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MENAREC

4-6 APRIL 2016  
KUWAIT



UNDER THE PATRONAGE OF HIS HIGHNESS THE EMIR OF THE STATE OF KUWAIT  
SHEIKH SABAH AL-AHMAD AL-JABER AL-SABAH

مؤتمر الطاقات المتجددة السادس لدول الشرق الأوسط وشمال أفريقيا  
The Sixth Middle East & North Africa Renewable Energy Conference

اللجنة الاقتصادية والاجتماعية لغربي آسيا

## Socio-Economic and Environmental Benefits of Renewable Energy in the Arab Region

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الأمم المتحدة

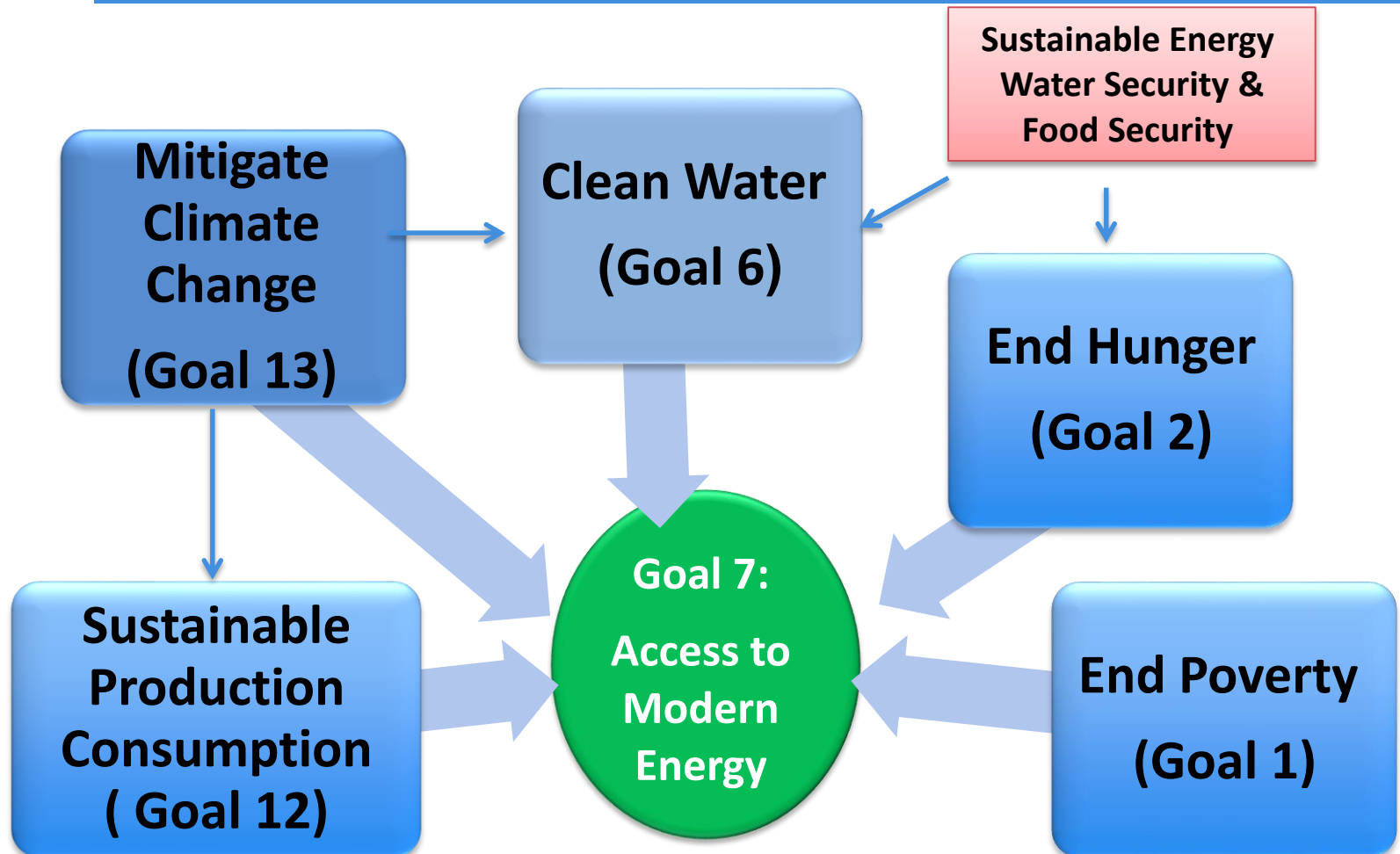
الاستشهاد

ESCWA

# Setting the Context

- ✓ Global economic activity remained subdued; downside economic risks have not disappeared, fragile and slowing growth in some parts of the world, and high debts continue to loom large over the recovery.
- ✓ Oil prices plunged near six-year lows which created growing source of concern, indicating a major structural shift in the global energy sector that has inevitably affected Arab economies.
- ✓ 1.2 billion people are without access to electricity and more than 2.7 billion people rely on the traditional use of biomass for cooking.
- ✓ Progress in reducing unemployment in the Arab region is still very modest and the rate remains the highest in the world.
- ✓ Climate change and its impacts are recognized as a major challenge to the Arab countries' sustainable socio-economic development.
- ✓ Advances in technology have lead to development of Unconventional resources, its development pace still to be confirmed in the coming years.
- ✓ Energy prices, subsidies, energy efficiency and energy policies among others play a major role in configuration of energy mix.

# Transforming our world: the 2030 Agenda for Sustainable Development



# Sustainable Energy For All

## United Nations Secretary General Initiative

Ensure access to affordable, reliable, sustainable and modern energy for all

### Ensure Universal Access to affordable, Reliable, & Modern Energy Access

- Provide universal access to modern energy services for lighting , health, drinking water , education, communications, cooking , etc.



### Double the Rate of Improvement in Energy efficiency

- Reduce energy needed to carry out various energy services to end user ,
- Improve the efficiency of production and distribution of energy



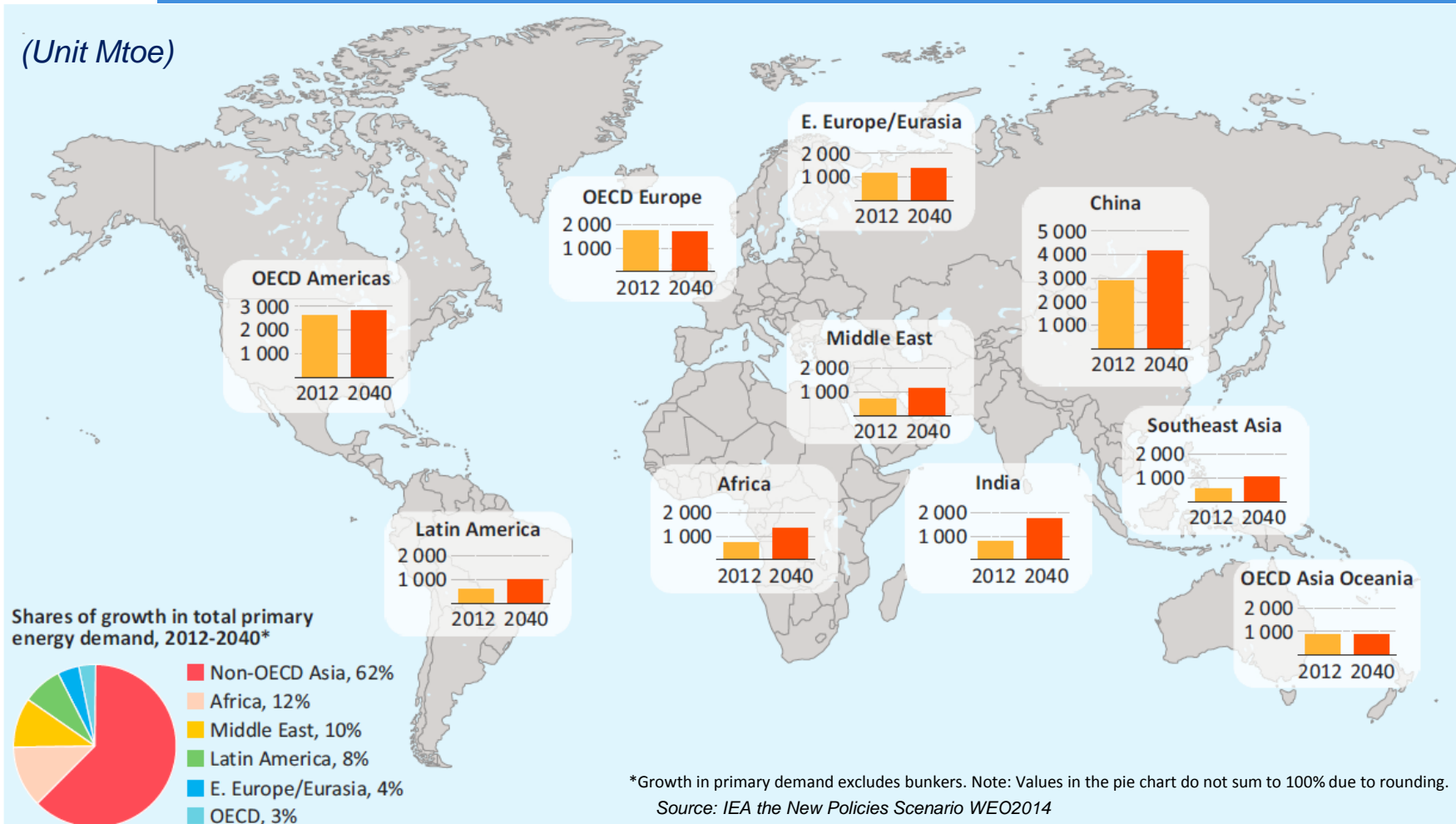
### Increase the Share of RE in the Global Energy Mix

- Support efforts to adopt renewable energy in various applications either directly to provide energy services or to generate electricity



