Expert Group meeting on Tracking Progress Towards Sustainable Energy Horizon 2030 in the Arab region
14-15 2017, Cairo, Egypt

Economic And Social Commission For Western Asia

TRACKING PROGRESS TOWARD SUSTAINABLE ENERGY MAJOR TRENDS FOR THE ARAB COUNTRIES

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Background to the Global Tracking Framework (GTF) Methodology

2011 Ban Ki Moon initiative Sustainable Energy For All (SE4ALL)

Energy access	Energy efficiency	Renewable energy
By 2030, ensure universal access to modern energy services	By 2030, double the global rate of improvement of energy efficiency	By 2030, double the share of renewable energy in the global energy mix

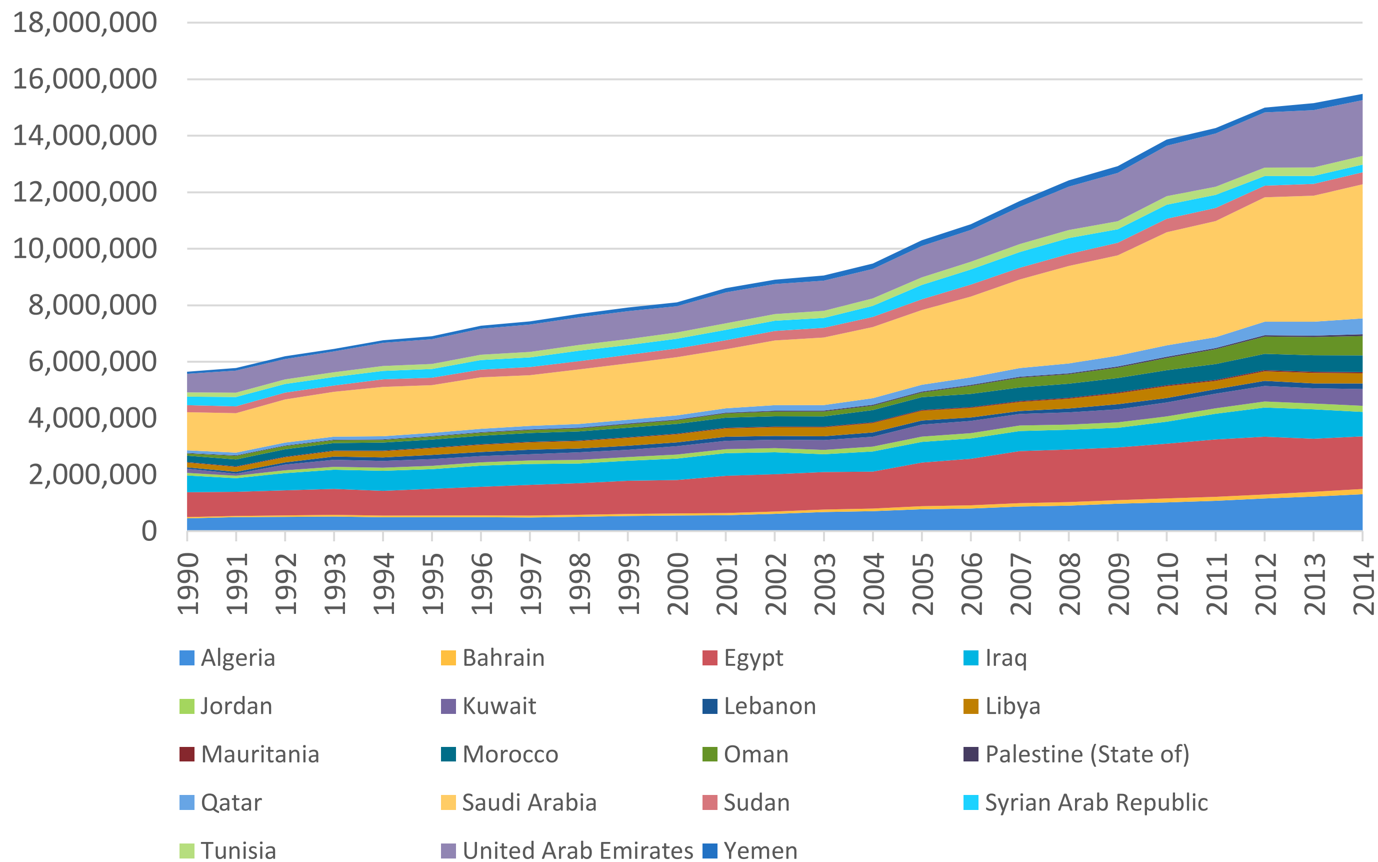
- 2013, 2015, 2017 GTF reports track global progress, to provide a "**vehicle for an emerging technical consensus regarding the best available indicators to capture advances in sustainable energy over time**."

➢ Unified indicators suited to compare progress across countries

- In 2017, the UN regional commissions will for the first time publish regional reports that track specific progress in their own regions.
- ESCWA tracks progress in the Arab region.

The context: Energy consumption more than doubled in the Arab region since 1990

Historical energy consumption in the Arab region by country (TJ), 1990-2014



The question: How inclusive is progress in sustainable energy development in the Arab region?

