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INTERNATIONAL ENERGY FORUM

International Energy Agency

Training Workshops on Energy Statistics: Energy Balances

Beirut, 11-14 December 2018

Energy statistics and balance for sustainable energy policy: Regional perspective

Economic and Social Commission for Western Asia

UNITED NATIONS
ESCWA

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Setting the Context: Energy Market development

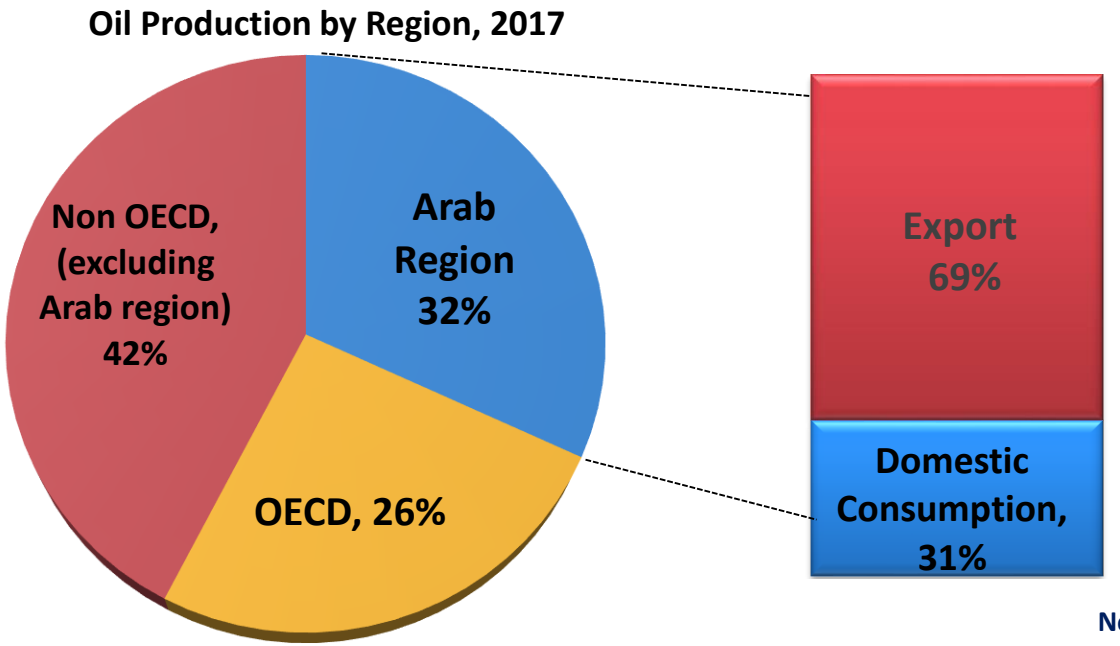
International Energy Transformation

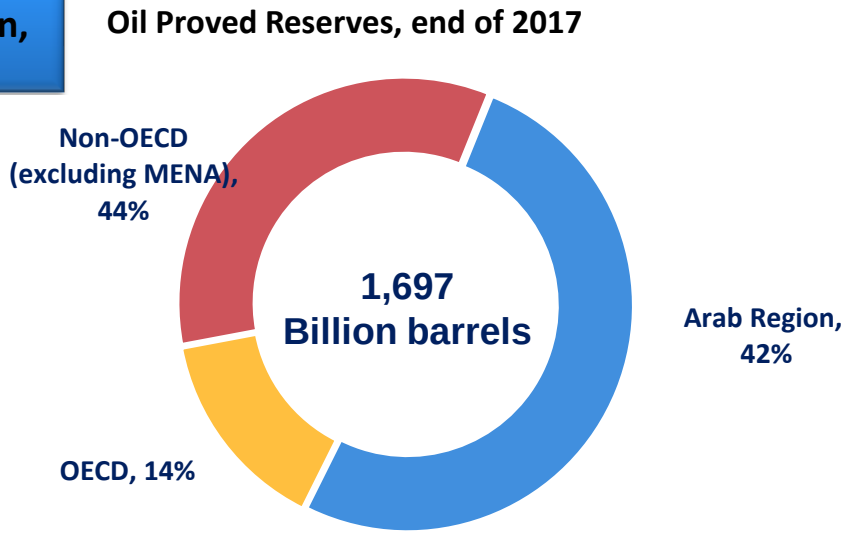
- Slowing of energy demand and decoupling with GDP growth in many countries and sectors
- Return of energy price volatility and fall in oil, gas and coal prices and upstream capital investment since 2014
- China's energy and economic transition
- Rapid growth in shale gas and tight oil production in the USA
- Strengthening climate policies and steeply falling costs for major low-carbon technologies especially in Renewables
- Increasing importance of electricity: providing energy access (esp. India) and adoption of electric vehicles
- Shifting nature of energy security and traditional producer/consumer dynamic