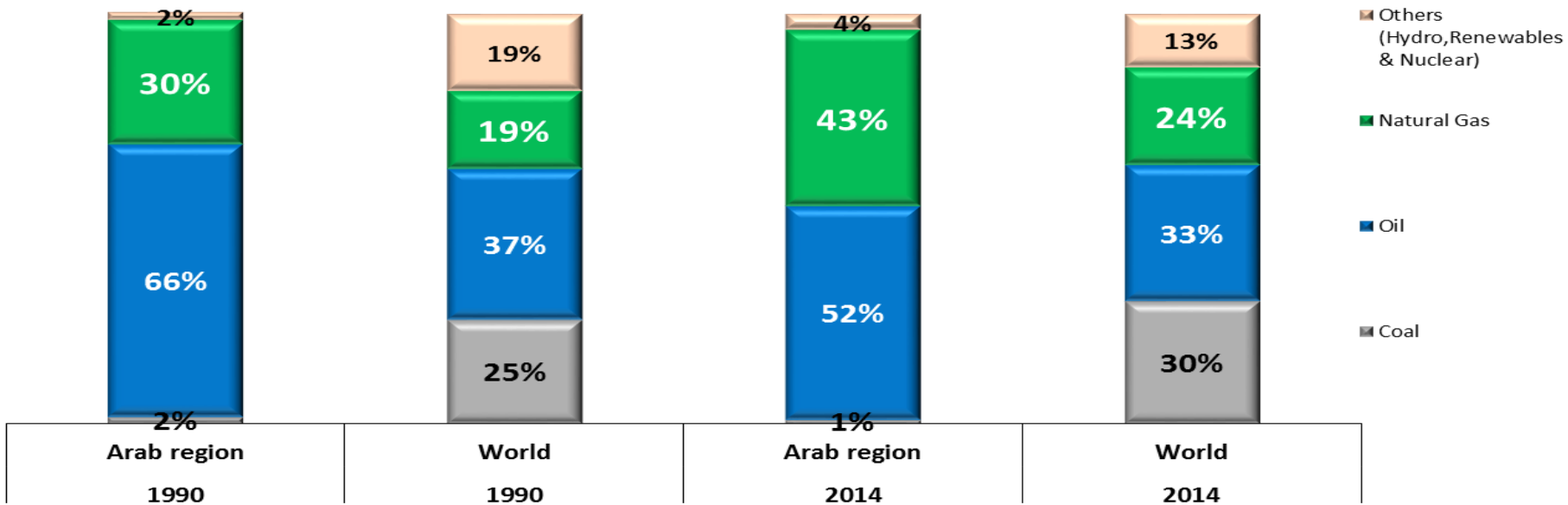
# Primary energy demand by Fuel and Region

(Unit Mtoe)

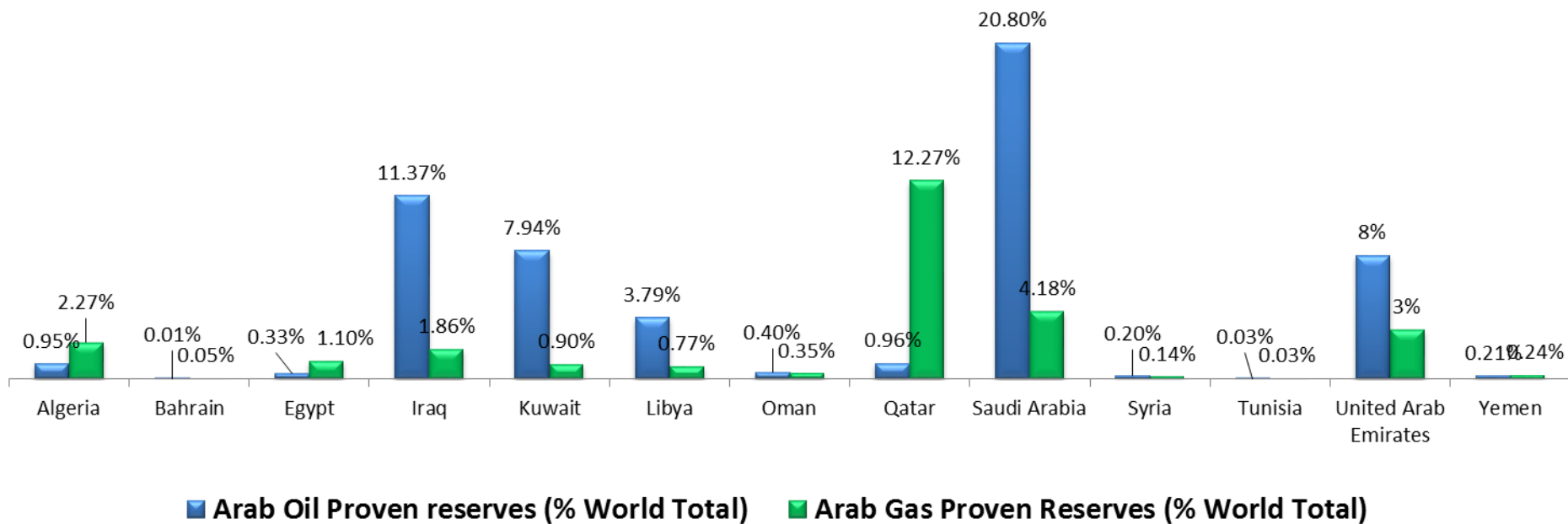


# Primary Energy mix: World & Arab Region

Primary Energy Supply shares by fuel, Arab region & World, 1990,2014

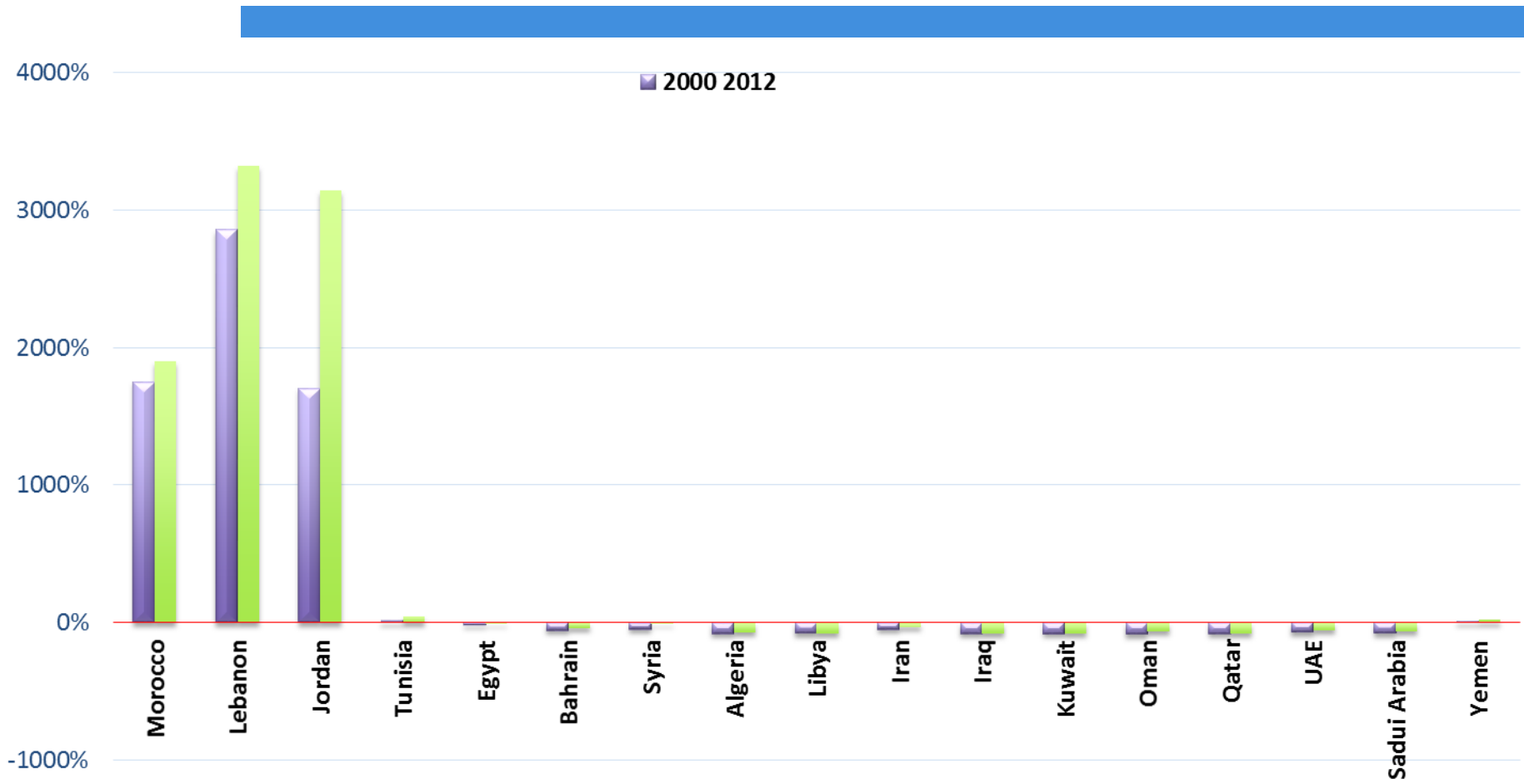


# Arab countries Proven Oil & Gas reserves



Source: OAPEC, BP 2014

## Energy dependence of the Arab countries



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



## Energy Access in the Arab Region

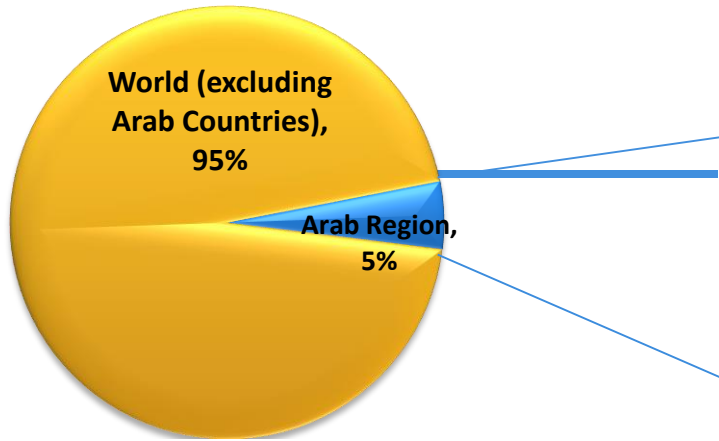
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- Many countries in the region are not able to provide adequate energy services for a significant portion of their population.
- About 54 million people in the Arab region (excluding South Sudan) have no access to the electrical grid, and about 48 million people are relying on biomass for cooking.
- Lack of energy services aggravates the cycle of extreme poverty in the rural areas, and some peri-urban locations, resulting in poor social and economic conditions.
- Women and children suffer the most from the limited access to energy services; health, safety, and environmental problems usually associated with the use of inefficient solid fuels in households.

