



Economic Sector  
Energy Department  
Arab Ministerial Council of Electricity

# Arab Renewable Energy Framework





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In Cooperation with :



# Arab Renewable Energy Framework (AREF)

<b>Article 1</b>	Subject matter and scope
<b>Article 2</b>	National Renewable Energy Action Plans
<b>Article 3</b>	Joint projects between Arab States and third countries/ parties
<b>Article 4</b>	Administrative procedures, regulations and codes
<b>Article 5</b>	Information and training
<b>Article 6</b>	Access to and operation of the grids
<b>Article 7</b>	Reporting by the Arab States
<b>Article 8</b>	Information platform
<b>Annex-1</b>	Overall renewable energy targets submitted by Arab States
<b>Annex-2</b>	Template of National Renewable Energy Action Plan (NREAP)

## **ARTICLE 1**

### **Subject matter and scope**

This document establishes a common framework for the promotion of energy from renewable sources. It includes guiding recommendations for achieving the national targets as provided by the LAS member States for the overall share of energy from renewable sources in electricity generation, heating and cooling. It lays down rules of reporting and information exchange, recommendations of joint projects between Member States and with third countries or parties, administrative procedures, information and training, and access to the electricity grid.

## **ARTICLE 2**

### **National renewable energy action plans**

Each Arab State shall adopt a national renewable energy action plan (NREAP), setting out Arab States' national targets for the share of energy from renewable sources consumed in electricity generation, and heating and cooling in 2020 as a first stage, then in 2030 as a second stage. The NREAP includes the minimum data required, taking into account the following:

- a) The effects of other policy measures relating to energy efficiency on final consumption on energy, and adequate measures taken to achieve those national overall targets.
- b) Joint projects among Arab States, third countries or parties.
- c) Changes in national policies affecting the NREAP.

## **ARTICLE 3**

### **Joint projects between Arab States, third countries and parties**

Arab countries shall work on:

1. The establishment of all types of joint projects relating to the production of electricity, heating or cooling from renewable energy sources in collaboration with other countries/parties. That cooperation may involve private sector.
2. Informing the LAS of the proportion or amount of electricity, heating or cooling thermal energy from renewable energy sources produced by any joint project in their territory that became operational after 2010 or by proposed installations, or the increased capacity of an installation that was refurbished after that date. The information shall:
  - (a) Describe the proposed installation or identify the refurbished installation;
  - (b) Specify the proportion or amount of electricity or heating or cooling thermal energy produced from the installation;
  - (c) Identify the Member State or third party in whose favour the project has been carried out;
  - (d) Specify the period, in whole calendar years, during which the electricity or heating or cooling thermal energy is produced by the installation from renewable energy sources.

3. The period specified under paragraph 2(d) shall not extend beyond 2030. The duration of a joint project may extend beyond 2030.

#### **ARTICLE4**

##### **Administrative procedures, regulations and codes**

Arab States shall work on:

1. Facilitating any national procedures concerning the authorization, certification, licensing and all other administrative procedures that are applied to plants and associated transmission and distribution network infrastructures for the production of electricity, or heating and cooling from renewable energy sources, including necessary arrangements to ensure that:

(a) Subject to differences between Arab States in their administrative structures and organization, the respective responsibilities of national and local bodies for authorization, certification and licensing procedures including spatial planning are coordinated, with specific timetables for determining planning and building applications;

(b) Comprehensive information on the processing of authorization, certification and licensing applications for renewable energy installations and on available assistance to applicants are made available at the appropriate level;

(c) Rules governing authorization, certification and licensing are objective, transparent, and proportionate, and take fully into account the particularities of individual renewable energy technologies appropriate for local conditions;

(d) Administrative charges paid by consumers, planners, architects, builders and equipment and system installers and suppliers are transparent and cost-related;

(e) Simplify authorization procedures, through simple notification, if allowed by the applicable regulatory framework, established for smaller projects and for decentralized devices for producing energy from renewable sources, where appropriate.

2. Defining any technical specifications which must be met by renewable energy equipment and systems in order to benefit from national support schemes. Where national standards exist, including energy labels and other technical reference systems, such technical specifications shall be compliant with those standards. Such technical specifications shall not prescribe where the equipment and systems are to be certified and should not impede the operation of a competitive internal market.

