abbès (DZ), Osona (ES), Copenhagen (DK) provide an interesting example of an inventory of GHG emission in relation to the local SECAP.

The Module's Contents

- The Covenant of Mayors for Climate and Energy
- Inventory of greenhouse gases (GHG)
- Some examples of Sustainable Energy Action Plan (SEAP) and Sustainable Energy and Climate Action Plan (SECAP)



Preview of some of the slides. This Module has 66 Slides.

Download the full module [here](#)
(French Only)

VI. The Role of Energy Managers

About the Author

Amádis SANTOS – Energy Expert, ADENE



A. Santos has over 10 years of experience in coordinating and executing R&D EU Projects on energy efficiency and renewable energy at the Welding and Quality Institute (2001 to 2010). He also gained experience as Energy Expert developing energy and HVAC audits, renewables energies, indoor air quality, and environmental management audits. From 2010 to 2014, he worked for the Maintenance and Support Services department at EFACEC, where he took care of developing EE projects focusing on industry and buildings. Since 2014, he has been working as Senior Energy Expert in the Department for the Promotion of Energy Efficiency in Public Administrations at ADENE, where he is responsible for promoting energy efficiency in public administration aiming to allow the state to reduce the energy bill by 30% by 2020 in their respective services and agencies. Graduated in Environmental Management with a post-graduated in energy efficiency, he is also qualified as internal audit on the ISO 50001, and Trainer recognized by EVO (Efficiency Valuation Organization) for the training of Certified Measurement and Professionals (CMVP) in Portuguese and English. He is a Certified Measurement and Verification Professional Local Board Member at the Association of Energy Engineers (AEE).

Summary of the Presentation

This training session mainly focused on the role of energy manager as well as on energy management and monitoring.

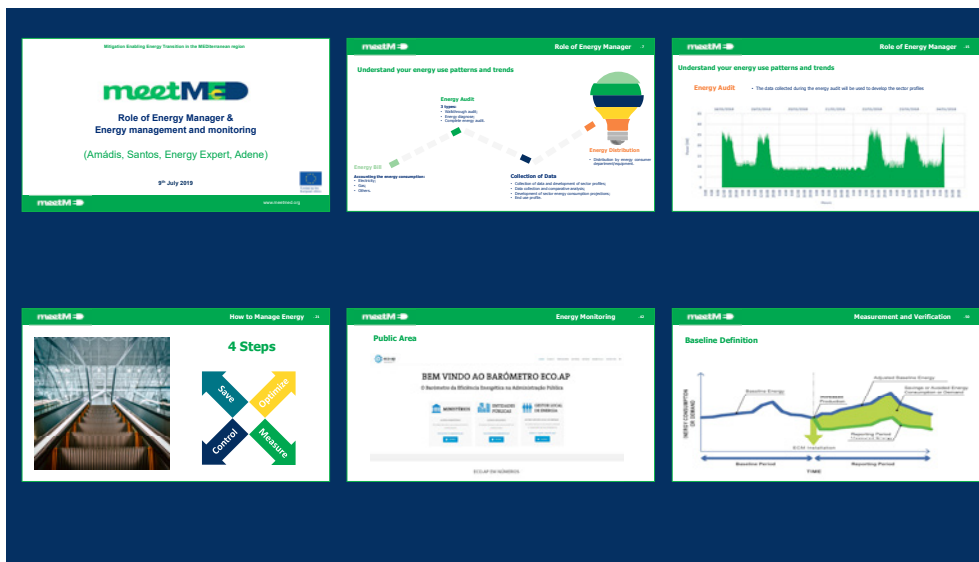
The first session focused on the role of the energy manager. There, the energy use patterns and trends were addressed, with special reference to the changing concept of energy management and the increasing complexity of this job than a few years ago. Energy and facility managers are being pushed to reinvent themselves and they have to set priorities. Given this, the training session examined how to determine the

energy savings and minimize energy use in buildings by reducing energy wastage. Best practices for HVAC systems, informatic equipment, lighting systems, electric motors were also presented. Moreover, special attention was given to the energy monitoring through measurement and verification. Measurement and Verification is the process of planning, measuring, collecting and analysing data in order to verify and report energy savings in an individual facility, which result from the implementation of energy conservation measures.