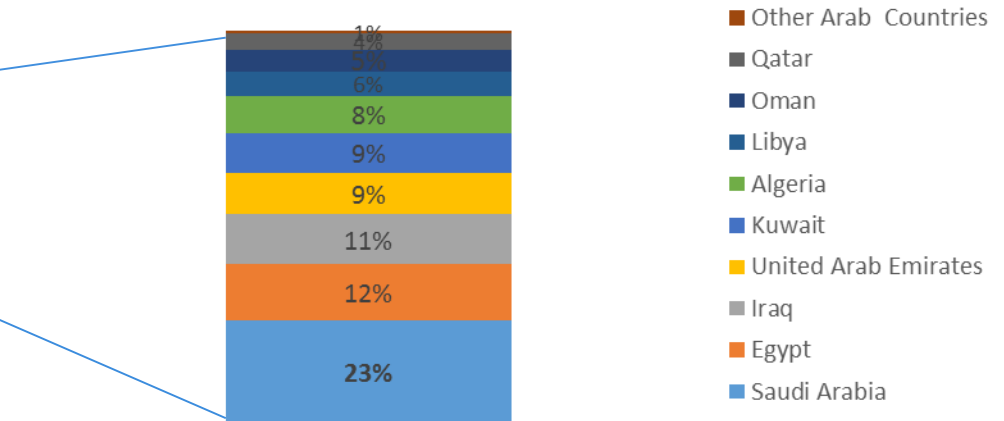
*Source: IEA database Report 2014*

# Greenhouse-gas (GHG) emissions

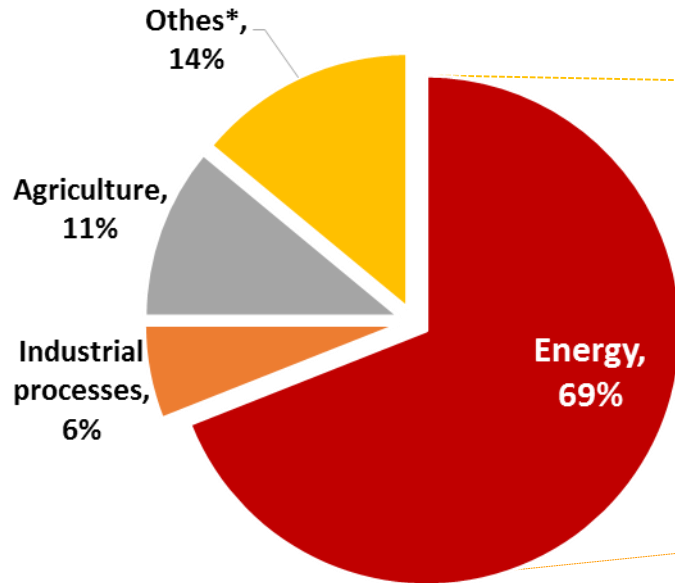
## GHG emissions by region, 2012



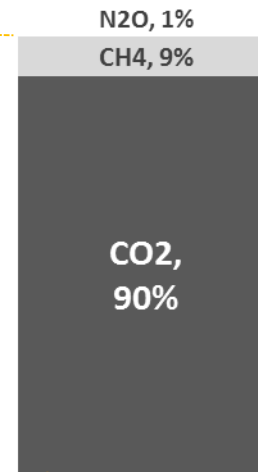
## Share of GHG Emissions in Arab Countries, 2012 \*



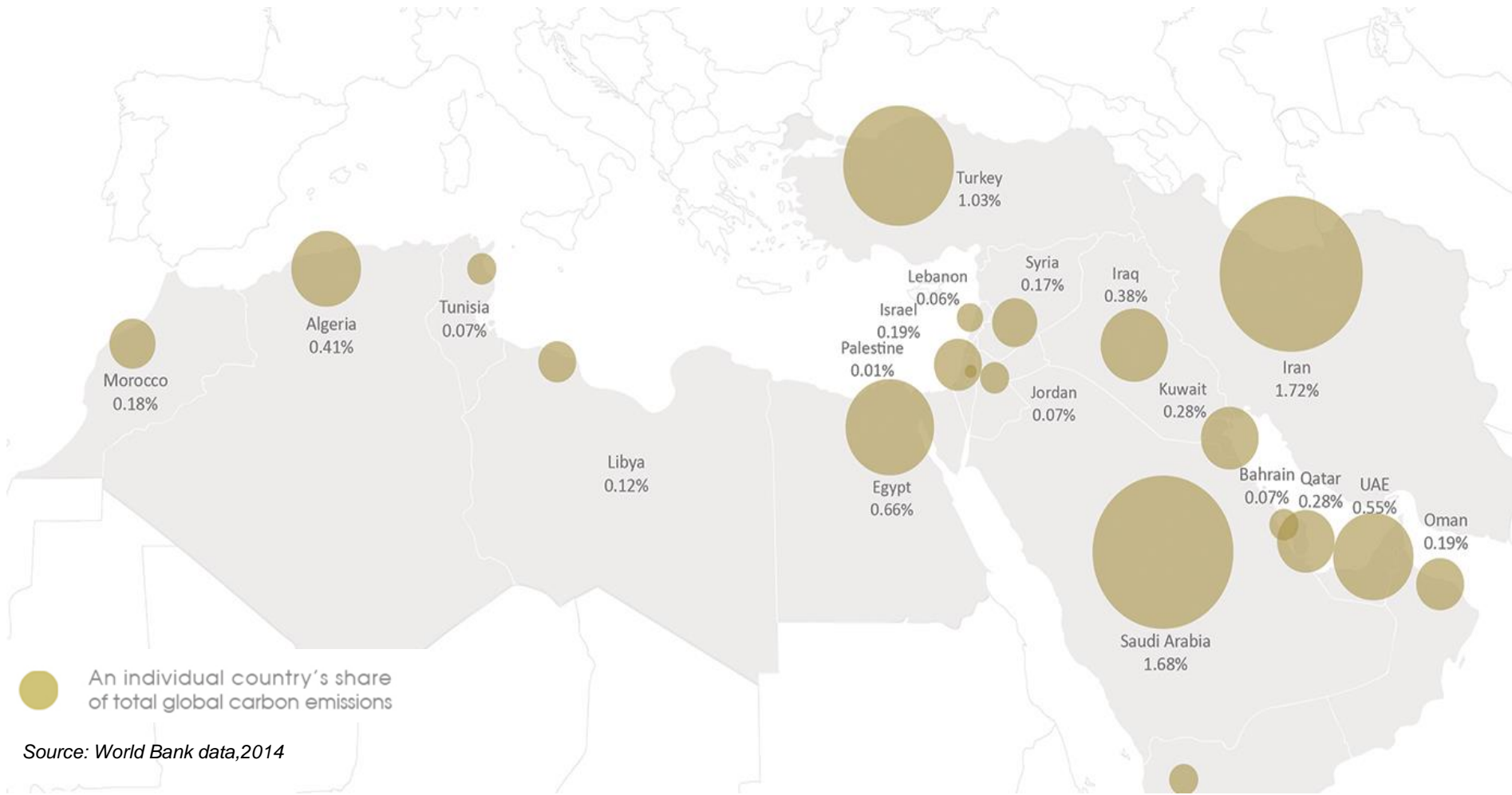
## Share of Global GHG, 2010



## Share of Global GHG, 2010



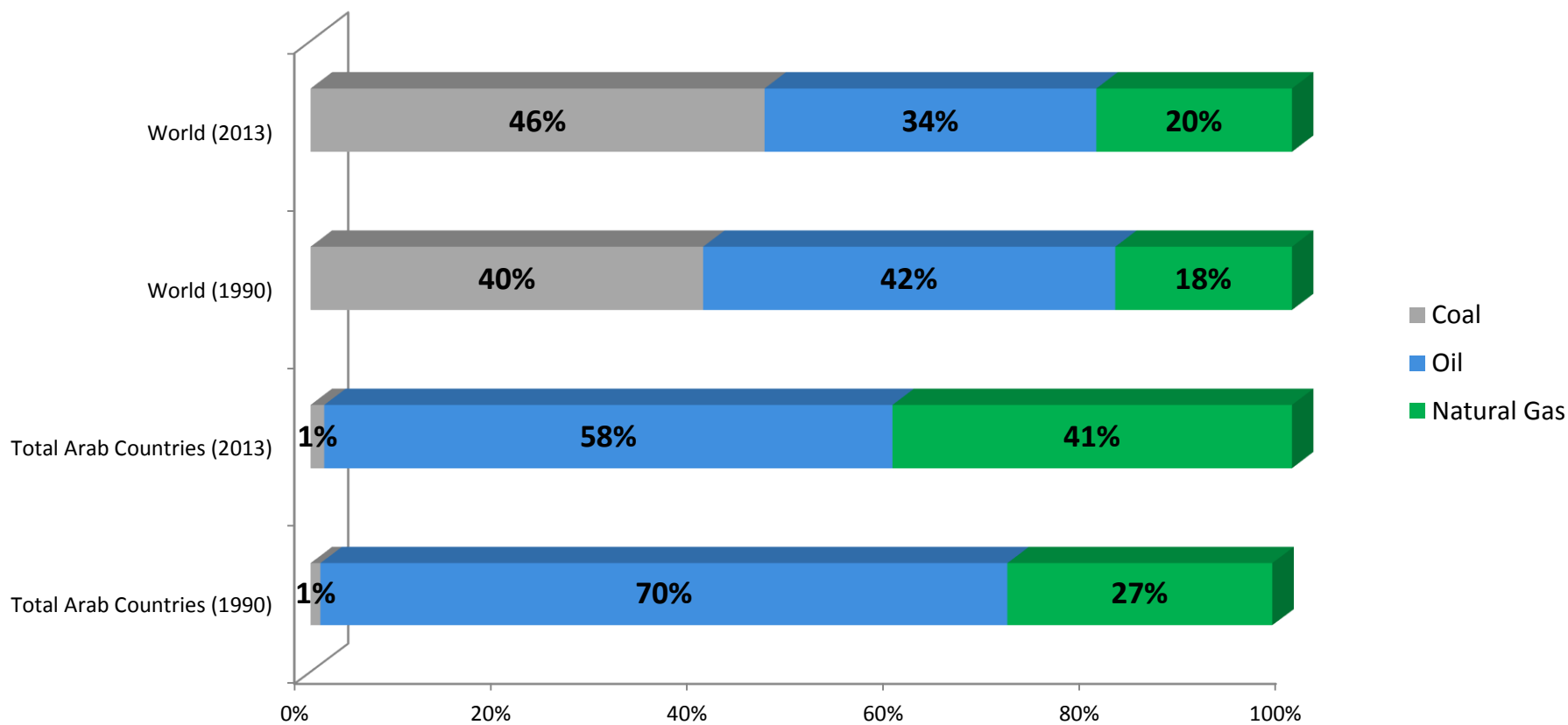
# Share of Arab countries in total Carbon emission



Source: World Bank data, 2014

- Historically low rate of energy use and carbon emissions, the Arab world which constitutes 5% of the world's population, emits just under 5% of global carbon emissions,
- Except for Saudi Arabia, no single Arab country is responsible for more than 1% of global emissions.

