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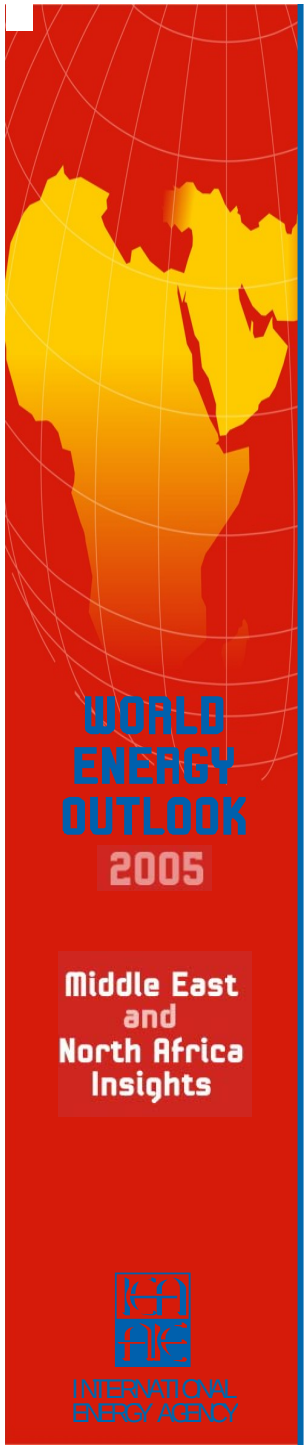
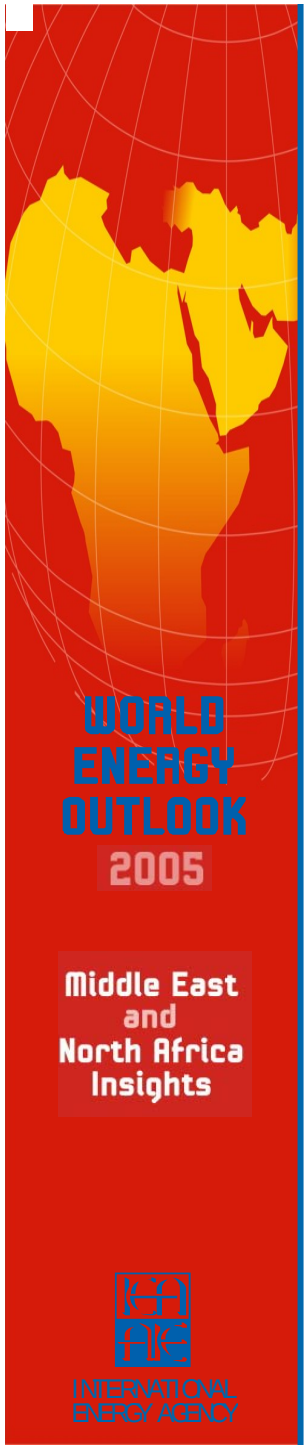
Nicola Pochettino
Senior Energy Analyst

INTERNATIONAL ENERGY AGENCY



Global Energy Trends: Reference Scenario



International Energy Price Assumptions

- The assumed oil-price path in the Reference Scenario has been revised upwards from *WEO-2004*, in response to the results of detailed analysis of investment prospects:
  - Average IEA crude oil import price, which averages $5 less than WTI, is assumed to ease from a recent peak of over $60 to $40 in 2010 rebounding to $65 in 2030 in nominal terms
- In next few years, crude oil production capacity additions, new refinery investments & slower demand growth is expected to drive down prices
- But limited spare refining capacity, the rising cost of non-MENA crude projects and producer price targets/quotas could temper that decline
- Higher oil prices result in lower oil-demand, that reaches 115 mb/d in 2030 – 6 mb/d less than in *WEO-2004*

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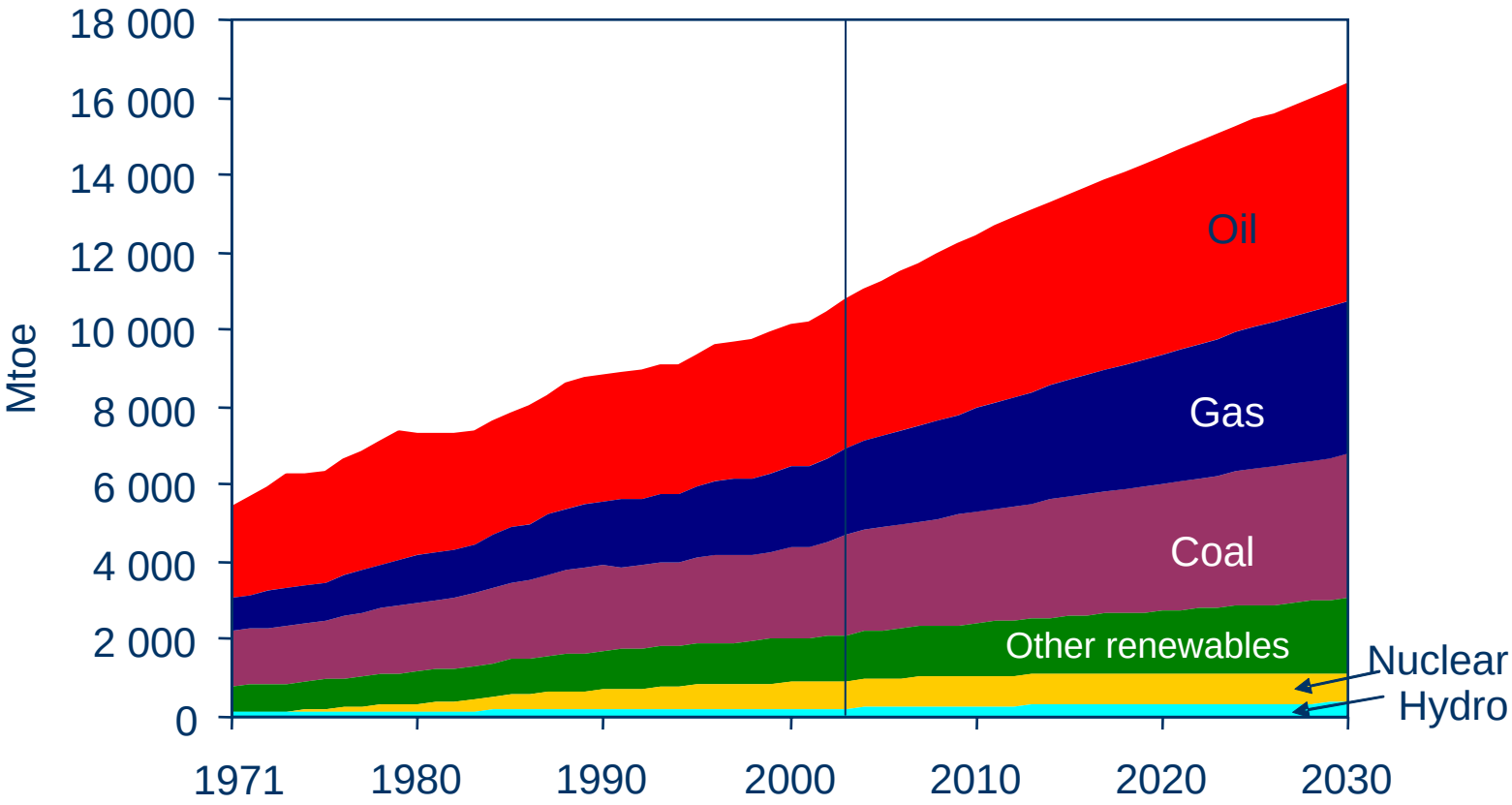
World Primary Energy Demand



