



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

CONCEPT NOTE FOR THE CREATION OF AN INDUSTRIAL ASSOCIATION OR NETWORK ON EE AND RE TO SERVE LOCAL MARKETS

Maghreb Countries



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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.

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Table of Contents

Credits	05
Tables and Figures	07
Acknowledgements	08
Acronyms	09
Introduction and Methodology	10
1. State of Play	14
1.1. The Moroccan Energy System	14
1.2. The Tunisian Energy System.....	17
1.3. The Algerian Energy System	20
2. Objectives and Expectations of a Regional Structure	25
2.1. Promoting Synergies Between Countries	25
2.2. Export	27
2.3. Training and Information	27
2.4. Lobbying	28
3. Conditions for Success	30
3.1. Requirements	30
3.2. Points to Look Out	31
3.3. Recommendations	32
4. Proposals for a Maghreb Structure	34
4.1. Legal Framework	34
4.2. Purpose and Scope	35
4.3. Governance and Localization	35
4. Action Plan	37
5. Conclusions	39

Tables and Figures

List of Tables:

Table 1 : Criteria for assessing feasibility of an industrial association	12
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List of Figures:

Figure 1 : Methodology flow chart.....	11
Figure 2 : Sub-regional workshop in Algiers (21/11/19)	13

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Dominique Campana

Director, Europe and International Division

Acronyms

AMEE	Moroccan Agency for Energy Efficiency
AMISOLE	Moroccan Association of Solar and Wind Industries
AMPF	Moroccan Association of refrigeration professionals
ANME	National Agency for Energy Management – Tunisia
APRUE	Agency for the Promotion and Rationalisation of Energy Use – Algeria
CDER	Renewable Energy Development Center – Algeria
CEREFE	Renewable Energy and Energy Efficiency Commission – Algeria
CGEM	General Confederation of Moroccan Business Owners – main employers’ union – Morocco
CNERIB	National Centre of Integrated Studies and Research on Building Engineering – Algeria
EE	Energy Efficiency
FCE	Business Owners’ Forum - Employers’ union – Algeria
FCCIM	Fédération des chambres de commerce et d’industries du Maroc
FENELEC	National Federation of Electricity, Electronics and Renewable Energies – employer’s union – Morocco
FNME	National Fund for Energy Management – Tunisia
IFMEREE	Training institute for renewable energy and energy efficiency – Morocco
IRESEN	Research Institute for Solar Energy and New Energies – Morocco
MASEN	Moroccan Agency for Sustainable Energy
NEMP	National Energy Management Programme – Algeria
RE	Renewable Energy
REEEP	Renewable Energy and Energy Efficiency Programme – Algeria
UPER	Union of professionals in renewable energies – Professional association – Algeria
UTICA	Tunisian Union of Industry, Commerce and Handicrafts – employers union – Tunisia

Introduction and Methodology

Growing energy demand, growing population, growing cities... The Maghreb countries are facing many challenges in the fight against climate change and GHG reduction. These challenges require coordinated and significant efforts from many stakeholders: civil society, local and national authorities and private sector shall be involved in developing sustainable markets for energy efficient solutions and products and manufacture using renewable energy sources.

Local private sector is indeed key to promote energy efficient products and services and renewable energies. In constant progress according to many observers, these markets are however not well structured and are still small despite a growing interest and recognized potential (IRENA, 2016). They also cover wide and varied fields of activity: from the manufacturing of equipment components from simple to complex (RE) to maintenance services, energy audit services or those related to certification / labelling, from design to the realization of works and infrastructures in the building sector, industry or even city planning. It also covers a wide range of existing and potential jobs in various sectors. However, this market is characterized by its heterogeneity, different sizes, different expectations, targets and objectives.

The creation of a solid structure (association or network) at the national and - potentially - regional level would serve along various manufacturing operations to develop and introduce renewable energy and energy efficiency measures, as well as to promote local production of RE and EE systems' components. They could also serve as an industrial and commercial lobby defending and promoting the development of a local market through a clear and efficient public policy for energy transition, including regulation and financing means.

From the experiences obtained from industrial associations in the region and a fine understanding of the stakeholders, this concept note questions the feasibility of such an association or a network of industries in the three targeted Maghreb countries (Morocco, Algeria and Tunisia, Libya being temporarily suspended).

The general objective of this mission is to contribute to the wider deployment of energy efficiency and renewable energy markets in 3 target Maghreb

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

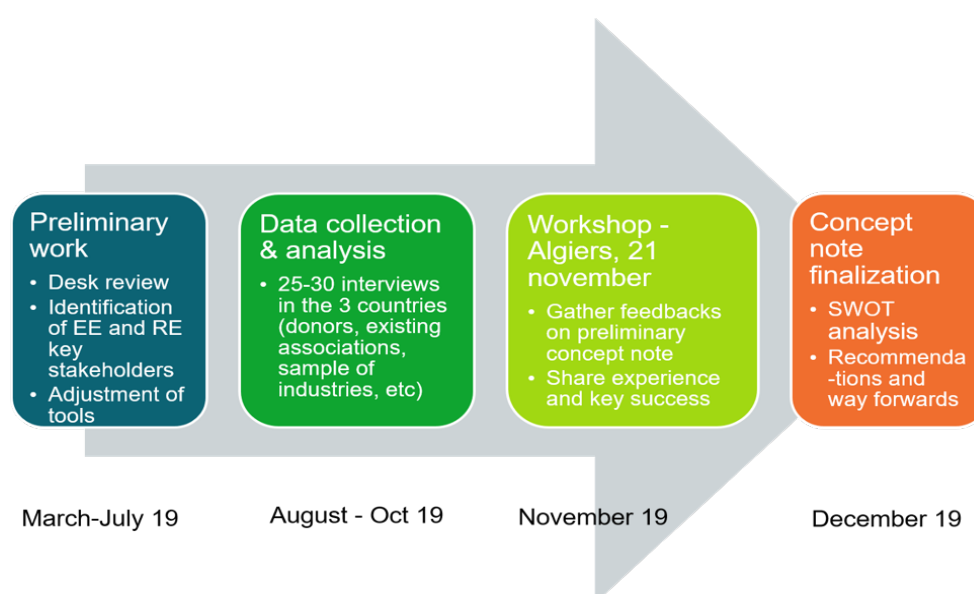
countries, namely Algeria, Morocco and Tunisia. More specifically, this mission consists in feeding a concept note for the creation of an association or a network with regionally based private actors on energy efficiency and renewable energies matters.