1 Universal access to modern energy

2 Energy efficiency

3 Renewable energy

Issues of concern for the Region

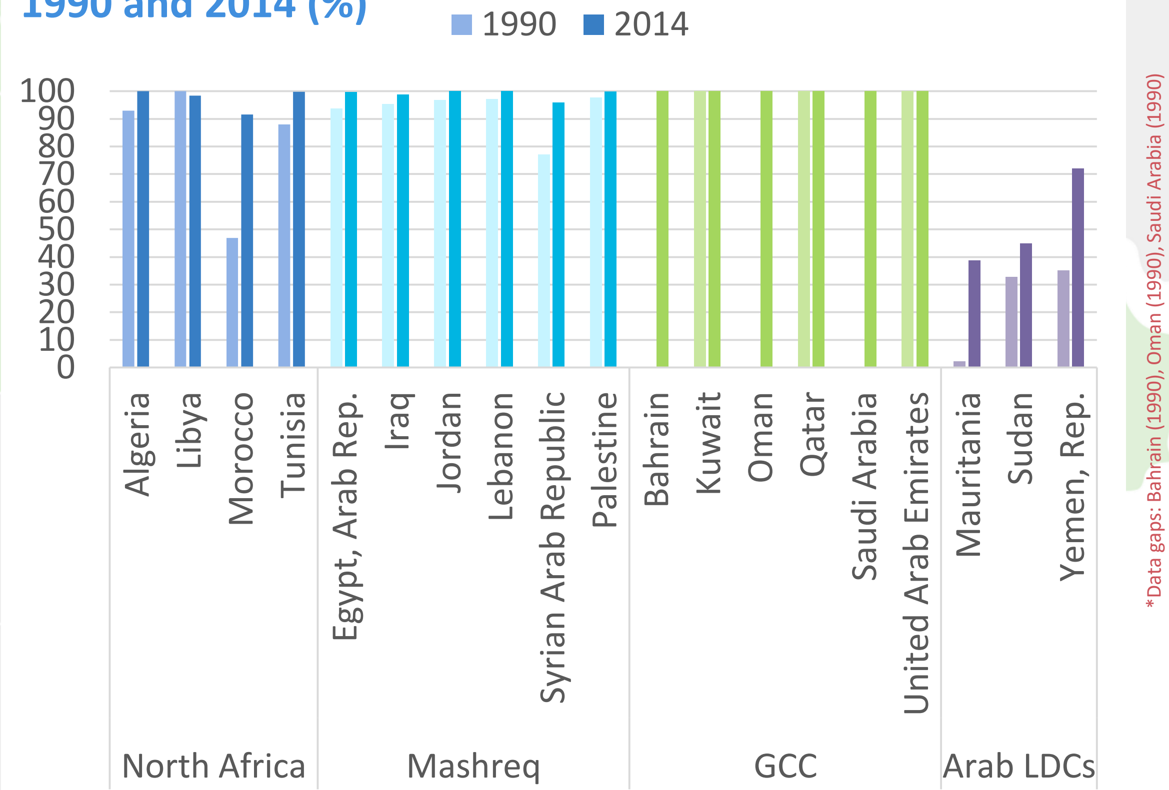
- Energy, water, food security
- Rising urbanisation
- Climate change vulnerabilities: drought, extreme weather, flooding
- Inclusive national development
- Conflict potential of unequal access to energy and natural resources

Population growth, industrialisation, rising living standards will require more energy in the future.

Universal access to modern energy

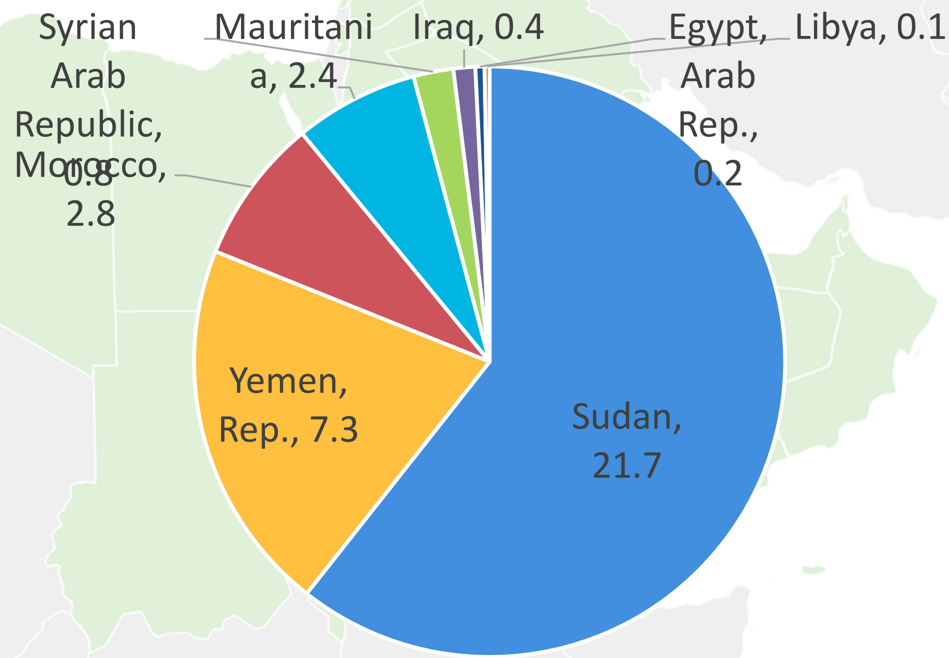
- Electricity access has been historically high in the Arab region as far back as the 1990s
- Rapid progress has been made in universalizing electricity access in North Africa and the Mashreq, although small rural-urban divides remain
- Arab LDCs remain the only sub-region in the Arab world with significant access deficits, in particular in non-urban areas

Share of population with electricity access in the Arab region, 1990 and 2014 (%)



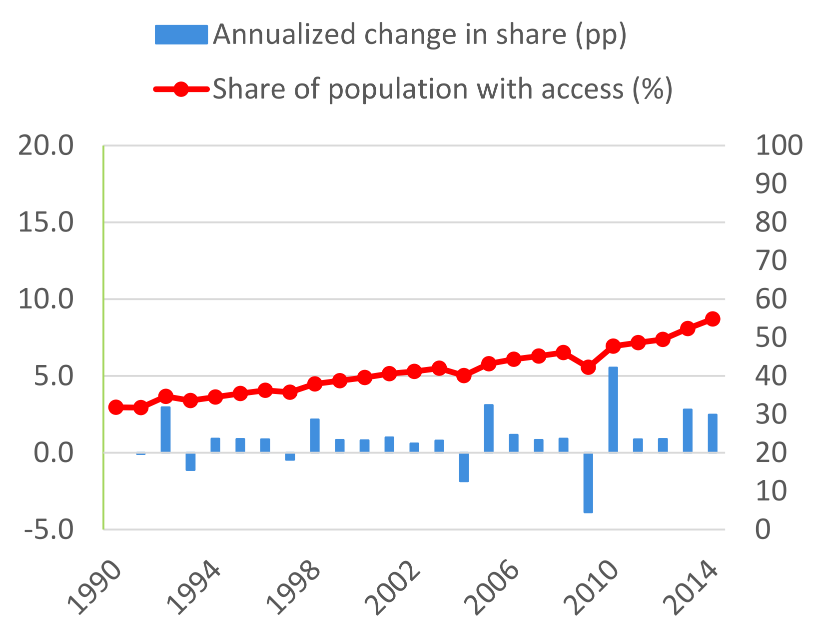
Universal access to modern energy

Population without access to electricity in the Arab region, 2014 (mn people)