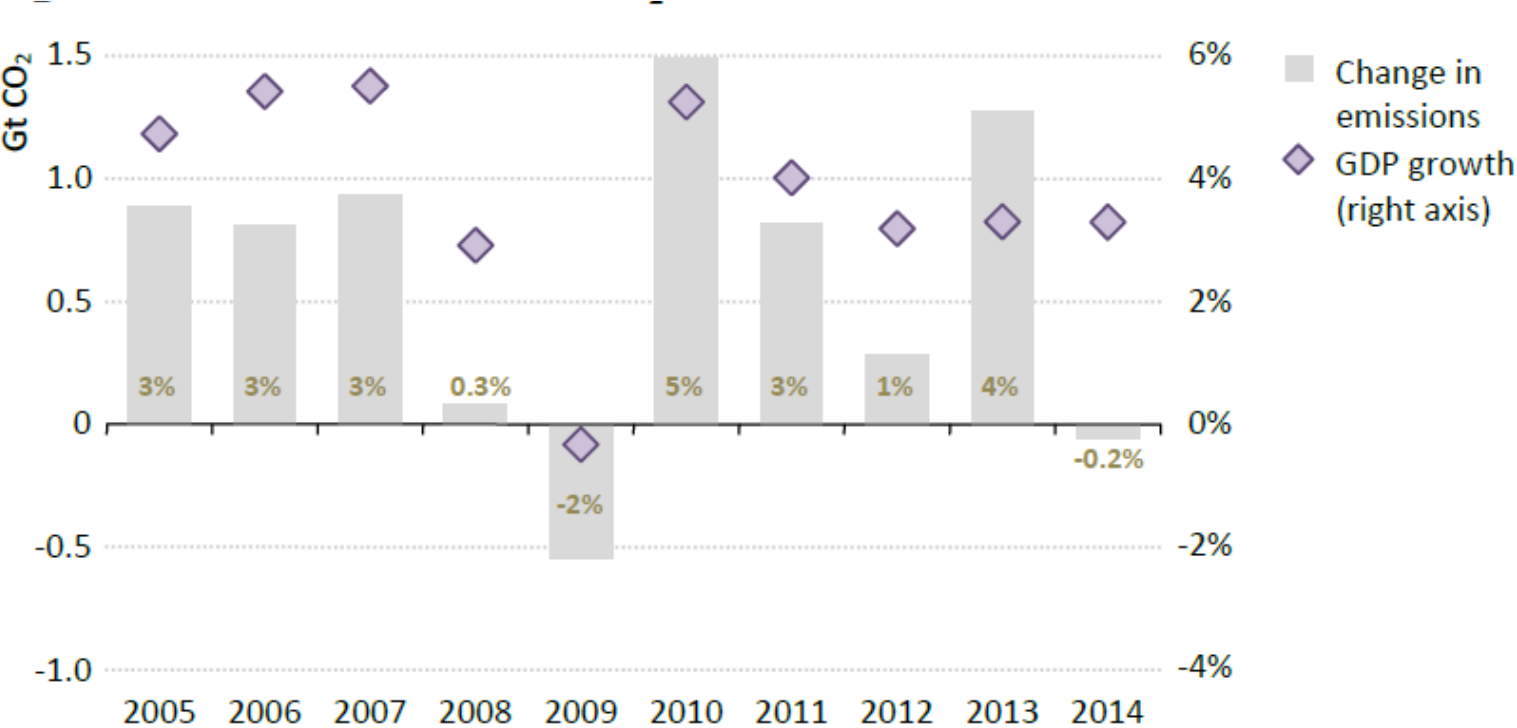
## CO2 emissions by Fuel : World & Arab Region



Data Source: IEA, 2015

\*\* Other includes nuclear, hydro, geothermal, solar, tide, wind, biofuels and waste.

# Renewable Energy Challenges: Decoupling Environmental Impacts

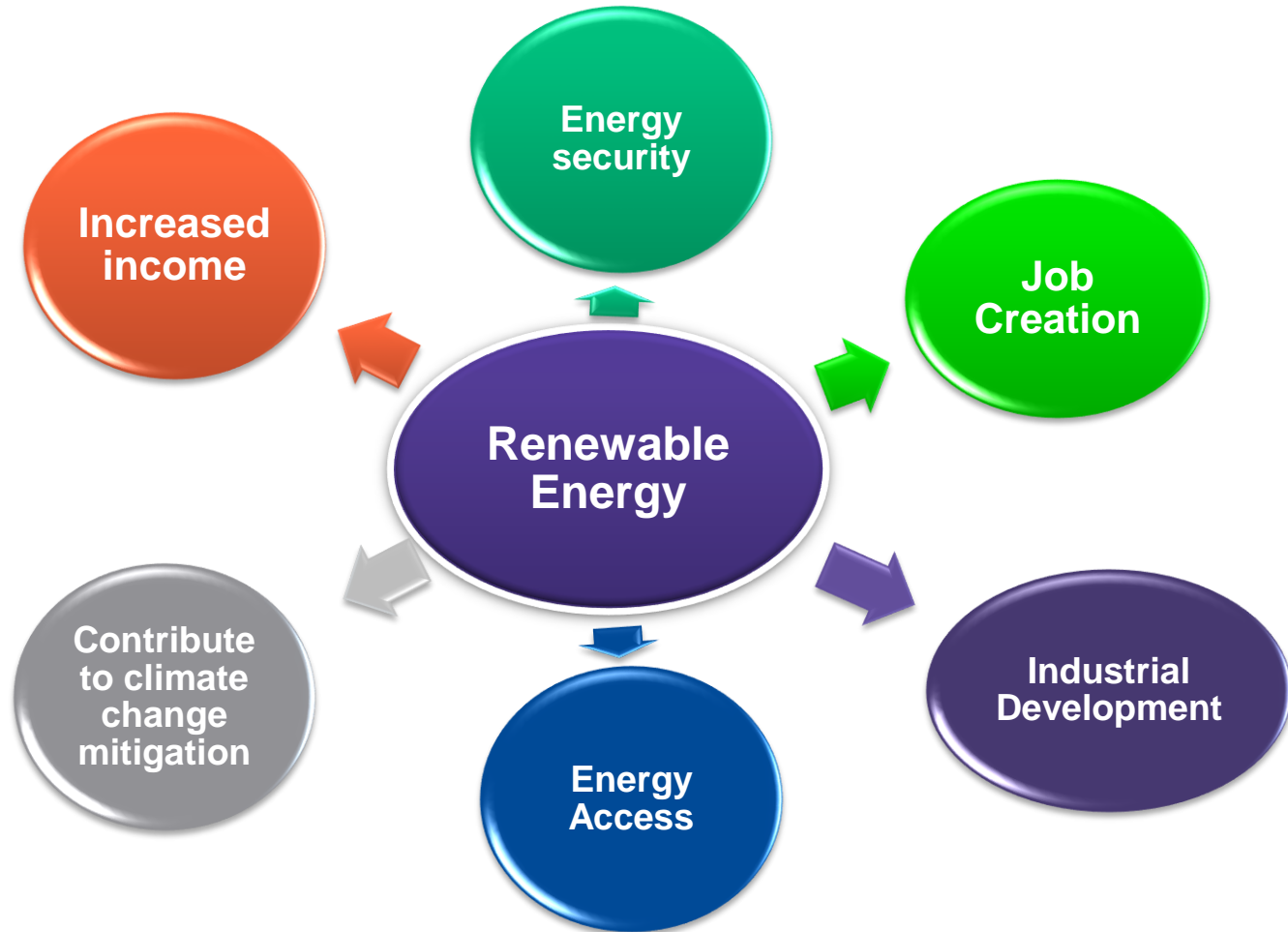


- Decouple energy from economic growth without a corresponding increase in energy use.
- Decouple emissions from energy demand growth without a corresponding increase in GHG emissions.

Source: IEA WEO2015

# The Benefits of Renewable Energy Deployment

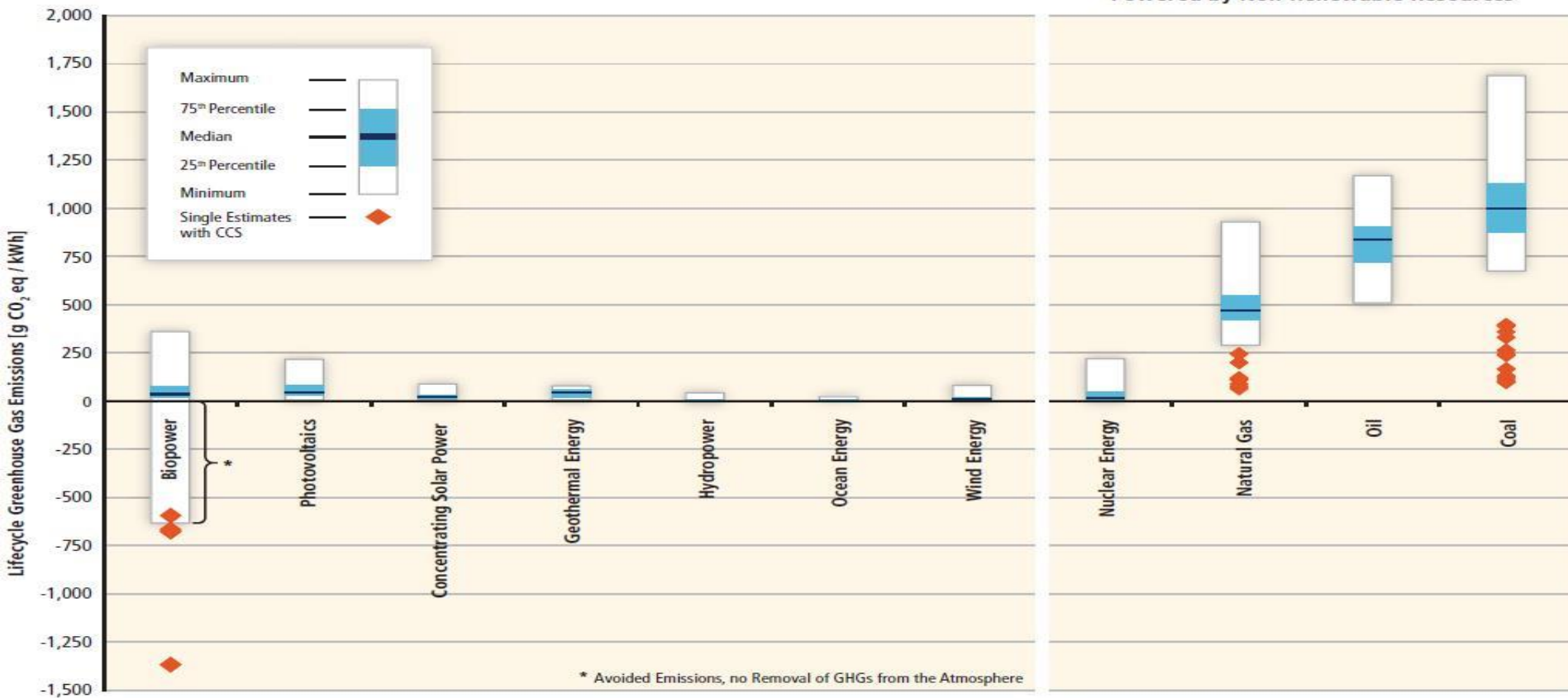
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# Renewable Energy Deployment: instrument for climate change mitigation

