



OAPEC
Organization
of Arab Petroleum
Exporting Countries

*5th Session of the UNECE's Group
of Experts on Gas*

United Nations, Geneva, Switzerland
21-23 March 2018

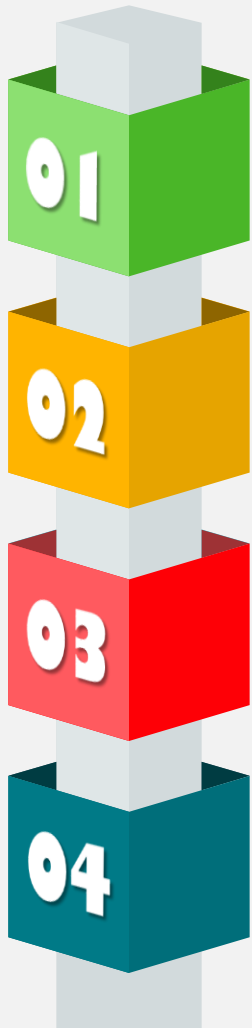


United Nations
Economic Commission
for Europe

**“The Growing Significance of Natural Gas in the Arab Energy
Sector & Its Contribution to Sustainable Energy Future”**

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OAPEC



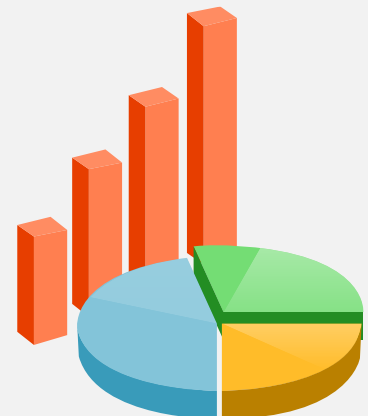


Development of Upstream Gas Sector

Significance of Gas in the Arab Energy Sector

Contribution of Gas to Sustainable Energy Objectives

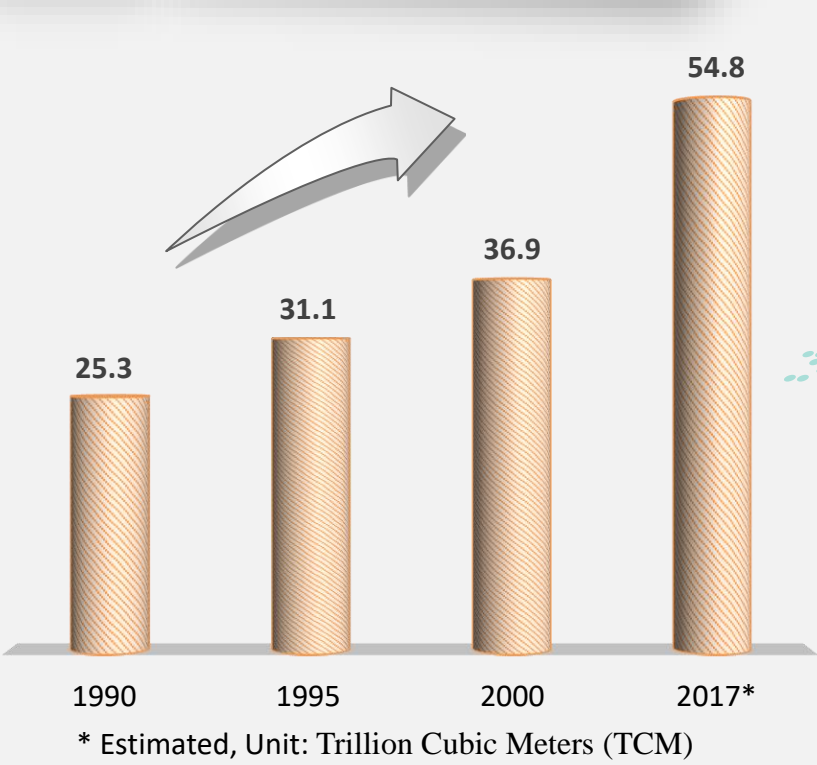
Gas and Renewables: Current Activities and Plans