Oil and gas together account for more than 60 % of the growth in energy demand between now and 2030 in the Reference Scenario

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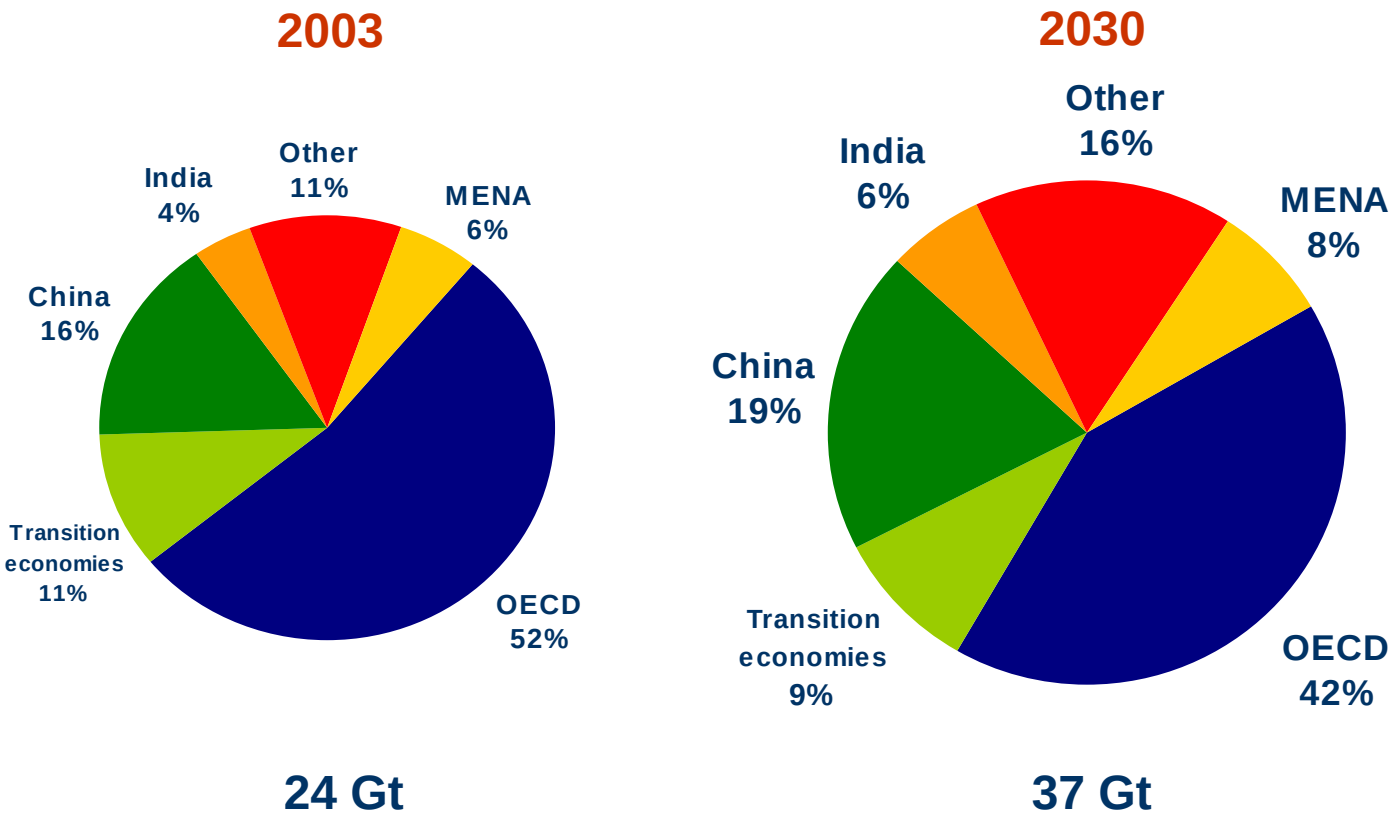
Energy-Related CO_2 Emissions by Region



Global emissions grow by just over half between now and 2030, with the bulk of the increase coming from developing countries

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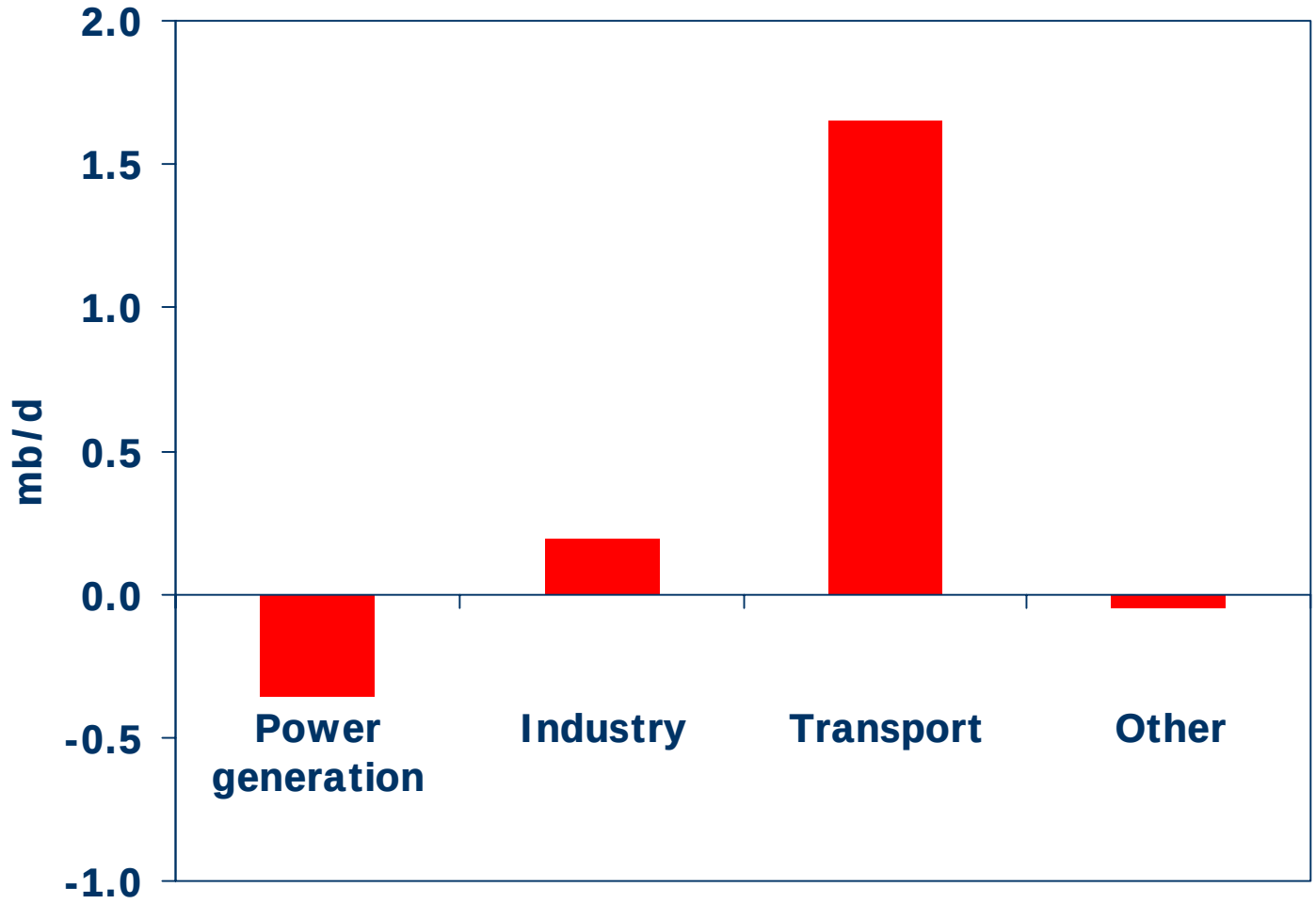
OECD Oil Demand Growth by Sector, 1999-2004