3. Recommending to all actors to ensure equipment and systems are installed for the use of electricity, heating and cooling from renewable energy sources when planning, designing, constructing and renovating where appropriate.

4. Developing appropriate measures and incentives to increase the share of renewable energy in the different sectors.
5. Requiring; in their building regulations and codes, the use of minimum levels of energy from renewable sources in new buildings and in existing buildings that are subject to major renovation where appropriate.
6. Ensuring that new public buildings and existing public buildings that are subject to major renovation fulfil an exemplary role in the context of this Guideline.

## **ARTICLE 5**

### **Information and training**

Arab States shall work on:

1. Ensuring that information on technical procedures and support measures are made available to all relevant actors.
2. Ensuring the readiness of certification schemes or similar qualification schemes for equipment and installations of renewable energy during the first year of implementation of the NREAP. Each Arab country shall study the possibility of recognition of pan-Arab accreditation certificates or those issued from other Arab countries.
3. Making available to the public information on certification schemes or equivalent qualification schemes as referred to in paragraph 2. Arab States may also make available the list of installers who are qualified or certified in accordance with the provisions referred to in paragraph 2 above.
4. Ensuring that guidance is made available to all relevant actors, notably for planners, architects, and contractors so that they are able to consider the optimal combination of renewable energy sources, and high-efficiency technologies when planning, designing, building and renovating.
5. Guiding local authorities to develop suitable information, awareness-raising, guidance or training programs in order to inform citizens of the benefits and practicalities of developing and using energy from renewable sources.

## **ARTICLE 6**

### **Interconnection to and operation of the grids**

1. Arab States shall take the appropriate steps to develop transmission and distribution grid infrastructure, intelligent networks, storage facilities and the electricity system, in order to allow the secure operation of the electricity system as it accommodates the further development of electricity production from renewable energy sources, including interconnection between Arab States and between Arab States and third countries. Arab States shall also take appropriate steps to accelerate authorization procedures for grid

infrastructure and to coordinate approval of grid infrastructure with administrative and planning procedures, whenever possible, considering the requirements related to the safety of the grid according to criteria set by the competent national authorities.

2. Arab States shall ensure that transmission system operators and distribution system operators in their territory guarantee the transmission and distribution of electricity produced from renewable energy sources; whenever possible.
3. Arab States shall recommend to transmission system operators and distribution system operators to set up and make public their standard rules relating to the bearing and sharing of costs of technical adaptations, such as grid connections and grid reinforcements, improved operation of the grid and rules on the non-discriminatory implementation of the grid codes, which are necessary in order to integrate new producers feeding electricity produced from renewable energy sources into the interconnected grid.
4. Arab States shall recommend transmission system operators and distribution system operators to provide any new producer of energy from renewable sources wishing to be connected to the system with the comprehensive and necessary information required.
5. Arab States may allow producers of electricity from renewable energy sources wishing to be connected to the grid to issue a call for tender for the connection work.
6. Arab States will provide attractive charges for transmission and distribution of electricity produced from renewable sources, so that they are commensurate with the return of connecting these stations to the network.

## **ARTICLE 7**

### **Reporting by Arab States**

1. Each Member State shall communicate an annual report to the LAS on the progress accomplished in the implementation of the NREAP by 31 December annually. The report shall detail, in particular:
  - (a) The sectorial and overall shares of energy from renewable sources in the previous calendar year and the measures taken or planned at national level to promote the growth of energy from renewable sources.
  - (b) The introduction of policies, support schemes and other measures to promote energy from renewable sources, and any developments in the measures used.
  - (c) Progress made in evaluating and improving administrative procedures to remove regulatory and non-regulatory barriers that hinder the development of energy from renewable sources.
  - (d) Measures taken to ensure the transmission and distribution of electricity produced from renewable energy sources, and to improve the framework or rules for bearing and sharing of costs.
  - (e) Progress made compared to the indicative trajectory of the targets set in the NREAP.

2. In its first annual report, the Member State shall name the authorities responsible for processing authorization, certification and licensing applications for renewable energy installations and providing assistance to applicants.

## **ARTICLE 8**

### **Information Database**

LAS shall establish an information database that includes the NREAPs and reports of the Arab States. In addition, the platform may be used to publicize relevant information which LAS or a Member State deems to be of key importance to this Framework and to the achievement of the objectives.

