



Libyan Transitional Government

Ministry of Electricity and Renewable Energy

Renewable Energy Authority of Libya (REAoL)

National Plan for developing The Renewable Energy in Libya

(2013-2025)

September 2012

Contents:

1. Renewable Energy Authority of Libya (REAOL)

OverviewStructure ... Mission ... Vision

2.Current Situation of Electricity System in Libya

3. Current Situation of Renewable Energy in The world

4. Renewable Energy Potentials in Libya

5. REAOL's Plan

Opportunities and Challenges

Contents:

6. REAoL Plan – Short - term Plan (2013 - 2015)

Planning & Studies

Energy Efficiency Programs

Proposed projects

Estimated Budget

7. REAoL Plan – Med term plan (2016-2025)

Planning & Studies

Proposed projects

8. The Energy Efficiency

Contents:

1. Renewable Energy Authority of Libya (REAOL)

OverviewStructure ... Main Responsibilities ... Vision

2.Current Situation of Electricity System in Libya

3. Current Situation of Renewable Energy in The world

4. Renewable Energy Potentials in Libya

5. REAoL's Plan

Opportunities and Challenges



Renewable Energy Authority of Libya (REAoL)

REAoL is a governmental authority, it was established in 2007, The main objectives of REAoL are:

- ✓ A comprehensive mapping of renewable energy sources in Libya and implement the studies to determine the current and future market.
- ✓ Implement of renewable energy projects in various forms.
- ✓ Increase the contribution of RE in the national energy mix.
- ✓ Encourage and support the industries related to renewable energy.
- ✓ Propose the legislation needed to support renewable energy.
- ✓ Implementation of the programs related to the energy efficiency.

Mission

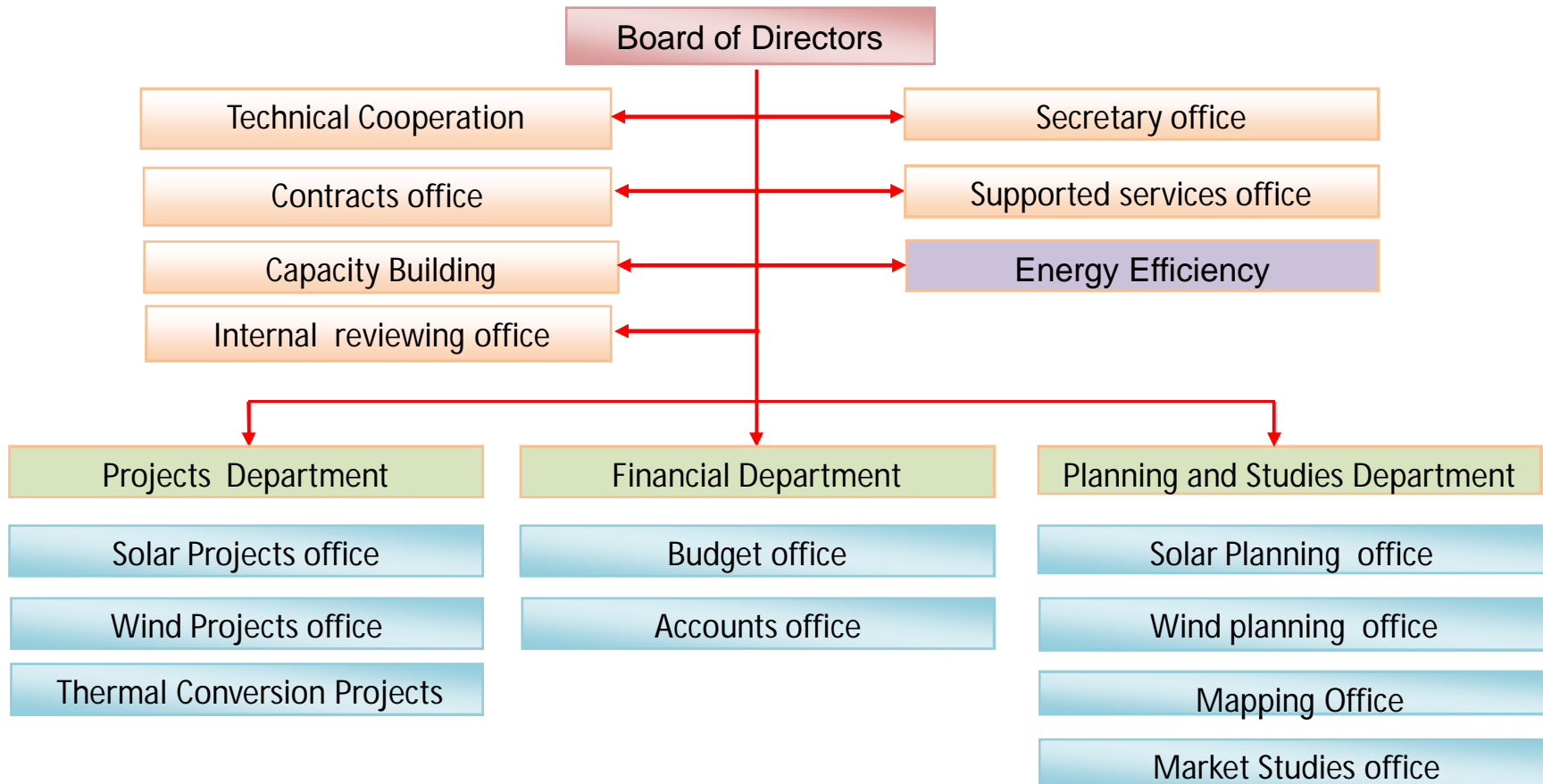
Work toward integrating the locally available Renewable energy Resources (Solar & Wind) with the National Energy System.

Increase the share of RE in the National Energy Mix.

Vision

Our vision is to become a leading company with its achievements and success by having positive impact on the social and economic development programs of Libya through the optimal use of renewable energies.