The second session was dedicated to practical examples: For instance, how to calculate the corresponding average monthly energy use for your installation or how much is produced by a renewable energy equipment (like PV systems). The practical session explained also how to calculate energy efficiency savings and gave an example of a Measurement and Verification (M&V) process aimed at increasing energy savings, reducing the cost for financing projects, encouraging better project engineering, increasing public understanding of energy management as a public policy tool and helping national industrial organisations promote and achieve resource efficiency and environmental objectives.

The Module's Contents

- Role of energy manager
 - How to manage energy
 - Tools for energy management
 - Energy monitoring
 - Example: Energy Barometer
 - Measurement and Verification (M&V)
 - Energy Audit example
- Energy efficiency measures study:
 - Lighting;
 - HVAC;
 - Motors;
 - Equipment
 - Measurement and Verification (M&V) example



Preview of some of the slides. Module (1) has 72 slides. Module (2) has 26 slides

Download the full module (1) [here](#)

Download the full module (2) [here](#)

VII. Financing Instruments – Funding Mechanisms

About the Author

Rayan Mourtada – Energy consultant, ALMEE



Rayan Mourtada is an energy consultant and member of ALMEE. With 5 years of relevant experience, in the past years he has worked for both private sector and NGOs. Having a solid background in computer science, he also holds a bachelor's degree in Business Administration and is currently completing an MBA in Finance. He has taken part in the development of the Building Energy Simplified Compliance Tool (TSBC) and is currently developing the GRASSmed certification, an Energy Performance Evaluation System and Certification for Buildings in Mediterranean countries. In addition, he has participated in many EE trainings in Lebanon, North Africa and West Africa.

Summary of the Presentation

In the attempt to provide the Algerian Municipalities with new means to meet their commitment towards the Covenant of Mayors, ALMEE presented the International Financing Instruments (IFIs) that are active in Algeria and discussed the project cycles and assessment criteria of some of the IFIs with the strongest presence in the region, such as the European Union, the United Nations Development Programme (UNDP), the French Agency for Development (AFD) and the KfW Development Bank.

As an alternative or complement to IFIs funding, ALMEE presented the available financing mechanisms for sustainable development projects in municipalities by discussing property taxes approaches, green bonds and capital markets, secondary markets, crowdfunding, public private partnerships (PPP) and last but not least, Energy Performance Contracting.

ALMEE analyzed Energy Performance Contracting (EPC) thoroughly, detailing the

Energy performance contract and the selection and tendering of EPC projects. EPC is a creative financing method that allows financing energy efficiency upgrades from cost reductions. This has many advantages for municipalities, as the financing risks, planning and execution of the EE upgrades are transferred to the contracting Energy Company.

The public financing process for Energy saving projects as well as the local actors involved were, then, discussed.

Finally, guidelines for Algerian municipalities relative to Energy saving projects funding, Preparation and implementation of SEAP and national guidelines for securing funding for Municipal Energy projects were presented.

The Module's Contents

- Financing instruments
- Municipality Funding Guidelines for Algeria
- Financing Mechanisms for Municipalities
- References
- Energy Performance Contracting (EPC)

Preview of some of the slides. This Module has 135 Slides.

Download the full module [here](#)

VIII. Energy Intensive Areas in Municipalities (1)

About the Author

Aristotelis Botzios-Valaskakis – Consultant Engineer, CRES



A. Botzios-Valaskakis holds a bachelor's degree in Mechanical Engineering and a master's degree in Environmental Engineering. He has 18 years of experience in the fields of energy efficiency and renewable energy. He is currently working at CRES and his range of expertise includes providing technical support to public authorities for the development of sustainable energy policies; implementing energy audits; monitoring and verifying energy performance of energy efficiency projects; conducting techno-economic feasibility studies for the implementation of energy efficiency and renewable energy projects; developing Energy Performance Contracts (EPC); carrying on dynamic energy modelling and assessment of buildings; and implementing techno-economic feasibility studies and Environmental Impact Assessment Studies of Renewable Energy Power Plants.

