

**Regional capacity building workshop on “Water- Energy Nexus
Operational Toolkit: Technology Transfer
30th – 31st October 2017, Amman, Jordan**

Economic and Social Commission for Western Asia

Local manufacturing of Renewable Energy in the Arab Region

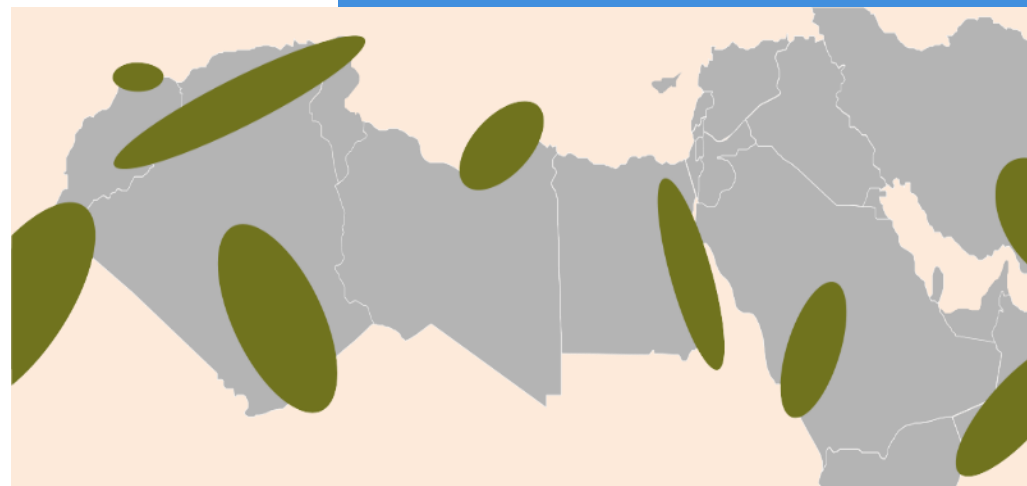


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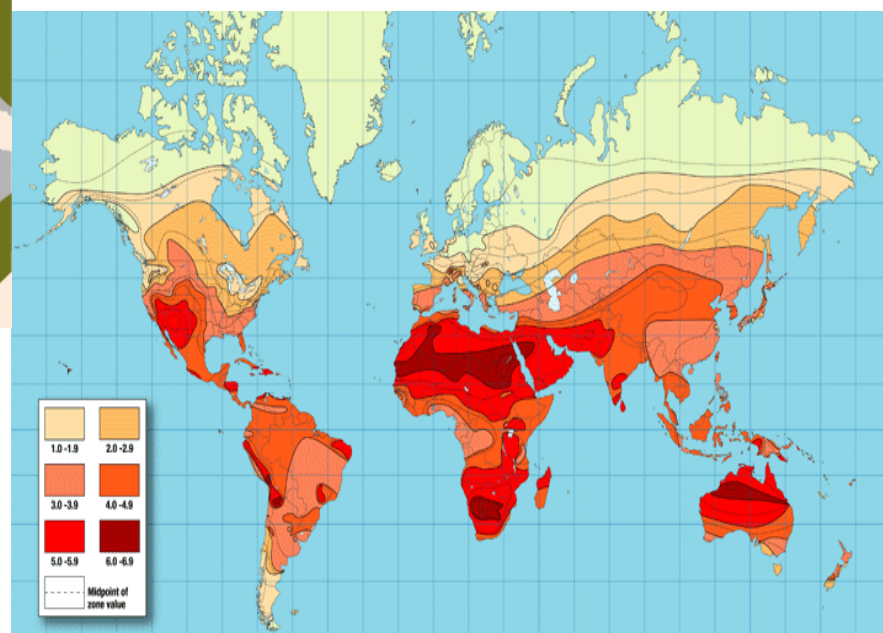
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Sustainable Development Policies Division