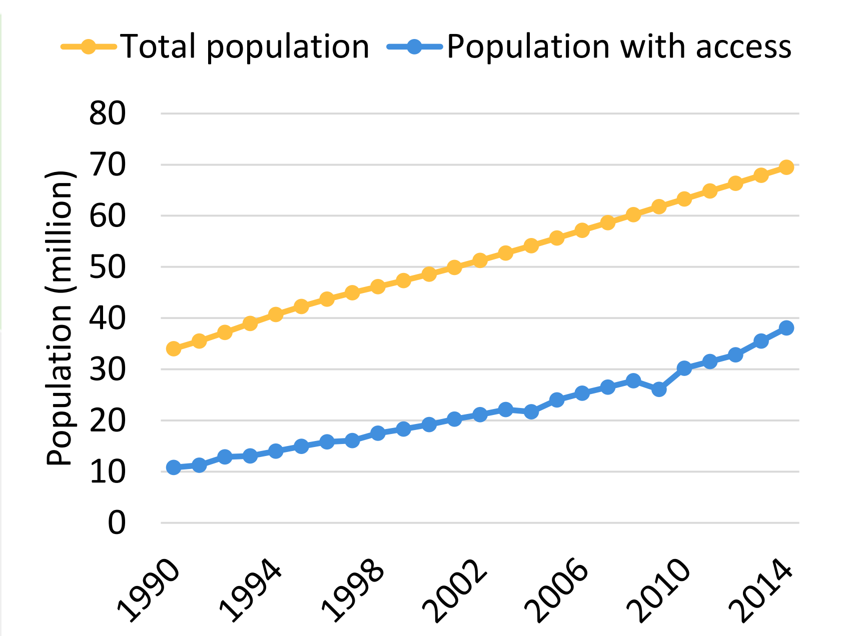


Universal access to modern energy

Share of population in the Arab LDCs with access to electricity and annualized change in share 1990-2014



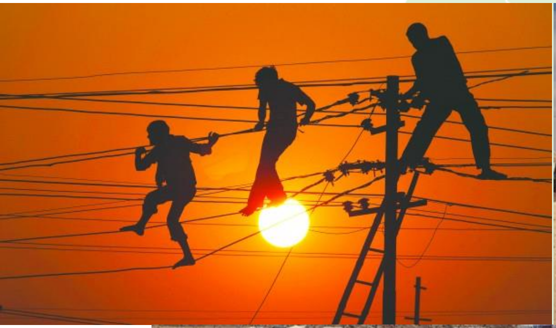
Number of people in the Arab LDCs with access to electricity, 1990-2015

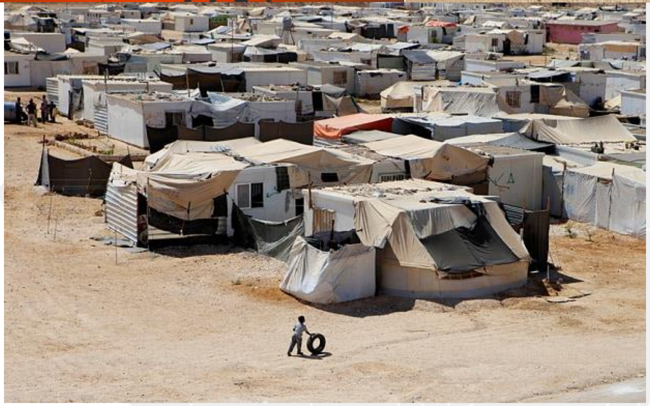


Since 1990, access to electricity in Arab LDCs has been increasing, but significant gaps remain. The gap in access to CFTs over the same period has actually been increasing.

Universal access to modern energy

Another question: how reliable are electricity services and how reliably does our data capture this?



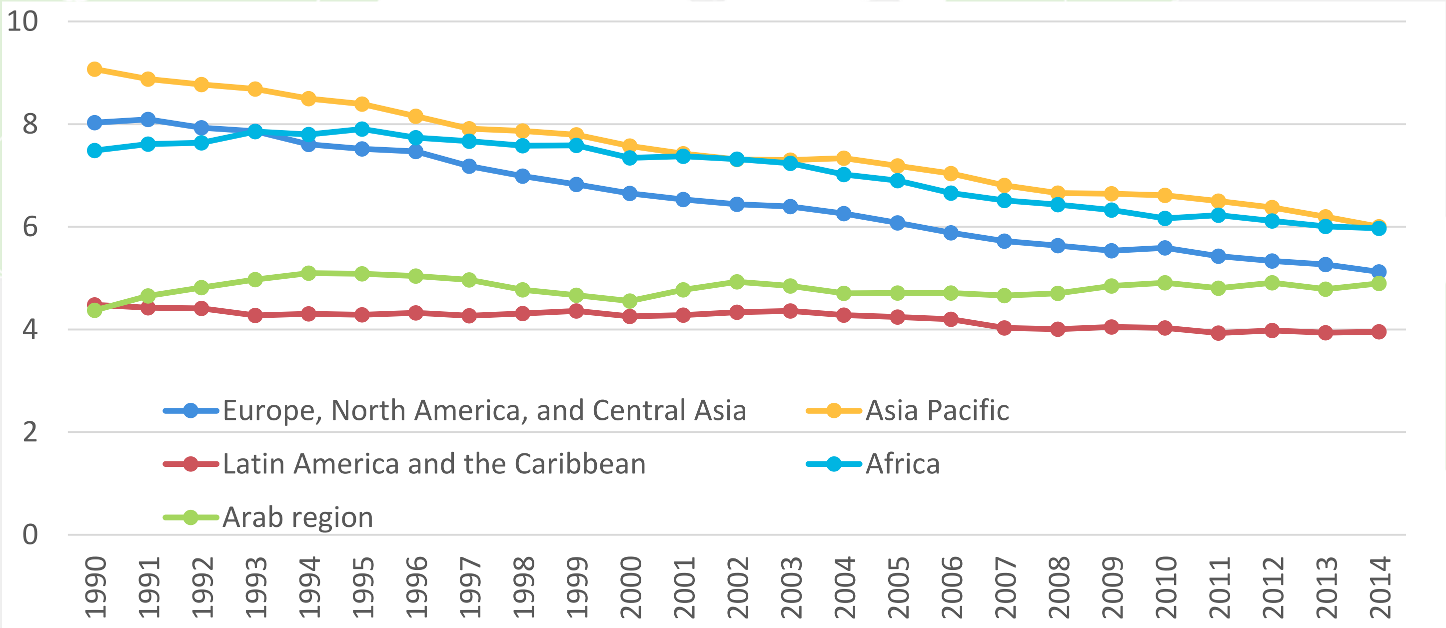


Specific thought given to

- Scheduled load shedding in response to insufficient generation capacity at peak load times
- Unexpected service disruptions due to insufficient capacity & network quality
- Informal housing
- Conflict and refugees