Organizational Structure of Renewable Energy Authority Of Libya



Contents:

1. Renewable Energy Authority of Libya (REAOL)

OverviewStructure ... Main Responsibilities ... Vision

2.Current Situation of Electricity System in Libya

3. Current Situation of Renewable Energy in The world

4. Renewable Energy Potentials in Libya

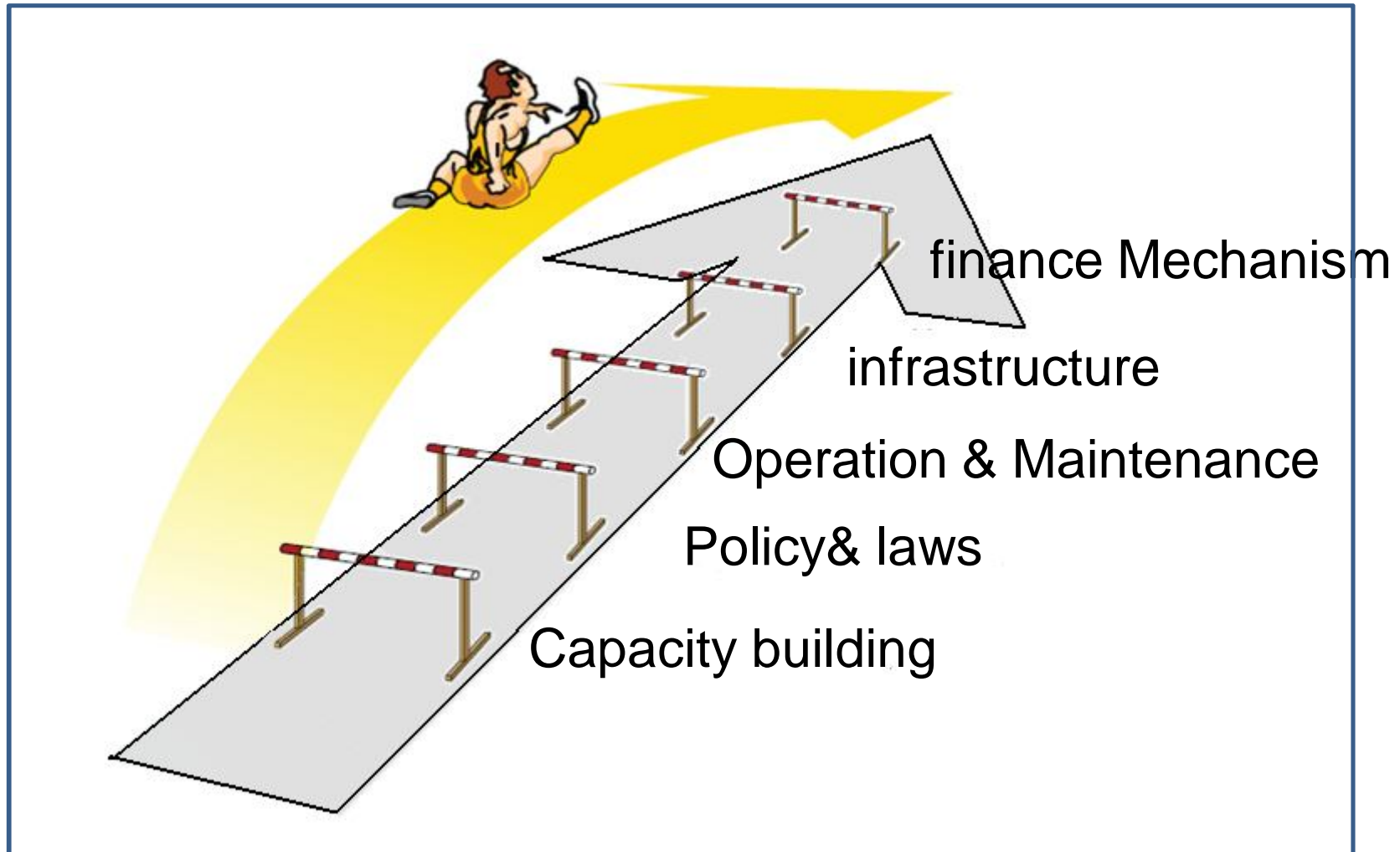