This mission has enabled to:

- identify through desk research the main challenges and legal, institutional and economic background information on EE and RE markets
- identify key actors, levers and constraints for the creation of such an association or network in the 3 targeted Maghreb countries;
- identify the mandate, ambitions, objectives and modalities for the implementation and organization of such association / network;
- initiate exchanges between private stakeholders to refine the feasibility of such a structure and establish an action plan.

Reminder of different phases that led to drafting this concept note:

Figure 1 : Methodology flow chart



Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

Several factors for the assessment of the creation of an industrial association were used to structure the interviews and are listed below:

Table 1: Criteria for assessing feasibility of an industrial association

Market Maturity

Size of national industry on EE and RE	This criterion tackles the size and strength of national industry on EE and RE, the number of industries, the variety of sectors, the market scale (local or export);
Capacity of private stakeholders	This criterion focuses on the market maturity regarding norms and standards applied, relationships with international markets. It could facilitate networking and interest in better structuring the market as well as it could tackle the capacity of private stakeholders (level of informality). R&D in EE and RE technologies will be also considered.
Market maturity	This criterion takes into account the market size and potential for development of EE and RE, including public awareness. It could be an ambiguous criterion: a mature market could be ready for better structuration, but a developing market needs more before striving for better structuration. A focus on appliances will be done, if possible.

Business Environment

Adapted EE and RE rules and regulations	This criterion tackles the level of national EE and RE policies and strategies ambition, the capacity of public stakeholders to dialogue on EE and RE policies. It could also tackle the “clarity” of business environment (level of transparency, clear rules and regulation, facility of doing business). A special focus will be put on the existence of policies and measures to enhance RE and EE use in residential and industrial sectors.
Level of competition / level of cooperation	This criterion tackles the consciousness of having a common interest in promoting EE and RE. It reflects the existing level of cooperation/ dialogue between industries in the country.
Civil society maturity	This criterion tackles the degree of current market structuration, the existence of industrial associations and their dynamism, the level of dialogue with the state and public institutions, their independence towards public institutions.
Willingness of stakeholders	This criterion takes into account the willingness of stakeholders and apparent “enthusiasm” for creating such structure.
Funds availability	International funds and action plans in cooperation with third parties

This document has been elaborated taking into account the 28 semi-structured interviews conducted between July and November 2019 (11 in Tunisia, 8 in Algeria and 9 in Morocco) as well as the reactions and suggestions of stakeholders, particularly during the regional workshop held on 21 November 2019

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

in Algiers⁽¹⁾. More than 60 structures (enterprises, existing industrial networks, chambers of commerce, international technical and financial partners, public agencies) were represented with two delegations from Tunisia and Morocco. During this workshop, several experiences were presented, and fruitful discussions allowed drawing the recommendations contained in this concept note.

Figure 2 : Sub-regional workshop in Algiers (21/11/19)



(1) The programme can be found online <https://meetmed.org/meetmed-worskhop-on-mobilizing-the-private-sector-for-the-energy-transition-in-algeria-and-in-the-mediterranean-region-maghreb-focus/>

1. State of Play

Overall, the three Maghreb countries have experienced rather uneven developments, even though all of them have implemented an energy management policy, which included regulatory framework and institutions. The structure of the professions is not quite homogeneous as there is a relatively developed organisation in Morocco, while in Tunisia and Algeria important professional sectors have to be structured yet.

1.1. The Moroccan Energy System

Growing Energy Consumption

Energy consumption is growing steadily due to the improvement in the standards of living and the development of industrial activity. Between 2007 and 2017, final energy consumption increased by 34% to reach 16.1 MTOE. This increase is mainly due to transport (+58% over the same period) and the residential sector (+26%). Electricity needs are increasing faster (+58%) than overall energy demand and could reach, according to the IEA, an annual growth rate of 5% over the next 3 years.

The Energy Mix is Still Dominated by Fossil Fuels

Despite the efforts to diversify the energy mix, fossil fuels account for 90% of primary energy consumption. Renewable energies account for the remaining 10%. Apart from those generated from wood and waste, which are in decline (-30% between 2007 and 2017), renewable energies are increasing. Their share in final consumption reached 7.2% in 2016 (compared to 4.5% for North Africa). In 2017, they accounted for 14.8% of electricity generation.

Energy Policy

The Government's policy is based first and foremost on the "National Energy Strategy" drawn up in 2009, which provides a framework for guidance and planning up to 2030. Energy efficiency and renewable energy legislation and regulations were introduced subsequently and in accordance with this framework document.

- **Energy Efficiency:**

Following the publication of the “National Energy Strategy”, the Government created in 2010 the National Agency for the Development of Renewable Energy and Energy Efficiency (ADEREE). The latter will be renamed, in 2016, “Agence Marocaine pour l’Efficacité Energétique” (AMEE) with limited appointed tasks in the field of energy efficiency. The Law n°47-09 on energy efficiency was promulgated on 29 September 2011. This law introduces the obligation to carry out an energy impact study for certain building construction projects, the minimum energy performance of appliances running on electricity or hydrocarbons sold in the country, thermal performance rules for new buildings, as well as mandatory energy audits for large energy consumers.