Renewable energy potential in the MENA region



source: MAKE, MENA Wind Power Outlook, 2 April 2015, Joffery Dupuy, P. 8

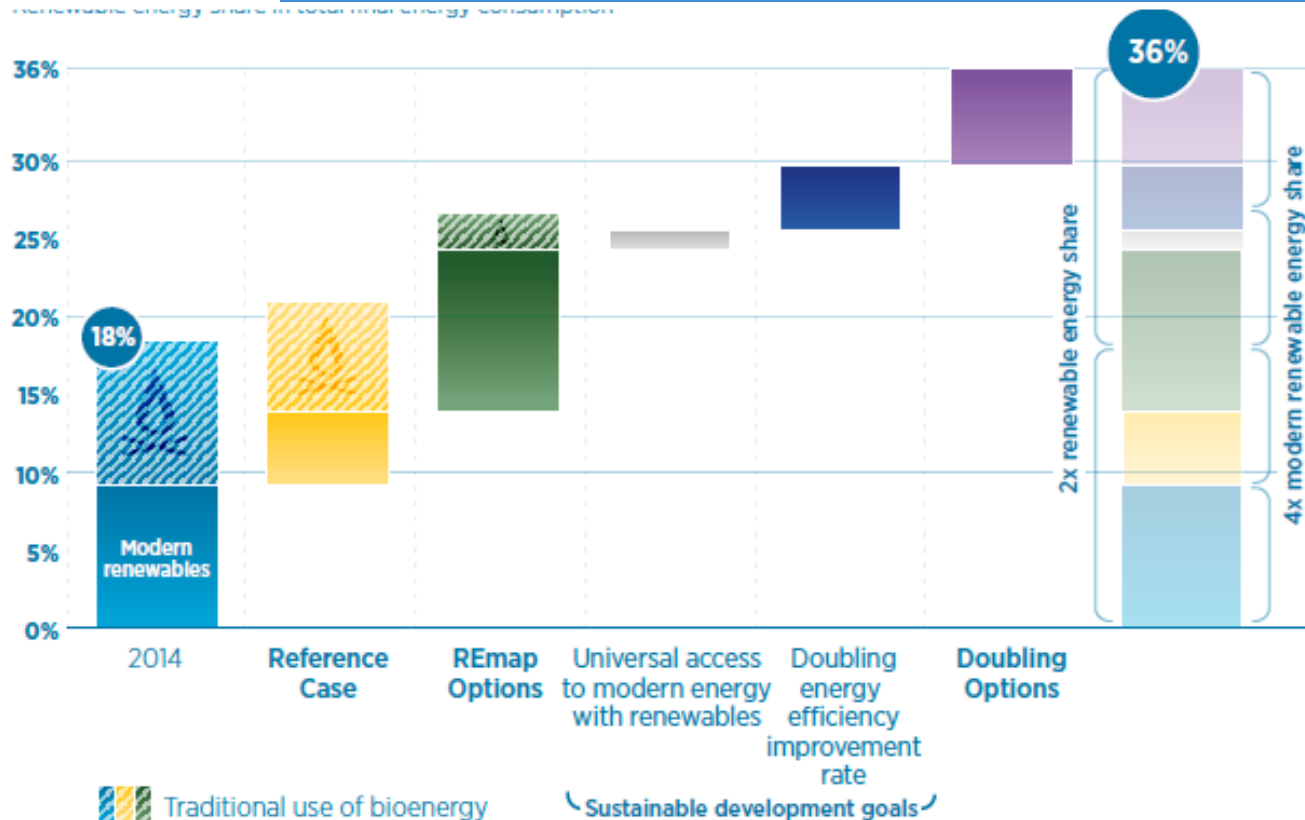
- Wind speed suitable for the production of electricity in various locations of many countries
- High Solar Irradiance



source: www.altestore.com/howto/Solar-Electric-Power/Reference-Materials/Solar-Insolation-Map-World/a43

- Vast desert lands, semi-flat, and mostly uninhabited.
- Pilot and commercial projects, industrial potential, Technical staff and available labor.
- Official interest in RE/ Plans and Policies to diversify the energy mix.
- Contribution to Energy Security.
- A tool to reduce emissions.