5. REAoL's Plan

Opportunities and Challenges

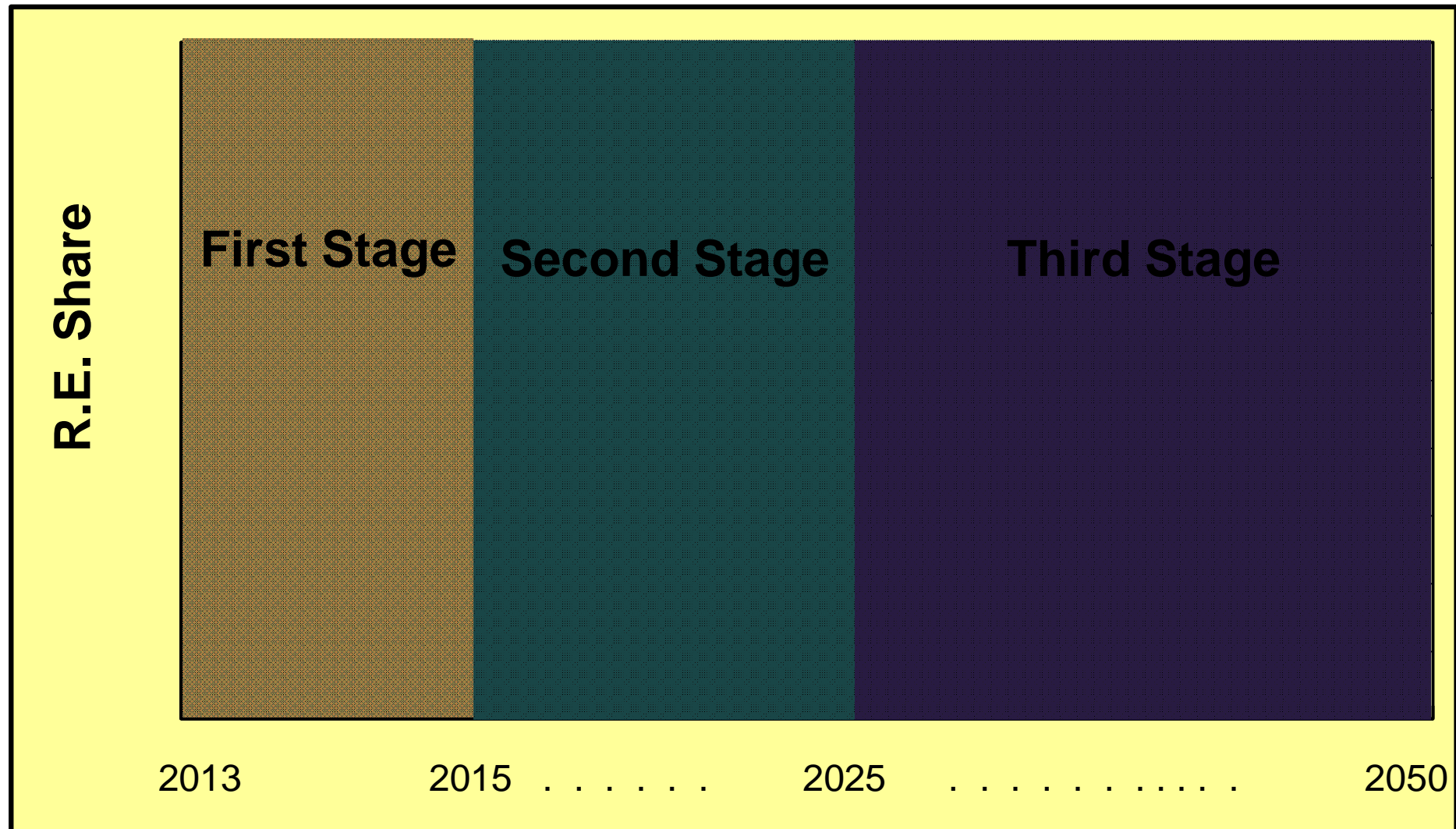
Sample Of R.E strategy in Arab Country

Country	R.E. Share (End 2009)	R. E. Strategy
Egypt	10 %	20% (2020) Including hydropower
Morocco	14%	42% (2020)
Algeria	0.8%	5% (2017
Tunis	1.1%	11% (2016)
Libya	0%	? (2020)

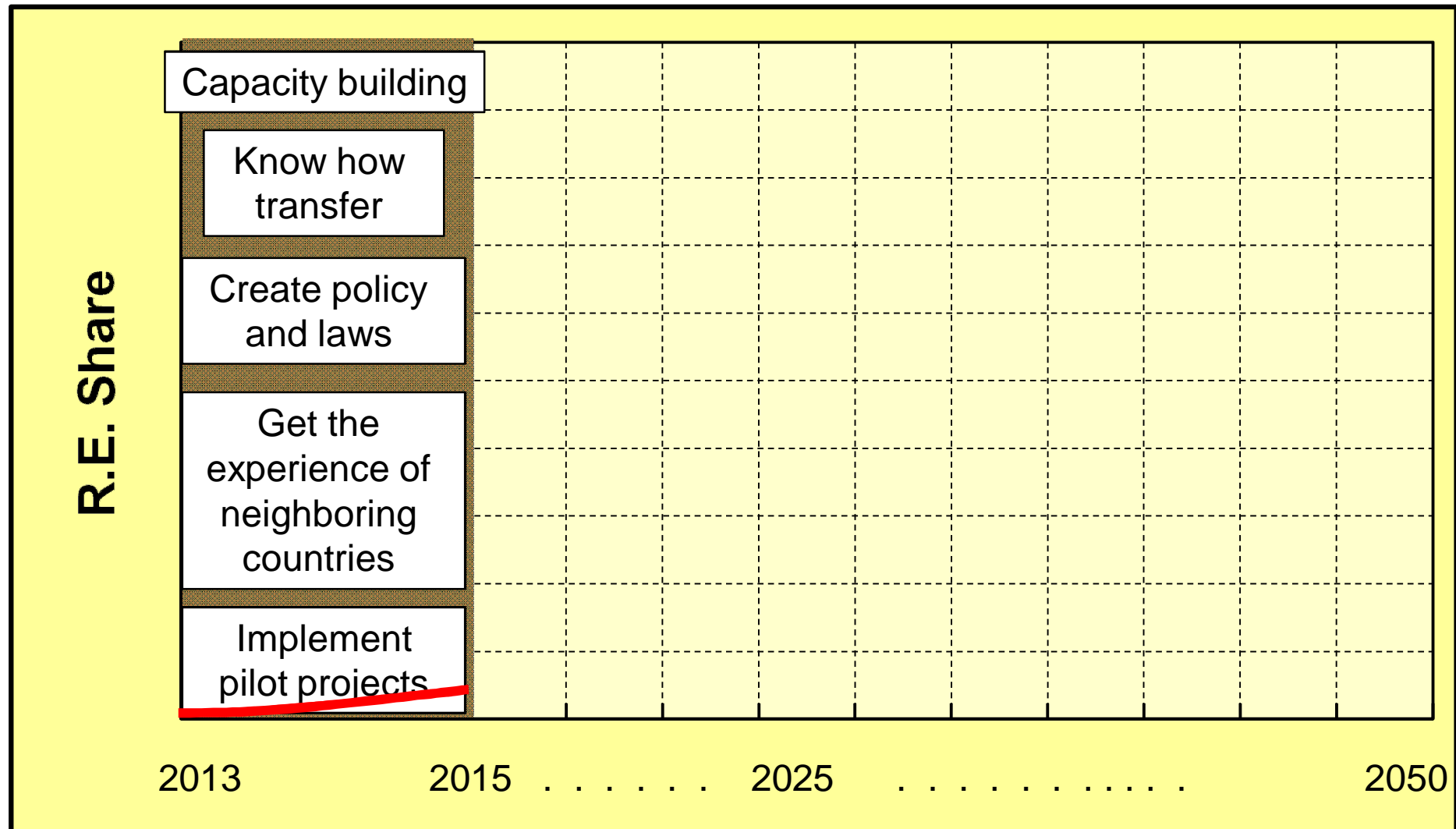
Barriers facing renewable energy in Libya