Arab Region Energy Transitions

- The region is in the midst of a transition from being a major supplier of energy to international markets, towards an increasingly important demand market
- Fall in energy prices in 2014 stimulates a new wave of economic reforms
- Shift towards domestic energy and water pricing more reflective of international benchmarks
- NDCs and participation in Paris Accord on Climate Change: adaptation Vrs maximising the co-benefits of GHG avoidance
- Power sector fuel switching from oil to gas
- Cleaner energy options become part of policy mainstream: renewables, nuclear, CCS/CCUS…
- Industrial strategy: building on strengths in energy intensive sectors (esp. petrochemicals) and moving up the value chain.

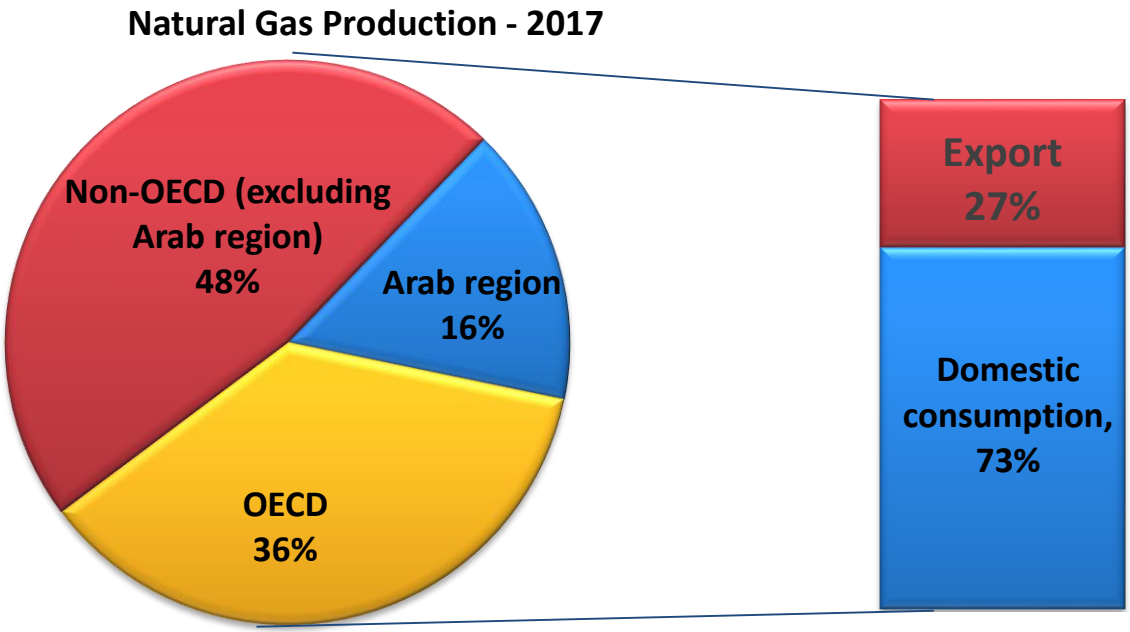
Oil production and proved reserves by region