01

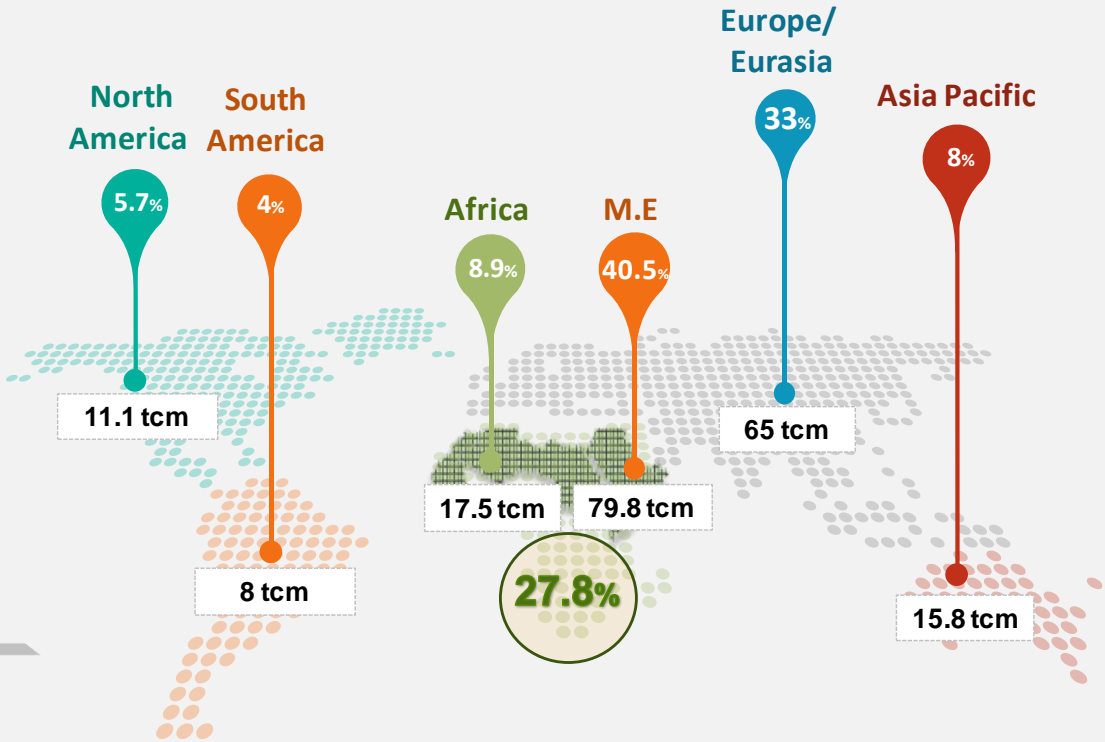
Development of Gas Reserves in the Arab Countries (1990-2017)



Source: OAPEC

116%

Total increase in the remaining gas reserves



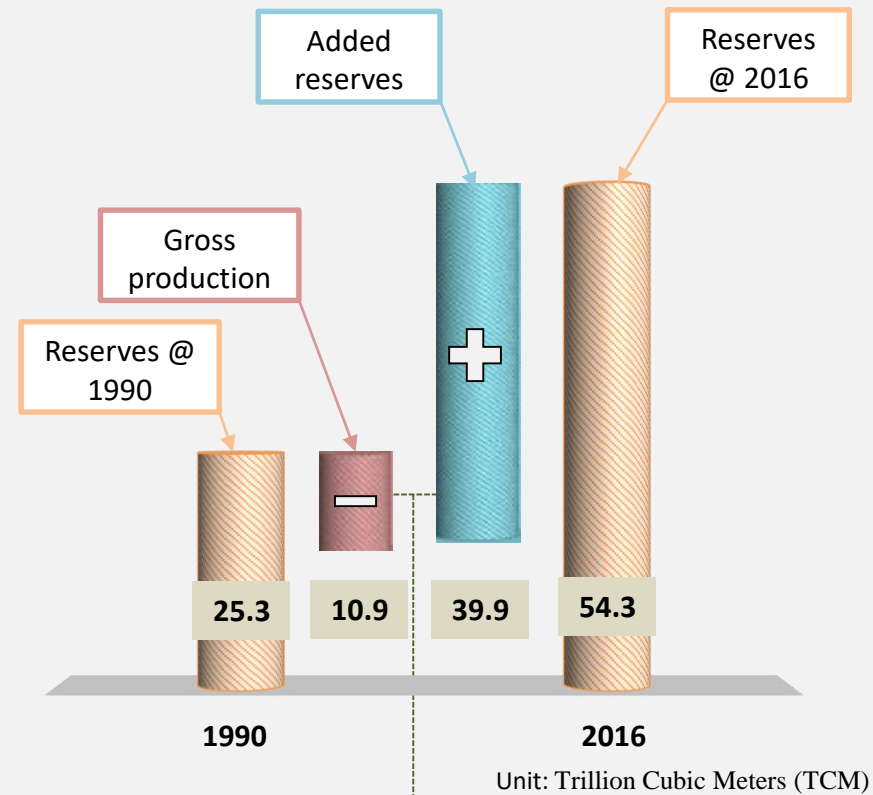
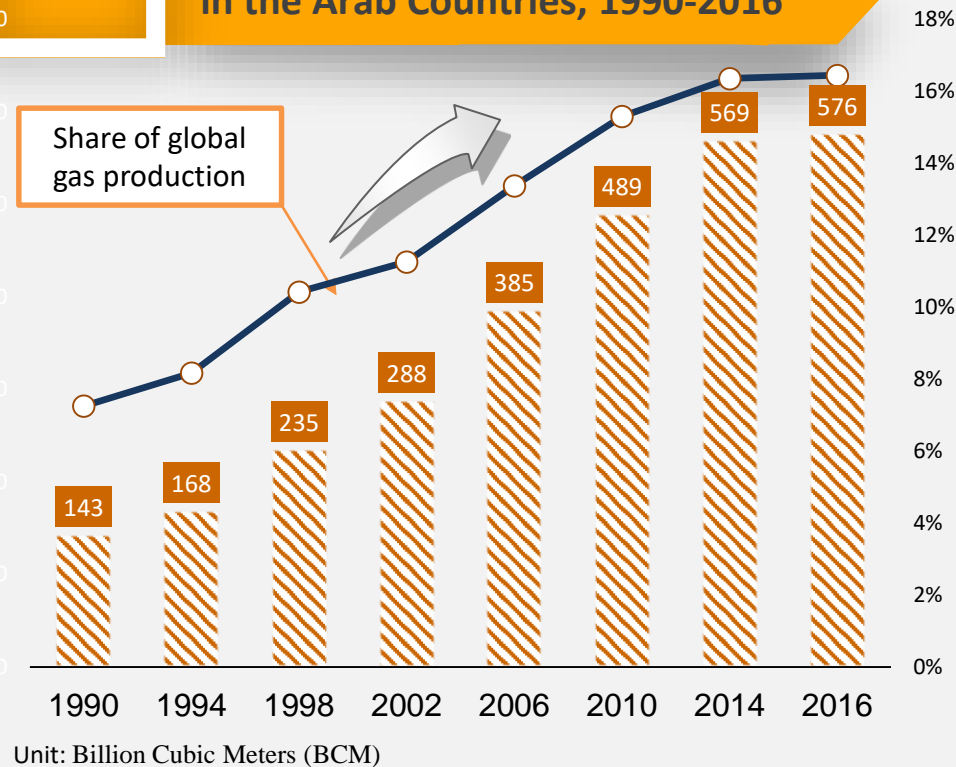
Source: O & G Journal, OAPEC