Energy efficiency

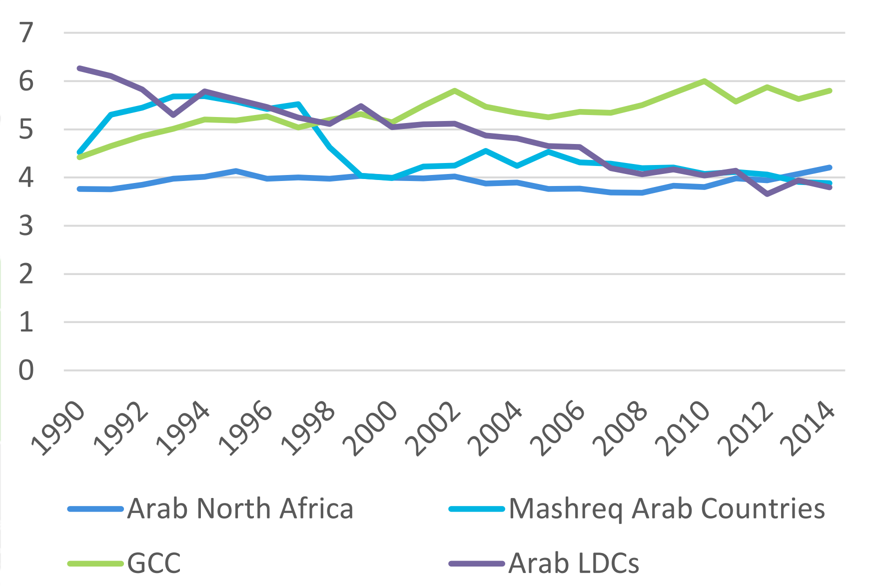
Energy intensity trends by global region, 1990-2014 (MJ / GDPPPP 2011 $)



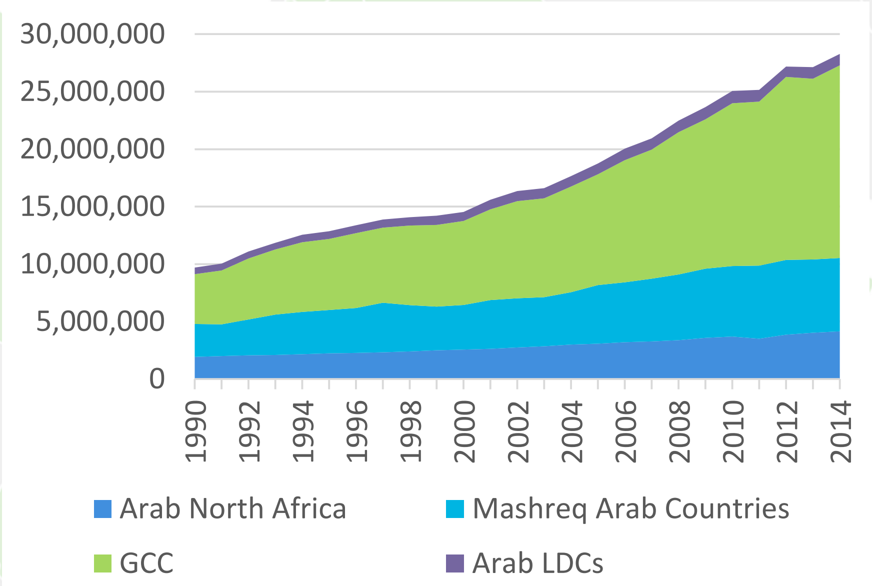
The Arab region is the only world region where energy intensity has been increasing, not declining since 1990

Energy efficiency

Energy Intensity in the Arab region by sub-region, 1990 - 2014 (MJ / GDPPPP 2011 $)

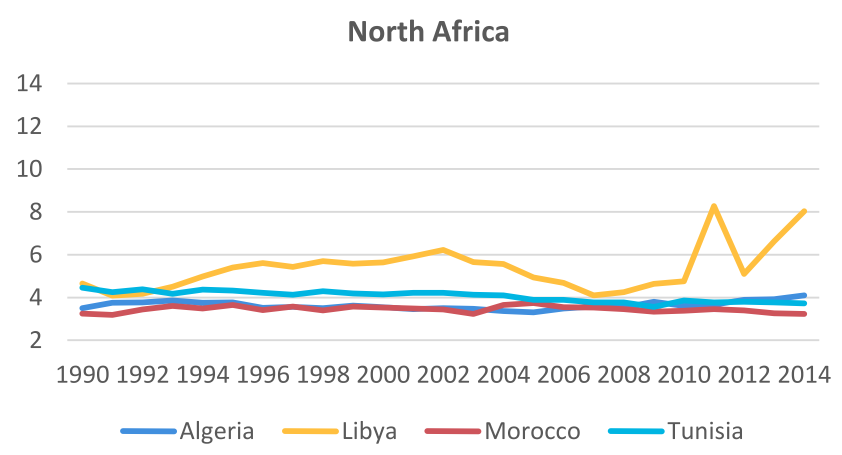


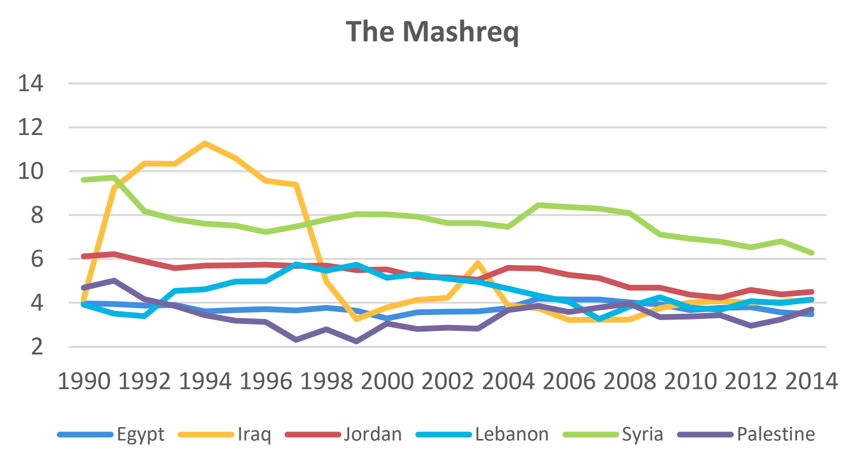
Final energy consumption in the Arab region by sub-region, 1990-2014