- **Renewable Energies:**

The National Energy Strategy adopted in 2009 initially planned to achieve a 42% share of renewable energy in electricity generation capacity by 2030. In the framework of Morocco’s commitments at COP 21, in 2015 this objective was raised to 52%.

In order to implement the action plan comprised in the National Energy Strategy, the Government promulgated on 11 February 2010 the Law n°13-09 relating to renewable energies (Dahir n°1-10-16), which will be amended and enhanced on 12 January 2016 by the Law n°58-15 (Dahir n°1-16-3). This latter particularly will let the electricity production from renewable energy sources to be open to competition and renewable energy producers to have access to the electricity grid.

On 11 February 2010, the law n°57-09 was also promulgated. This concerned the creation of the Moroccan Agency for Solar Energy “MASEN”, which was turned in the “Moroccan Agency for Sustainable Energy” in 2016. Its competencies are extended to all renewable energies with the mission to carry out a development program of integrated power generation projects with a minimum additional capacity of 3,000 MW by 2020 and 6,000 MW by 2030.

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

Industrial and Institutional Players

Industrial Players	
Renewable Energies	<p>The renewable energy sector is new but there is already a fabric of companies involved in equipment manufacturing, installation, development and operation.</p> <p>There are 4 manufacturers of photovoltaic panels of which the most important is ALMADEN (capacity of more than 250 MW / year), producers of solar water heaters, such as First Solaire or Batitherm. There are also a few engineering firms that carry out the studies and construction of installations, such as Morenergy or AS ENERGY. The Nareva Group specializes in the investment, development and operation of power plants.</p>
Electrical Industries	<p>The players in this sector are quite numerous and manufacture different products: cables, equipment, etc. Most of them are members of the National Federation of Electricity, Electronics and Renewable Energies (FENELEC), which also includes 90% of distributors and installers. It also includes subsidiaries of international groups that have Moroccan production sites such as ABB or NEXANS.</p>
Appliances, Electronics, Cooling and Heating	<p>There are few Moroccan producers or assemblers of household appliances. However, there is MANAR.</p> <p>As far as electronics are concerned, there are several manufacturing sites, which are either subsidiaries of international groups exporting products for the aeronautics or other industrial sectors or local subcontractors for industry.</p> <p>In the field of industrial refrigeration, there are mainly installers.</p>
Insulation of Buildings	<p>There are 3 producers of sandwich panels (Maghreb Steel, MPI Kenitra and Interfer S.A) and some manufacturers of expanded polystyrene, such as LMN.</p>

Institutional Players	
Associations	<p>Professionals are well structured. The FENELEC brings together more than 540 companies representing 95% of the professions. The Moroccan Association of Refrigeration Professionals (AMPF) is an association created in 1994 by refrigeration professionals and approved by the Ministry in charge of Industry. Created in 1987, the Moroccan Association of Solar and Wind Energy Industries (AMISOLE, member of FENELEC) has accompanied the different phases of the development of renewable energies. Finally, the Solar Cluster brings together different entities, such as training centres, companies, research centres, etc.</p>

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

Institutional Players	
Public Institutions	<p>Several Ministries are involved in issues relating to renewable energies and energy efficiency, but the Ministry of Energy, Mines and Sustainable Development and, to a lesser extent, the Ministry of Regional Planning, Urban Planning, Housing and Urban Policy - this is in charge of building and urban planning regulations, particularly as regards the thermal aspects and energy balances of projects - are particularly noteworthy.</p> <p>Three public entities play an important role:</p> <ul style="list-style-type: none"> • The Moroccan Agency for Energy Efficiency (AMEE) under the supervision of the Ministry in charge of energy; • The Moroccan Agency for Sustainable Energy (MASEN), which is a key player in the field of renewable energy, and also under the supervision of the Ministry in charge of energy; • The Institute for Research in Solar Energy and New Energies (IRESEN), which is a research centre. <p>There are also 2 training institutes for renewable energy and energy efficiency (IFMEREE) located in Oujda and Marrakech.</p>

1.2. The Tunisian Energy System

An Energy Balance with a Structural Deficit

The analysis of the current energy sector context, the future stakes and the challenges to be addressed imply the country's commitment to an energy transition by establishing a model that will ensure the diversification of its energy sources and the security of its energy supply. The Tunisian energy system is characterized by:

- An energy mix based almost exclusively on hydrocarbons;
- Declining national hydrocarbon resources and a continuously growing energy demand, revealing an energy deficit that became structural in 2000 and continued to grow over time to exceed 3.8 MTOE in 2018 (Ministry of Industry, "open data" portal);
- High dependence on natural gas for electricity generation;
- An energy supply that is not completely secure for petroleum products (60% of needs are imported) and not diversified for natural gas (50% of needs are met by Algerian gas);

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

- A rather limited penetration of renewable energies although the country has a large potential. A certain slowdown in the implementation of energy efficiency programs despite the achievements and the advance recorded by Tunisia vis-à-vis Arab and African countries;
- Heavily subsidized energy prices and an insufficiently targeted compensation policy result in a deficit that represents 1/3 of the country's trade deficit.

