



The Integration of the PAN – Arab Electricity Market PAEM

Eng. Rania Raafat
Electricity Expert
League of Arab States



Contents

- 1 PAN Arab Electricity Market (PAEM) Principles and Objectives
- 2 PAEM Stages
- 3 PAEM Integration - Opportunities
- 4 The Needs To Accomplish The integrated PAEM
- 5 The benefits from a fully integrated PAEM by 2038



PAEM Principles and Objectives

Achieve the best results, at the short and long term, for electricity supply at both regional and national levels.

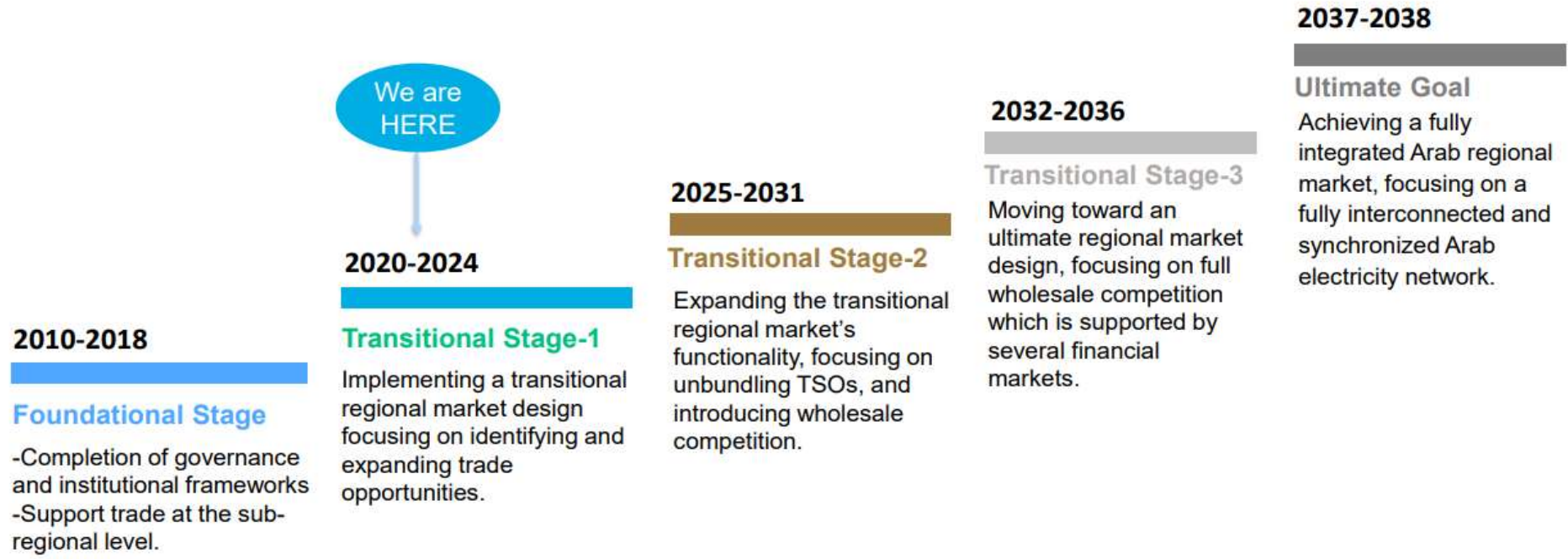
Enable Electricity trade and exchange between Member States, electricity buyers and sellers not only within their national markets, but also at the level of all Member States' markets on the basis of fair access to the grid and competition.

Promote public and private investment in large projects in the field of generating and transmission electricity of regional interest based on cost reduction.