Distribution of World's Total Proven Gas Reserves, 2017

02

01

Development of Marketed Production in the Arab Countries, 1990-2016



5.5%

ANNUAL GROWTH RATE

Gas production grew about four times in 1990-2016

576 bcm

TOTAL GAS PRODUCTION IN 2016

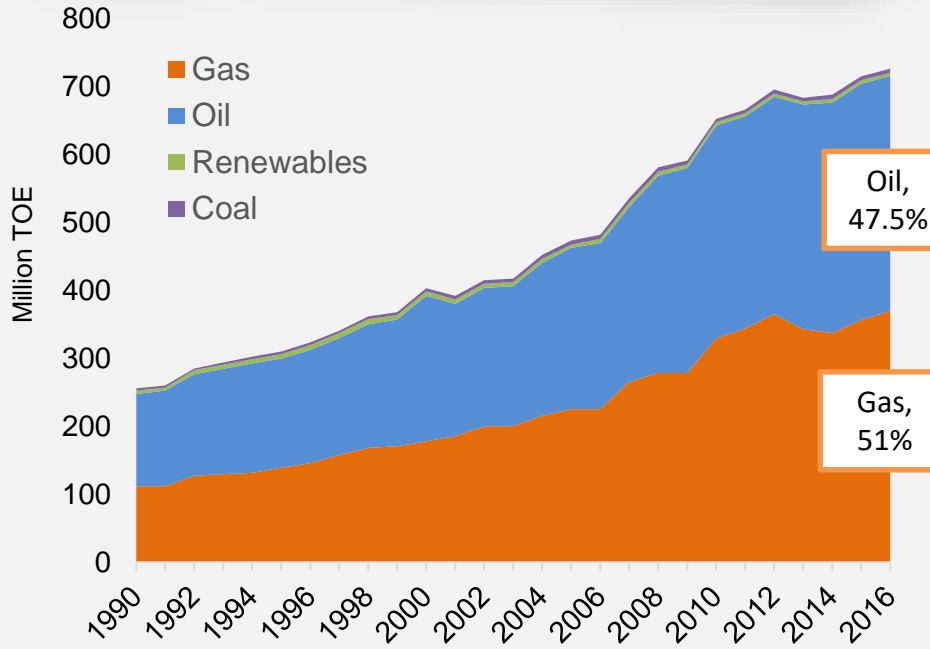
This accounts for 16% of the global production

360%

Compensation ratio of the cumulative gross gas production!