Energy Policy: EE and RE Development Programmes

Tunisia is one of the few countries to have adopted a proactive energy management policy since the mid-1980s. Indeed, long before the energy balance deficit was established and persisted, and aware of the importance of the energy sector, both economically and socially, the public authorities took important energy policy measures. This policy was reinforced from the mid-2000s onwards in the wake of soaring international oil prices and a growing energy deficit. Ambitious energy efficiency and renewable energy development programmes were developed:

Program	Provisions
Three-year program 2005-2007	<p>For more than 20 years, the Tunisian State has been implementing a national policy of energy management and promotion of renewable energies. This policy was consolidated by the promulgation of the Energy Management Act of 2 August 2004, amended by the Act of 9 February 2009, which paves the way for the self-generation of electricity through renewable energies.</p> <p>As part of this policy, a three-year energy management programme was set up in 2005-2007, accompanied by the creation of the National Fund for Energy Management (FNME: Fonds National pour la Maitrise de l'Energie). This program saved 700 KToe in 2007, i.e. 8% of national consumption for the same year.</p>
Four-year plan 2008-2011	<p>Following the success of this three-year programme, a new four-year programme for energy management (2008-2011) has been set up with the main objectives of reducing demand by 20% by 2011 and increasing the share of renewable energies to 4% of electricity demand.</p> <ul style="list-style-type: none"> • Total FNME subsidy: 59 million dinars.

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

Program	Provisions
Tunisian Solar Plan	<p>The Tunisian Solar Plan (TSP) set up in 2009, covers the period 2010-2016. It builds on and complements the achievements of the four-year programme. Through this plan, Tunisia has shown its ambition to embark on the path of a green socio-economic development and economical in energy consumption.</p> <p>The TSP is intended to strengthen the energy management policy by focusing on the development of renewable energies in the production of electrical energy and the improvement of electrical efficiency.</p> <p>In substance, the TSP comprises 40 operational projects (residential photovoltaic, solar heating, EE, wind power, etc.) divided into 5 chapters classified by field of energy activity for a total cost of 3,600 M TND.</p>
National Energy Management Strategy - Horizon 2030	<p>The national energy management strategy was built based on the results of the national debate organized between the end of 2013 and April 2014 on the country's energy policy;</p> <p>The 2 main axes of the national strategy are the reduction of primary energy demand by 17% in 2020 and by 34% in 2030, compared to the trend scenario of "laissez faire", and the development of renewable energies. The energy savings that would be achieved in 2030 should reach 6.5 MTOE. By 2030, 30% of electrical energy should be produced from renewable energy sources.</p>

Industrial and Institutional Players

Industrial Players	
Renewable Energies	<p>In terms of industries, strictly speaking, this sector remains poorly supplied with only two manufacturers of PV panels (Shams technologies and Aurasol) and a few manufacturers of solar water heaters (SOFTEN, BSI, etc.). Nevertheless, there are many installers working in this sector thanks to the PROSOL and PROSOLELEC programs, which have had the merit of encouraging Tunisian consumers to equip themselves with PV and solar thermal installations. It should be noted that these professionals are members of two professional associations: the "Chambre Syndicale des Intégrateurs en Photovoltaïque" and the "Chambre Syndicale Nationale des Energies Renouvelables", both under the authority of the employers' union (UTICA).</p>
Electrical Industries	<p>The electrical, electronic and household appliances industry (IEEE) counts more than 400 companies with a workforce of 10 or more people. It employs 87,702 people. There are 240 totally exporting units providing 89% of the sector's employment, i.e. 77,881 people.</p>
Household Appliances, Heating and Cooling	<p>There are about ten assemblers of household appliances in Tunisia, such as Afrivision (BEKO, Hisens, etc.), Al Athir (Thomson, Samsung, etc.), Ben Ayed (Candy, Bosch, etc.). There is also a significant number of design offices and installers of hot/cold devices operating in Tunisia and for the export, particularly in sub-Saharan Africa (industrial refrigeration).</p>

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

Industrial Players	
Insulation of Buildings	Tunisia has 4 industrial units manufacturing sandwich panels (SNCI, Tunisie panneaux, Panneaux du Maghreb and Stunas Industries).
Institutional Players	
Associations	<p>In the EE and RE sector, Tunisia has mainly trade union associations whose main objective is to protect their sector against any economic risk that could have impacts on them. These trade union associations, such as the “Chambre Syndicale des Intégrateurs en Photovoltaïque” and the “Chambre Syndicale Nationale des Energies Renouvelables”, are affiliated to the Tunisian Union of Industry, Commerce and Handicrafts “UTICA” (main employers union). It is also worth noting the existence of a union chamber for sealants and another in the LED bulb manufacturing industry.</p> <p>NB: in 2013, a “Renewable Energy and Energy Efficiency, TUNICREEE” cluster was created, based at the Borj Cedria technopole. The latter has remained inactive since its inception, but ANME is now rethinking how to revive its activity.</p>
Public Institutions	<p>The RE and EE sector in Tunisia is under the supervision of the Ministry of Industry and SMEs. This Ministry deploys its strategy through the National Agency for Energy Management (“Agence Nationale pour la Maitrise de l’Energie” - ANME), created in 1985.</p> <p>The scope of ANME’s intervention encompasses all initiatives and actions aimed at improving the level of energy efficiency and diversifying energy sources.</p>

1.3. The Algerian Energy System

Energy Consumption is Growing Rapidly

Since the mid-2000s, the country’s energy needs have been growing rapidly. Between 2007 and 2018, final energy consumption increased by an average of 5.2% per year, from 27.5 MTOE to 48.1 MTOE. This is mainly due to a stagnation in energy prices between 2005 and 2016 combined with improved living standards, accelerated growth in the housing stock and economic development. Between 2008 and 2018, energy consumption by housing reached an average annual growth rate of 6.7%, while for industry and construction, the increase was on average 5%. It should be noted that the Algerian State has subsidised, since the 1970s, the tariffs for the sale of energy on the domestic market. The prices charged are regulated and any variation is decided by the Government.