Summary of the Presentation

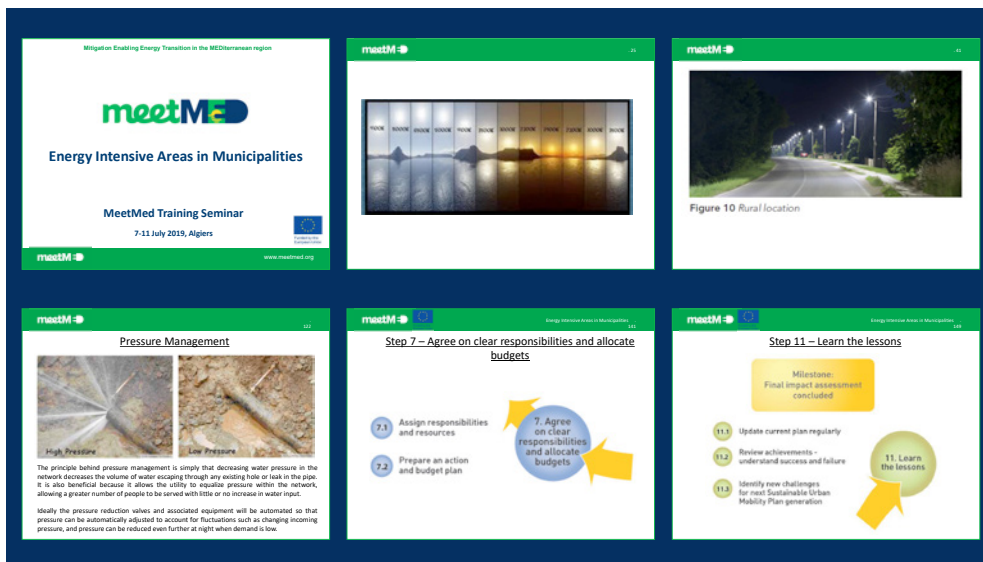
The scope of the intervention during the training seminar was to inform the participants of the energy-intensive sectors in the municipalities and their energy saving potential. More specifically, the public lighting, water supply and transportation sectors were analysed as these are the most energy intensive sectors in the municipalities. The training material consisted of the presentation of:

- The general terms and definitions of each of the sectors. This included a very short presentation of the existing technologies and requirements, which could be followed by both technical and non-technical participants.
- The current situation and existing practices in both EU member states and non-member states.
- The commercial energy saving measures and technologies available.

- Public procurement procedures and criteria which optimize the energy saving potential.
- Monitoring and verification methodologies of energy performance and energy savings.

The Module's Contents

- Public lighting
- Water Supply



Preview of some of the slides. This Module has 151 Slides.

Download the full module [here](#)

Energy Intensive Areas in Municipalities (2)

About the Author

Giorgos Stavrakakis – Senior Researcher, PhD, CRES



G. Stavrakakis is a Chemical Engineer with a PhD in Building Physics Engineering from the National Technical University of Athens. He has 10 years of experience in the energy sector as well as scientific expertise in the field of Computational Fluid Dynamics (CFD) and non-linear programming algorithms in the building, urban and industrial sector, in particular in Coupled CFD, Artificial Neural Networks (ANN) simulations and gradient-based algorithms for optimizing building design and urban planning towards sustainability in living environments. Furthermore, he is an experienced engineering consultant in the field of energy-efficient and environment-friendly applications in the building and the industrial sector, in particular in the following areas:

- Design for buildings' compliance with the National Energy Performance Building Directive (EPBD) 2010/31/EC;
- Application of zonal modelling tools (thermo-radiative models, heat transfer, energy consumption calculations) for energy performance assessments of buildings;
- Application of field models (mass, momentum, turbulence, thermal energy, chemical species) for assessing comfort and air quality conditions in living spaces;
- Coupled field and zonal modelling for assessing building energy performance considered the external microclimate.