In the OECD, the transport sector accounted for almost all the oil demand growth

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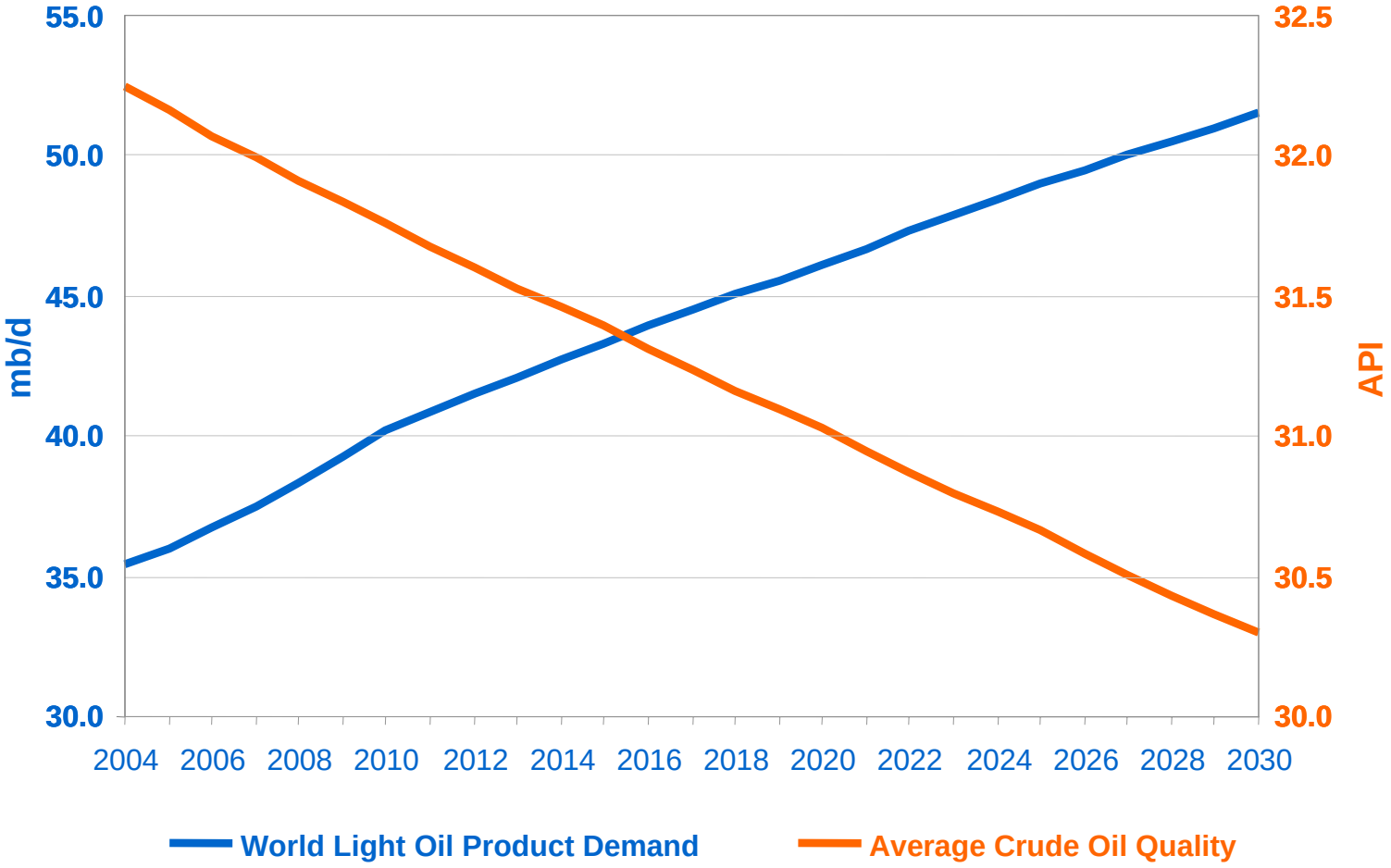
World Light Oil Product Demand & Crude Oil Quality



Oil quality will fall while light product demand will rise - a key challenge for the refining industry