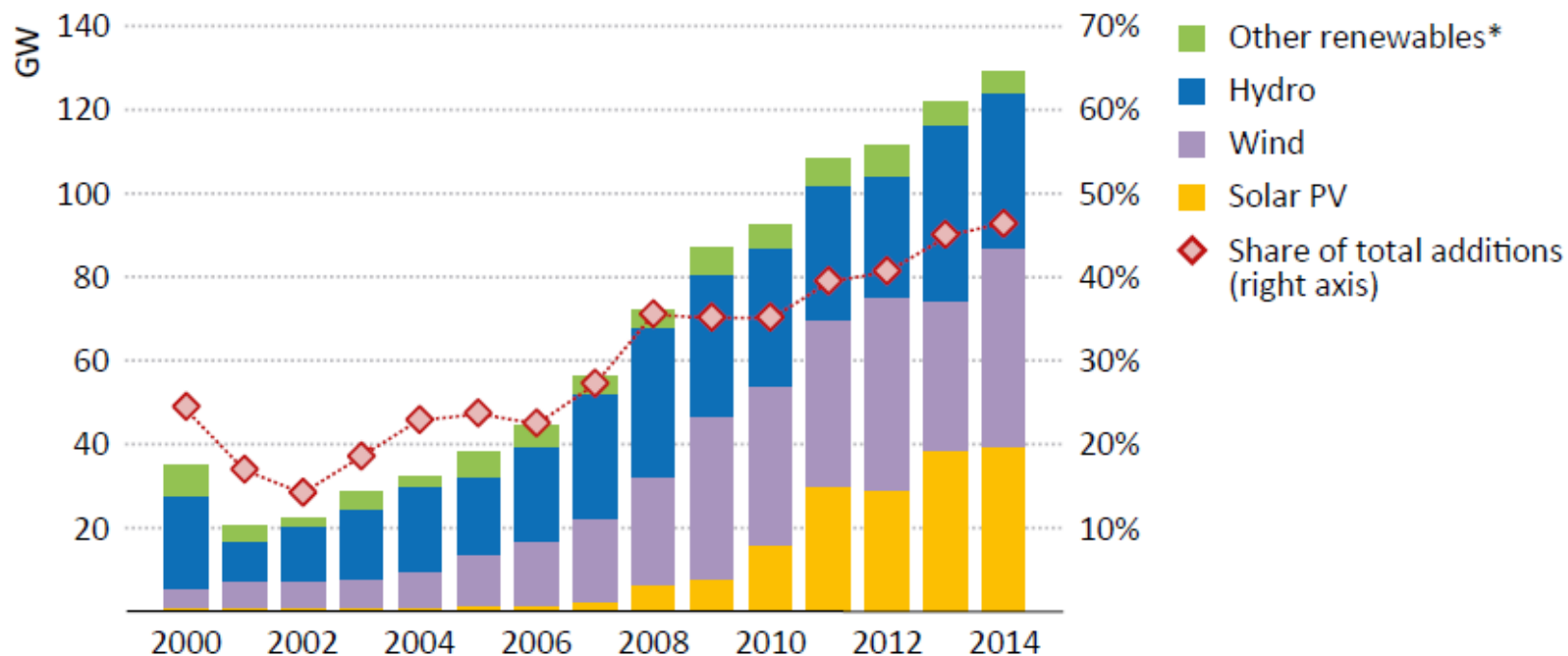
Electricity Generation Technologies Powered by Renewable Resources

Electricity Generation Technologies Powered by Non-Renewable Resources



- RE has Little to no global warming emissions
- RE Life-cycle global warming emissions during manufacturing, installation, operation and maintenance, dismantling and decommissioning, are minimal

## Global RE-based power capacity additions by type and share of total capacity additions

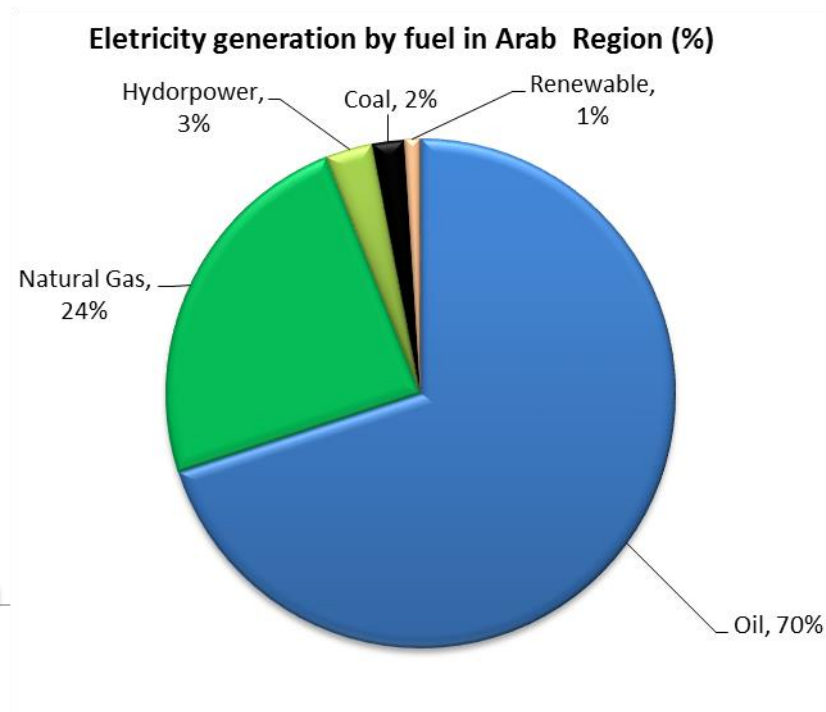
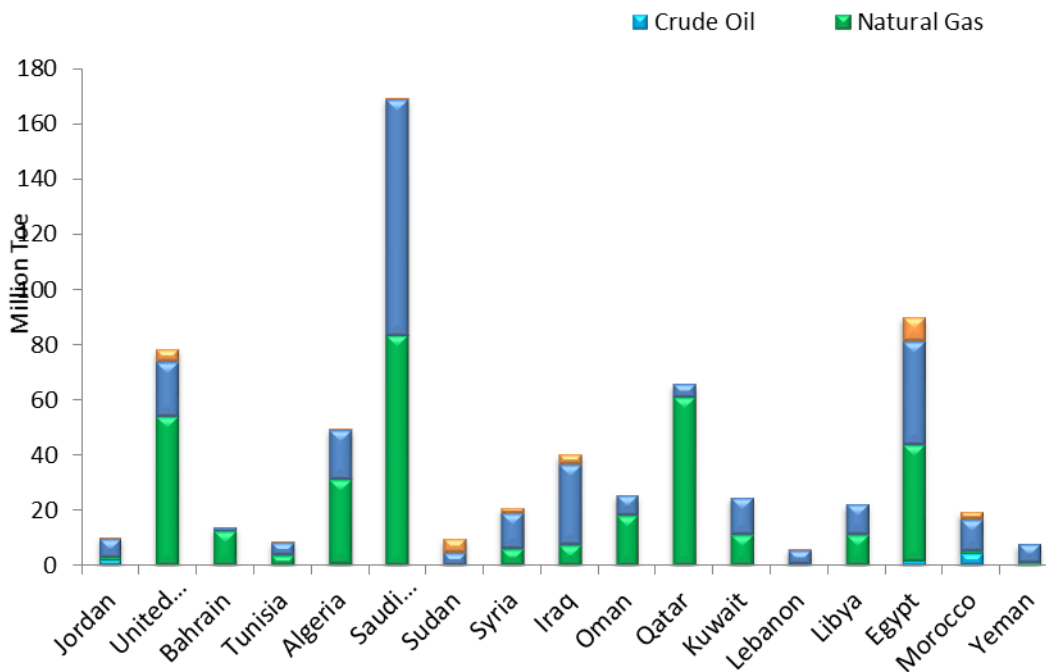


\* Includes geothermal, marine, bioenergy and concentrating solar power.