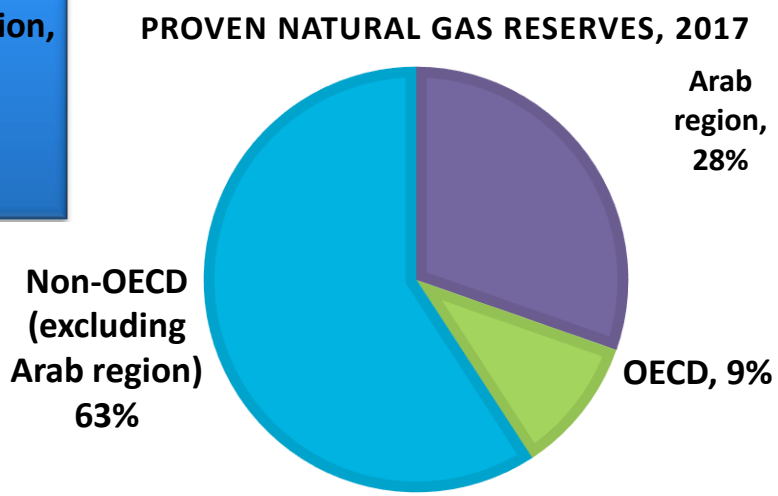


Data Source: BP2018, OAPEC

Natural gas production and proved reserves by region

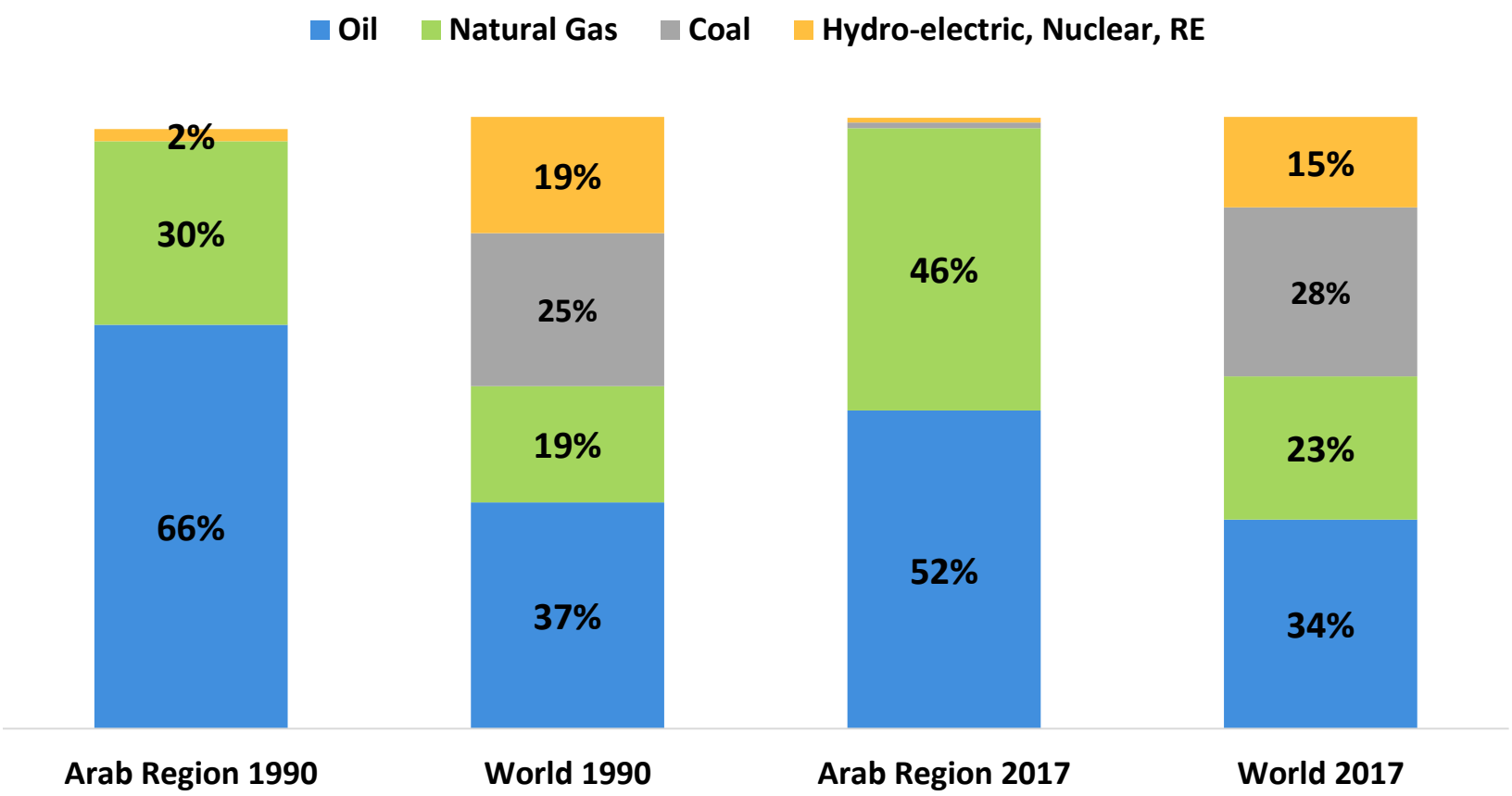


Source: Cedigaz, BP,2018, OAPEC,2018



Countries in the Arab region exhibit different energy consumption levels, but they share their reliance on fossil fuels for energy sufficiency.