## AREF Annex-1

Targets already submitted by LAS Arab States for the share of renewable sources

Country	Quantitative Strategic Goals associated with renewable energy		
Jordan	Renewable energy will constitute 7% of total energy mix by 2015 Renewable energy will constitute 10% of total energy mix by 2020		
Emirates	Abu Dhabi is projecting to reach 7% of its energy needs from RE sources by 2020. Dubai strategy is based on Solar Energy that will cover 5% of the energy demand by 2030		
Bahrain	Have not yet declared a National Strategy for RE		
Tunisia	30% of generated electricity by 2030		
	Wind Energy	1500MW	2030
	Solar energy (Photovoltaic)	1900MW	2030
	Solar Energy ((CSP))	300MW	2030
	Biomass	300MW	2030
Solar Water Heating	1 million cubic meter	2016	
Algeria	40% of total electricity produced from RE by 2030		
Saudi Arabia	RE Policies are being drafted to identify quantitative targets for RE share in total energy mix. 44% of total energy needs from RE by 2032. Developing a comprehensive sustainable economic system for energy. Improving the Kingdom's grids to become compatible with RE.		
Sudan	Cumulative objective: 2665.4 MW by 2031 to be distributed as follows:		
	Water generation ( large scale stations	1092MW	2031
	Wind Energy	680MW	2031
	Solar Photovoltaic	666MW	2031
	Solar CSP	50MW	2031
	Water Generation (small stations)	56MW	2031
	Generation from RDF	67.4MW	2031
	Biomass	5MW	2031
Geothermal energy is under assessment			
Syria	The five years plan 2011-2015 declared these targets: Wind 1000 MW PV 200 MW CSP 1300 MW Total 4550 MW representing 30% of the installed capacity by 2015. Nowadays, the draft comprehensive RE&EE plan is under preparation		
Oman	Currently studying the National Strategy for Energy, aiming to decrease dependability on fossil fuel. The National Electricity Authority has implemented new practices in rural areas to encourage the integration of RE and has taken drastic measures to ensure the proper and efficient implementation. Subsidiary electricity companies in rural areas will overlook the implementation of RE.		
Iraq	RE share is 2% of the total mix representing 300MW (( Solar and wind energy)) by 2017.		
Palestine	Gradually achieving 240 GWh to generate electricity from RE which is equivalent to 10% from total electricity produced locally, with a target of reaching 130MW by 2020.		

	Solar energy (( photovoltaic and CSP)) 65MW 2020 Wind Energy 44MW 2020 Bio Gas 21MW 2020
Qatar	the integration of 200 MW of Solar Energy CSP and Photovoltaic by 2020
Kuwait	The integration of 15% of RE to generate electricity from 2015-2030.
Lebanon	The integration of 12% of RE by 2020.
Libya	Solar Energy and Wind energy to constitute 3% of produced electricity by 2015. Solar and wind energy to constitute 7% from produced electricity by 2020. Solar and Wind energy to constitute 10% from produced 2025.
Egypt	20% of total electricity produced by 2020 will be derived from the following: Wind Energy- 12% equivalent of 7200MW Solar Energy 2% Hydro Energy 6% Generating Electricity 3500 MW from Solar energy by 2027 as follows: 2800 MW from Solar Power CSP by 2027 700 MW from Photovoltaic by 2027.
Morocco	Wind Energy 14% by 2020 Solar Energy 14% by 2020 Water Energy 14% by 2020
Yemen	Integration 15% of total generated electricity by 2025 divided as follows: Wind energy projected 400 MW by 2025 Geothermal 160 MW by 2025 CSP 100 MW by 2025 Biomass 6 MW by 2025 PV 8.25 MW by 2025

Numbers provided are based on the Arab Guidelines handbook for RE and EE – 2013  
Economic Sector- Energy Department – League of Arab States