01

Development of Primary Energy Demand in the Arab Countries, 1990-2016



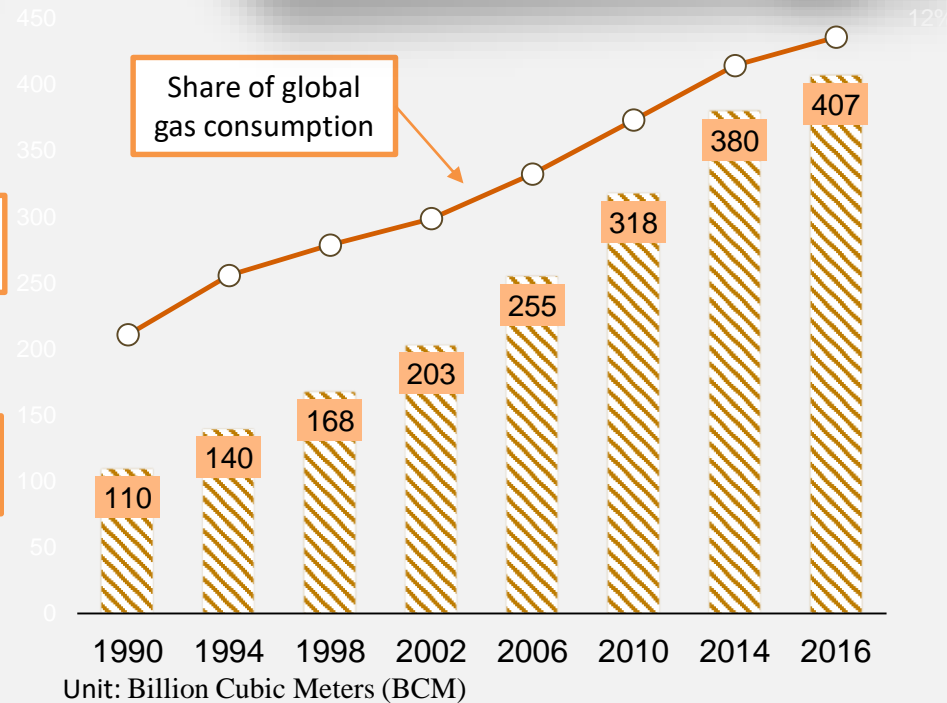
Source: OAPEC

PRIMARY ENERGY MIX IN THE ARAB REGION

- It is dominated by fossil fuels ~ 99%
- Total primary energy grew at an annual growth rate of **4.1%**!