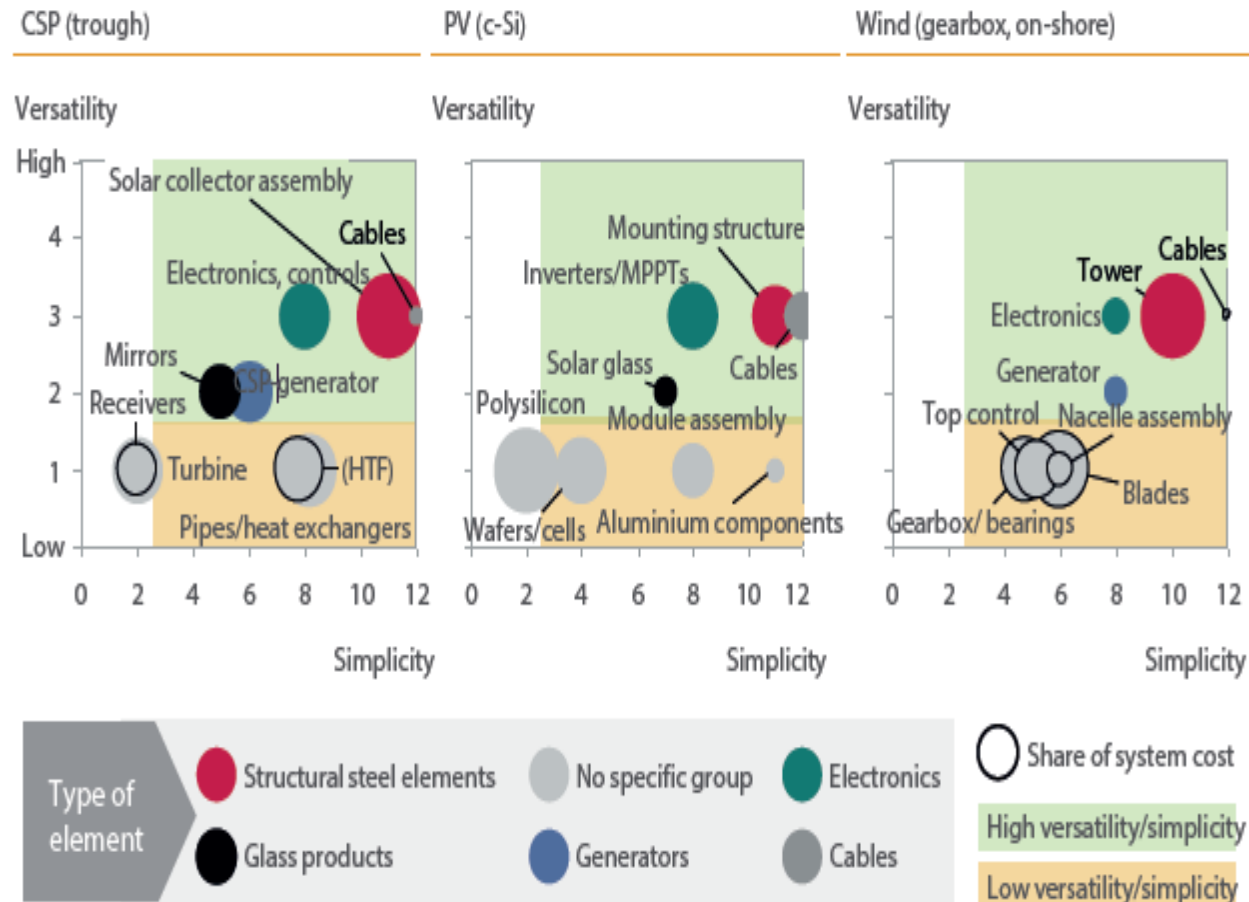
Benefits from increasing share of RE in total final energy consumption



- 24.4 million jobs in the renewable energy sector by 2030.
- Save up to 4 million lives per year in 2030.
- Boost the global GDP by up to USD 1.3 trillion.