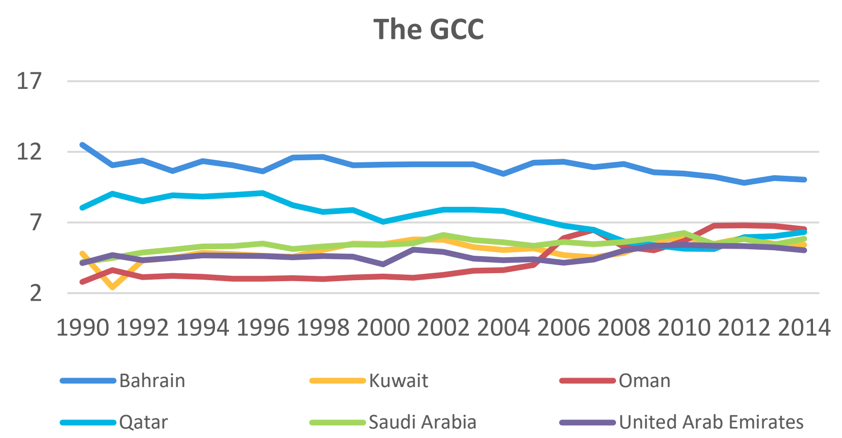


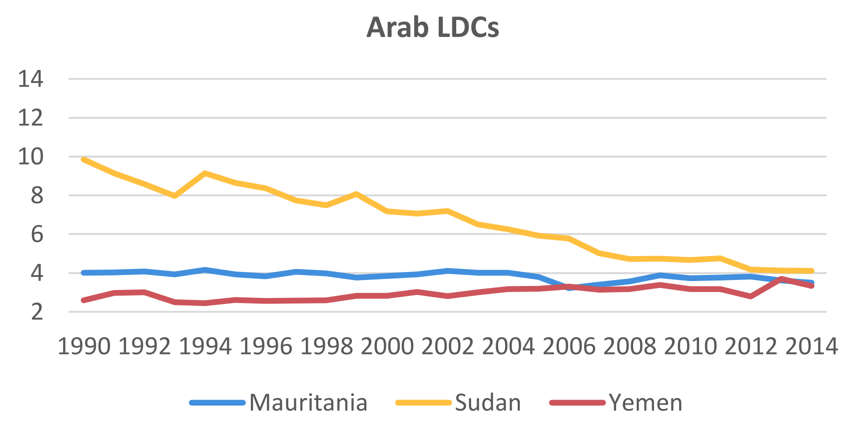
Much of the region's aggregate growth in energy intensity since 1990 comes from the GCC