The Energy Mix is Very Strongly Dominated by Fossil Fuels.

Algeria essentially meets its energy needs thanks to the abundance of its hydrocarbon resources. More than 99% of final energy consumption comes from hydrocarbons, while renewable energies provide only 0.4%.

Energy Policy

- **Energy Efficiency:**

As a hydrocarbon-producing country, Algeria has not suffered the pressure of rising fossil fuel prices, which has pushed neighbouring countries to control their energy consumption. Rather, it was the decline in oil export revenues and the discovery of new oil fields, combined with the increase in domestic consumption during the 1980s, that led the Algerian Government to consider a rationalization of energy consumption at that time. This concern was reflected in the creation of the Agency for the Promotion and Rationalisation of Energy Use -APRUE- in August 1985. The latter, under the authority of the Minister of Energy and in consultation with the Intersectoral Energy Management Committee, develops and monitors the implementation of the National Energy Management Program (NEMP). Since February 2011, it has been part of the Renewable Energy and Energy Efficiency Programme (REEEP) developed by the Government for the period 2011-2030. The REEEP was revised in January 2015, especially with respect to its objectives for the development of renewable energies. Further amendments to the latter are being prepared by the Government and are expected to be formalized in the first half of 2020.

Regarding energy efficiency, it provides for:

- An energy saving of 30 MTOE in buildings and public lighting by developing thermal insulation of buildings and solar water heaters, and by phasing out incandescent lamps;
- Reduction in energy consumption in the transport sector by 16 MTOE by encouraging the use of gas as a fuel (LPG and CNG);
- Saving 30 MTOE in industry by optimizing process consumption through energy audits and corrective actions.

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

• Renewable Energies:

The government's strategy for the development of renewable energies is expressed through the REEEP, which planned to reach 22 GW of power dedicated to electricity production by 2030. In view of the delays in implementing the programme, in February 2020 the Government announced that it intends to reduce this target to only 15 GW by 2035. The distribution of the different energies initially planned is:

- 61.7% in photovoltaics,
- 22.8% in wind power,
- 9.1% in solar thermal,
- 4.5% biomass,
- 1.8% in cogeneration,
- 0.1% for geothermal energy.

As of 2011, the Government has decided to give priority to the development of a local industry for the manufacture of the necessary equipment as part of its strategy.

Industrial and Institutional Players

Industrial Players	
Renewable Energies	The market remained embryonic until 2012 as the demand consisted mainly in providing photovoltaic kits for isolated sites. Foreign suppliers for larger wind and solar installations. However, the manufacture of photovoltaic panels only started in 2011 with ALPV company. The Government's decision to achieve its REEEP objectives by promoting the use of local products has led to the emergence of new local producers from 2014: AURES SOLAIRE (an Algerian-French JV), CONDOR, ENIE (a public enterprise) and ZERGOUNE GREEN ENERGY. There are also a few companies specialising in the installation of solar photovoltaic systems, such as ALSOLAR, ASC

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

Industrial Players	
Electrical Industries	The players in this sector are quite numerous and manufacture different products: cables (EL SWEDY, ENICAB subsidiary of CONDOR, GISB...), metering equipment (AMC, ENERGICAL...), LV/HV transformers (ELECTRO-INDUSTRIES), line accessories (AMC...), low and medium voltage switchgear (AMC, ENERGICAL...), BMS, ...), Lights for indoor and outdoor lighting including LED (ROUIBA LIGHTING, LUXY LIGHTING, LED POWER), generators (AMIMER ENERGIE, GMI...), batteries (ENPEC...), bulbs (LED POWER, FILAMP), etc...
Appliances, Electronics, Cooling and Heating	This sector is one of the first to be affected by the implementation of measures stemming from the NEMP: energy class labelling and tax on energy-intensive products. It is also one of the most dynamic in the country. In addition to Brandt's local subsidiary, there are some great success stories in the field of household appliances and brown goods with CONDOR, SATEREX (IRIS brand), LOTFI ELECTRONIC (Géant brand), etc. There are also SMEs specialising in the production of industrial refrigeration and heating equipment.
Insulation of Buildings	Algeria has several producers of insulation mainly in expanded polystyrene or cork (expanded or agglomerated). Some of the most important ones are: POLYSTYRENE DES OASIS, SOFATPO, CERALG, etc. There are also a dozen sandwich panel producers, such as SPS, GROUPE RAHMANI, BORDJ STEEL (BENHAMMADI group which also controls CONDOR) or BATI COMPOS (Cevital group which controls Brandt). There are 3 producers of insulated doors for cold rooms, such as DIMA FROID.

Institutional Players	
Associations	<p>In the field of renewable energy, there are a few associations. Three of them only bring together professionals: The Solar Energy Cluster, the Union des Professionnels des Energies Renouvelables (UPER) and the Energia club of the "Forum des Chefs d'Entreprises" (employers' association).</p> <p>The others are made up of professionals as well as individuals, who campaign for the development of clean energy, such as Bariq 21.</p>

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

Institutional Players	
Public Institutions	<p>Several Ministries are involved in issues related to renewable energies and energy efficiency: The Ministry of Energy (main department on both aspects), the Ministry of Environment and Renewable Energies, the Ministry of Housing, Town Planning and Cities.</p> <p>Four public institutions play an important role:</p> <ul style="list-style-type: none"> • The “Commissariat aux Energies Renouvelables et à l’Efficacité énergétique” (CEREFÉ) - created in November 2019 - is placed under the direct supervision of the Prime Minister and its mission is to design the national strategy for the development of renewable energies and energy efficiency. It participates in the implementation and evaluation of the national policy in the field of renewable energies and energy efficiency. • The APRUE: agency under the supervision of the Ministry of Energy and in charge of all matters relating to energy efficiency in all areas. • The National Centre for Integrated Studies and Research in Building (CNERIB) is a research centre under the supervision of the Ministry of Housing, which intervenes in particular for building regulations. • The CDER, is a research centre under the supervision of the Ministry of Higher Education and Scientific Research, which often intervenes to advise the Ministry of Energy on issues relating to renewable energies.