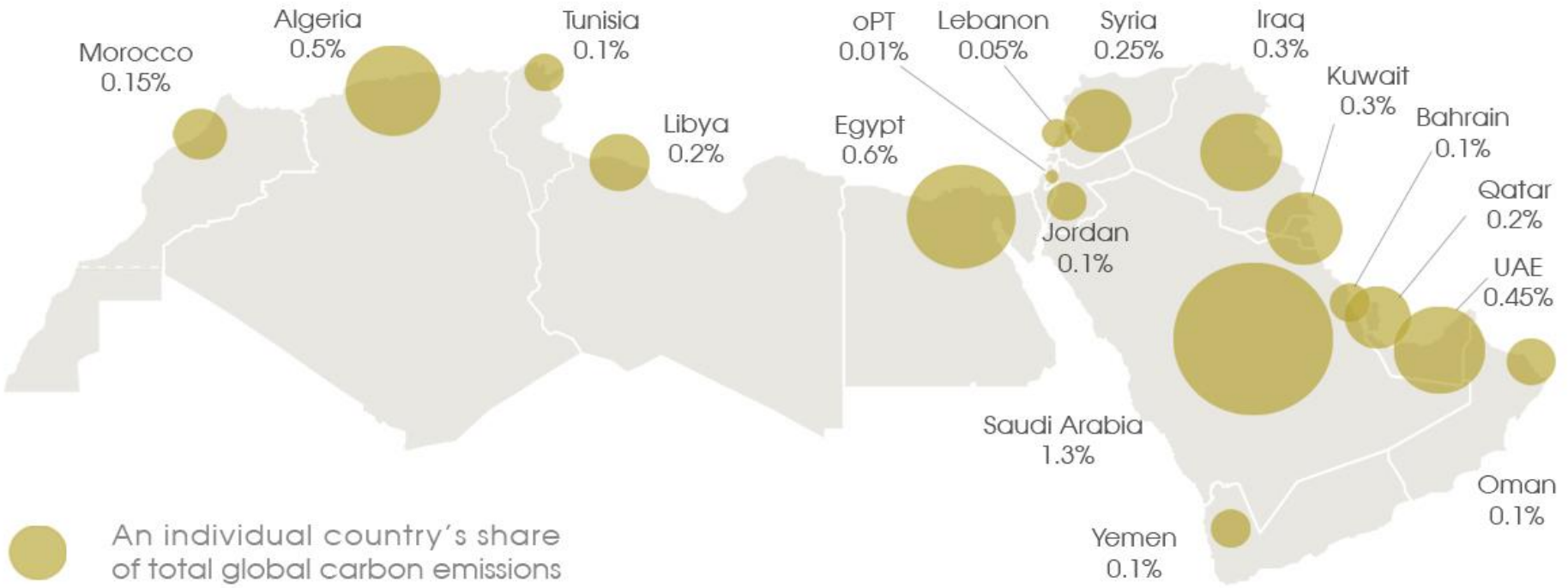
Energy Mix in the World and Arab Region



Dependence on fossil fuels is a source of fundamental vulnerability in the Arab region, economically, fiscally and environmentally

While climate change has never played a significant role in Arab countries' discourse on energy use,

……..today the Arab region is one of the regions of the world most vulnerable to climate change



Historically low rate of energy use and carbon emissions: Arab region constitutes 5% of the world's population, emits just under 5% of global carbon emissions

Sustainable Energy in the Sustainable Development Agenda 2030

17 SDGS

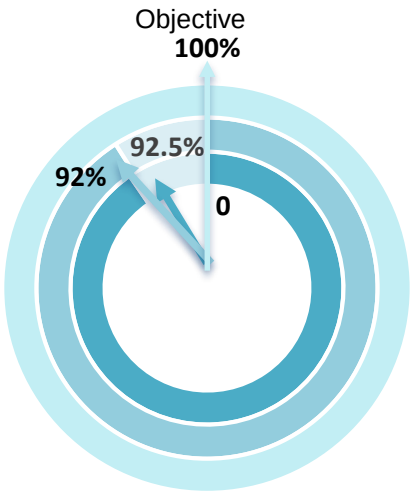
- 169 Targets
- 230+ indicators

Important regional insights on energy for sustainable development

Near-universal access to modern energy but very slow progress in energy efficiency and a marginal role of renewable energy