02

Development of Gas Consumption in the Arab Countries, 1990-2016



5.1%

ANNUAL GROWTH RATE

Gas consumption grew ~ four times in 1990-2016

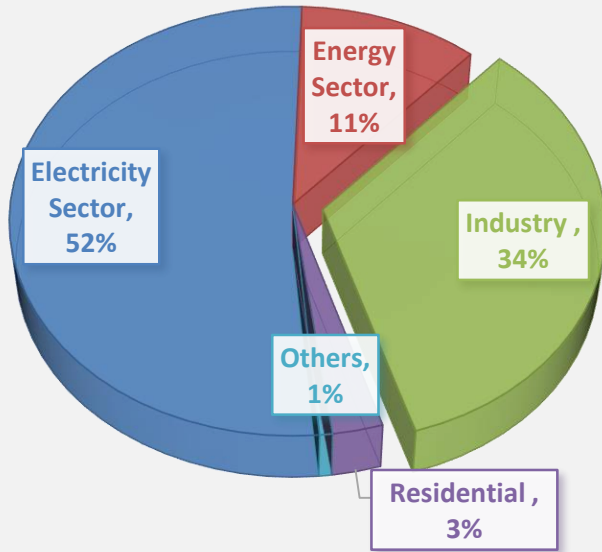
407 bcm

TOTAL GAS CONSUMPTION IN 2016

accounts for > 11% of the global gas demand

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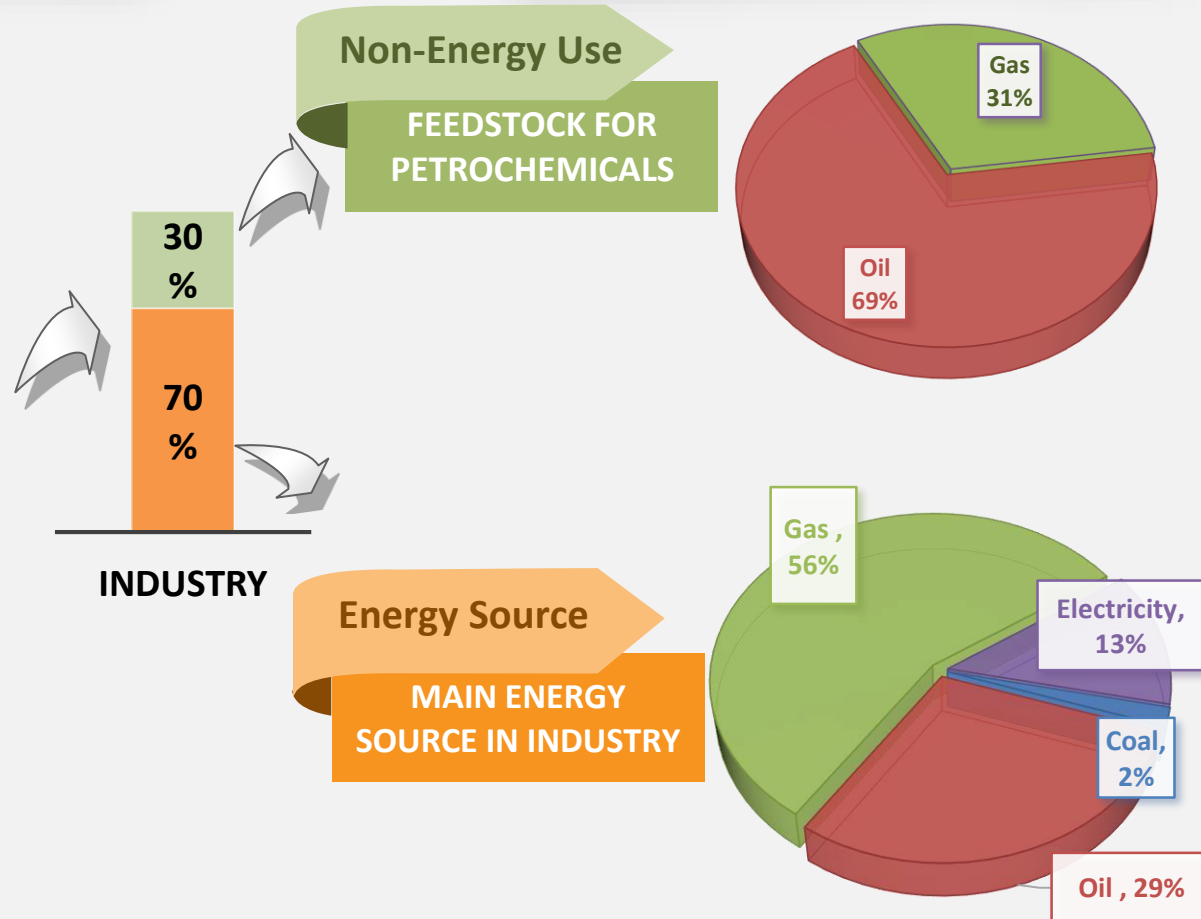
Share of Gas Consumption per Sector in the Arab Countries, 2016