**AREF Annex-2**  
**National Renewable Energy Action Plan**

## TABLE OF CONTENTS

<b>Part I. Renewable Energy National Indicators</b>	<b>13</b>
1. Baseline Definition 2010	13
2. Expectation of the non-renewable energy until 2020 and 2030	13
3. Renewable energy targets and growth paths	14
a. Gross energy national target	14
b. Sectorial targets and growth paths	14
c. Resource shares of the renewable energy targets	14
<b>Part II. Policies and Mechanisms</b>	<b>16</b>
4. Regulated targets and obligations	16
5. Renewable energies support schemes	16
a. Financial Support	16
b. Tradable certificates	17
c. Feed-in tariffs	18
d. Tendering procedures	19
e. Policies and measures summary	19
6. Administrative procedures	20
7. Technical specifications and installers' certification schemes	20
8. Policies for renewable energy's integration in buildings	21
9. Access to and operation of the grids	22
10. Joint projects with other Arab States, foreign countries or/and third parties	22
11. Heating and cooling projects' support schemes	23
12. Awareness raising campaigns	23
<b>Part III. NREAP Progress Assessment</b>	<b>24</b>

## Part 1: Renewable Energy National Indicators

This part gives an overview of the national renewable energy national indicators describing the targets and the main strategic lines of action.

### 1 Baseline Definition 2010

This section presents a unified baseline for the different Arab countries based on year 2010 in terms of:

- Electricity generation from non-renewable energy resources
- Electricity generation from renewable energy resources
- Heating from all resources
- Cooling from all resources

**Table 1.** Baseline Data for the year (ktoe<sup>1</sup>)

	Base Year 2010
Non-RE electricity	
RE electricity	
Heating	
Cooling	

### 2 Expectation of the non-renewable energy until 2020 and 2030

The member states should present, in this section, a projection of the development of non-RE electricity, heating and cooling for the years 2015, 2020, 2025 and 2030.

**Table 2.** Projections of non-renewable energy productions (ktoe<sup>2</sup>)

	Baseline		End of phase 1		End of phase 2
Year	2010	2015	2020	2025	2030
Non-RE electricity					
Heating					
Cooling					

<sup>12</sup>Based on an electricity conversion factor of 0.086 toe/MWh and/or an annual energy savings of 0.06 toe/m<sup>2</sup> for installed SWH surface.

### 3 Renewable energy targets and growth paths

#### 3.1 Gross energy national target

The member states will describe their renewable energy national targets for both years 2020 and 2030 in terms of produced energy and shares (%) of the total generated energy.

**Table 3.** Energy national target

	2010	2015	2020	2025	2030
RE production (ktoe)					
Total energy production (ktoe)					
% of total energy production					

#### 3.2 Sectorial targets and growth paths

In addition to setting sectorial total national targets till 2030, it is also important to describe sectorial targets for electricity, heating and cooling when available.

Moreover, setting intermediate targets help setting the trajectory expected for growth of renewable energy use in each sector. The sectorial renewable targets in electricity, heating and cooling in addition to the sectorial growth paths are only estimations and depend greatly on the advancement of the action plan.

**Table 4.** Sectorial energy growth paths

Year	2010	2015	2020	2025	2030
RE electricity (ktoe)					
RE Heating (ktoe)					
RE Cooling (ktoe)					
Total Energy production (ktoe)					
Share of RE of total energy production(%)					

#### 3.3 Resource shares of the renewable energy targets

Dealing always with the national targets, this section will look at the renewable energy mix between the different available technologies, their evolution paths and their contributions to the electricity sector and to the cooling and heating sector.

**Table 5.** RE resources electricity shares

	2010		Current Year		2015		2020		2025		2030	
	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh	MW	GWh
Hydro												
<1MW												
1-10MW												
>10MW												
Of which pumping												
Geothermal												
Solar:												
PV, CPV												
CSP												
Wind:												
Onshore												
Offshore												
Biomass:												
Solid												
Biogas												
Bio liquids												
Others												
Total												
Of which in CHP												

**Table 6.** RE resources cooling and heating shares

(ktoe)	2010	Current Year	2015	2020	2025	2030
Solar						
Wind						
Biomass:						
Solid						
Biogas						
Bio liquids						
Heat pumps						
Total						

## Part 2: Policies and Mechanisms

The second part of the NREAP will cover different policies and mechanisms to achieve the different targets set for renewable energies in the sectors of electricity, cooling and heating.