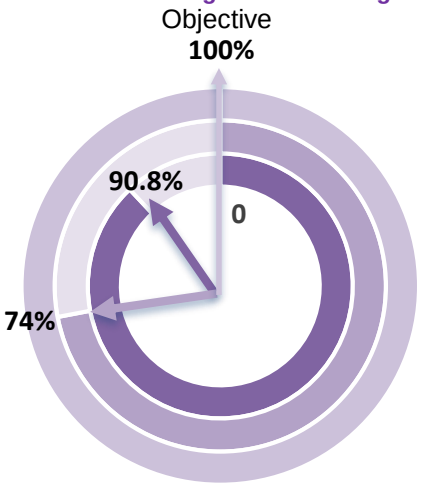
https://www.unescwa.org/publications/gtf-regional-report-arab-region-progress-sustainable-energy

SDG 7.1.1: Electrification



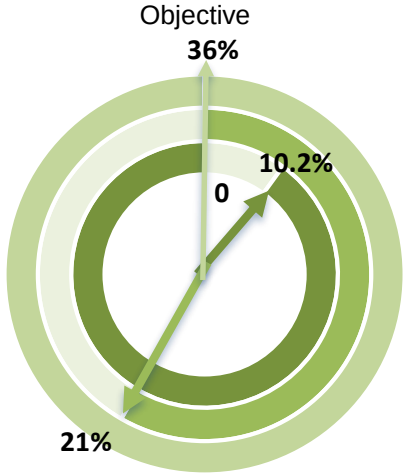
- Access to electricity, 2017, Arab region
- Access to electricity, 2030, projected progress globally
- 2030 Target: Ensure universal access to electricity

SDG 7.1.2: Clean Fuels and Technologies for Cooking



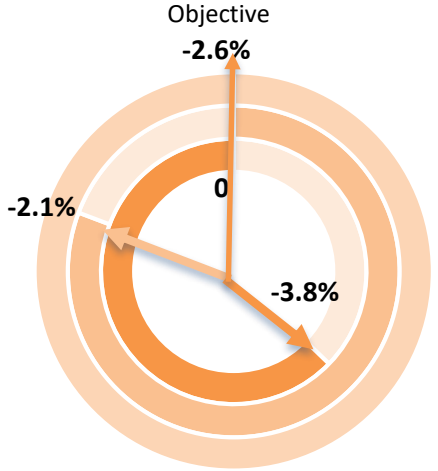
- Access to CFTs, 2017, Arab region
- Access to CFTs, 2030, projected progress, globally
- 2030 Target: Ensure universal access to CFTs

SDG7.2: Renewable Energy



- Renewable energy share of TFEC, 2016, Arab region
- Renewable energy share, 2030 - IEA estimates, globally
- 2030 Target: Double the share of renewable energy in the global energy mix

SDG 7.3 : Energy Efficiency



- Change in energy intensity, 2010–2016, Arab region
- Compound annual growth rate of primary energy intensity, 2012-2030, current trends, globally 2030
- 2030 Target: Double the global rate of improvement in energy efficiency, expressed as compound annual growth rate of primary energy intensity

- ❑ Significant gaps to EA in the LDC
- ❑ Access to CFTs remains precarious in the Arab LDCs (less than 40%)
- ❑ RE still concentrated in a few Arab countries, dominance of Hydro-power
- ❑ Over 2/3 of the region's consumption of RE is based on biomass in rural area
- ❑ Arab region needs to reduce EI by an average CAGR of -3.4% between 2016 and 2030 to meet the global target
- ❑ Energy net exporters in GCC and North Africa continue to drive the regional trend in rising energy intensity
- ❑ Residential and service sectors account for at least 2/3 total annual electricity consumption

Data and indicators: Limitations and the need for country consultations

Measuring energy access:

- Reliability and quality of electricity access
- Affordability, expressed as share of household income spent on energy
- Energy mix by sector, role of fossil fuels

Measuring energy efficiency:

- **Data harmonization:** no standardized measure of energy efficiency
- **Measuring energy efficiency through energy intensity:** - using energy intensity as a proxy for energy efficiency would require more detailed disaggregation of data to sectors, subsectors and individual end-use activities..