2. Objectives and Expectations of a Regional Structure

The creation of a regional structure seems to be unanimously supported by the stakeholders met in the three countries. It gives rise to several objectives and expectations that we are presenting here.

2.1. Promoting Synergies Between Countries

For all the interviewed professionals, the creation of a regional structure should make it possible to promote synergies between industrial players and associations in the three countries, with the aim to:

- **Structure and strengthen the relationships** that already exist between certain companies and entities in the 3 countries. Indeed, some companies or associations have already had contacts and tried to work together but this remains very limited and insufficient. In Algeria, the Solar Energy Cluster has already approached its counterparts in Morocco but, according to the Algerian leaders, exchanges of information are very difficult in the absence of a regional structure that could help facilitate exchanges and avoid certain reticence.
- **Foster industrial synergies** in order to create a market for green energies and technologies for the Maghreb. It will be necessary to:
 - Increase the size of the market in order to generate as much investment as possible.
 - Homogenize the standards between the countries and even regulations, including customs regulations, to facilitate trade.
 - Monitor the market at the Maghreb level: the players in the three countries often have little knowledge of the markets of other Magh-

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

reb countries, which would enable them to meet Maghreb demand on markets where local supply is insufficient.

- Raise awareness on the main three countries having calls for tenders adapted to the level of industries and companies of the Maghreb or of a country.
- Work on the complementarities between the companies of the three countries and gather them in order to make common offers on the Maghreb market but also at the African or even Mediterranean level.

- **Supporting the transfer of technology or know-how between Maghreb and extra-Maghreb countries**

- For RES, some professionals in Algeria deplored the insufficient exchange of know-how and technologies. In this way, on the one side, experiences in terms of labels or certification could be transmitted to neighbours and it will be possible to take advantage of the existence of production units in neighbouring countries, for example for photovoltaic panels.
- Refrigeration professionals in Morocco suggested regrouping or consulting at the Maghreb level for the import and export of technologies and assembled parts in order to improve competitiveness and EE.

- **Pooling resources and knowledge**

- Benchmarking the most advanced Maghreb countries. This is to prevent other countries from repeating the same mistakes.
- Exchange between countries on regulatory aspects.
- Exchanges on good practices between industrialists in the field of energy efficiency.
- Creating a “Maghreb Observatory of EE and RE”, which will be responsible for providing statistical data and carrying out prospective studies.

- **Draining funding**

In the case of a regional program, funding would be more easily obtained through this regional association. The search for funding to solve common problems (e.g. to set up labels or quality standards, or to train trainers on new standards, etc.) could be facilitated by pooling human

resources and federating on Maghreb projects carried out by this regional structure.

2.2. Export

This structure should also help **promote export competitiveness outside the Maghreb and in the Maghreb market** thanks to:

- The complementarities between the companies of the three countries grouped together for exporting RE production facilities to Africa and the Maghreb region.
- The promotion of the activity of member companies.
- Sharing and exporting the technical and managerial know-how of the members of the network or association.
- Exporting solar and wind energy to the EU with a 15 to 20-year perspective.
- The eventual creation of a Maghreb “supply chain” capable of responding to markets in the Maghreb and in Europe, where local supply has diminished due to Chinese competition.

2.3. Training and Information

In terms of training and information, this regional structure should encourage:

- **Training and raising awareness on energy management**
 - Advise consumers to make them recognize the quality and level of energy performance, as the Maghreb market is a price market. Thus, although some household appliances have labels indicating their energy class, many consumers are still unable to understand the financial issues related to energy consumption (payback time, etc.) and are content to use the purchase price as a criterion of choice.
 - Train professional installers and dealers in EE technologies and issues (e.g. in Algeria, plumbers do not trust gas water heaters equipped with electric ignition and prefer appliances with a pilot flame).

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

- Coach, inform and train members about the differences in regulations between countries.
- **Improving business expertise on energy standards**
 - The regional association could provide training to companies for a better mastery of ISO 50 001 certification.
 - Training will be important in order to facilitate the implementation of a digital energy management system.

2.4. Lobbying

The goal is to successfully:

- **Be a recognised interlocutor for dialogue with public authorities**
 - Being a source of proposals for public authorities during preliminary discussions to define changes in the countries' energy strategy that are consistent with the collective interest of the industries (and therefore economies) in the region and in line with climate policies.
 - Consulting with public authorities on changes in regulations and incentive schemes (subsidies, taxes, etc.).
 - Examples: in Algeria for gas appliances (heating and water heaters), professionals could negotiate a differentiation of taxes on gas appliances according to their energy performance level; in Tunisia, the challenge is to perpetuate the "PROSOL" program, which allows subsidizing RE installations and preserving the economic model of companies in this sector. The discussions led by the national associations could be carried out considering the mutual interests of the industrialists in the region through the regional structure.
 - Discussing on monitoring the energy performance of equipment: setting up accredited laboratories. The existence of a regional structure could encourage the pooling of test platforms or Maghreb skills if necessary.
 - Implementing recognized quality labels, such as the ones for PV solar panels and their installers (example of the TAQA PRO label in Moroc-

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

co), electrical or gas equipment, etc...

- **Be a source of proposal, recognized by donors and international organizations.**

- Participating in or initiating international projects or programs.
- Access to financing.
- Influencing and contributing to projects funded by donors.