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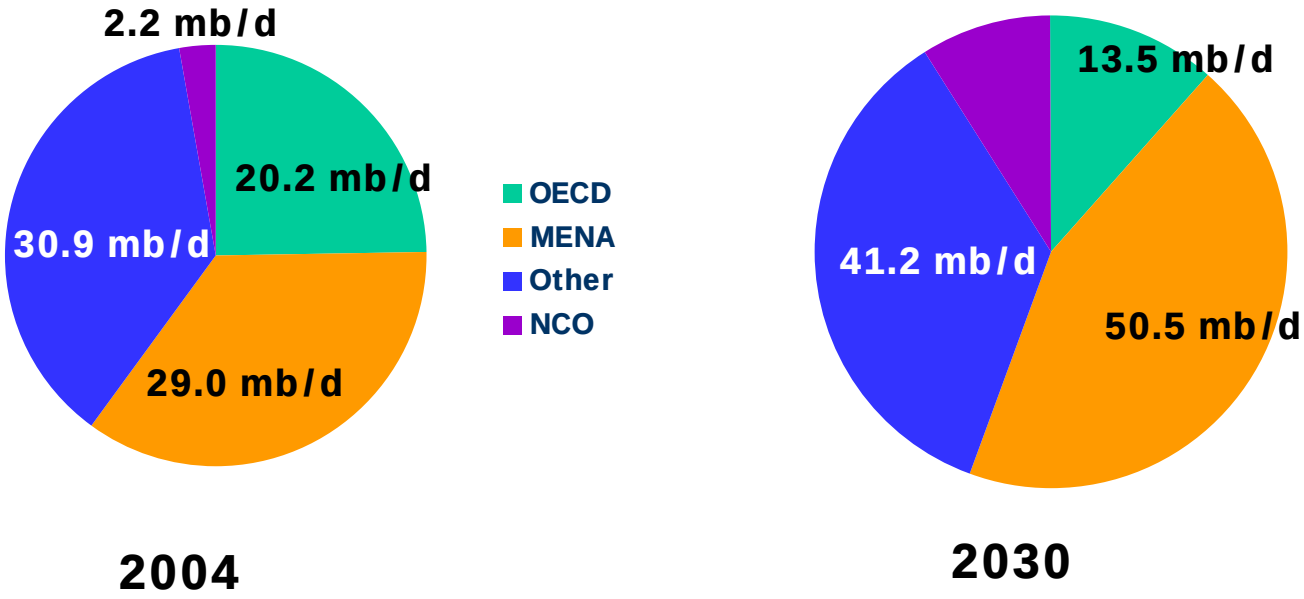
World Oil Production Shifts Away from OECD



Global oil production climbs from 82 mb/d in 2004 to 115 mb/d in 2030; OECD share falls from 25% to 12%

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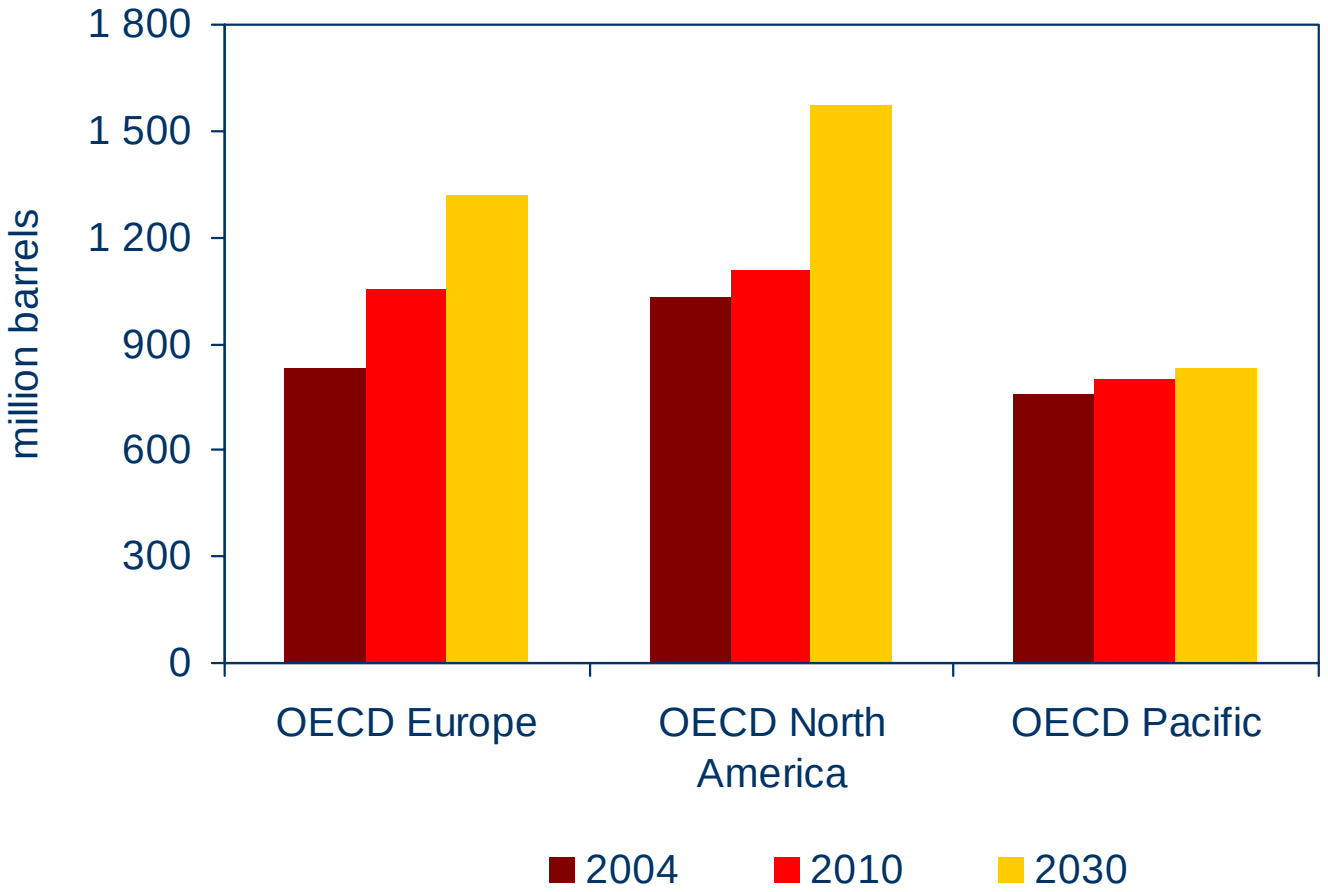
Volume of Oil Stocks Needed to Ensure 90 Days of Net Imports in OECD Regions in the RS



To maintain emergency coverage in a situation of rising oil-import dependence will require large volume increases of oil held in storage