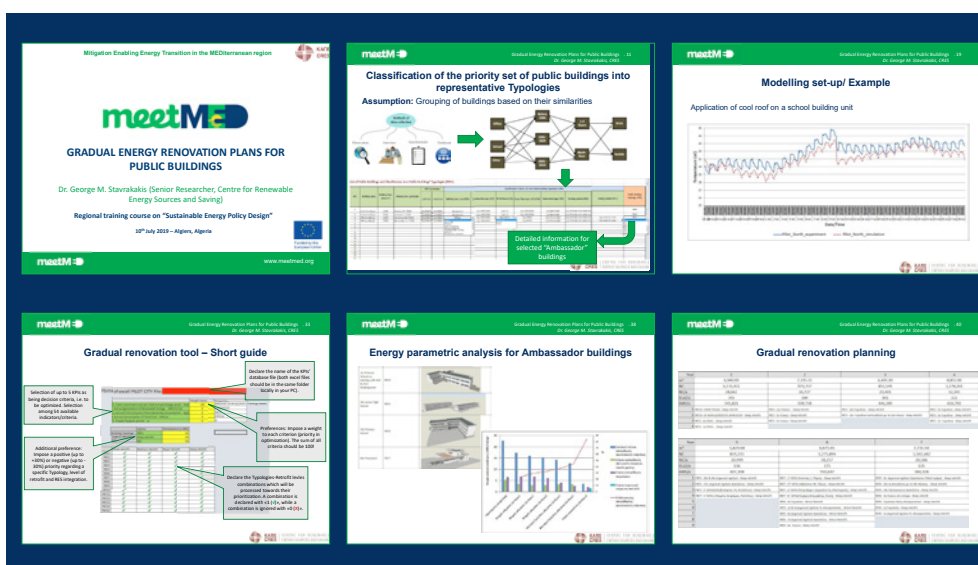
Summary of the Presentation

The scope of the intervention during the training seminar was to inform the participants of the implementation of gradual energy renovation plans for public buildings. More specifically, the training material consisted of the presentation of:

- The requirements for realistic and affordable energy renovation planning;
- The computational methodology developed within the framework of the European IMPULSE-MED project;
- A case study from the island of Crete;
- Suggestions for the formulation of policies and plans for the energy renovation of a stock of public buildings.

The Module's Contents

- Key objectives and common challenges
- Initial sample of buildings
- Classification of the initial set of priority buildings
- Energy analysis of the “Ambassador” buildings
- Processing of key performance indicators
- Gradual Renovation Planning
- Energy upgrading plan for public buildings’ stock – indicative contents.



Preview of some of the slides. This Module has 47 Slides.

Download the full module [here](#)

Energy Intensive Areas in Municipalities (3)

About the Author

Eftychia Mavrou – Energy expert, CRES



Eftychia Mavrou has a degree in Environmental Science from the University of the Aegean, a MSc on Environmental Geotechnology from the Department of Mineral Resources Engineering of the Technical University of Crete, where she was an Assistant at the Laboratory of Solid Fuels beneficiation and Technology. Furthermore, she holds a Postgraduate Diploma on Research on Environmental Education from the Department of Education and Pedagogic of the University of Quebec in Montreal. Her working experience is mainly in the domain of environmental education. Since 2009, she has been a member of the Training Department of CRES, expertizing in the implementation of EU training projects in energy efficiency (EE), energy saving (ES) and renewable energy sources (RES). She has 12 years of experience in the implementation of EU and national funded projects, conduction of reports and studies, development of educative material, design of training courses, organizing dissemination events and translating technical, educative and dissemination material. She is registered at EOPPEP's Trainers Registry as Certified Trainer for Adults.