3. Conditions for Success

3.1. Requirements

The establishment of a structure at a regional level requires the existence or the creation of national associations per country. These will serve as a basis for the creation of a Maghreb network.

Indeed, while **Morocco** has clusters and specialized national associations covering the sectors of RE and EE (AMISOLE for RE, AMPF for the refrigeration industry, ...) federated within the FENELEC, itself attached to the CGEM (Moroccan employers), **Algeria** that conceals a considerable fabric of industrialists does not have associations neither clusters of operators on EE and even less a national federation, which they would join. Nevertheless, there are several large employers' associations: FCE, CGEA, UGEA, CAP...

Finally, the situation in **Tunisia** is in-between, since industrialists of the RE sector would appreciate the creation of a structure that could take their concerns into account, considering that the existing union chambers are rather oriented towards the installer's companies, which constitute the largest part of their members.

The interviews with some Moroccan officials underlined their reluctance to join a regional structure that could compete with their organization. Conversely, during the workshop held in Algiers, the participants approved the principle of a regional structure federating the national associations.

Overall, Algeria is the most concerned with the need to organize professionals at the national level, since national sectors with many companies remain devoid of associative or cluster structures. For instance:

- producers of household appliances, notably those assembling air conditioners and refrigerators, which are subject to energy class labelling and variable taxes depending on their classification. This sector includes about 60 companies, of which nearly 40 produce refrigerators and/or air conditioners.

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

- building materials industries, such as insulation, sandwich panels and joinery. There are dozens of companies in this sector, twenty of which produce insulation and sandwich panels and thirty in industrial joinery.
- lighting appliances manufacturers, among which there are a dozen that produce LED devices or bulbs.
- industrialists assembling boilers, stoves or gas water heaters, which are about twenty.

The APRUE has already initiated awareness-raising campaigns and consultations to improve the energy efficiency of the goods produced by these players. It also proposed to these industrialists to join forces in an association: the principle seems to be accepted, but it lacks a core of entrepreneurs determined to act.

All Algerian manufacturers who import CKD⁽¹⁾ or SKD⁽²⁾ kits are subject to regulatory constraints imposed by the Government, such as quotas on their kit imports, which should lead them to form an association or informal group in order to be able to negotiate with the public authorities a relaxation of these restrictions.

3.2. Points to Look Out

- Interaction (operative) between national and regional organisations:
 - Principle of subsidiarity: regional association based on the existing network and responsible for subsidiary action where the national organisation cannot reach;
 - Avoid the creation of a super structure that could cannibalize or compete with existing national structures.
- Institutional organisation of the proposed regional association:
 - Principle of flexibility: institutionalising a group, a federation or a network of national associations, without prejudice for future development;

(1) *Completely Knocked Down*. The term represents a technique of exporting unassembled products, in particular to avoid high customs duties and to retain the technological added value for the exporter.

(2) *Semi knocked down*. It is a technique whereby a company exports partially assembled products either to its licensees-partners or to its industrial subsidiaries.

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

- In the long term, favour a specialization in the field of energy management.
- Criteria for membership:
 - voluntary and non-discriminatory: all interested national organisations are invited to take part;
 - inclusive: minimum membership fees (can be an inhibiting factor for companies) and facilitate the payment by national and foreign companies (authorizations under foreign exchange laws)

3.3. Recommendations

- **Funding:** funding shall be provided through memberships and/or concrete projects backed by national public authorities, international donors or UN institutions.
- **Integration of public institutions into the process of creating a national or a Maghreb association.** The establishment of future association will be more credible in the eyes of the industrial stakeholders if it had the support of the public authorities. The presence or the support of representatives of ministries or agencies in charge of energy management issues could lend credibility to these associations in front of governments. Public support could even facilitate their access to international organisations and donors.
- **The heterogeneity of market visions:** This needs to be taken into account for the regional structuring according to institutional or private actors and to Maghreb countries. The interests of an institutional actor may differ from those of a private actor and, from one country to another, there are also different views. Attention should therefore be paid to the points of convergence rather than to the divergences.
- **Common interest:** a common interest needs to be found between the future members through concrete actions in the form of jointly developed projects, which may be funded by IFIs.
- **Competition:** ensuring that an equal distance is maintained between future members (competitors). Such association will thus gain in credibility. It must not be allowed to serve the special interests of one company to

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

the detriment of its competitors, or to give more attention to one country or professional sub-sector at the expense of the other parties.

- **Communication:** the future association will have to adopt a pragmatic, therefore credible communication strategy in order to ensure the engagement of its future members. From the beginning, this should focus on the expected economic outlook and the benefits for each member. Indeed, as environmental protection has no the same priority and perception in the public opinion of the Maghreb countries as in the one of Western countries yet, it is necessary to highlight the other positive impacts that can be expected, such as the financial spin-offs.

4. Proposals for a Maghreb Structure

4.1. Legal Framework

During the workshop in Algiers, two possible legal forms were proposed to participants: an informal network or a Maghreb federation. The debate showed that most of the participants supported the idea of a federation of national associations; but some did not reject even the idea of an informal network of national associations. Others also suggested that the governments of each country should also be represented in this structure.

We propose, as initial step, **to set up an informal network** of national associations or even informal national networks in order to give time to countries, such as Algeria, to set up associations or clusters in the sectors, which are not already structured. This will also allow to have a period of reflection and maturation before choosing the final legal form. Nevertheless, this informal Maghreb network will need to establish sustainable organization and activities. The membership of representatives of public institutions, such as national agencies in charge of energy management, shall be modelled on and inspired to existing structures.

The structure to be created could eventually adopt the status of a federation bringing together the professional organizations of the Maghreb countries if the latter wish so. Maintaining of an informal nevertheless structured and organized network should not be excluded.