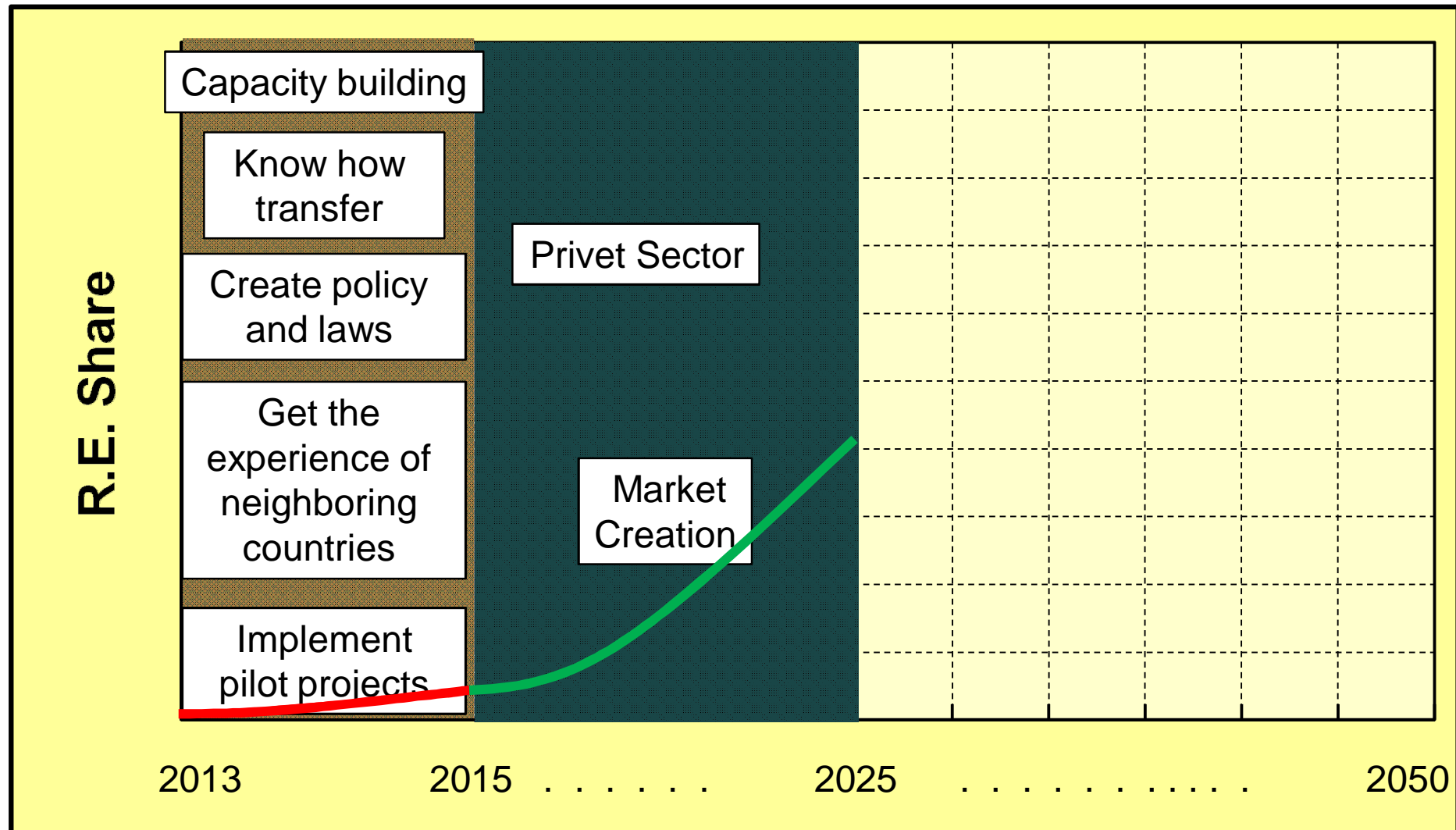
Progress development



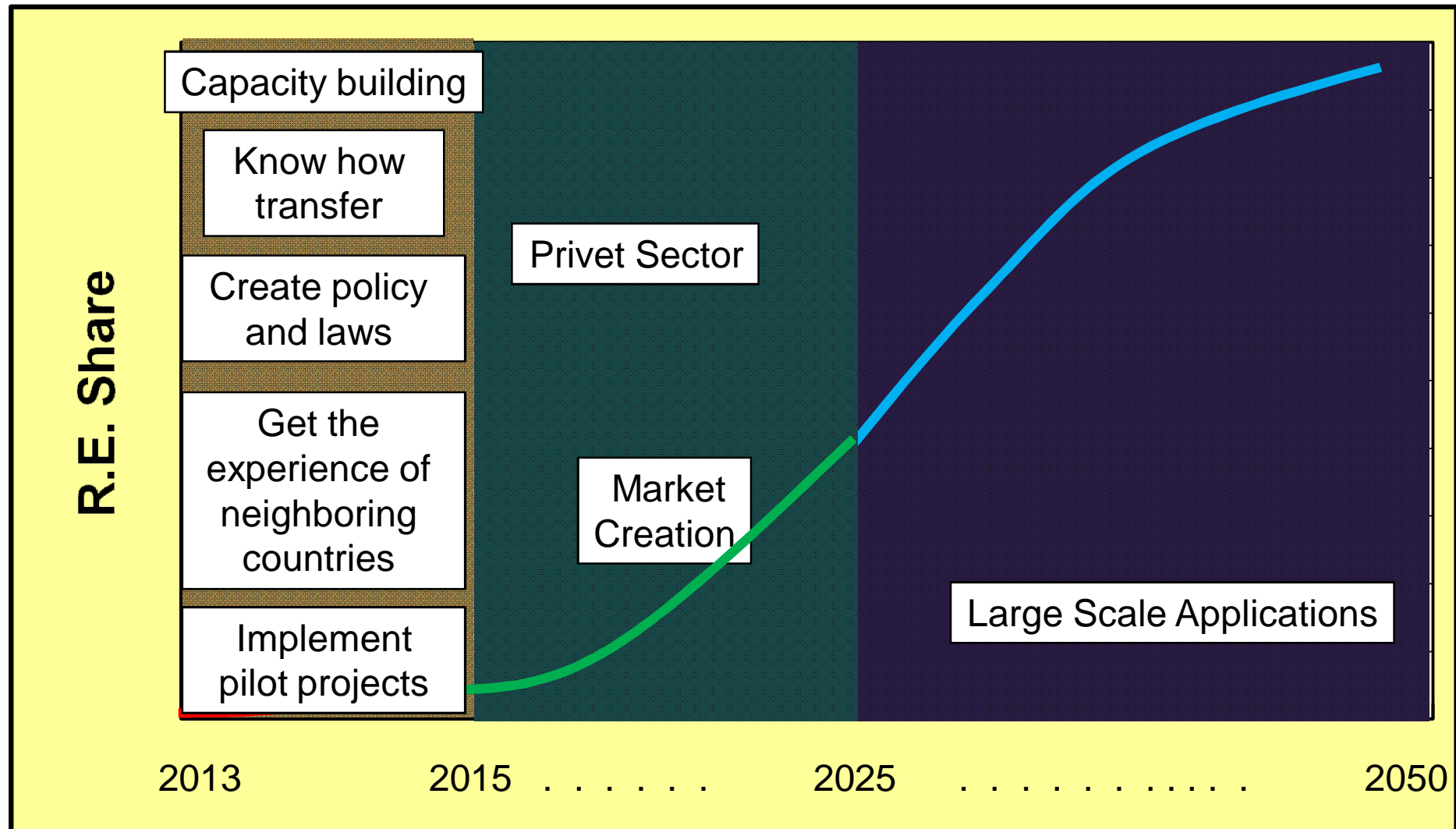
Progress development



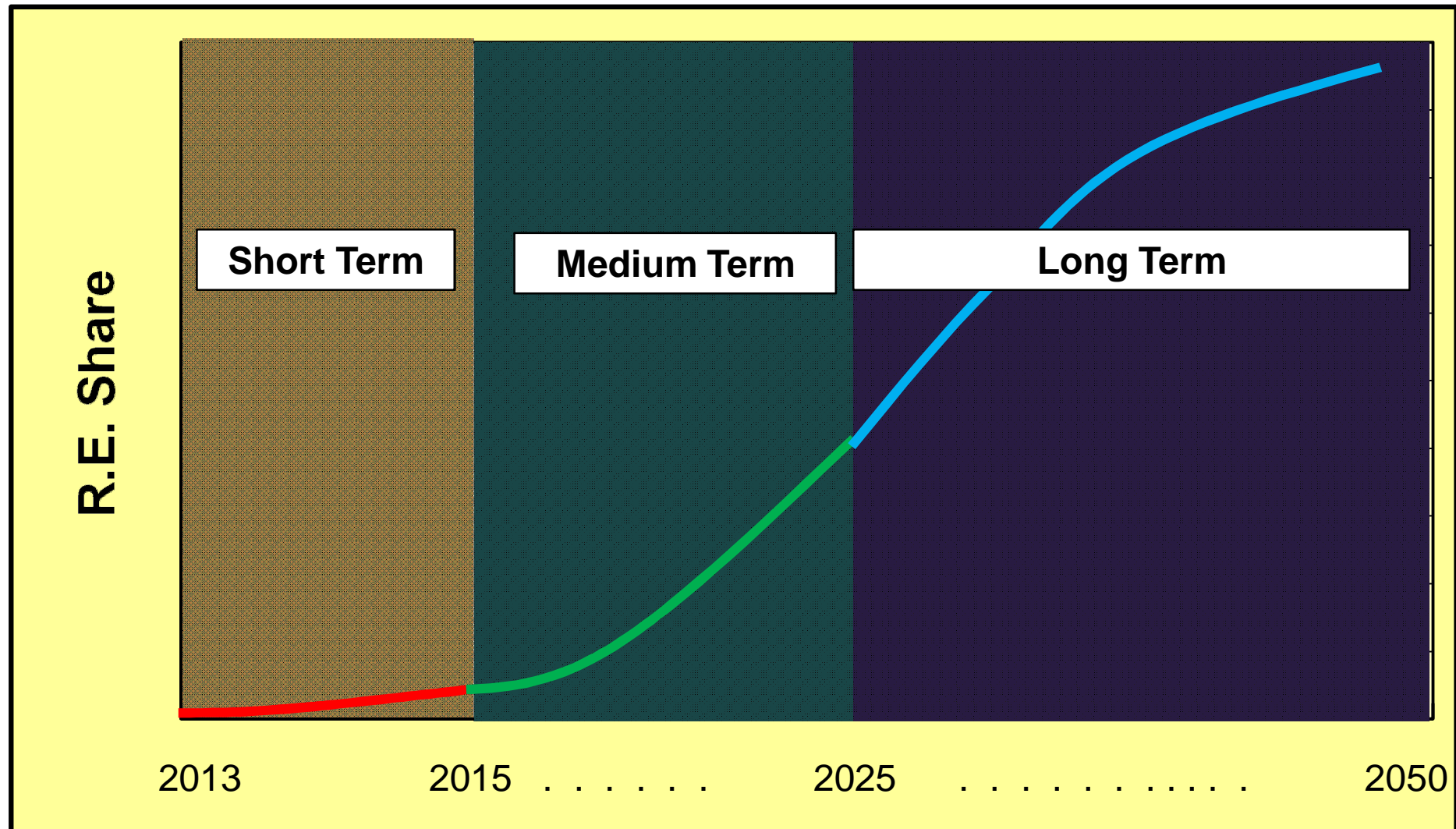
Progress development



Progress development



Progress development



Short-term projects (2013 – 2015)

short-term projects are Characterized the following

- ☐ Mature, well proven technologies and do not constitute a significant burden on the public budget during this period.
- ☐ The state should invest in this strategic sector with the aim of transferring knowledge and technology localization and building national technical staff.
- ☐ Most short-term plan projects financed from the Country budget due to the absence of laws and legislation governing investment in this sector.