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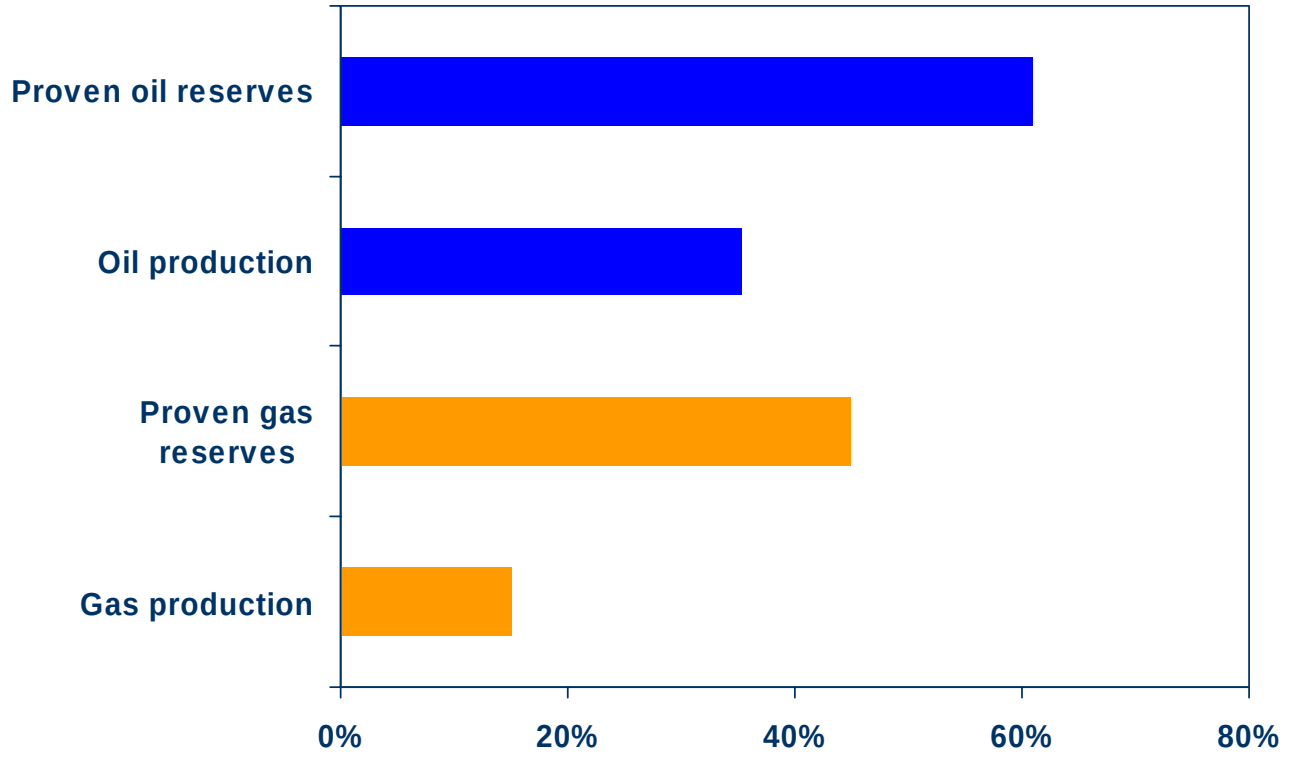
MENA Share in World Oil and Gas Reserves & Production, 2004



MENA share of global oil & gas reserves is much higher than its share of current production, suggesting strong potential for growth

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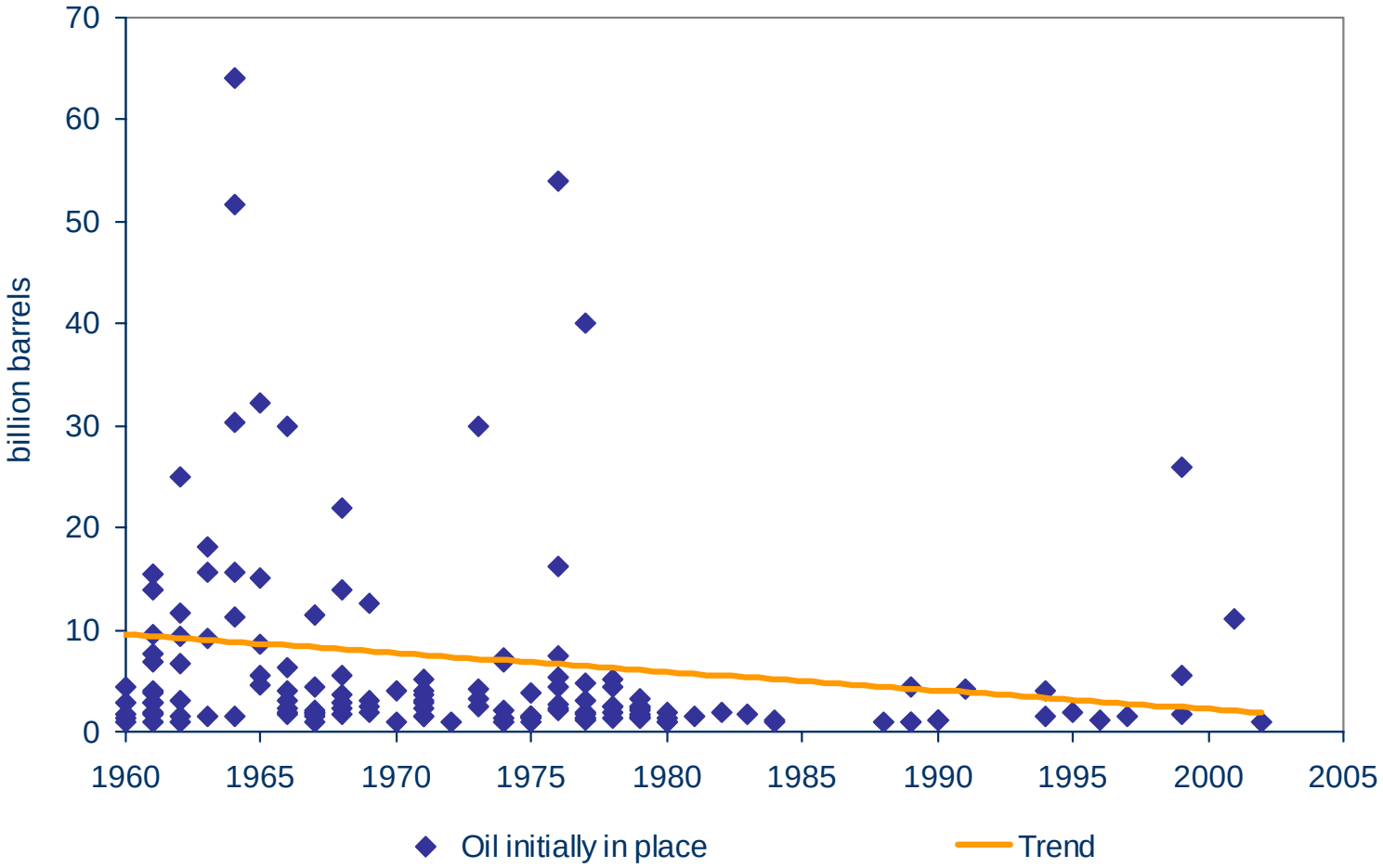
MENA Oil Field Discoveries, 1960-2002



Both the number of new discoveries and the size of fields discovered in MENA countries have fallen sharply since the 1960s