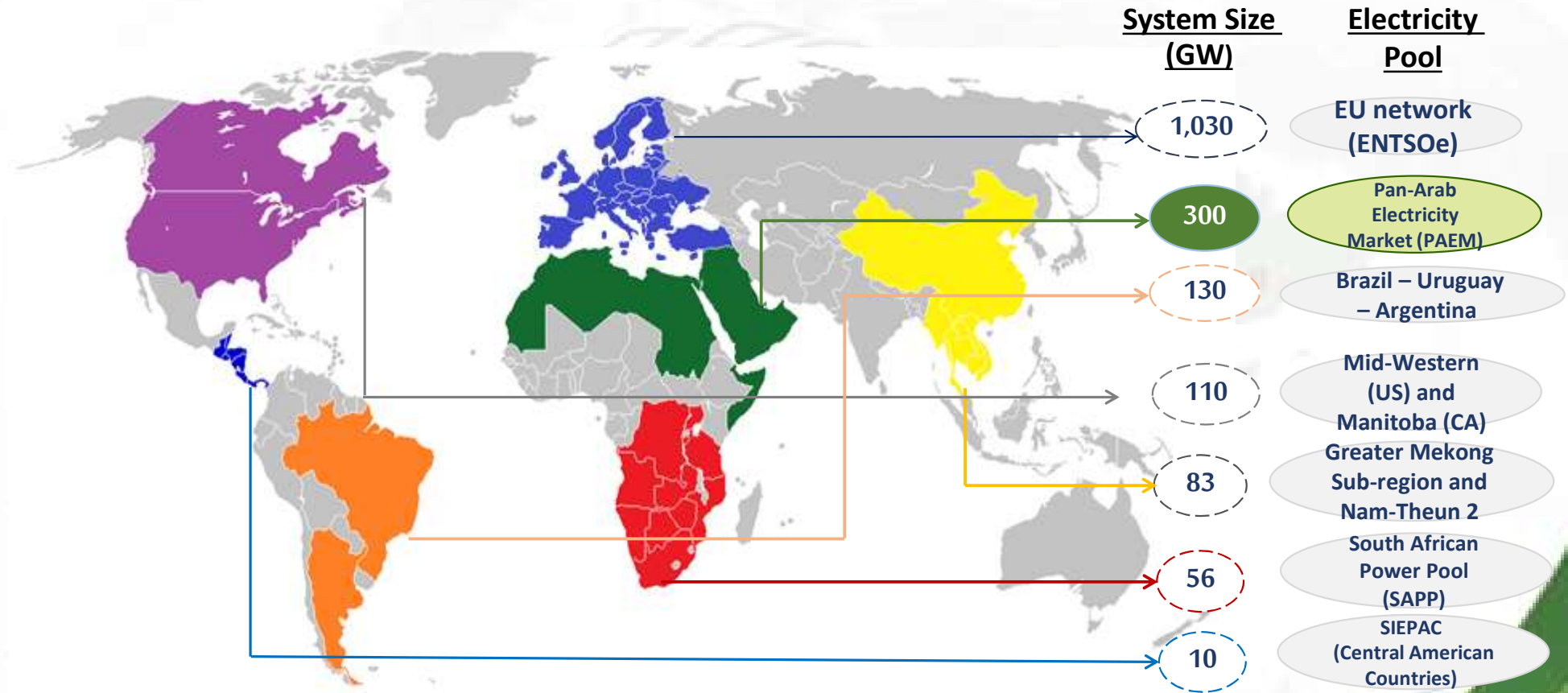
PAEM Stages

The MOU sets the vision and governance framework in a five-stage development plan