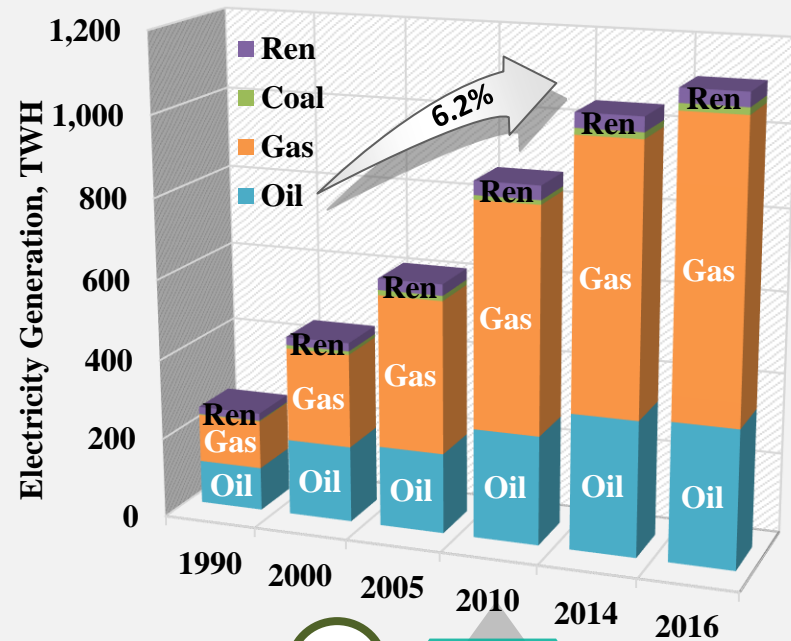
Source: OAPEC

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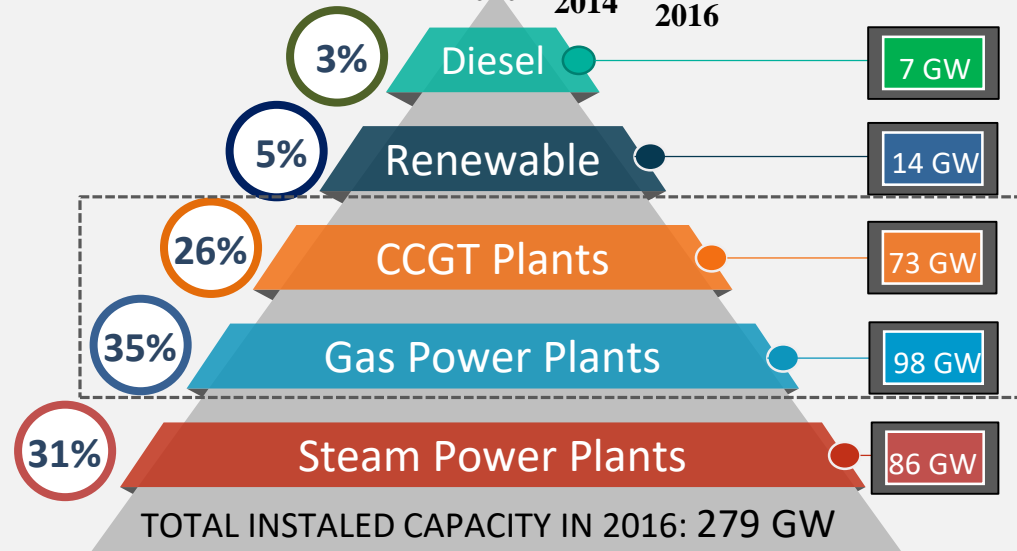
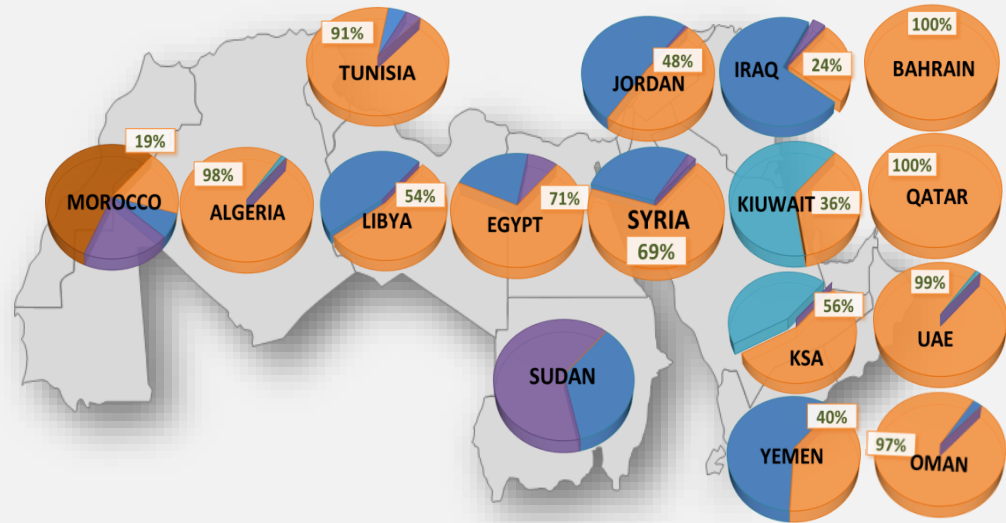
Gas Usage in Industry Sector in the Arab Countries, 2016



Development of Electricity Generation, TWH



Electricity Generation Mix per Country, 2016



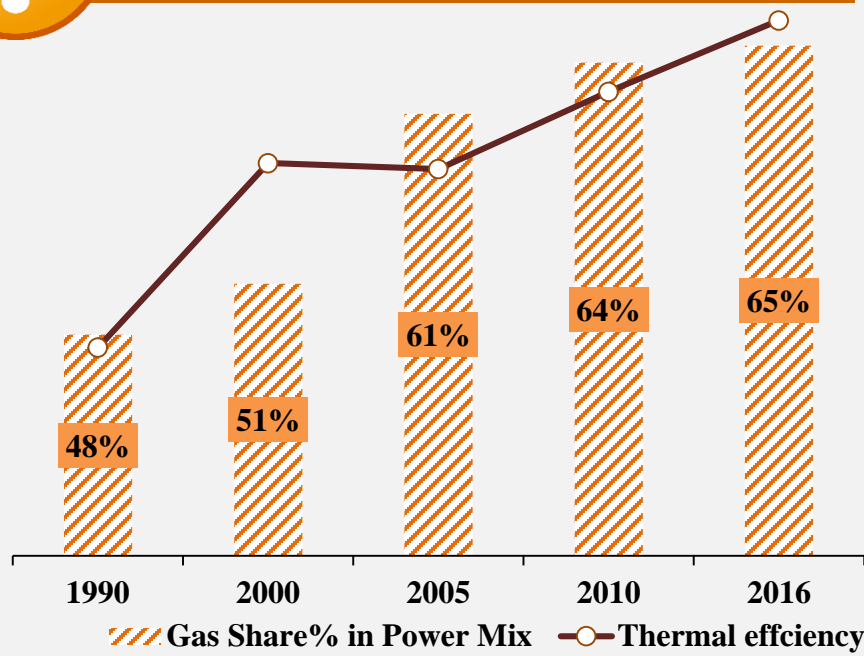
Renewables have a share 5% of installed capacity & 3% of generated electricity.