**Installation of Renewables-based power generation technologies hit a record high in 2014, helped by the continuing decline in technology costs.**

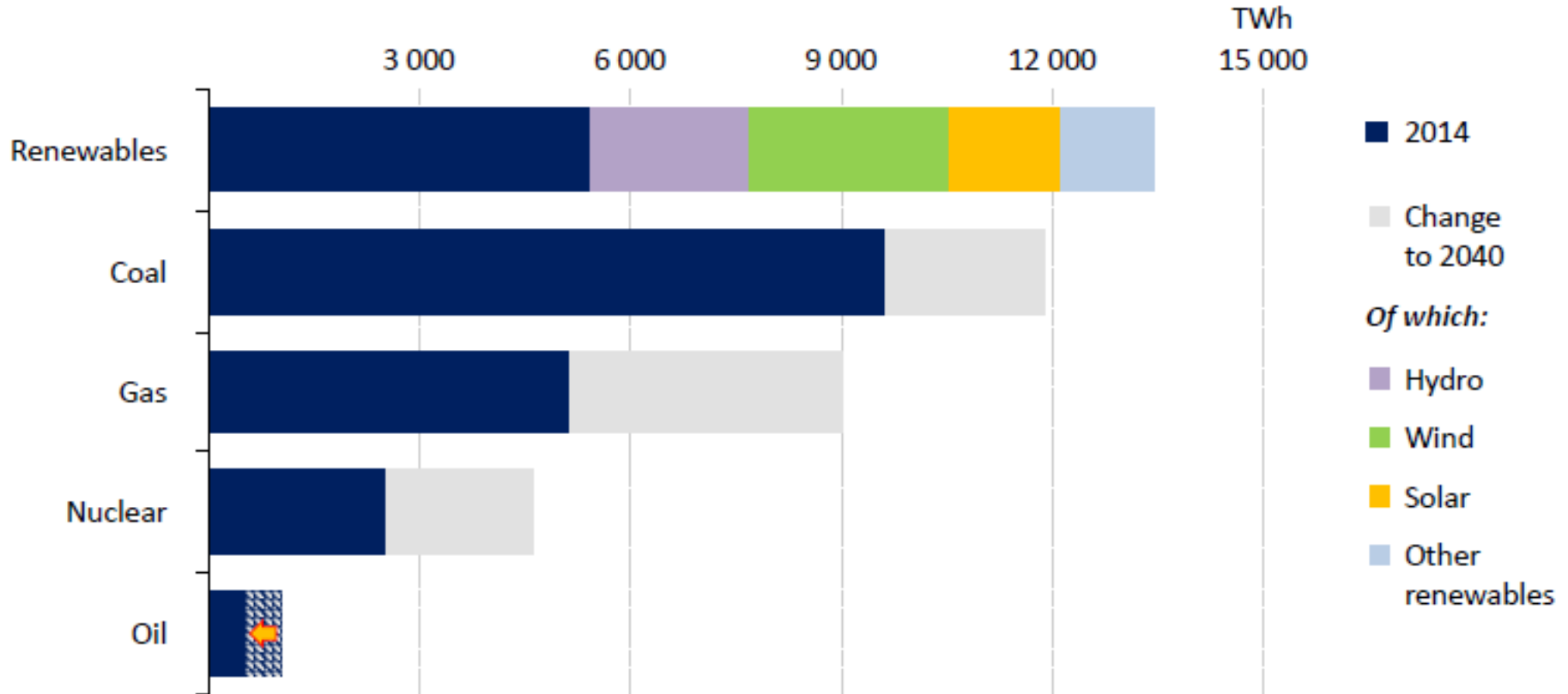


## Arab electricity generation by Country and by Fuel



**Arab's power generation consumption is shifting from oil to Natural gas resource.**

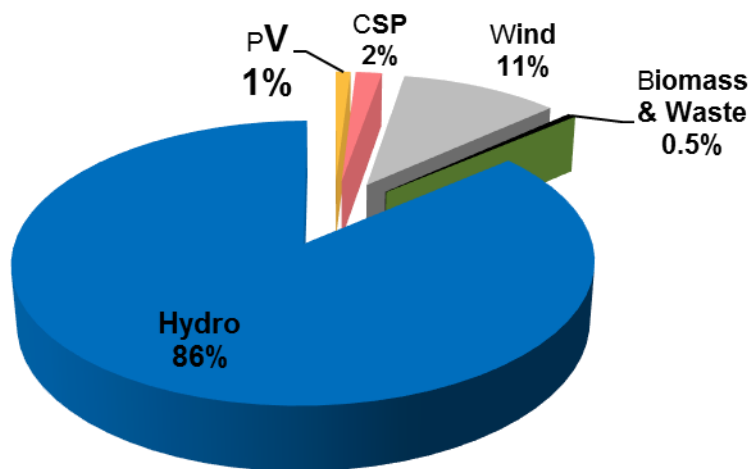
# Global electricity generation by source



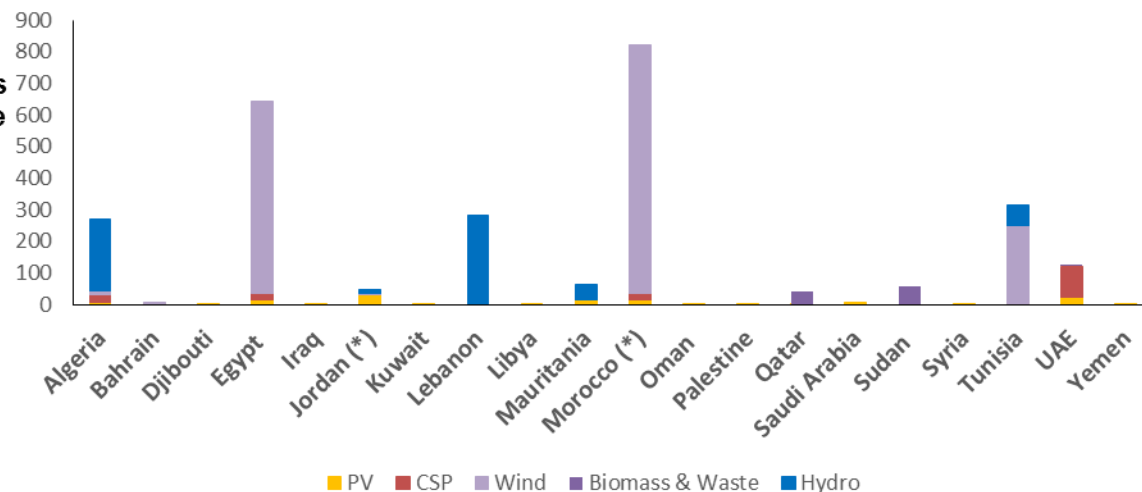
**Driven by continued policy support, renewables account for half of additional global generation, overtaking coal around 2030 to become the largest power source**

# Renewables-based power capacity additions by type in the Arab Countries

Renewable-Installed Capacity in the Arab Countries (2013)



Installed renewable energy power generation Capacity in the Arab Countries (MW)



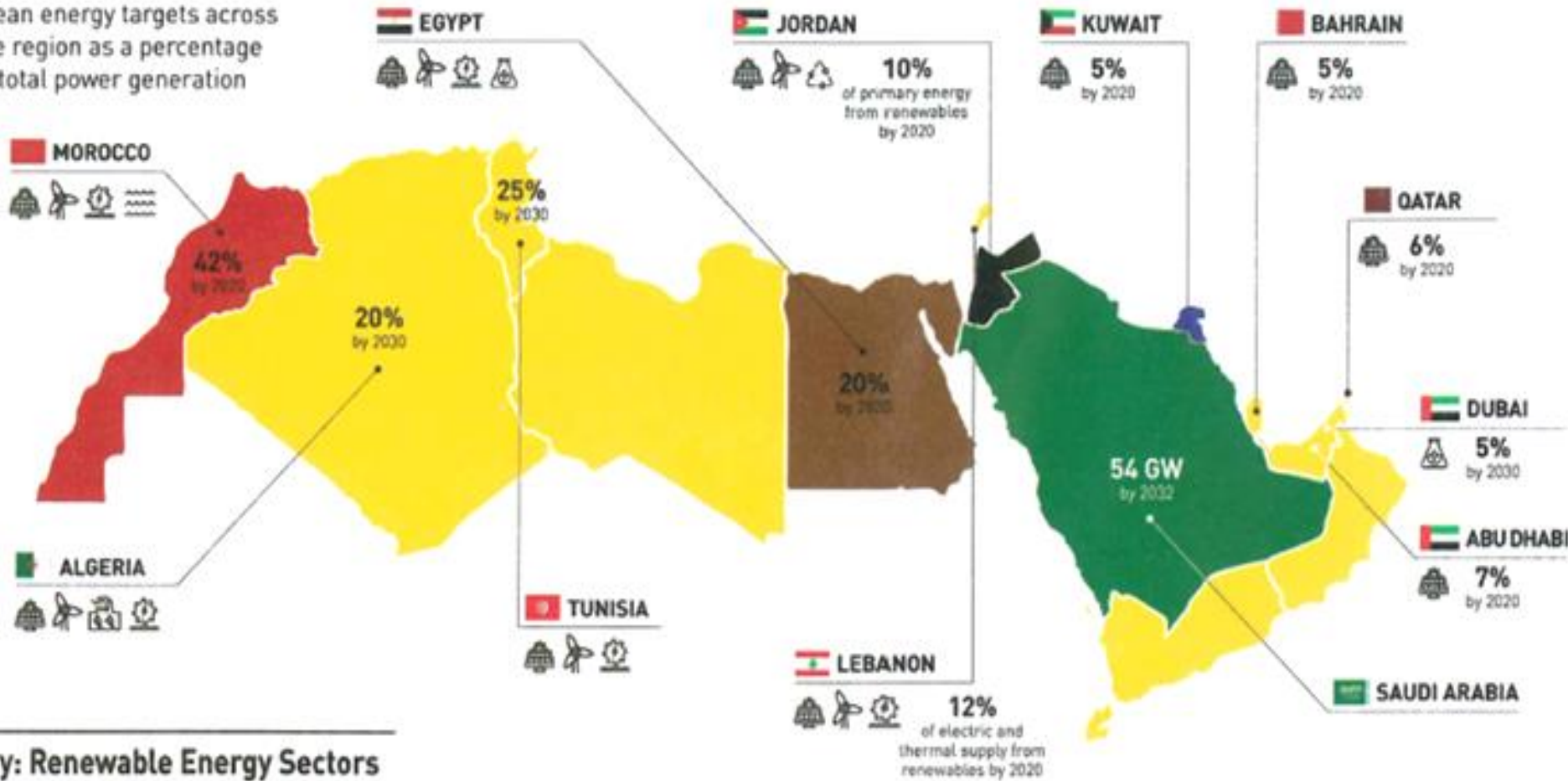
The RE in the Arab region has evolved rapidly in recent years with a diverse range of countries announcing projects and policies.