Summary of the Presentation

The content of the presentation concerning “Energy intensive areas in municipalities” is to inform the relative stakeholders and decision makers working in the public sector on the technical issues related to energy at municipal level. In many cases it has been proven that decision makers are willing to improve the social factors, which are reflecting in the life of the citizens, but sometimes technical and specialized knowledge is missing.

In this intervention, focus was given to transportation and mobility. In previous parts Public Lighting and Water Supply have been analysed.

When dealing with a Sustainable Urban Mobility Plan, the objective is to satisfy the

mobility needs of people and businesses in the city (and surroundings) for a better quality of life. The designing of the Plan can build on existing planning practices and take under consideration principles of integration, participation, and evaluation. In this intervention, the 11 steps for the ultimate designing have been presented (Determination of the potential, Definition of the development process, Analysis of the local mobility status and development of scenarios, Development of a common vision, Setting of Priorities and Measurable Targets, Development of effective packages of measures, Definition of responsibilities and allocation of budgets, Definition of a Monitoring and assessment plan, Implementation of the Sustainable Urban Mobility Plan, Establishment of proper management and communication, Identification of gaps/learn the lessons). All the steps were followed by examples of best practices applied in municipalities in Europe.

IX. Smart Cities

About the Author

Eftychia Mavrou – Energy expert, CRES



Eftychia Mavrou has a degree in Environmental Science from the University of the Aegean, a MSc on Environmental Geotechnology from the Department of Mineral Resources Engineering of the Technical University of Crete, where she was an Assistant at the Laboratory of Solid Fuels beneficiation and Technology. Furthermore, she holds a Postgraduate Diploma on Research on Environmental Education from the Department of Education and Pedagogic of the University of Quebec in Montreal. Her working experience is mainly in the domain of environmental education. Since 2009, she has been a member of the Training Department of CRES, expertizing in the implementation of EU training projects in energy efficiency (EE), energy saving (ES) and renewable energy sources (RES). She has 12 years of experience in the implementation of EU and national funded projects, conduction of reports and studies, development of educative material, design of training courses, organizing dissemination events and translating technical, educative and dissemination material. She is registered at EOPPEP's Trainers Registry as Certified Trainer for Adults.

Summary of the Presentation

When dealing with issues of efficiency, especially on a larger scale as is a City, the application of technological and digital trends can enhance the ultimate results. Therefore, the idea of a Smart City has emerged, as of a place where traditional networks and services are made more efficient with the use of digital and telecommunication technologies for the benefit of the inhabitants and business.

In this intervention, the concept of a Smart City was analyzed, starting with the presentation of the European innovation partnership on smart cities and communities (EIP-SCC), an initiative supported by the European Commission that brings

together cities, industry, small business (SMEs), banks, research etc, aiming at improving the urban life through more sustainable integrated solutions and addresses city-specific challenges from different policy areas such as energy, mobility and transport, and ICT. The idea of this initiative is to build on the engagement of the public, industry and other interested groups to develop innovative solutions and participate in city governance.

The main issues that should be taken under consideration by a stakeholder or a decision maker concerning the Smart Cities were also presented in this intervention. The priorities that should be established, the policies that should be considered or drafted, the interaction with the single market are the first issues to examine. In order to proceed to a more detailed review, the specific issues that the Smart Cities deal with were mentioned: Energy, Sustainable Transportation, Waste, Biodiversity etc. Finally, the starting points necessary to develop Strategies and Plans which are needed to be defined in order to meet with the UN's Sustainable Development Goals were presented, followed by the European Energy Award which motivates the municipalities to take action in the field of energy and climate protection.

The Module's Contents

- Definition
- European innovation partnership on smart cities and communities
- Priorities of the EIP-SCC partnership
- EIP-SCC marketplace
- Related policies
 - Digital single market and smart cities
- Energy and smart cities
- Sustainable transport for smart cities
- The needs for developing “Smart City Strategies” and implementing “Smart City Plans”
- Starting points for development of Smart City plans



Preview of some of the slides. This Module has 18 Slides.