Gas turbines and CCGT represent **60%** of the total installed capacities

Modernization and replacement of less efficient plants are still ongoing



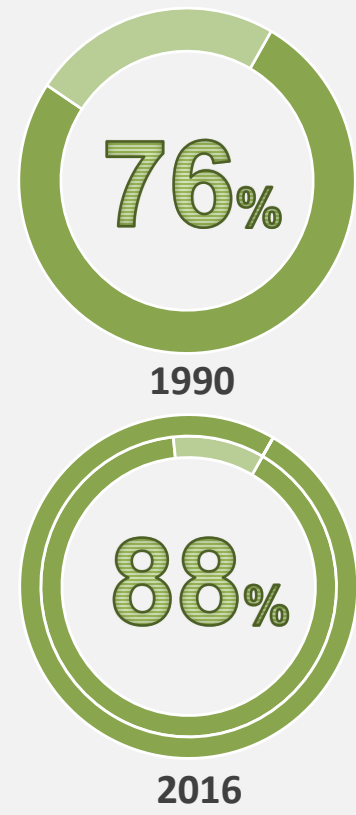
The impact of gas usage in power sector on thermal efficiency



Overall thermal efficiency increased from 31% to 36%

Fuel Conservation

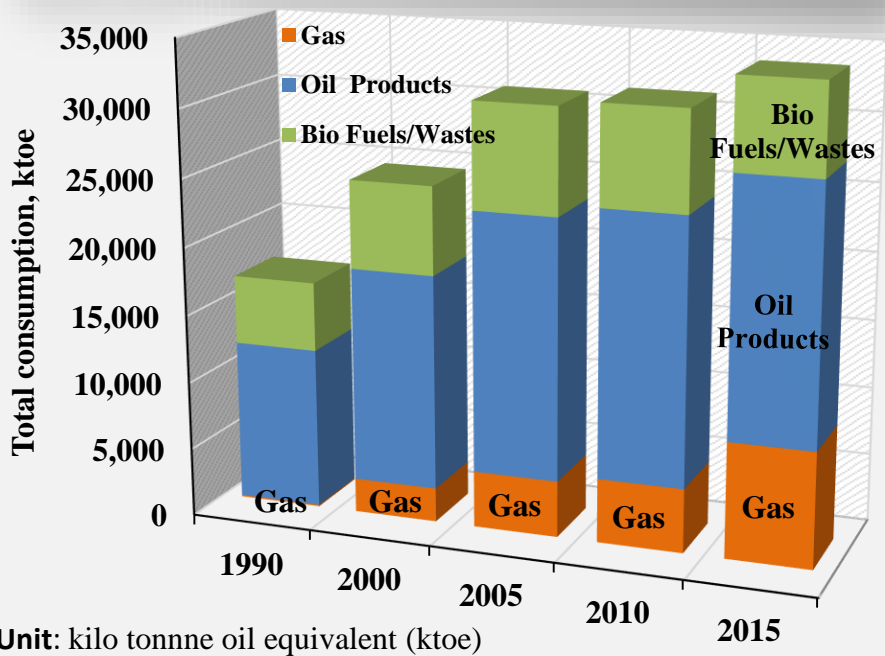
Access Rate Access to Electricity, % of Arab Population



Source: Data compiled from WB, WEO 2017, Global Tracking Framework Report 2017

01

Gas Penetration into the Residential Sector in the Arab Countries, 1990-2015



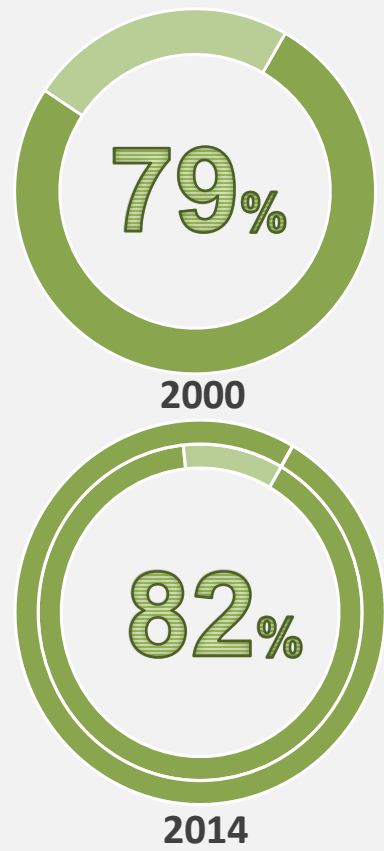
25%

GAS SHARE IN THE RESIDENTIAL SECTOR IN 2016

While wastes share declined from 30% to 19% during (1990-2015)