…But a look across the block also reveals nobody is really doing well





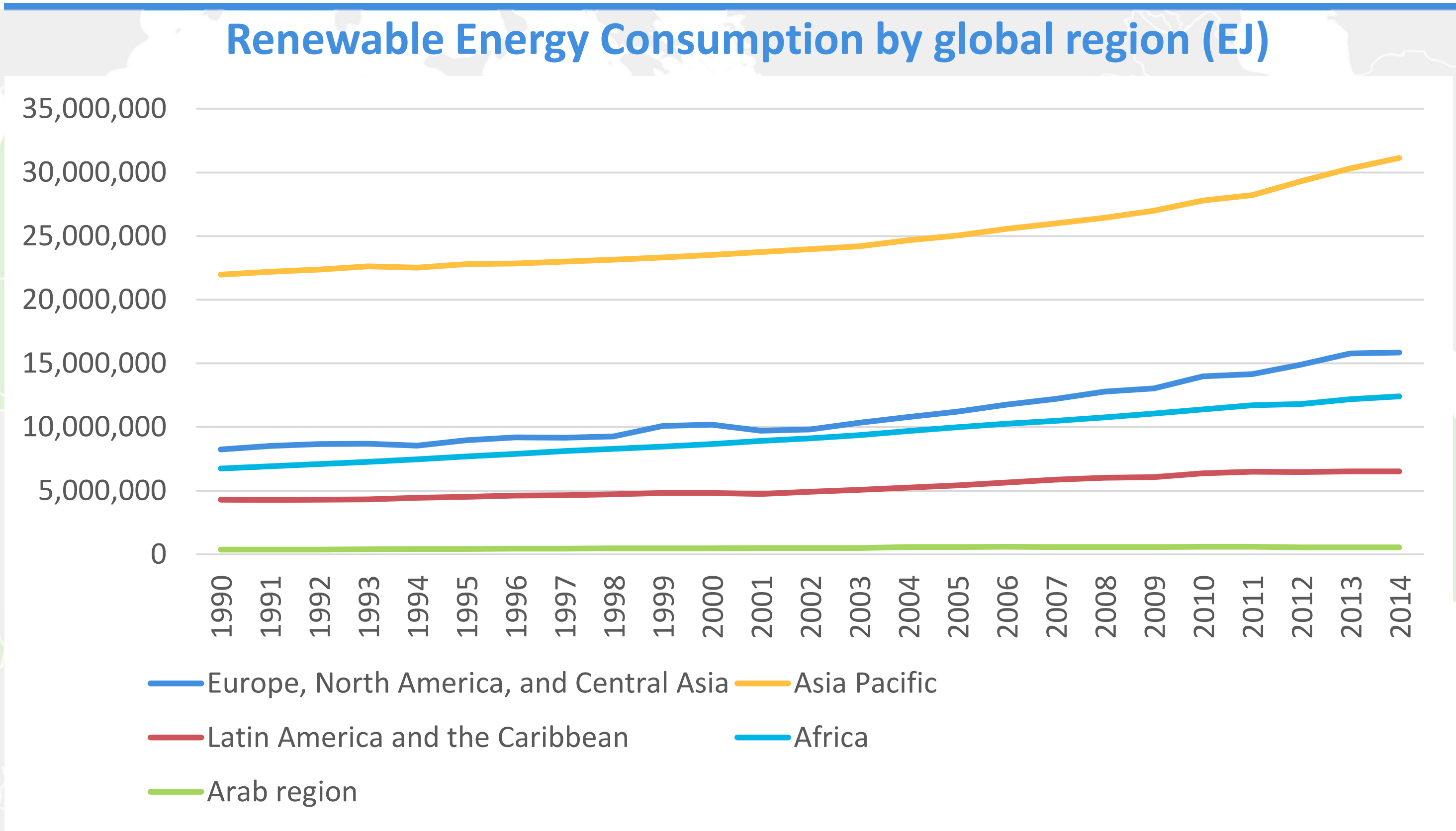




Energy efficiency – known problems

Policy	Measuring energy efficiency
▪ The **cost of energy to consuming sectors** (industries, utilities, final consumers) ▪ The **structure of local economies** (energy-intensive industrialisation) ▪ **Market design** in key energy-consuming sectors (utilities, industry): state companies versus competitive markets ▪ **Lack of policy priority and capacity**: regulation, market incentives ▪ **Information deficits**: missing data and consumer information; Regulatory deficits also imply lacking consumer choice.	▪ **Data deficits:** we have no standardised measure of energy efficiency ▪ **Measuring energy efficiency through energy intensity:** Fluctuations in export commodities prices on world markets and currency fluctuations affect the value of GDP relative to energy input , using energy intensity as a proxy for energy efficiency

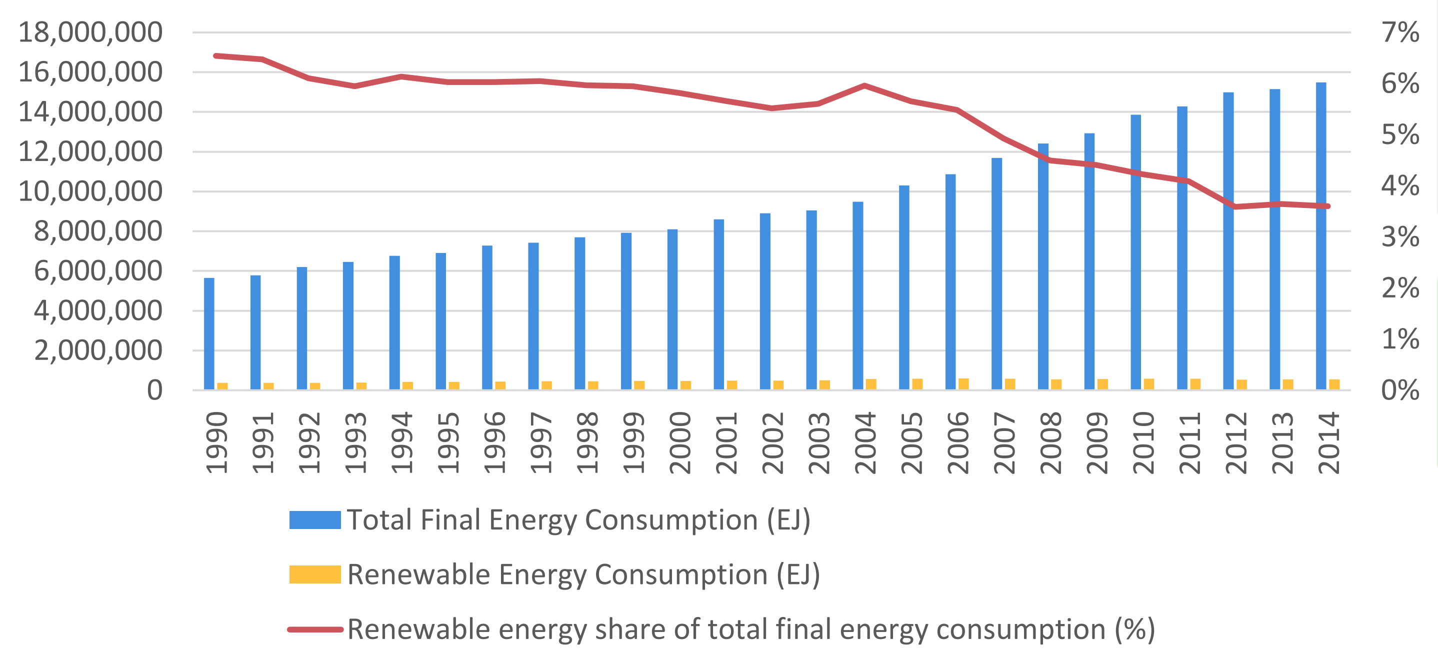
Renewable energy



Renewable energy in the Arab region remains a rather untapped resource despite significant potential (solar, wind, bioenergy)

Renewable energy

Share of renewable energy in final energy consumption in the Arab region, 1990-2014