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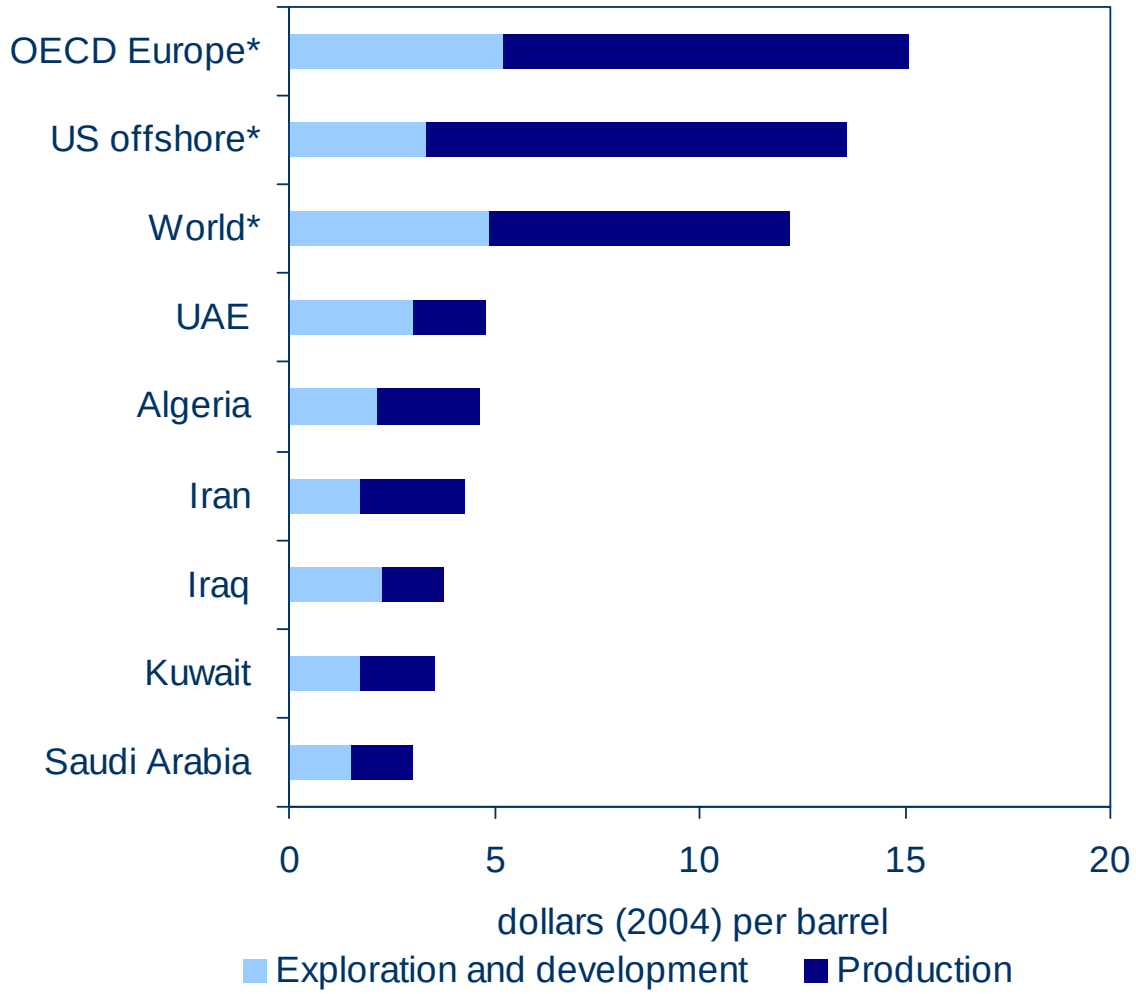
Indicative Crude Oil Production Costs in Selected MENA Countries and non-MENA Regions



Oil reserves in MENA countries are among the cheapest to find, develop and produce in the world

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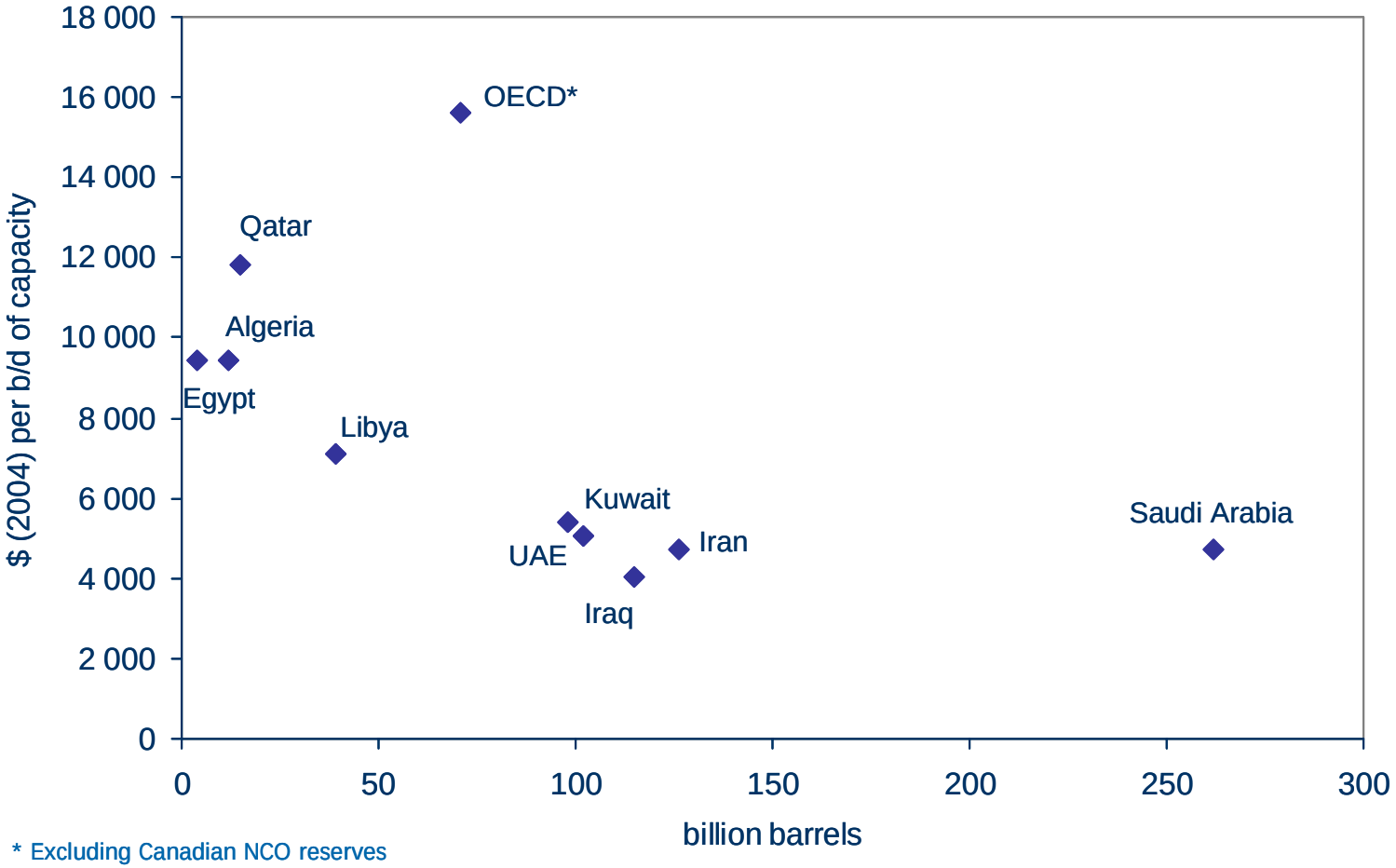
Average Exploration and Development Costs versus Proven Oil Reserves in MENA Countries