Download the full module [here](#)

X. Energy Communities

About the Author

Eftychia Mavrou – Energy expert, CRES



Eftychia Mavrou has a degree in Environmental Science from the University of the Aegean, a MSc on Environmental Geotechnology from the Department of Mineral Resources Engineering of the Technical University of Crete, where she was an Assistant at the Laboratory of Solid Fuels beneficiation and Technology. Furthermore, she holds a Postgraduate Diploma on Research on Environmental Education from the Department of Education and Pedagogic of the University of Quebec in Montreal. Her working experience is mainly in the domain of environmental education. Since 2009, she has been a member of the Training Department of CRES, expertizing in the implementation of EU training projects in energy efficiency (EE), energy saving (ES) and renewable energy sources (RES). She has 12 years of experience in the implementation of EU and national funded projects, conduction of reports and studies, development of educative material, design of training courses, organizing dissemination events and translating technical, educative and dissemination material. She is registered at EOPPEP's Trainers Registry as Certified Trainer for Adults.

Summary of the Presentation

Energy Communities is a recent legal form aiming to the facilitation of promotion of clean energy with the active involvement of communities in the energy sector, resulting direct benefiting from energy projects locally. More specifically, Renewable energy communities involve generation of energy from renewable sources and technologies, which are partly or wholly owned by local communities.

Since the benefits from the involved communities are important and strong (economic development, creation of new jobs, cheaper energy, self-sufficiency, community cohesion, energy security) the particularities of such projects needed to be underlined. Therefore, this intervention, after presenting the benefits, focused on the challenges

that need to be taken under consideration in order to strengthen base foundations for the implementation of a successful Energy Community.

The analysis of existing models is considered also helpful in order to valorize different social, geographical, economical and other factors that result to the definition of the ultimate choice of the structure which the energy community should have. The various Legal forms that a Community can have were presented and then the intervention focused on the available technical options. Finally, specific recommendations concerning awareness, expertise, finance and legal frameworks were analyzed.

Successful regulatory frameworks which have proven effective in other countries can be used as a best practice example to duplicate or adopt. Net metering, ESCOs, RES-coop cooperation have been implemented in European countries and their advantages and experience have been presented.

The Module's Contents

- Overview
- Main objectives
- Main benefits
- Main challenges
- Models
- Legal forms
- Technical options
- Recommendations
- Awareness
- Finance
- Expertise and guidance
- Legal frameworks and regulation
- Net metering
- Virtual metering
- ESCO
- REScoop and its advantages



Preview of some of the slides. This Module has 38 Slides.

Download the full module [here](#)

This publication is a product of the meetMED (Mitigation Enabling Energy Transition in the Mediterranean region) project which is funded by the European Union and jointly implemented by the Mediterranean Association of the National Agencies for Energy Management (MEDENER) and the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE). The conclusions of this report result from the analysis of the Country Policy Papers prepared by the meetMED Regional Expert Network (REN) – a network composed by experts coming from 13 Mediterranean countries – the aim of which is to support national governments in the implementation of EE and RE policies enhancing national programmes and frameworks in the region. Since 2012, the eight target countries (Algeria, Egypt, Jordan, Lebanon, Libya, Morocco, Palestine and Tunisia) have improved their energy efficiency and renewable energy sectors, having put in place long-term national energy strategies that set ambitious targets for energy savings and renewable energy penetration. Nevertheless, several challenges still hinder the development of EE and RE, particularly related to governmental, technical or information aspects. This report identifies a set of recommendations that can be implemented to promote the development of both sectors. Awareness of the population for EE and RE benefits should be one of the main objectives of the countries since the lack of knowledge is a clear barrier to the dissemination of good practices. Regional cooperation should be encouraged to facilitate the energy transition in the Southern and Eastern Mediterranean Countries (SEMCs) – cooperation will accelerate the implementation of common measures and help overcome shared barriers.



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