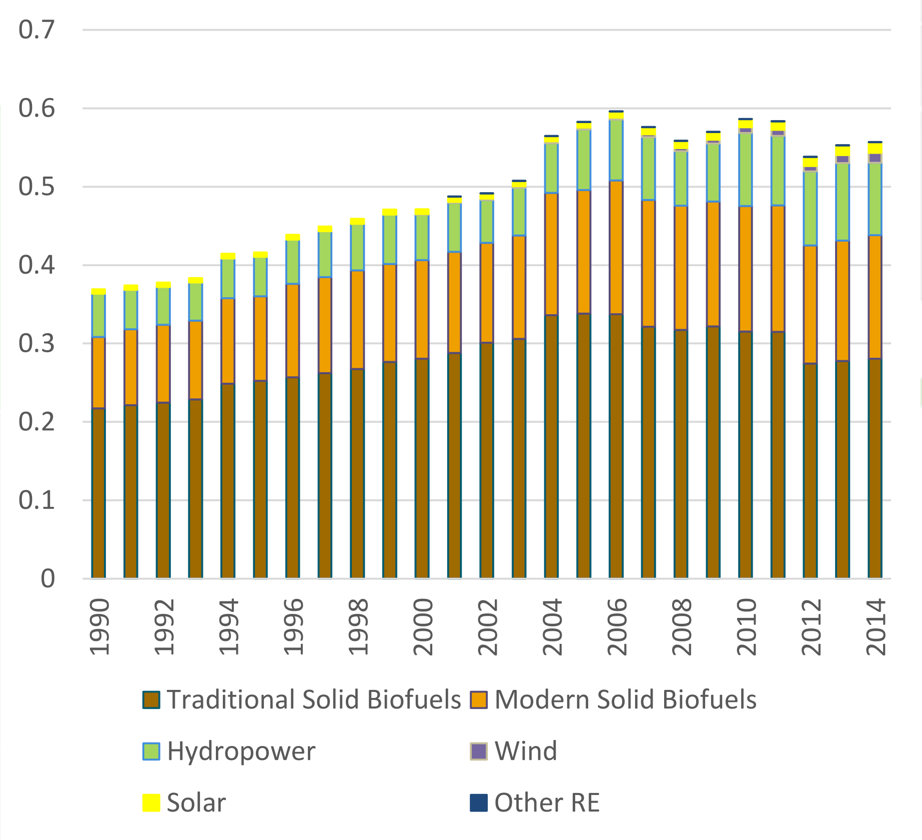


The share of renewable energy in aggregate Arab energy consumption has actually been declining over the years

Renewable energy

- Biomass dominates the Arab region’s renewable energy consumption
- In many cases, biomass is an inferior choice – particularly traditional solid biofuel (fuelwood, crop residues, animal dung)
- As people climb up the energy ladder, they moved from biomass to liquid fuels and electricity
- As modern renewable energy projects – wind, solar – have only been slowly forthcoming, net-RE consumption in the Arab region has gone down along with increasing access rates to modern energy

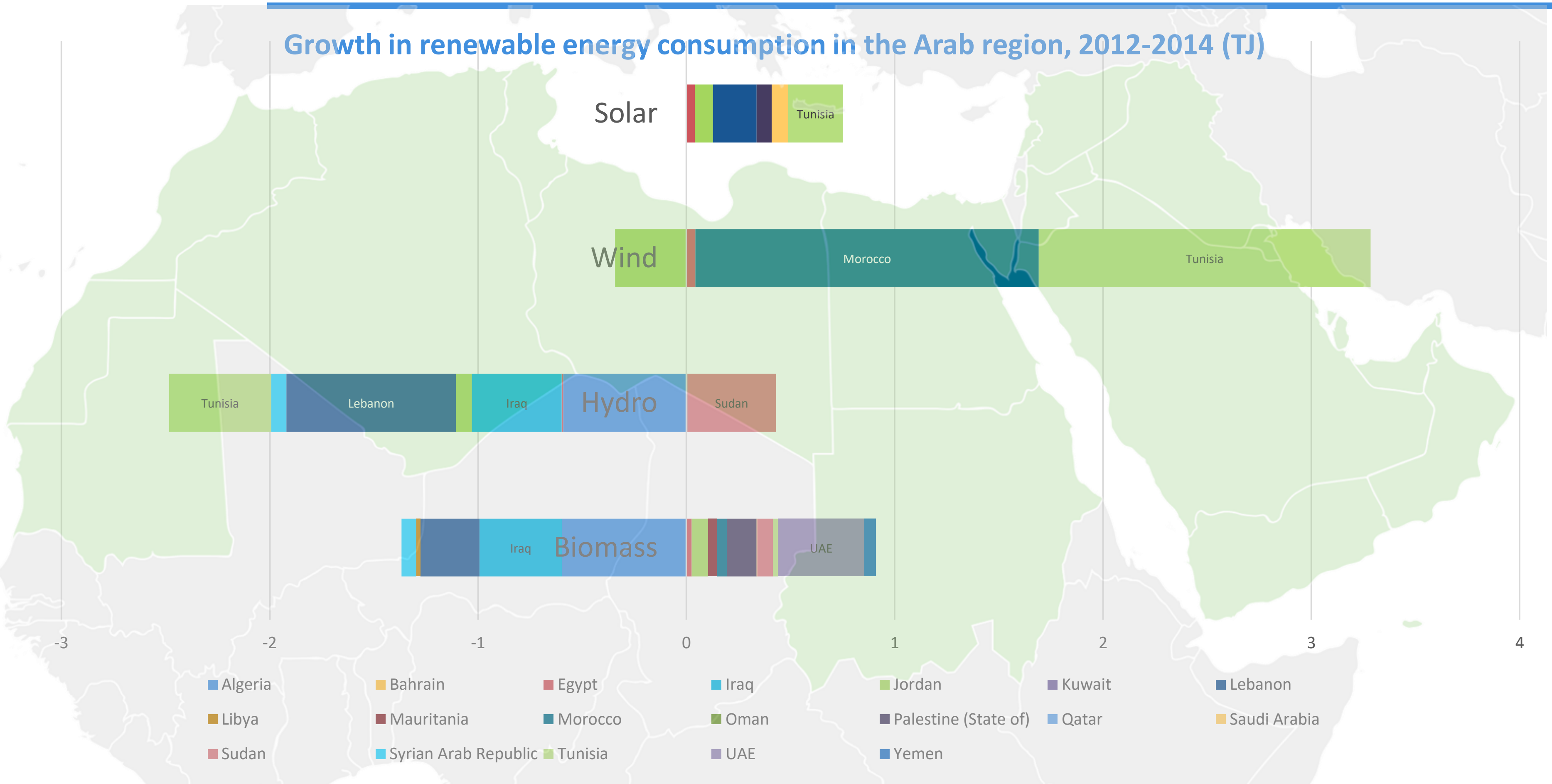
RE consumption by source in the Arab region, 1990-2014 (EJ)



Renewable energy – known problems

- **Cost barriers (i): Cost of technology.** Modern RE technologies such as wind and solar were long not cost-competitive
- **Cost barriers (ii): Fossil fuel pricing and subsidies**. Prices for electricity and competing fossil fuels are so low that utilities have no incentive to use renewables, nor do final consumers
- **Market design**. Lack of utility market liberalization means utilities have no incentive to experiment with new technologies to drive down costs. Consumers have no choice over the source of their electricity supply.
- **Missing other incentives**. Lacking “fit” of energy security argument in fossil fuel exporters, low profile of environmental policy in energy market design
- **Technological challenges**. Intermittency, viability of decentralized feed-in generation.