The members of the structure (whatever its legal form) will therefore be professional organisations from the Maghreb countries, accompanied by public institutions such as agencies. The informal network will have to rely on a consultation process to achieve a consensual structure and organization.

Along with this preparatory work, professionals who do not have a national organization will have to structure themselves (cf. 3.1) while participating in the in-

formal network. This process of creating national associations should be better completed quickly. Otherwise, informal networks should be set up in the very short term so that these national organizations can participate in the consultation process for the foundation and construction of a Maghreb structure.

4.2. Purpose and Scope

This Maghreb structure might be transversal, thus including all professional organizations dealing with energy management (EE and RE) and involved in the entire value chain in their respective field (engineering, manufacturing, installation ...). This would include specialized commissions for each sector: i.e. solar energy, wind power, household appliances, heating, thermal insulation, industrial refrigeration, etc. This kind of organization was proposed to the audience at the workshop in Algiers and it was not rejected. However, it seems preferable to leave a period of reflection to future members in order to find a consensus on its legal form and structure.

However, an alternative solution would be to set up two federations or networks at a later stage, in the medium or long term:

- one bringing together RE professionals,
- the other dedicated to the EE development.

Each would have sectoral commissions. This organization, proposed during the workshop in Algiers, did not rise any interest among those present but the idea could be envisaged in the future.

4.3. Governance and Localization

During the workshop in Algiers, governance and location for a formal federation structure were proposed and these were not rejected. If an informal network is chosen, it would be wise to adopt the main principles developed in this document. Based on the requests received by participants during the workshop in Algiers, it will be important to insert the rule of rotation and balance between countries.

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

The federation or network would be directed and administered by a Bureau composed of X members (X: number of member associations). These functions would be performed on a pro bono basis. Each national association would be represented by 1 member of its bureau designated or elected and mandated for a renewable period of 3 or 4 years.

The Bureau may elect or designate a President and a number of Vice-Presidents to be determined. Their proposed assignment shall last 3 or 4 years. Each Vice-President would chair a specialized sectoral committee. The nationality of each elected representative shall be different from that of the two predecessors in office to ensure that the post is held by nationals of each country in turn.

The headquarters of the structure could have a location that rotates in each country every 3 or 4 years as long as the organization remains light and easily relocatable.

It would also be possible to have a fixed headquarter but sectoral commissions located in other countries.

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

4. Action Plan

1

Duration	Action
12 to 24 Months	Creation of national associations or informal networks in fields not yet organized in each country.
Description	
<ul style="list-style-type: none"> • Identification of missing jobs, then support. • Consultation with the concerned professionals and institutions to set up national associations. <p>In Algeria and Tunisia, the following categories should be concerned:</p> <ul style="list-style-type: none"> - producers of household appliances; - building materials industries, such as insulation, sandwich panels and joinery; - manufacturers of light fixtures and bulbs; - producers of heating equipment. <p>In the three countries, equipment importing traders should be concerned too</p>	
Recommendations	
<ul style="list-style-type: none"> • The agencies in charge of energy management in each country must raise awareness among companies and support professionals who are not structured to create organizations. This support can be given also through the projects financed by donors, for example within the framework of a possible future programme. • Capitalize on what APRUE has achieved to identify the missing trades in Algeria and duplicate it in Morocco and Tunisia. 	

2

Duration	Action
6 to 12 months	Federate national associations or networks in an informal Maghreb network
Description	
<ul style="list-style-type: none"> • Organization of workshops in the three countries announcing the project to create the regional structure and inviting stakeholders to attend (existing associations or networks). • Creation of a steering committee. This latter will develop a roadmap that will give rise to the informal structure. 	
Recommendations	
<ul style="list-style-type: none"> • Integrate public institutions, particularly Ministries and or their agencies or even donors. • Maintain regular communication and exchange between members of the network. 	

Concept Note for the Creation of an Industrial Association or Network on EE and RE to Serve Local Markets in the Maghreb

3

Duration	Action
12 months	Setup the Maghreb network or converge towards a regional federation
Description	
<ul style="list-style-type: none"> Brainstorming and consultation for the setup of a formal or informal structure: finalization of the form, its organizational scheme and operating rules. Identification of programmes at a regional scale, which may be funded by donors. 	
Recomendations	
<ul style="list-style-type: none"> Identify bankable projects as a motivating and mobilizing factor that will raise consensus to the creation of a formal structure. These projects could initially be carried out by the informal network. Find out about the experiences of similar regional associations (EU or other) to identify good practices and avoid pitfalls. 	

4

Duration	Action
3 to 4 months	If the idea is retained: creation of a regional federation
Description	
<ul style="list-style-type: none"> The choice of the location of the structure should be justified and above all validated by all the members of the network. Notification of a general constitutive meeting. 	
Recomendations	
<ul style="list-style-type: none"> Opt for a headquarter that rotates from one country to another. Integrate public institutions, particularly Ministries and their agencies, and even donors. Consider membership fees or access rights. 	

5. Conclusions

The work carried out has demonstrated the feasibility of a regional industrial structure. It has confirmed the opportunity, the relevance and the interest in building such a structure. The latter requires a period of 18 to 36 months to be created. It is indeed necessary to set up national professional organizations beforehand. Associations are lacking in many important sectors considering the number of companies they gather, as for example is the case in Algeria for household appliances and materials industries. This period is also needed to mobilize the different actors potentially involved towards a consensus on the assets and on the legal form of a regional structure.

This concept note can be used as a first step to build upon. Collaboration between public and private actors shall strengthen the credibility of such network at the national and regional level. This project could be carried out by the transitional informal structure and would make it possible to finance the launching of the future Maghreb structure.



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