### 4 Regulated targets and obligations

The regulations could set target(s) and obligations/quotas for certain sectors to achieve (utilities, industrial, establishments, hotels and commercial facilities, etc.). In the case where these obligations exist please describe thoroughly by filling the following table:

**Table 7.** Regulated targets and obligations

Legal basis <sup>3</sup>	
Specific technology related	
Concrete targets or obligations per technology	
Concrete targets or obligations per year	
Party(ies) responsible(s) for the fulfilment of these obligations	
Penalties in case of non-fulfilment	
Fulfilment supervision mechanisms	
Obligation/target modification mechanisms	

The objective of this table is to clarify the legal basis if existing or to state any policy background related to these targets and obligations.

These regulations maybe technology specific or not, in both cases concrete targets for these regulations should be stated per technology and per year.

The parties responsible for the fulfilment of these targets should be clearly identified in addition to the fulfilment mechanisms, the consequences of non-fulfilment and, if existing, the modification mechanisms.

### 5 Renewable energies support schemes

This part should include all support schemes for renewable energies' implementation all along with any financing mechanisms modalities.

#### 5.1 Financial Support

Financial support can be classified in various ways such as financial support for investment, capital grants, low interest loans, tax exemptions or reductions, tax refunds, tender schemes, renewable energy obligations with or without green certificates (tradable green certificates), feed-in tariffs, feed-in premiums and voluntary schemes.

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<sup>3</sup>Legal bases means the related laws and the regulations.

**Table 8.** Financial support

Name	
Voluntary/Obligatory	
Objectives	
Expected impacts	
Related regulations	
Implementing body	
Supervisory authority	
Type	
Technology specific	
Eligible system sizes	
Start and end dates	
Periodical revision	
Budget sustainability measures	
Multiple support	

This part should state the name of the support program with a small description clarifying if it is voluntary or obligatory, its objectives and expected impacts on the national level, its background regulation when existing, and the responsible implementing body with the supervising authority.

The type of the financial support should also be specified being a subsidy, capital grant, tax exemption or reduction, tax refunds or low interest loans. It can also include more than of these types as it should be specified.

It should also specify if this support is technology or size specific, if it is already implemented or it is planned with its start and end dates and if it is periodically revised or not.

Finally, all measures for funds' continuity should be clarified all along with the possibility of multiple supports for any project profiting from this financial scheme.

## **5.2 Tradable certificates**

This certification system represents a mechanism to track and record production of renewable energy and that can be sold to the final consumer in the market for clean energy trade. These certificates can be used to demonstrate compliance with the requirements which may be imposed by the state on the supply companies for the production, or on the consumers for consumption of electrical power from a renewable source.

In addition to the descriptions of general financial support mechanisms, tradable certificates schemes should also specify the following information.

**Table 9.** Tradable certificates

Obligated share of RE electricity in the total supply and certificates system	
Obligated party	
International trade in certificates	
Bottom price restrictions	
Certificates' average price	
Non-fulfilment penalties	
Maximum participation period	
Trading scheme	

For tradable certificates, any obligatory shares of renewable electricity production should be specified all along with the corresponding obligated party. It should be clarified if international trade in certificates are accepted and under what conditions. Price restrictions should be also stated if there will be any floor for the bottom price or if the average price is made public and where.

### **5.3 Feed-in tariffs**

In this system, the state determines the tariff per unit of energy produced from a renewable source. These tariffs are higher than those granted to producing energy from traditional sources and they ensure the achievement of an adequate return for investors in renewable energy production. Usually, there is a tariff for each type of renewable energy; for example there will be a tariff for electricity produced from wind or solar energy, and others.

Additional information related to this type of financial support mechanism should be provided as described in the following table.

**Table 10.** Feed-in tariffs

Objectives	
Fixed tariff conditions	
Energy or capacity specificity	
Technology specificity	
Price per technology	
Tariff guarantee period	
Tariff adjustment schemes	

In this case, the information includes the objectives of the schemes and the conditions to be eligible for the fixed price. The state country should also specify if there is any cap on the total volume of electricity production per year or on the maximum allowed installed capacity.

Moreover, if the tariffs are technology specific the price for each technology should be stated.

Finally, the tariff guarantee period should be specified all along with any tariff adjustment schemes or possibilities.

#### 5.4 Tendering procedures

In this system investors are invited to develop electricity from renewable energy projects, within a certain period and size defined by the tender. Contracts with the lowest cost of production are selected and the electricity networks (transmission companies / network operator) are obliged to buy from these stations based on prices that have been reached through those tenders and periods that have been agreed upon in accordance with the tender.