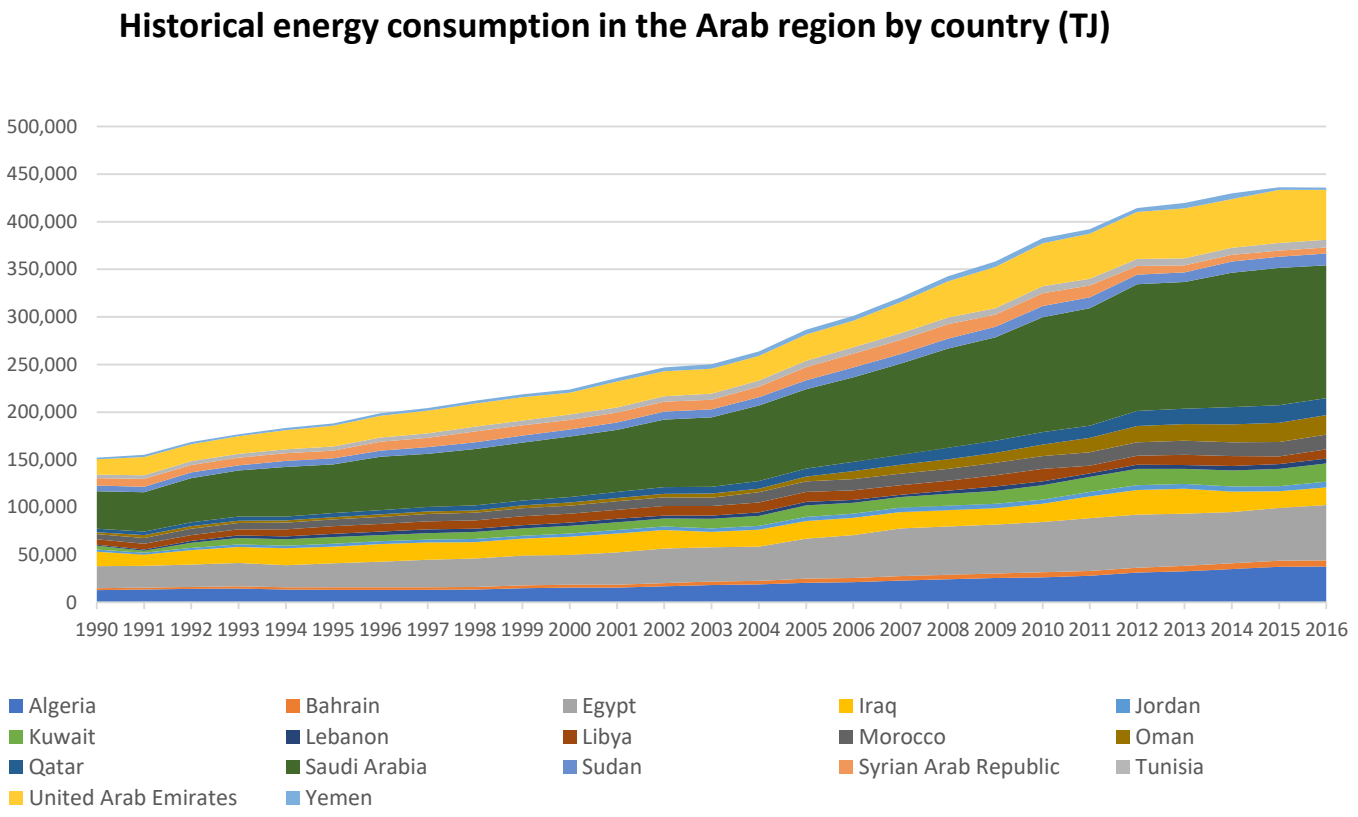
Measuring RE and harmonization of Definitions:

- Biomass is not by definition a modern fuel. The efficiency of biomass – whether modern or traditional – does not compare to RE technologies such as solar, wind or hydropower.
- Measuring and tracking the sustainable use of solid biofuels – and bioenergy in general – at country level is extremely complex for at least the following reasons:

- the assessment of sustainability relates to multiple dimensions with their own set of indicators.
- the assessment is applied at a “situation” level,
- measurement is data-intensive and few data are in the form required,
- periodic tracking would require an organizational structure and data-collection platform that few countries have.