Short-term projects (2013 – 2015)

Feild	Total capacity (MW)	Name of project	Capacity of project (MW)	Method of financing
Projects of wind power	260	Darnah wind farm	60	Country budget
		Al-Magron wind farmI	80	Country budget
		Al-Magron wind farmII	120	investment
Projects of solar PV	85	Plant Al-Jofra	14	Country budget
		Plant Sabha	15	Country budget
		Plant south green mount	50	investment
		Roof systems	3	Country budget
		Rural electrification	2	Country budget
Projects of Concentrated solar power	25	Plant south Sabha	25	Country budget
Projects of solar water heating	60	Different sits	60	Country budget

Contents:

6. Plan the work of REAOL- in the short term (2015 – 2013)

Planning and Studies

Energy efficiency programs

Proposed projects

the estimated budget

7. Plan the work of REAOL- in the medium term (2025 – 2016)

Planning and Studies

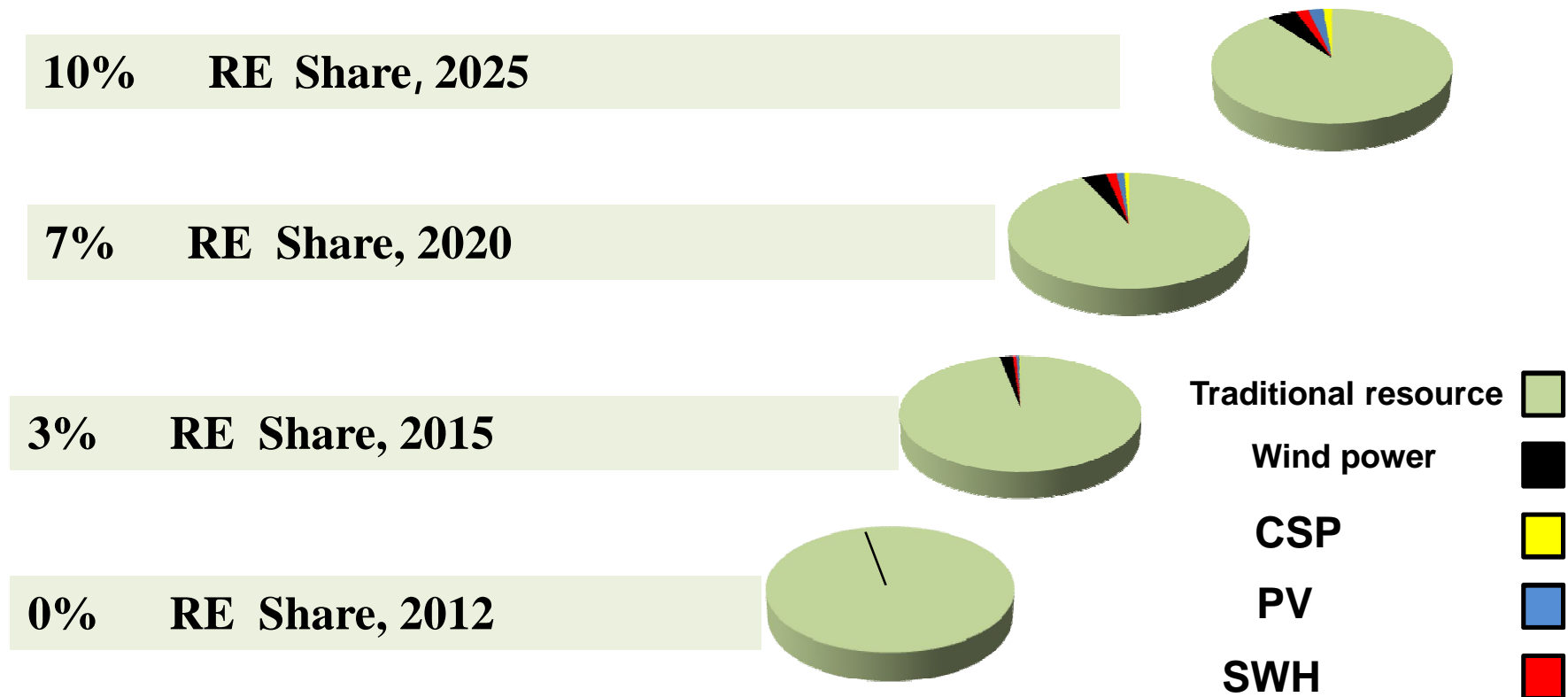
Proposed projects

8. International initiatives and international organizations

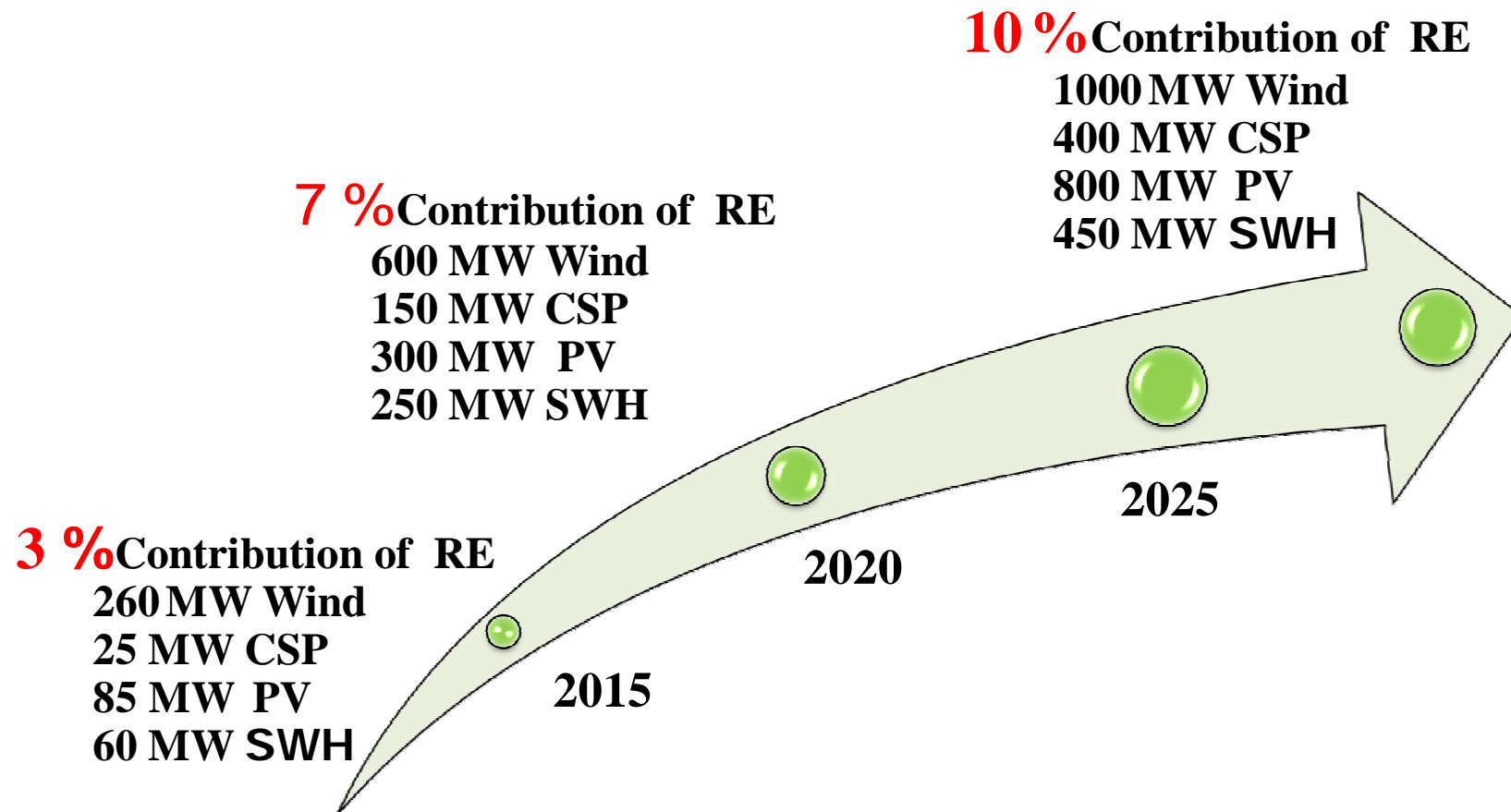
Medium-term projects (2016 – 2025)

Field	Method of financing	Total capacity (MW)	Notes
Projects of wind power	Country budget	340	Site selection will be conducted based on the results of technical and economical feasibility studies along with the follow up reports of the short term projects.
	investment	400	
Projects of solar PV	Country budget	220	
	investment	500	
Projects of CSP	Country budget	125	
	investment	250	