(\*) By 2015, total PV installed capacity in Jordan was 30 MW and total CSP installed capacity in Morocco was 180 MW

Sources: ESCWA, 2015a and OAPEC, 2014

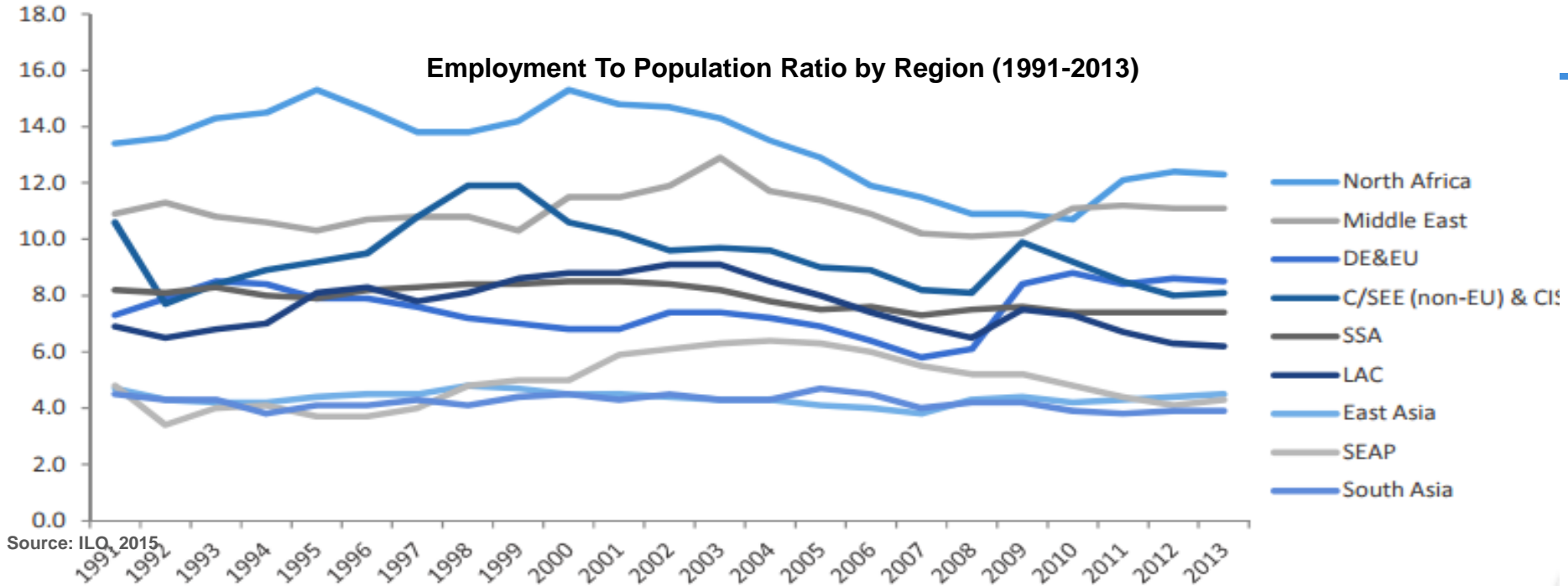
# RE Future Targets and Development in Arab Countries

Clean energy targets across the region as a percentage of total power generation



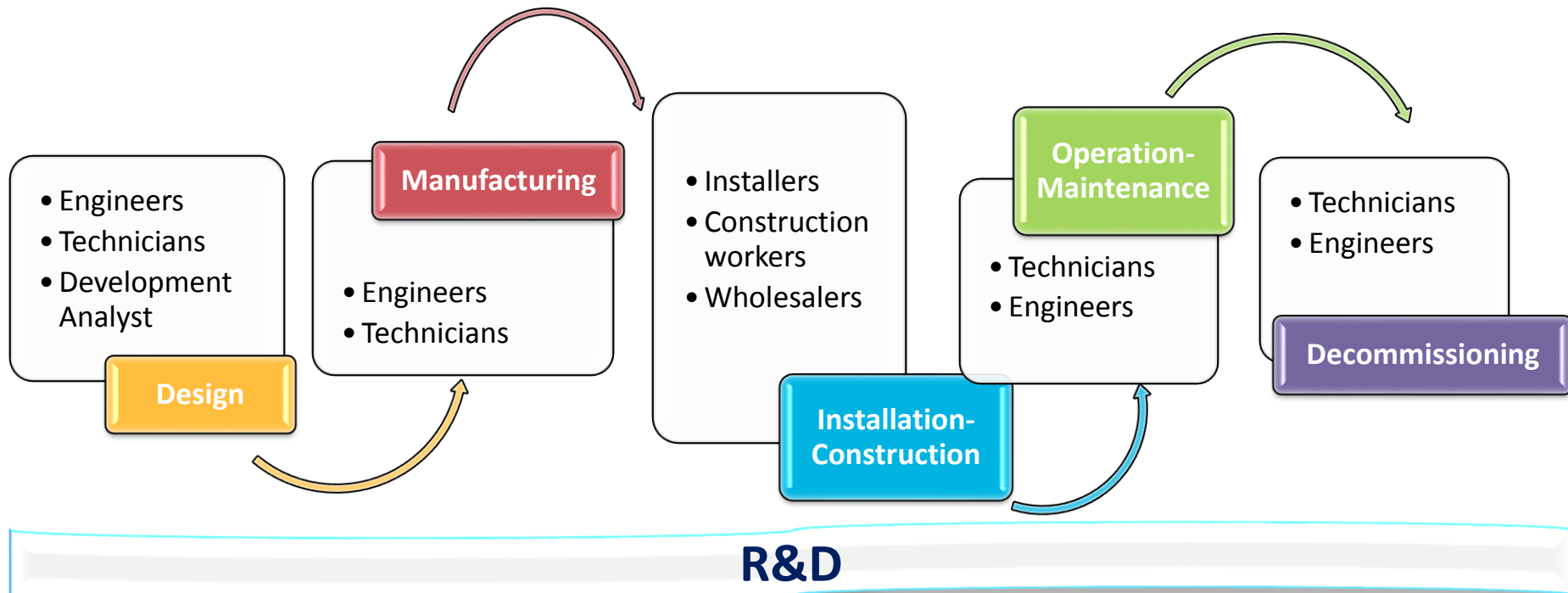
Source: World Forum Energy Summit, 2015

# Socio-Economic and Demographic Dynamics



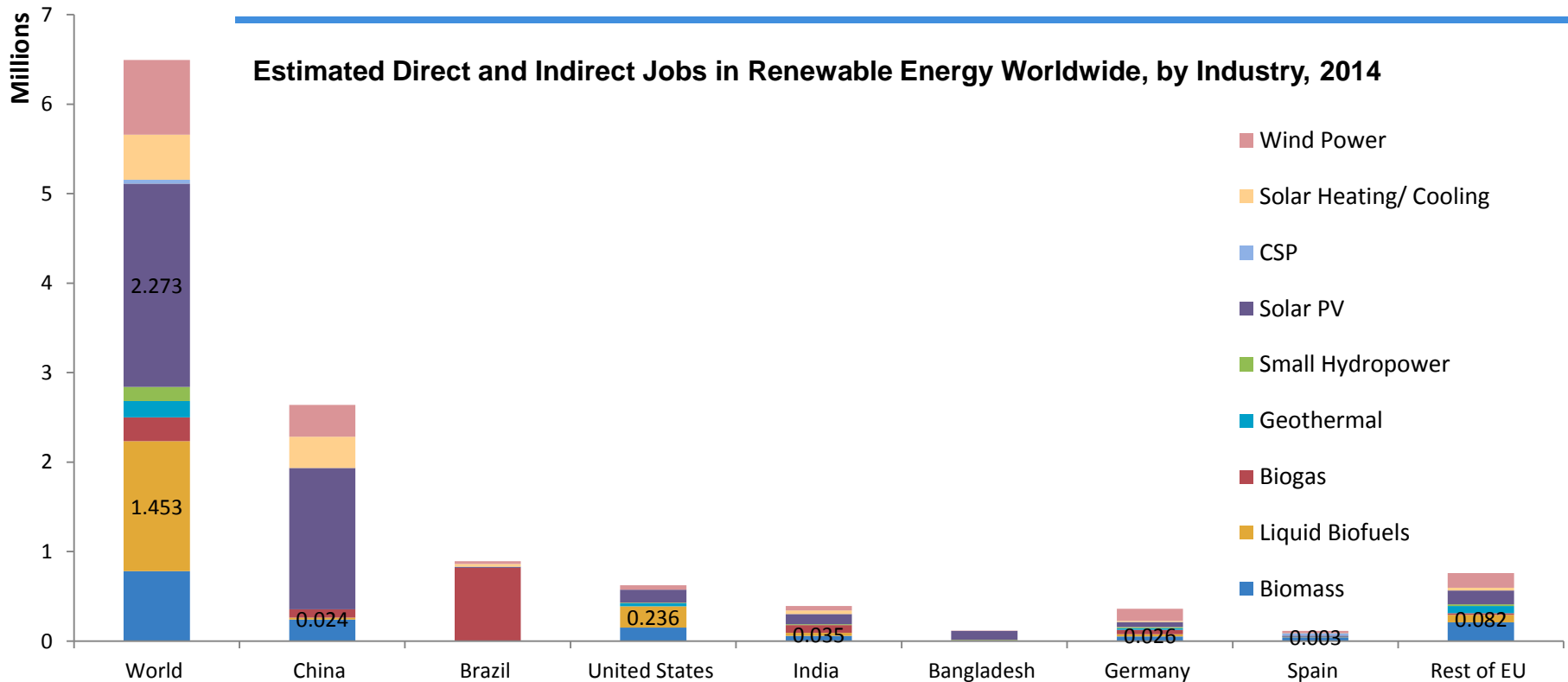
- The participation of young people in the economic life does not exceed 40% during past decade (53.6% for males and 19.5% for females).
  - More than 30 % of Arab youth are unemployed compared to the global average of 15 %
  - More than 50 million jobs by 2020 needs to be created, mostly for young educated people.