Local Manufacturing of RE components

- RE market is growing in the Arab region as countries strive to diversify their energy mix.
- Installed capacity in MENA Countries will reach 107 GW by 2030.
- Parts, such as cables and electronic components, are often not specific to a certain type of RE technology.
- RE manufacturer is therefore probably better off concentrating on the manufacture of less complex and more versatile components.



Source: Zickfeld and Wieland, 2013.

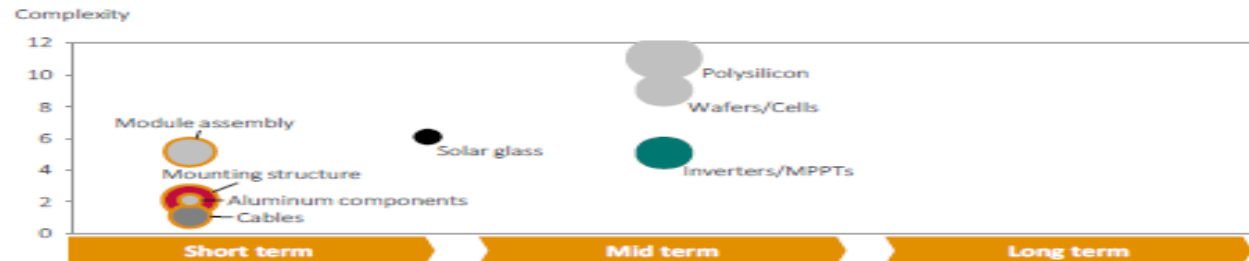
Projection of local manufacturing in the MENA for CSP, PV & wind

- All components with short-term localization period and not complex “low complexities” could be locally manufactured.
- PV and wind systems are expected to be manufactured in the Arab countries during mid-term localization periods.
- CSP is the only technology which would require a long-term localization period (due to CSP generator and turbine which are significantly complex).

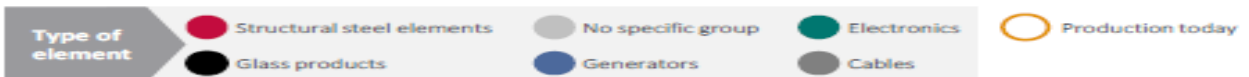
CSP technology in MENA (manufacturing of components)



PV technology in MENA (manufacturing of components)



Wind technology in MENA (manufacturing of components)