**Table 11.** Tendering procedures

Frequency	
Technology specificity	
Project capacity	
Project objectives	
Grid development integration	

As in the previous two sections, tendering procedures information should be added to the general financing mechanisms' information.

These have to include the frequency, size and the technology subjected by these tenders. Other project related information such as the objectives, capacity and grid development integration of each project has also to be clarified.

#### 5.5 Policies and measures summary

The member state concludes this section with a summary of all policies and measures pushing forward for the implementation of renewable energy projects. This table presents clearly the type of this measure, its expected results then it highlights the targeted group of such a measure with its source of funding.

In case such policies are limited in time the start and end dates, or revision dates should be mentioned in the last column.

**Table 12.** Summary of all policies and measures

Name of the policy/measure	Type	Expected results	Target group or sector	Existing or planned	Source of funding	Measure dates	
						Start	End
1.							
2.							
3.							
...							

## 6 Administrative procedures

It is recommended to explain briefly the strategies and delivery mechanisms for implementing the national plan with reference to the issues indicated below; where it is suggested to explain the current national and local rules concerning the authorization, certification and licensing procedures applied to plants and associated transmission and distribution network infrastructure for the production of electricity, heating or cooling.

- a. First of all, each country should list any existing national and, if applicable, local legislation concerning authorization, certification, licensing procedures and spatial planning applied to power plants and associated transmission and distribution network infrastructure
- b. For each of these previously stated legislations, the responsible ministry or authority (s) and its competences in the field needs to be clarified with any foreseen revisions steps stated in a chronological manner.
- c. The land allocation responsibilities should be clarified for each procedure through a land allocation mechanism, through public lands or through developers' land designation.
- d. It should be clarified if more than one level of administration is included in the authorization, certification and licensing procedures, especially on the local administration levels, all along with the coordination schemes between these.
- e. A description of the detailed comprehensive information and the assistance schemes during the complete procedure should be included all along with a description of the procedures' steps' explanation with an included detailed timeline of these steps.
- f. It is to be explained if these procedures takes into account:
  - the technology
  - the size of the project: small scale or decentralized projects
  - net metering possibility

Any available data measurement for resource assessment such as maps or atlas should be made available for the applicants all along with the corresponding responsible bodies.

**Table 13.** Administrative procedures

Local legislations concerning authorization, certification and licensing procedures	
Responsible bodies	
Land allocation responsibilities	
Administrative coordination schemes	
Administrative assistance schemes	
Technology and size specificity	
Resource assessment data measurements	

## 7 Technical specifications and installers' certification schemes

In this section any technical specifications (local, regional or international standards) required on equipment need to be clarified in order to benefit from support schemes and subsidies.

**Table 14.** Technical specifications

Already in place or planed	
Name of the specification	
Specification equivalencies	
Responsible body	

On the other hand, any required local or international certification (in place or planned) for the installers needs to be cited including the name of the certification and any possible equivalent certifications all along with the corresponding certification body.

**Table 15.** Installers' certification scheme

Already in place or planed	
Name of the certification	
Certification equivalencies	
Responsible body	

## 8 Policies for renewable energy's integration in buildings

Please note that when referring to increasing the use of renewable energy sources in buildings, the supply of renewable electricity from the national grid should not be considered. The focus here is on increasing local renewable energy based supply of electricity, heating and cooling to individual buildings.

**Table 16.** Policies for renewable energies integration in buildings

National reference legislation	
Responsible body	
Legislation revisions	
Minimum required level of RE use in new buildings	
Minimum required level of RE use in newly refurbished buildings	
Plans for public buildings	
Geographical area specificity	
Availability of specific targets per building type (residential, commercial, public and industrial)	
Future legislations	

Building specific information are resumed in the previous table that includes the national reference legislation all along with its responsible bodies. Any minimum required levels of renewable energy usage in new or newly refurbished buildings should be included while highlighting the role model of public buildings.

Any targets specific for different types of buildings such as residential, commercial, public and industrial have to be included with a perspective view of any future legislations to attain and increase these targets.

## 9 Access to and operation of the grids

This sections deals with the different aspects of integration of renewable energy projects to the existing electrical networks. In addition to the current situation and already existing legislation, please describe future actions, planned revisions, responsible bodies for it and expected results.