* Excluding Canadian NCO reserves

Costs in MENA are generally lowest in the countries with the highest proven reserves

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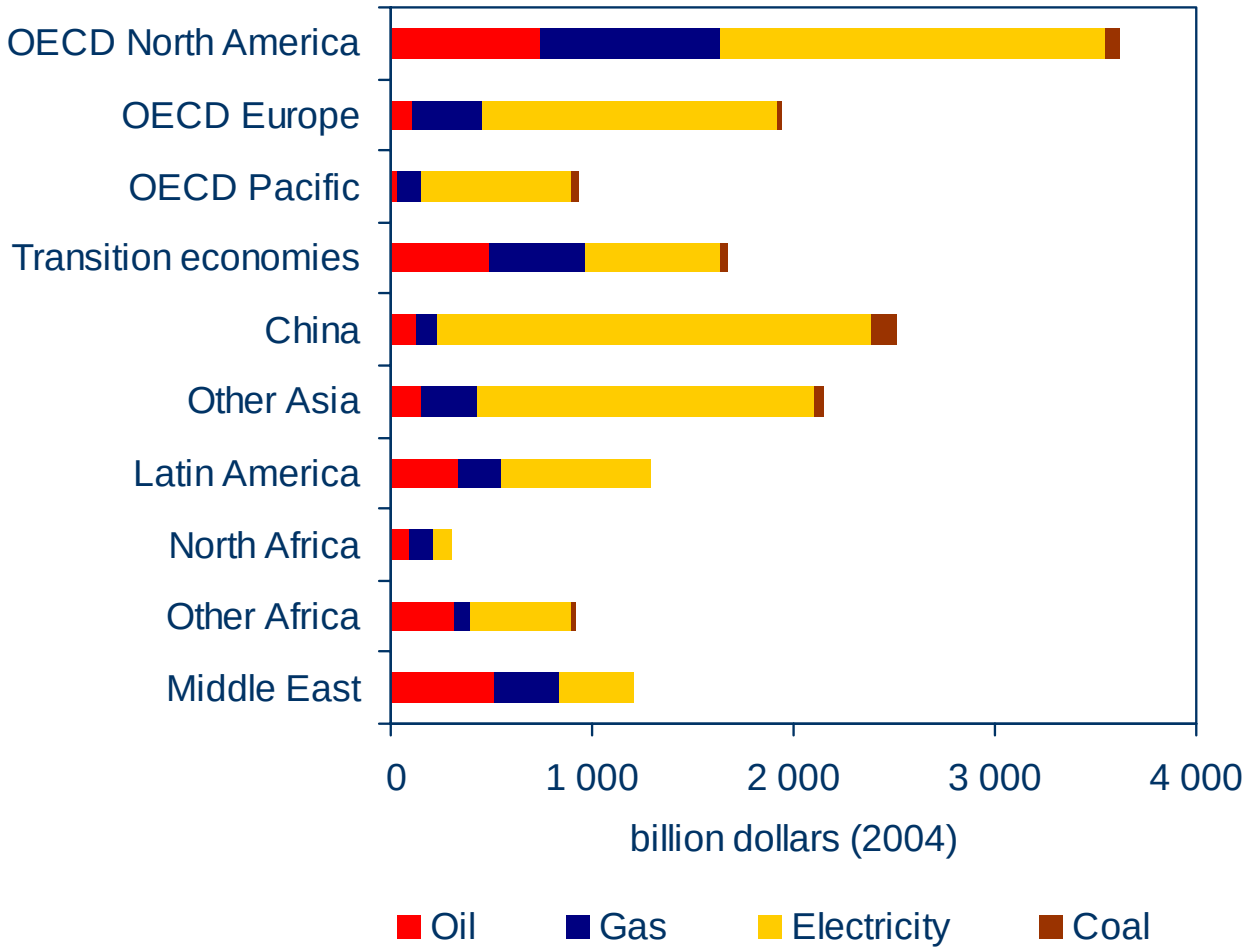
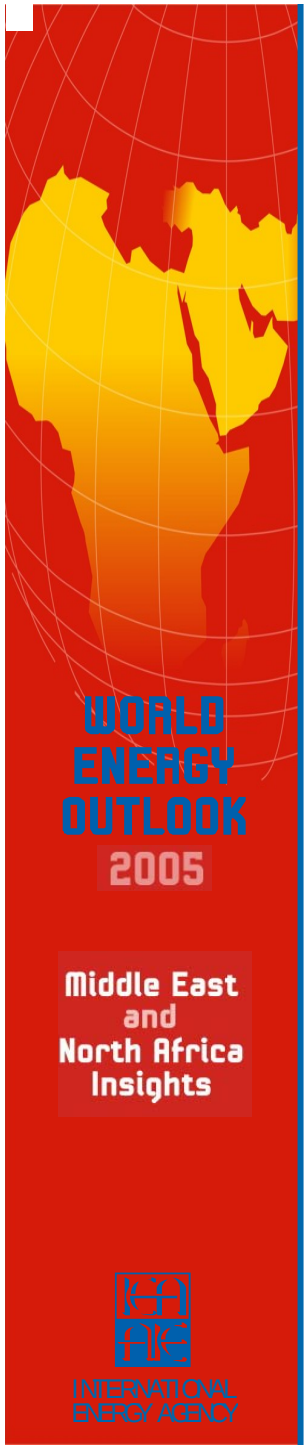
Cumulative Energy Investment in the Reference Scenario, 2004-2030