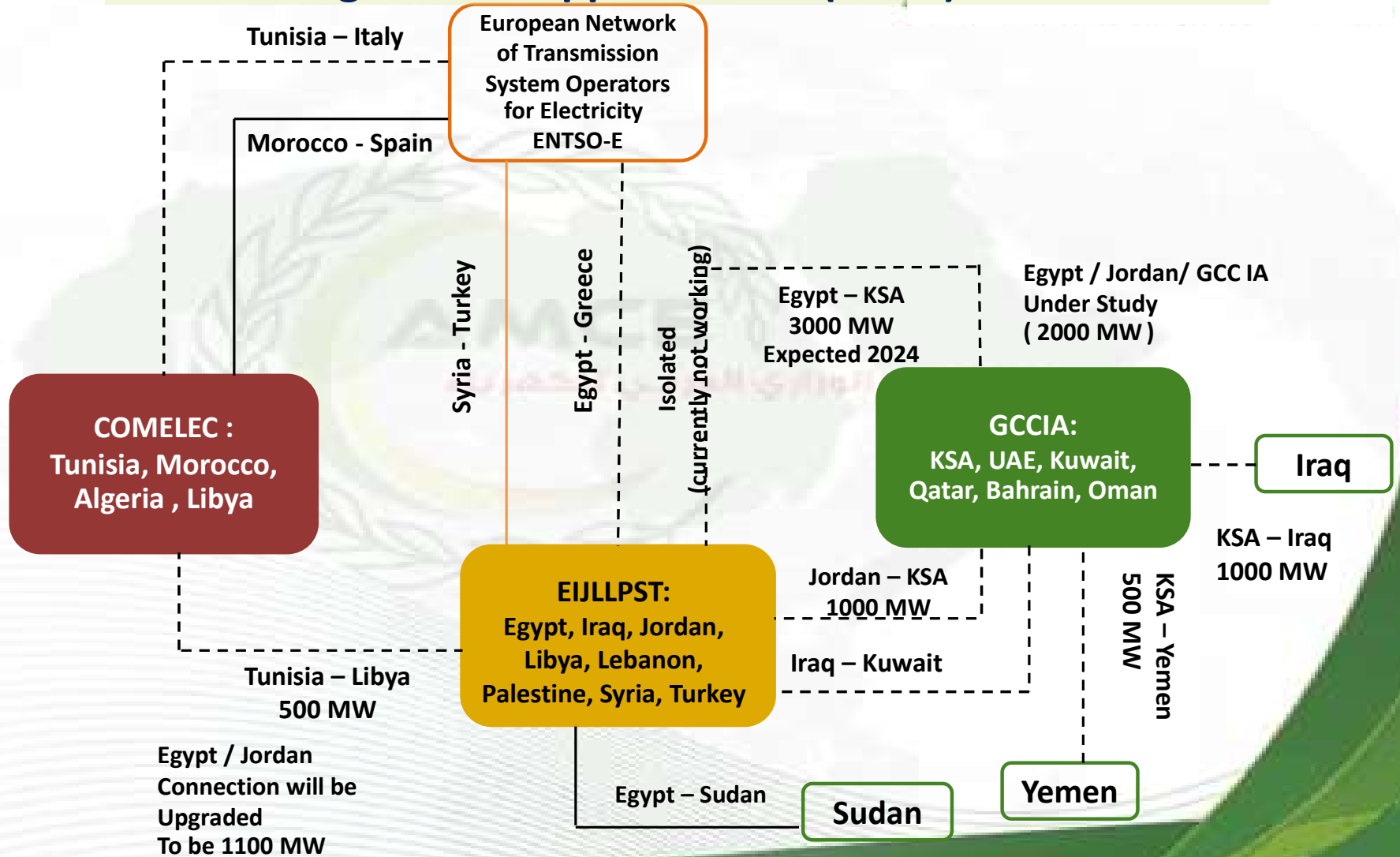


PAEM Integration - Opportunities



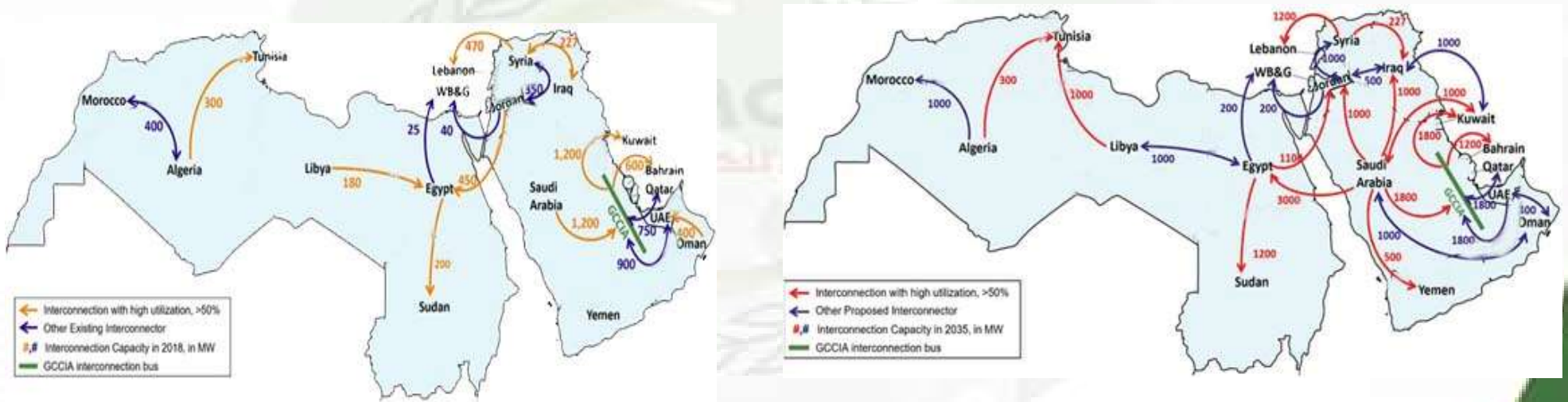


PAEM Integration – Opportunities (Cont.)