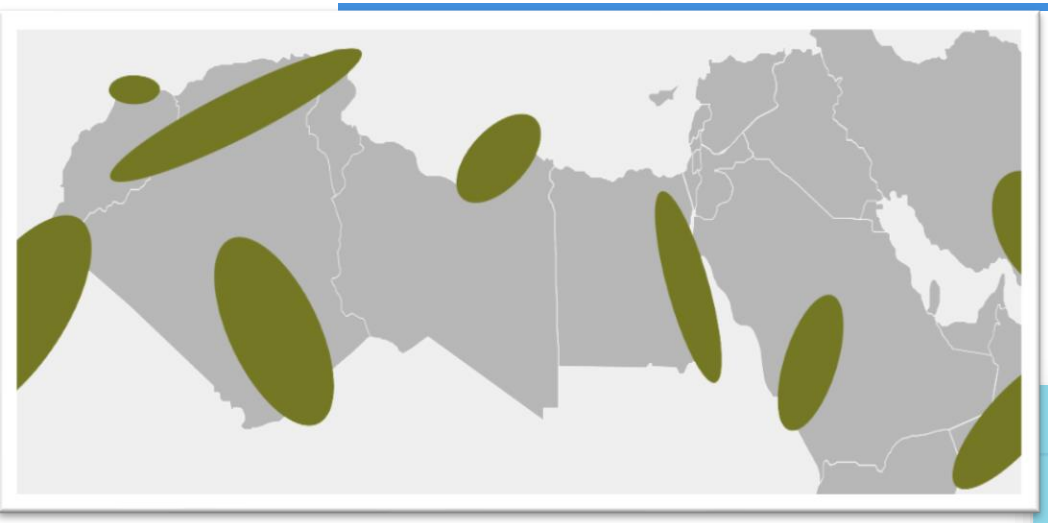
Unchecked energy demand:

Arab countries will need to diversify how and what energy they use



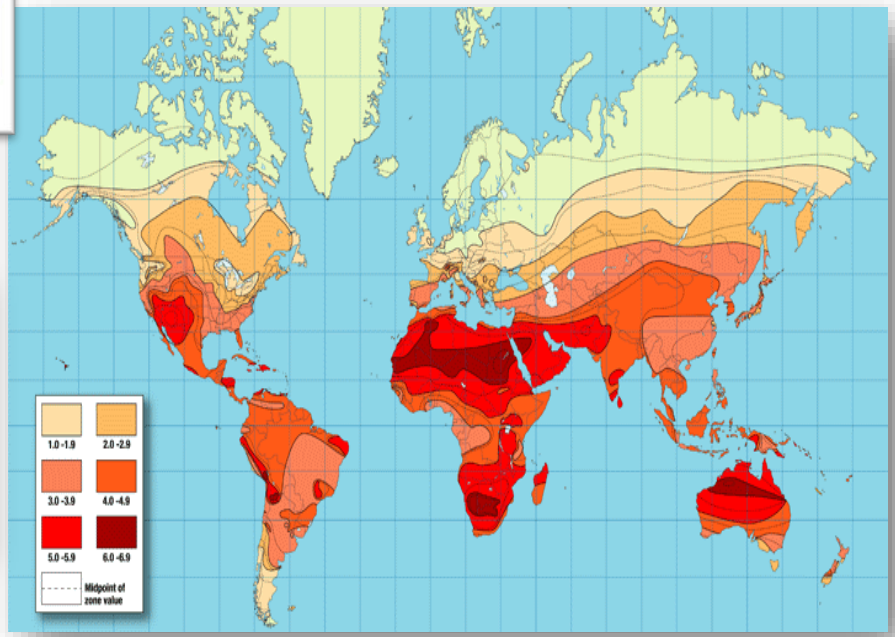
Source: IEA (2018)

The Arab countries are well endowed with potential for developing renewable energy resources, if adequately used



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
- Vast desert lands, semi-flat, and mostly uninhabited



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

Key Challenges and Barriers

The Arab region needs to develop more sustainable energy systems to meet development goals