- a) Cite any existing national legislation concerning requirements related to the energy grids.
- b) Clarify how renewable energy projects are included in the transmission and distribution grids while maintaining the secure operation of the electricity system.
- c) Specify the role of smart grids, information technology tools and storage facilities and how their development will be ensured.
- d) Quote any existing or planed interconnection capacity with neighbouring countries with their capacities and execution timeline.
- e) State any privileges for renewable energy connections (and at what voltage level) all along with any problems restricting connections of new RE projects.
- f) Explain any cost sharing procedures of network technical adoption all along with any possibilities of recovering schemes for such investments. These cost sharing procedures may be related to procedures between the operator and the developers or between current and future developers.
- g) Highlight any dispatching priorities for renewable energy electricity or any access guarantees clarifying the access to the grid priorities between different RE resources and real time dispatching possibilities with any type of extra tariffs charged to the usage of the distribution and transmission grids.

**Table 17.** Access to and operation of the grid

Energy grids' legislations	
RE grid integration measures	
Role of smart grids, information technology tools and storage facilities	
Existing or planed interconnection capacity with neighbouring countries	
RE connection privileges	
Cost sharing procedures	
RE access priorities	

## 10 Joint projects with other Arab States, foreign countries or/and third parties

This section of the NREAP should include the wider aspect of renewable energy projects in cooperation with other Arab countries and/or other foreign countries and/or third parties. Thereby a detailed description of joint investment mechanisms is to be described if already in place or if being planned; in addition to an estimation of the projects capacity that may be incorporated in such a type of projects.

It should also include an explanation on how third parties' project can be foreseen in the field of renewable energies.

Moreover, member states should include an explanation of any possibilities of RE financing cooperation between different Arab countries, with foreign countries or with third parties. Finally, a list of already installed projects, undergoing projects and planned projects with Arab states, foreign countries or/and third parties are to be provided in the following table:

**Table 18.** Joint project list

Project name	Technology	Capacity (MW)	Financing source	Progress state	Investments	Collaborating parties

## 11 Heating and cooling projects' support schemes

This section does not deal with electricity from renewable energies but with other different forms of energy: cooling and heating.

It should include the different support schemes that can be applied for combined heat and power cogeneration from renewable energy resources all along with the support schemes specific to the use of renewable energies' district heating and cooling projects.

Moreover, in this section the size of the project, either small or large scale, should be emphasized all along with the field of application such as the industrial or residential fields.

## 12 Awareness raising campaigns

In this section, describe current and future information and awareness raising campaigns and programmes, as well as planned revisions, and expected results.

Arab Countries should also indicate which responsible authority will monitor and review the effects of the programmes all along with their corresponding addresses for further details about the administrative and related functions. All these should be done while highlighting the role of regional/local authorities whenever it is a substantial role.

This information should include the following major ideas:

- a) A summary of the existing national or local programmes
- b) Information communication tools with the different actors: consumers, builders, installers, consultants, architects and suppliers. In addition, to responsible bodies for periodical data communication.
- c) Availability of data measurement for resource assessment such as maps or atlas all along with the corresponding responsible body.
- d) Presence of specialized guidance programmes for planners and architects in order to properly consider the optimal combination of renewable energy sources in any future development plans.
- e) Availability of awareness raising programmes for citizens on the benefits and practicalities of using energy from renewable sources highlighting the role of regional and local actors in the designing and managing these programmes.

## 13 NREAP Progress Assessment

Like any action plan, the NREAP should include an execution assessment mechanism that includes two major parts: a qualitative assessment and a quantitative assessment. Each of these assessments should clarify the update of the planned steps in accordance to the stated schedule and should explain any modification or delays.

The qualitative assessment follows up on the execution of the policies already cited in Table 12. The following table should show the execution status of these policies if they are still in action, stopped, delayed or still advancing as planned with any corresponding remarks.

**Table 19.** Qualitative assessment

Name of the policy/measure	Type	Expected results	Target group or sector	Execution status	Source of Funding	Start and end dates of measure	Remarks
1.							
2.							
3.							
...							

Whereas, the quantitative assessment follows up on the update of implementation of renewable energy projects will be done by updating Table 5 and Table 6 on annual bases.