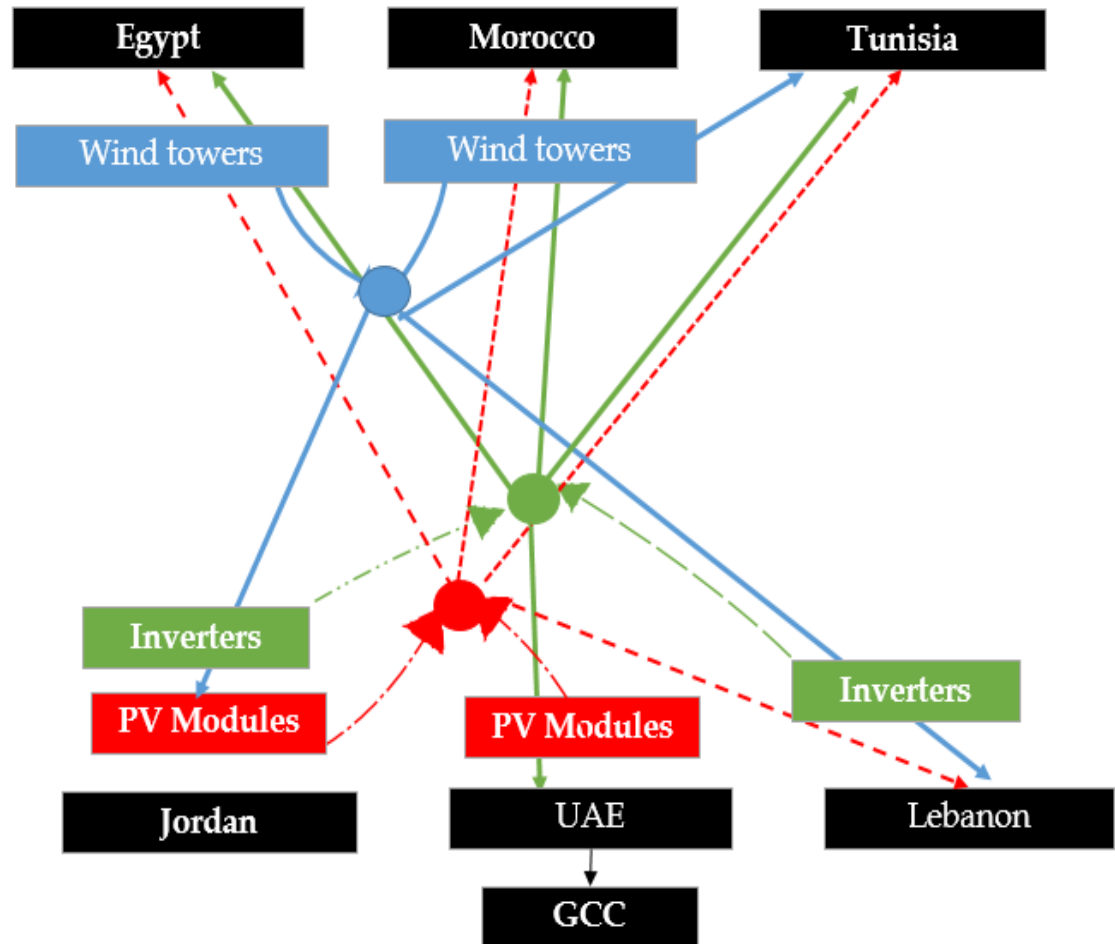
Note: Size of bubble shows relative value of CAPEX