Utilization of Infrastructure By Enabling trade on economic merits



Increase Utilization of Existing Interconnection Capacity

New and Reinforced Interconnections by 2035



Utilizing The Existing Infrastructure

Benefits of enabling trade on economic merits through the existing interconnections only May:

- Decrease total system costs by US\$71 billion
- Increase the annual average utilization from 5–7 percent in 2018 to 36 percent in 2035
- Exhibit an estimated commercial value of trade of US\$23 billion
- Improve energy security by 23 percent
- Increase the share of renewable technologies in the energy mix to 17.6% by 2035

Existing Cross-Border Interconnectors with expected utilization greater than 50% in 2035

Algeria – Tunisia	GCCIA – Kuwait
Egypt – Libya	GCCIA – Bahrain
Egypt – Sudan	GCCIA – KSA
Egypt – Jordan	Oman – UAE
Syria – Iraq	Syria – Lebanon



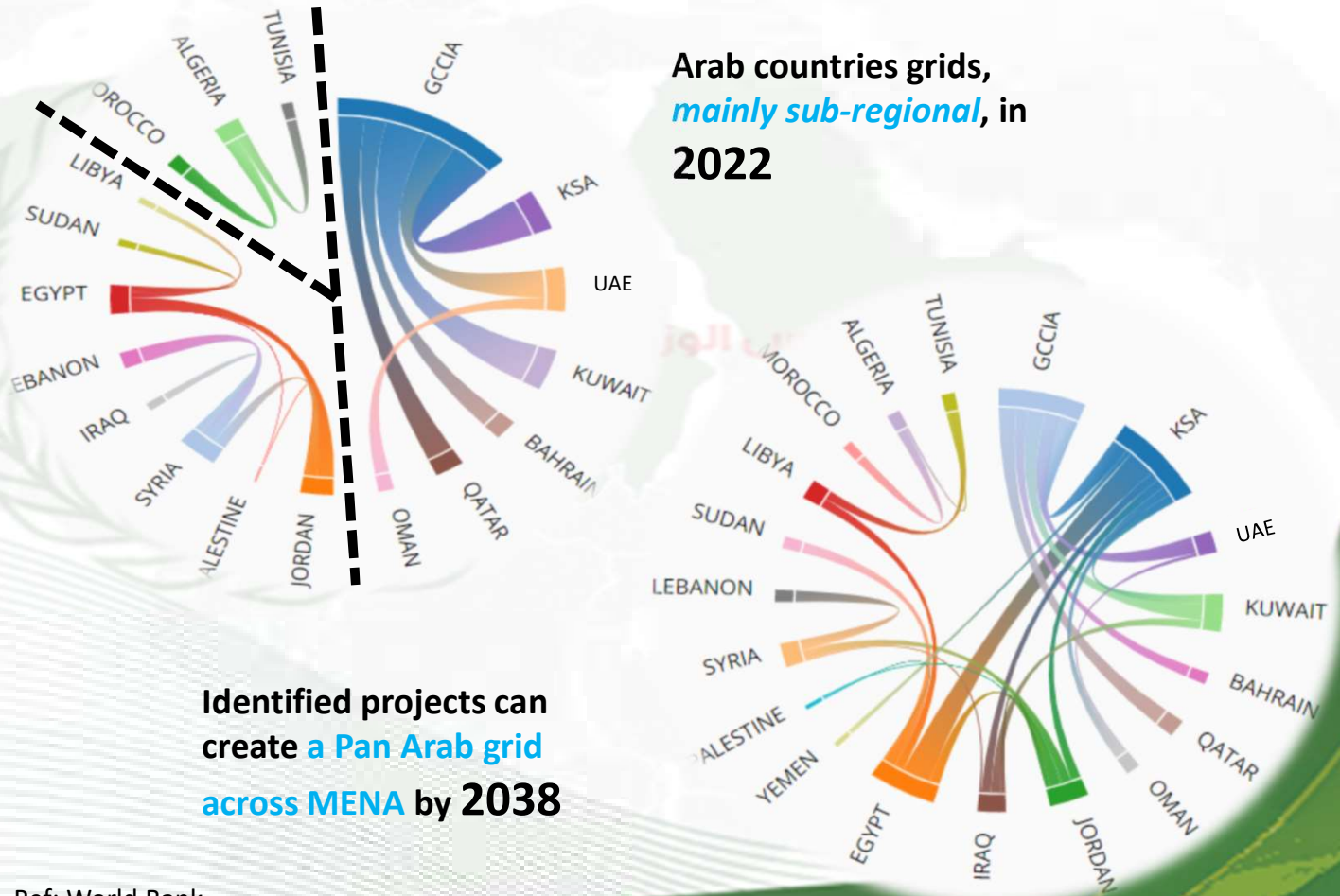
Identified New Interconnections

New Interconnections	Total Capacity (MW)
KSA - Egypt	3000
KSA - Yemen	500
Tunisia - Libya	1000
KSA - Jordan	1000
KSA - Iraq	1000
Jordan - Iraq	500
KSA - Oman	1000
Kuwait - KSA	1000

Identified Reinforcements

Identified Reinforcements	Increased Capacity (MW)
Algeria-Morocco	600
Egypt-Sudan	1000
Egypt - Jordan	650
Egypt - Gaza Strip	175
Jordan - West Bank	160
Libya - Egypt	370
Jordan - Syria	650
Lebanon - Syria	730
GCC Interconnections	600-1050

Identified projects transform the level of integration among national power grids in MENA, increase RE Integration, and Decarbonize the Economy



Arab countries grids, *mainly sub-regional*, in 2022

Identified projects can create a **Pan Arab grid** across MENA by 2038

Ref: World Bank



The Needs To Accomplish An integrated PAEM

Scaling-up Trade & Infrastructure

- ✓ Complete and Improve the Infrastructure.
- ✓ Countries of the region need to develop and agree on a pricing approach suitable for cross-border trade on economic and commercial basis.