But wind and solar power are coming



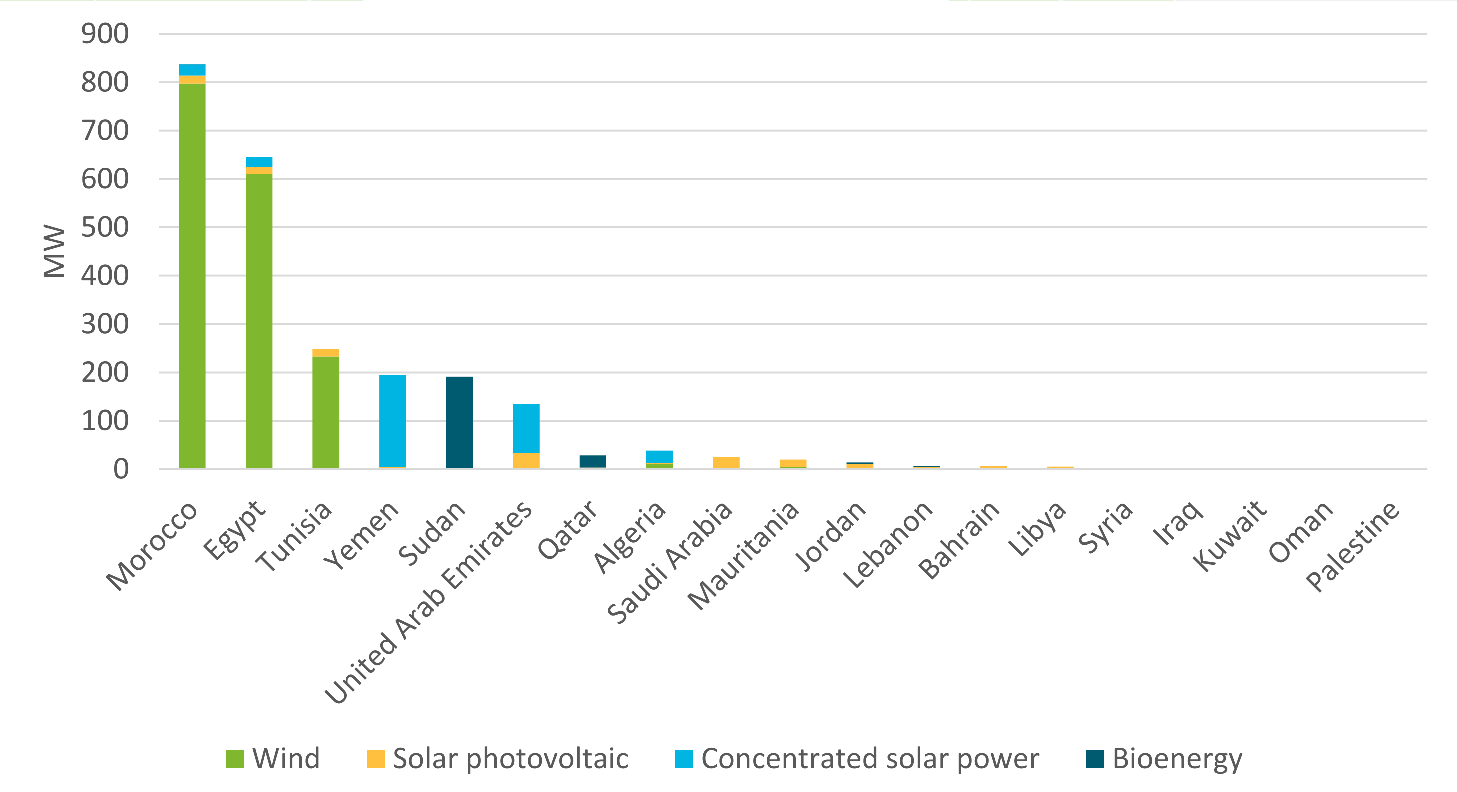
Renewable energy

Net renewable energy capacity additions and % in electricity generation in the Arab region, 2013 and 2014

		Net capacity additions (MW)						% of electricity generation					
Country	Year	Hydropower	Wind	Solar - PV	Solar - CSP	Other renewables	Total	Hydropower	Wind	Solar - PV	Solar - CSP	Other renewables	Total
Algeria	2013	-	-	-	-	-	0	0.6%	-	-	-	-	0.6%
	2014	-	10	-	-	-	10	0.4%	-	-	-	-	0.4%
Egypt	2013	-	-	-	-	-	0	7.7%	0.8%	0.1%	-	0.9%	8.6%
	2014	-	60	-	-	-	60	8.1%	0.8%	0.1%	-	0.9%	9.0%
Mauritania	2013	21	-	15	-	-	36	-	-	-	-	-	-
	2014	-	-		-	-	0	-	-	-	-	-	-
Morocco	2013	-	240	1	-	-	241	0.3%	0.0%	-	-	0.1%	0.4%
	2014	-	302	1	3	-	306	0.3%	0.0%	-	-	0.0%	0.4%
Tunisia	2013	-	27	1	-	-	28	9.3%	5.3%	-	-	5.3%	14.6%
	2014	-	33	10	-	-	43	5.7%	6.7%	-	-	6.7%	12.4%
Jordan	2013	-	-	2	-	-	2	0.3%	1.9%	0.1%	-	2.0%	2.3%
	2014	-	1	6	-	-	7	0.3%	2.7%	0.1%	-	2.8%	3.1%
UAE	2013	-	-	13	100	-	113	-	-	0.0%	0.1%	0.1%	0.1%
	2014	-	-	-	-	-	0	-	-	0.1%	0.2%	0.3%	0.3%

A handful of Arab countries use more renewables for utility generation than others

Installed electricity generation capacity from renewable energy in the Arab region, excluding hydropower, 2014



In conclusion

- **Significant progress in modern energy access**, with important remaining sub-regional gaps in the Arab LDCs
- **Progress in energy efficiency needs to accelerate much more**
- **The Arab region's potential for renewable energy remains largely under-exploited**

Policymakers are key to accelerating progress in sustainable energy over the coming years.

Known, and largely untackled vulnerabilities

- **Growing energy demand – to continue over coming decade**
- **Costs of imports and deadweight losses to the economy**
- **Existing inter-linked water and food security concerns that are likely to be intensified by lacking energy and wider natural resource management**
- **Climate vulnerabilities**

THANK YOU

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