Energy Access

- Inequalities in access to natural resources
- Growing rate of urbanization
- Urban-rural divide
- Frequent disruptions in energy supply

Energy Efficiency

- Policy focus efforts geared towards fast-rising development and high living standards
- Wide spread energy inefficiencies across all economic sectors
- Lack of policy priority and capacity (incentives and regulatory measures
- Market Structure and role of Private Sector

Renewable Energy

- Highly regulated utility markets
- High subsidies on fossil fuel-based products
- Technological barriers
- Commercial viability
- Low market incentives
- Untapped renewable resources (solar and Wind)

Other Challenges

- Water scarcity
- Land degradation
- Food Security
- High dependency on fossil fuel
- Access to finance and technology
- War, regional instability and mass migration
- Data and Information deficits
- Lack of transparency

Sustainable energy systems is a crucial priority, especially to meet the expectations of the overwhelmingly young populations for economic opportunities and improving living standards.

Key Policy Recommendations:

…...Business-as-usual in the areas of energy and wider natural-resource management in the Arab region is not anymore an option

Priority Actions

1. Develop **suitable/proactive** policies & institutional frameworks and ensure **long term commitment**
2. **Reform** domestic energy and water **pricing** and utility market
3. Manage natural resources more **sustainabl**y
4. Boost economic **diversification** & boost energy **productivity**
5. Increase **private sector** involvement
6. Develop **local manufacturing** of clean energy technologies components
7. Enhance **interregional cooperation**, grid **interconnectio**n and share/learn from best practices.
8. Develop institutional **capacity**, **transparency** and **accountability**
9. Strengthen local **governance** and **communication**
10. Reinforce the role of **Civil Society**, **Gender equality** and **stakeholder engagement**.

Means of Implementation

- Promote **investments** in clean technologies / financial market & local market enablement
- Develop/reinforce **technology** dissemination & Research and Innovation
- Initiate/ reinforce **capacity building** programs
- **Develop/reinforce energy data, indicators and analysis systems**

Energy data, indicators and analysis : **Priority Actions**

- Adapt existing indicators for SDG 7 to reflect the range of issues on EA, RE, EE, and complement reporting on agreed indicators to include indicators for all energy-related SDGs.

- Develop **specialized national energy data observatories** to centralize the consolidation, processing and analysis of energy-related data and indicators on a regular basis.

- Ensure that full **energy balances** are produced regularly and timely by Governments as the basis to track national energy trends, and that international **methodologies** are adopted to ensure **data comparability**.

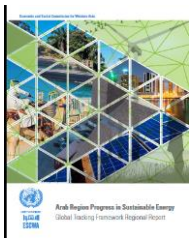
- Develop indicators **adapted to the systems of the future**, continue to adapt data gathering systems, including monitoring and evaluation, and develop **new indicators** that reflect **the links between the issues** of water, food, climate, investments in clean energy, gender, and other forms of energy.

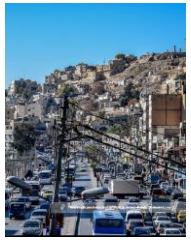
ESCWA Core Functions

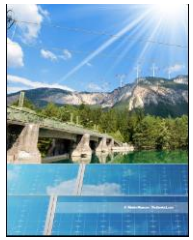
To serve as the:

- **Think Tank** of the Arab region – by undertaking innovative research and supporting quality data collection and analysis for evidence-based policy;
- **Advisor** to the Arab region – by providing regional, sub-regional and national capacity building and technical advisory services to member States; and
- **Voice** of the Arab region – by creating regional platforms for deliberation and consensus building that feed global fora and transform the aspirations of Arab citizens into commitments for action.

- Scale up actions in support of SDG7 achievement and intensify engagement through support to VNRs and other outreach platforms.
- Vehicle the priorities of the region to the global level through the: HLPF, Regional and International Forums, TAG SDG7, UN-Energy.
- Develop Knowledge exchange platform through ESCWA Committee on Energy and the ESCWA Expert Group on Fossil Fuels.
- Develop Regional initiatives and projects on upscaling EE and promoting use of RE
- Establish jointly with SEforAll and IsDB the SEforAll Middle East Hub.
- Organize of Regional Training, Workshops on statistics and energy data indicators with international and regional organizations.
- Partner with SDG7 Custodian agencies on the SDG7 Global Report and development of the Arab Regional Report.





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Thank YOU

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