Access Rate to Clean Fuels and Technologies for Cooking, % of Arab Population



Source: WHO, updated 6th of April, 2016



01

Electricity Generation Outlook in the Arab Countries, TWH



Source: AUE, 2016



Electricity generation will climb by almost **“6% per year”** through to **2027**



65% is the total increase in electricity generation by 2027



Such growth will require annual capacity additions of about **20 GW**

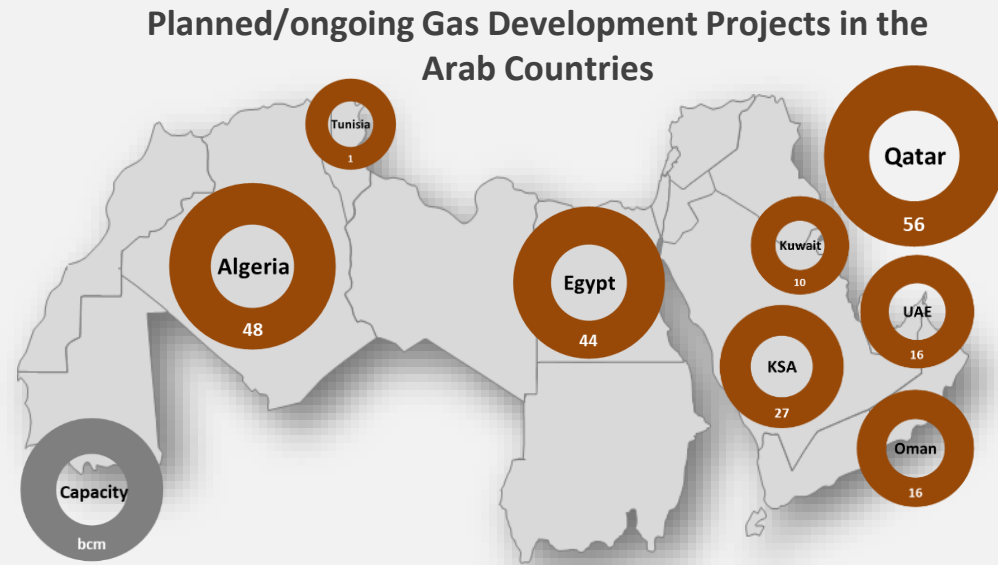


Gas and Renewable Sources will play the main role to meet this demand growth

NATURAL GAS

(22)

Gas development projects are expected to come onstream in **2017-2022** at total production capacity of 200 bcm/y (i.e. **35%** of current gas production)



60

R.E Targets

under construction R.E projects

50

40

30

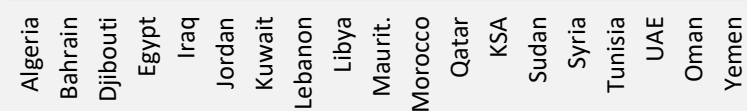
20

10

0

GW

Source:
RECEE



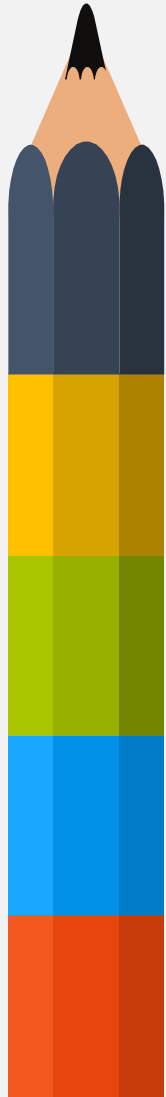
RENEWABLE ENERGY

17 GW

-Renewable energy projects under construction/planned.

130 GW

-Total installed capacity of renewable energy sources according to announced targets



- Gas is the dominant fuel in the Arab primary energy mix (51%) and in the electricity generation mix (65%)
- Electricity sector is the main consumer of natural gas (52%) followed by industry sector (34%) in which gas is consumed for energy and non-energy use (feedstock for chemicals/petrochemicals)
- The expansion of gas usage in power sector contributed to achieve an electrification rate of 88% and to increase the average thermal efficiency of power plants from 31% to 36%.
- Gas penetration into the residential sector contributed to increase access rate to clean fuels for cooking to 82%.
- Renewable sources share is limited in the electricity generation mix, however, many Arab counties adopted ambitious plans to increase their share to attain sustainable energy future.



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