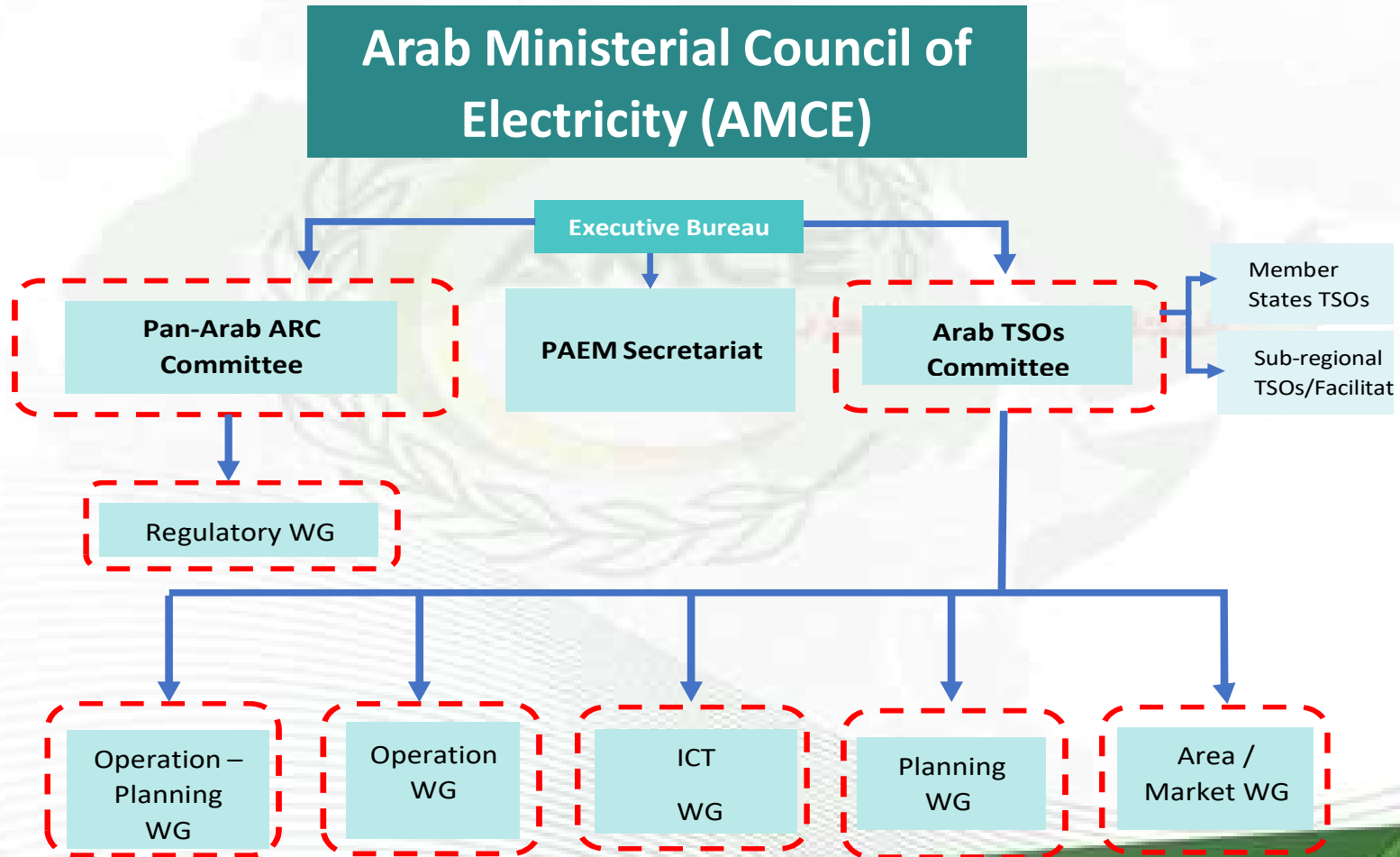
Completing governance framework

- ✓ General Agreement
- ✓ Market Agreement
- ✓ Grid codes
- ✓ Market rules



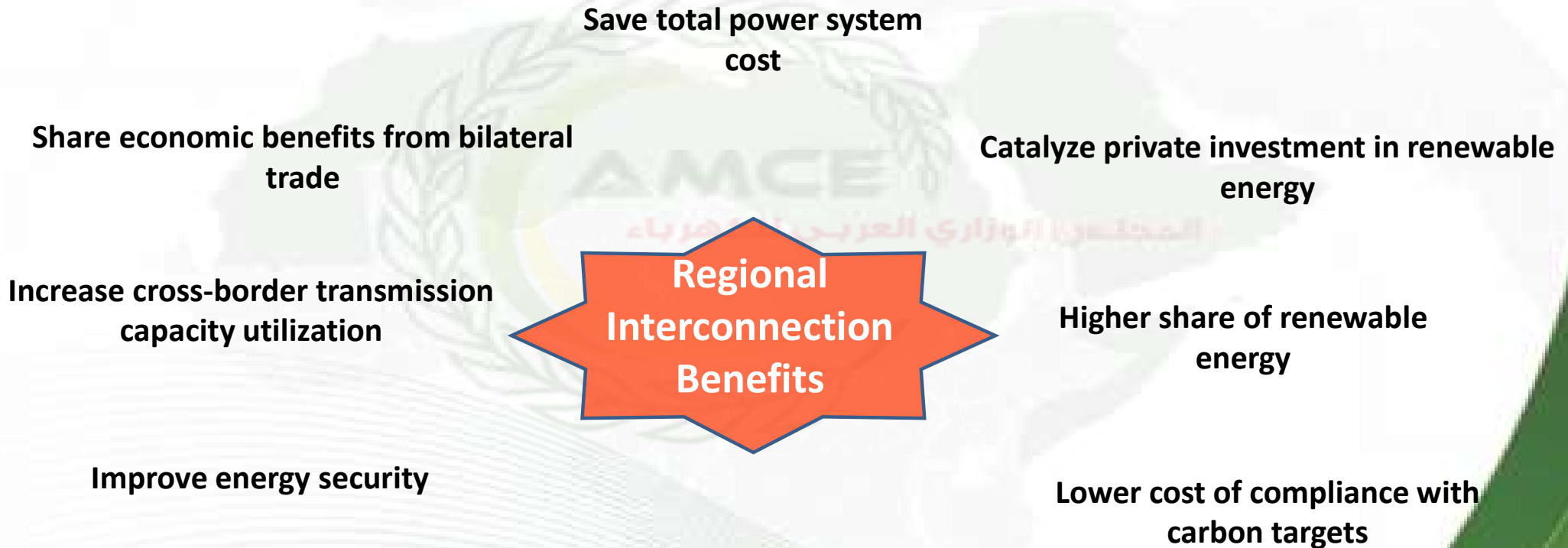


The Needs Cont. PAEM Institutions - Forming Market Committees





The benefits from a fully integrated PAEM by 2038





Thank You
القطاع العام
energy.dept@las.int