Inter-Arab Trade Agreements and Zones

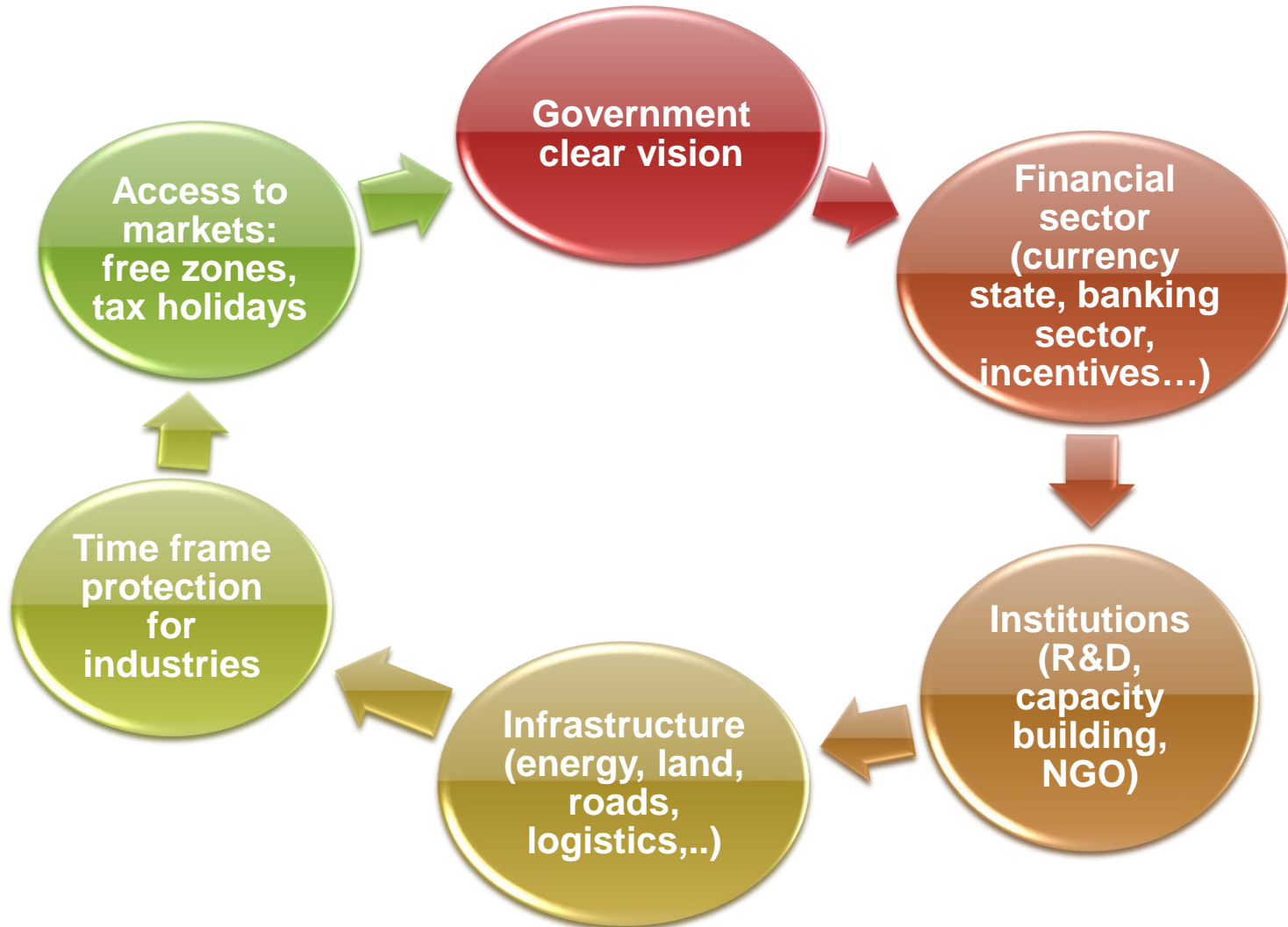
- Agreement to Facilitate the development of trade among Arab countries (1981,1997)
- Greater Arab Free Trade Area/GAFTA (~ all Arab Countries, 2005)
- Agadir Agreement (Egypt, Jordan, Morocco, Tunisia, 2001)
- Council of Arab Economic Unity (Egypt, Iraq, Jordan, Kuwait, Libya, Mauritania, Palestine, Saudi Arabia, Sudan, Tunisia, Syria, UAE, Yemen)
- Arab Maghreb Union (Algeria, Tunisia, Libya, Mauritania and Morocco)
- Gulf Cooperation Council (Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates)
- Treaty of Joint Defense and Economic Co-operation of the League of Arab States

Enhancing regional collaboration: selected Arab countries based on join studies ESCWA-IRENA

- The ambitious target of each country can create momentum in RE component manufacturing.
- The regional market should be considered in order to justify such investments.
- Parameters to enhance interregional Arab cooperation:
 - Unified Arab standards, accredited testing facility
 - Arab free tax zone
 - Shared zones for common products



Study General Recommendations based on Gaps



Recommendations for encouraging local RE manufacturing in the Arab region

Substantial political support	Competitive local players	Competitive local players	Investment and finance
<ul style="list-style-type: none"> • Formulate a long-term RE strategy with national targets and a regulatory framework • Define a national plan for RE equipment manufacturing • Reform fossil fuel subsidies 	<ul style="list-style-type: none"> • Conduct awareness-raising initiatives • Assess the feasibility of production line upgrades • Foster business links through joint ventures • Support the structuring of the sector 	<ul style="list-style-type: none"> • Conduct awareness-raising initiatives • Assess the feasibility of production line upgrades • Foster business links through joint ventures • Support the structuring of the sector 	<ul style="list-style-type: none"> • Encourage financial institutions to grant low interest loans • Implement financial support mechanisms in the form of price, tax and other incentives

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Thank YOU