# RE Deployment Benefits: Job Creation



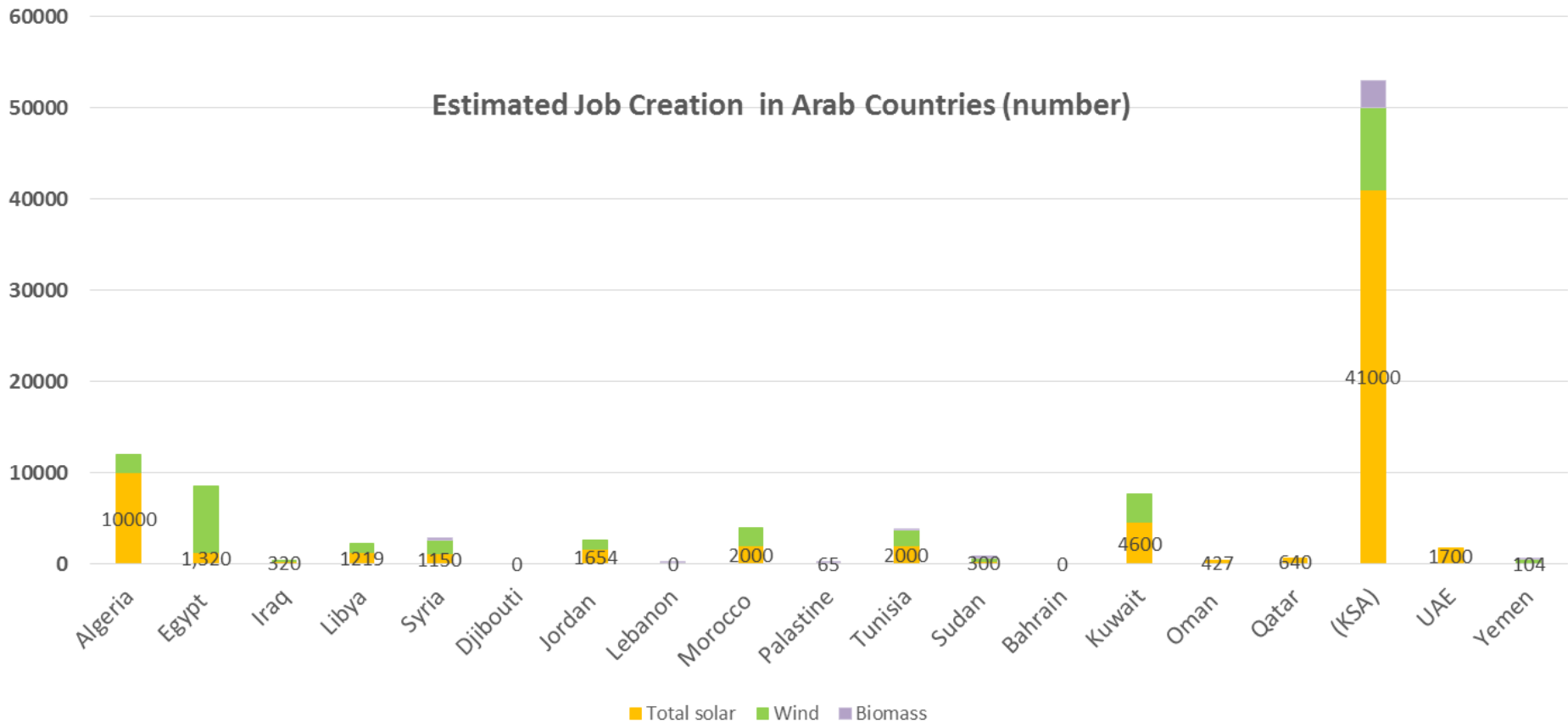
**Economic diversification and job creation is a potential key benefit of investment in RE technologies**

# RE Deployment Benefits: Job Creation Worldwide



**Above 6 million people are already employed in renewable energy sector**

# RE Deployment Benefits: Job Creation in the Arab Countries



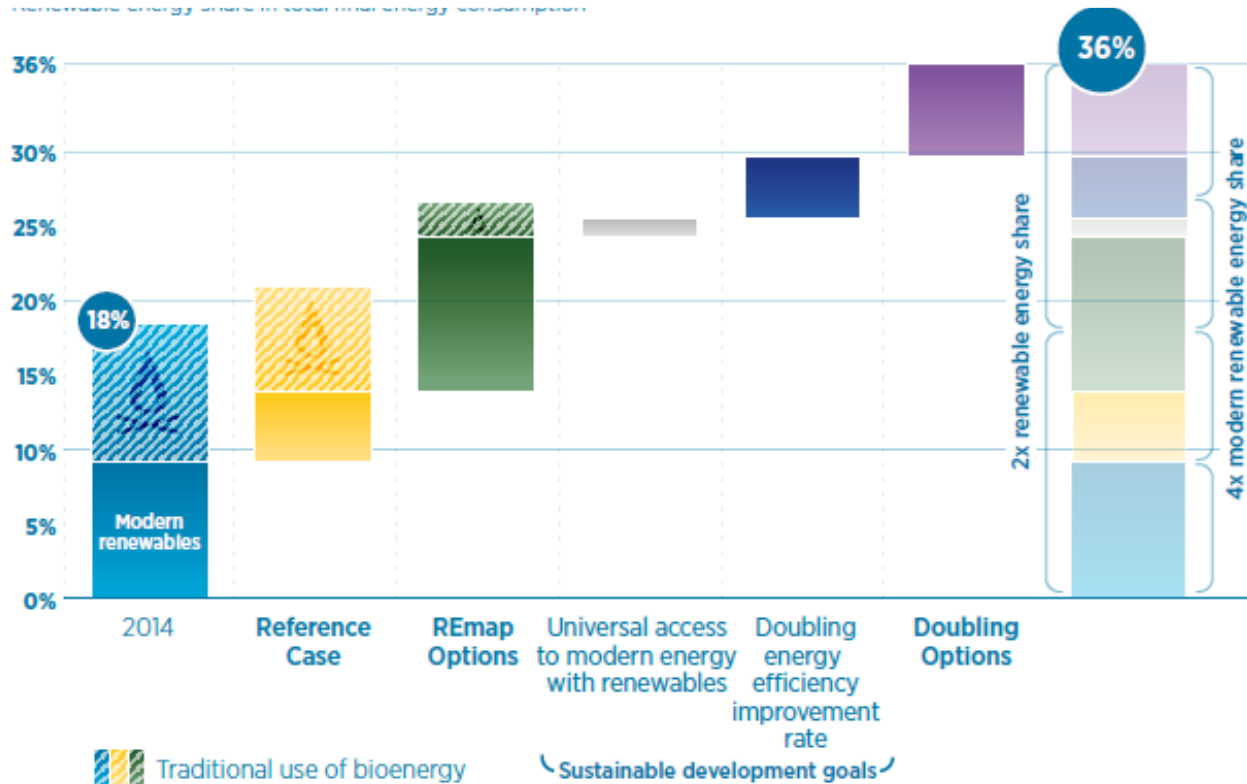
Sources: ESCWA, 2015a and OAPEC, 2014



# RE Contributes to Improve Living Conditions in Rural & Remote Areas



# Renewable energy share in total final energy consumption

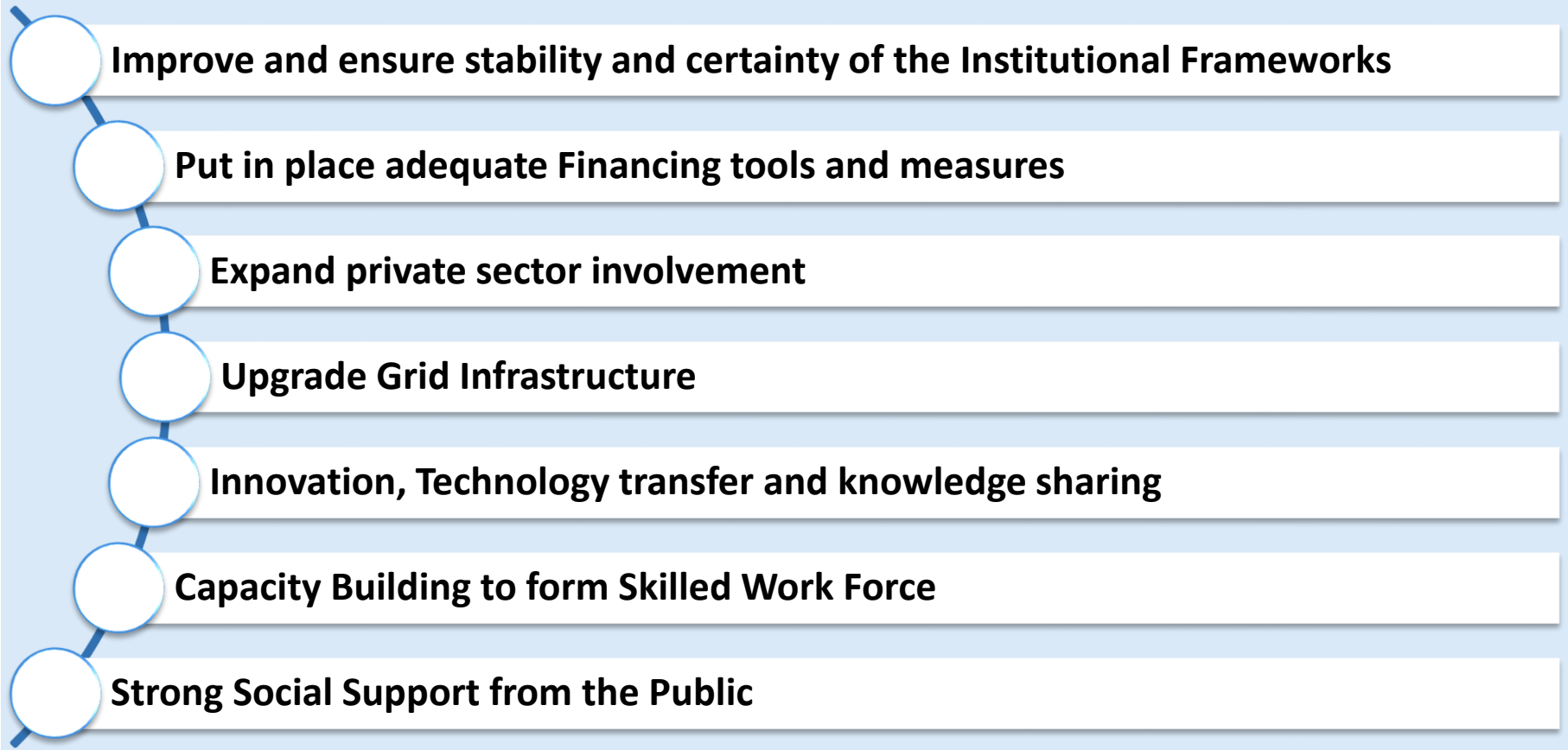


- 24.4 million jobs in the renewable energy sector by 2030.
- Save up to 4 million lives per year in 2030.
- Boost the global GDP by up to USD 1.3 trillion.

**Doubling the world's renewable energy share requires concerted action, reinforcing growth in Renewables with energy efficiency and universal access.**

## Priority Areas to improve implementation of RE toward sustainable energy

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Economic And Social Commission For Western Asia



UNITED NATIONS

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ESCWA

**Thank you**

**40**  
YEARS