Projects of SWH	Country budget	250	

Proposed national strategy for the development of RE in Libya (2013 – 2025)



Proposed national strategy for the development of RE in Libya (2013 – 2025)



Note: Percentages shown represent the amount of the RE contribution to the national energy generation mix.

Indicators that can be achieved from the implementation of the short term projects 92013 – 2015)

Implementation of this program will place Libya at the forefront on the regional scale and will bring the following benefits

- ☐ Saving 2.9 million barrels of oil per year
- ☐ avoid about one million tons of carbon dioxide annually.
- ☐ Financial returns from the sale of certificates reduction in carbon emissions valued at about (6 – 8 million US Dollars annually)
- ☐ Contribute to cover part of the demand for electric power
- ☐ Gain experience and transfer of knowledge and technology localization.
- ☐ Sustainable spatial development and job creation
- ☐ Will pave the way toward having Libya as a clean energy exporter

Contents:

6. Plan the work of REAOL- in the short term (2015 – 2013)

Planning and Studies

Energy efficiency programs

Proposed projects

the estimated budget

7. Plan the work of REAOL- in the medium term (2025 – 2016)

Planning and Studies

Proposed projects

8. The Energy Efficiency

REAOL has been officially given the job of carrying out the work of Energy Efficiency to the stage of implementation:

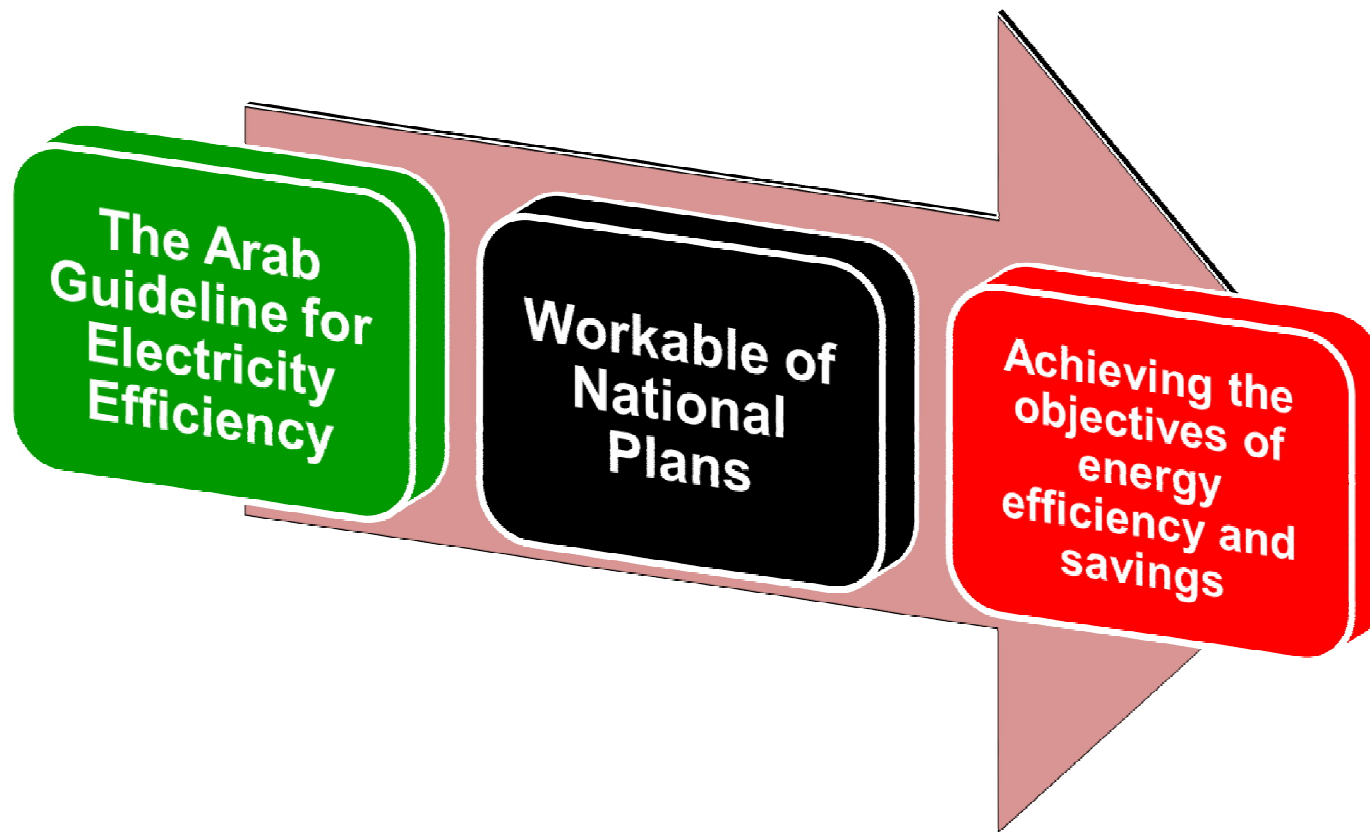


REAOL has been officially given the job of carrying out the work of Energy Efficiency to the stage of implementation:

- Coming up with the National Energy Efficiency Action Plan (NEEAP)
- Review the worldwide practices of EE and come up with the best practices and what, how, when can be implemented in Libya
- Propose the necessary laws, regulations, incentives and get it approved by the Government.
- Do the work of public awareness and public acceptance.



Methodology proposed to achieve the National Energy Efficiency Action Plan (NEEAP) according to the Arab Guideline for Electricity Efficiency



The proposed structure of NEEAP National Plan of Energy Efficiency

Definitions

Chapter 1

Purpose & Scope of work

Chapter 2

General Goals and objectives

Chapter 3

The leading role of the public sector

Chapter 4

Incentives to Promote the practices of efficient energy end-use and energy services

Chapter 5

Laws, regulations and administrative provisions accompanying the plan

Annexes

With the end of 2014, we expected the plan has reached the stage of going into force.

By that time we expect to have laws, regulations and policies and legislation and incentives approved by the Government.

By that, we need to create a supervisory authority to ensure compliance with the laws and regulations Regulator

Words to Conclude:

To see the fruitful conclusions of this RE & EE action plan, the following must be considered:

- ☐ Libya's electricity market up to now is a complete monopoly. GECOL is the only generation company, only transmission company, only distribution company Heavily subsidized.
- ☐ The price of electricity in Libya is very low. A fair and practical FiT must be in place.
- ☐ Libya has no energy regulator.

Words to Conclude:

To see the fruitful conclusions of this RE & EE action plan, the following must be considered:

- ☐ Investment laws in the energy sector does not exist.
- ☐ The energy market in Libya is very much fragmented and not easy come up with risk assessment.
- ☐ Libya (REAOL) must create a power purchase agreement to promote the various RE technologies (cost + profit margin).

Words to Conclude:

To see the fruitful conclusions of this RE & EE action plan, the following must be considered:

- ☐ The Libyan financial institutions must get involved in the investment.
- ☐ Directing a percentage of current support for conventional energy sources (fuels of various kinds) to support the development of renewable energy sources
- ☐ Libya must play a role toward the implementation of the proposed international initiatives.
- ☐ Increase the R & D support for RE and EE

- ❑ The Libyan financial institutions must get involved in the investment.
- ❑ Directing a percentage of current support for conventional energy sources (fuels of various kinds) to support the development of renewable energy sources
- ❑ Libya must play a role toward the implementation of the proposed international initiatives.
- ❑ Increase the R & D support for RE and EE

Thank You

Competent technical parties worked with Secretariat of the Council of Arab electricity ministers In the preparation of form the indicative

- 1. Regional Center for Renewable Energy and Energy Efficiency
(RCREEE)**
- 2. Energy Efficiency in the Construction Sector in the Mediterranean
(MED ENEC)**
- 3. Euro-Mediterranean Energy Market Integration Project
(MED EMIP)**

For these bodies a essential role in reviewing and evaluating the plan (in the case of the request of the Country). As well as review and redirect the application every three years.

First: Planning and Studies

Work with specialized consultancy offices and international organizations in the implementation of the following acts

1. Study the possibility of using silicon available in Libya in the solar cell industry.
2. Planning to establish an industrial base for renewable energy equipment in Libya
3. Study the possibilities available to the local entry in the industrial partnerships
4. Reload National Atlas of the Solar and Wind Energy.
5. Study and evaluate the performance of renewable energy systems installed