More than 60 % of total energy supply investments will go into the power sector



MENA Energy Trends

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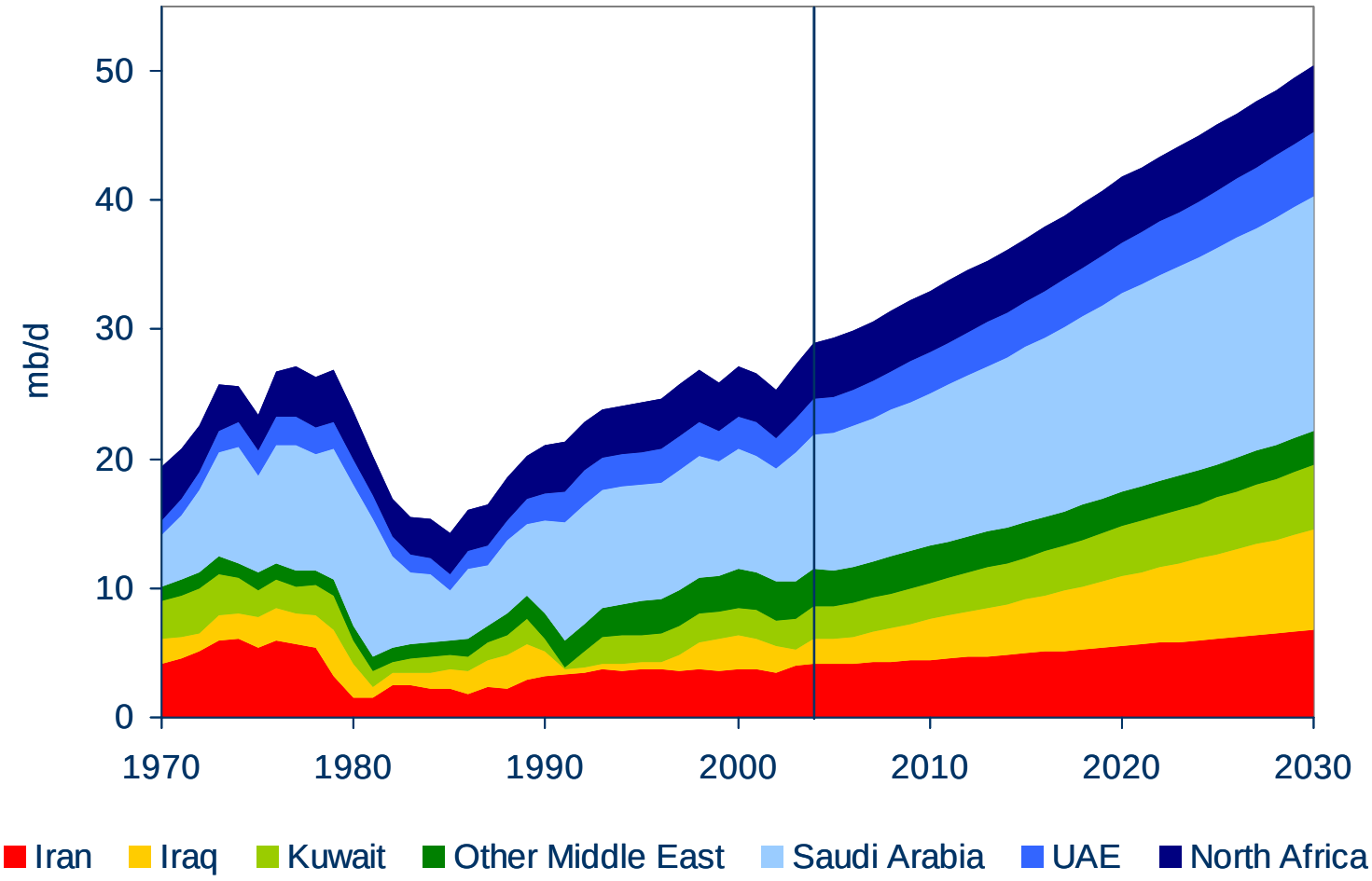
MENA Crude Oil & NGL Production by Country



MENA's share of world oil production rises from 35% in 2004 to 44% in 2030 in the RS, with Saudi production rising to over 18 mb/d

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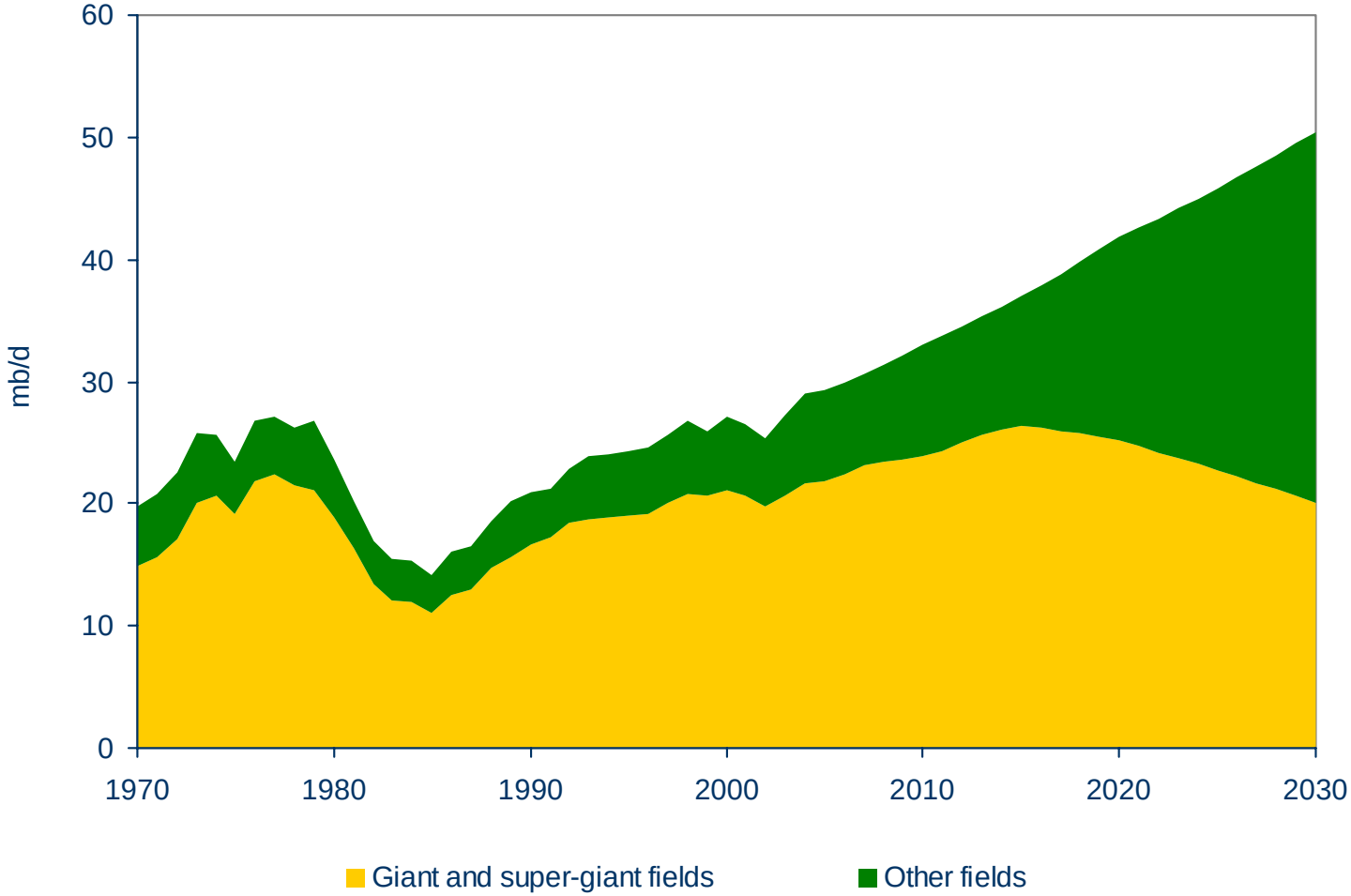
MENA Oil Field Production by Size



Current 75% share of super-giant/giant fields in MENA oil production will decline to 40% through 2030

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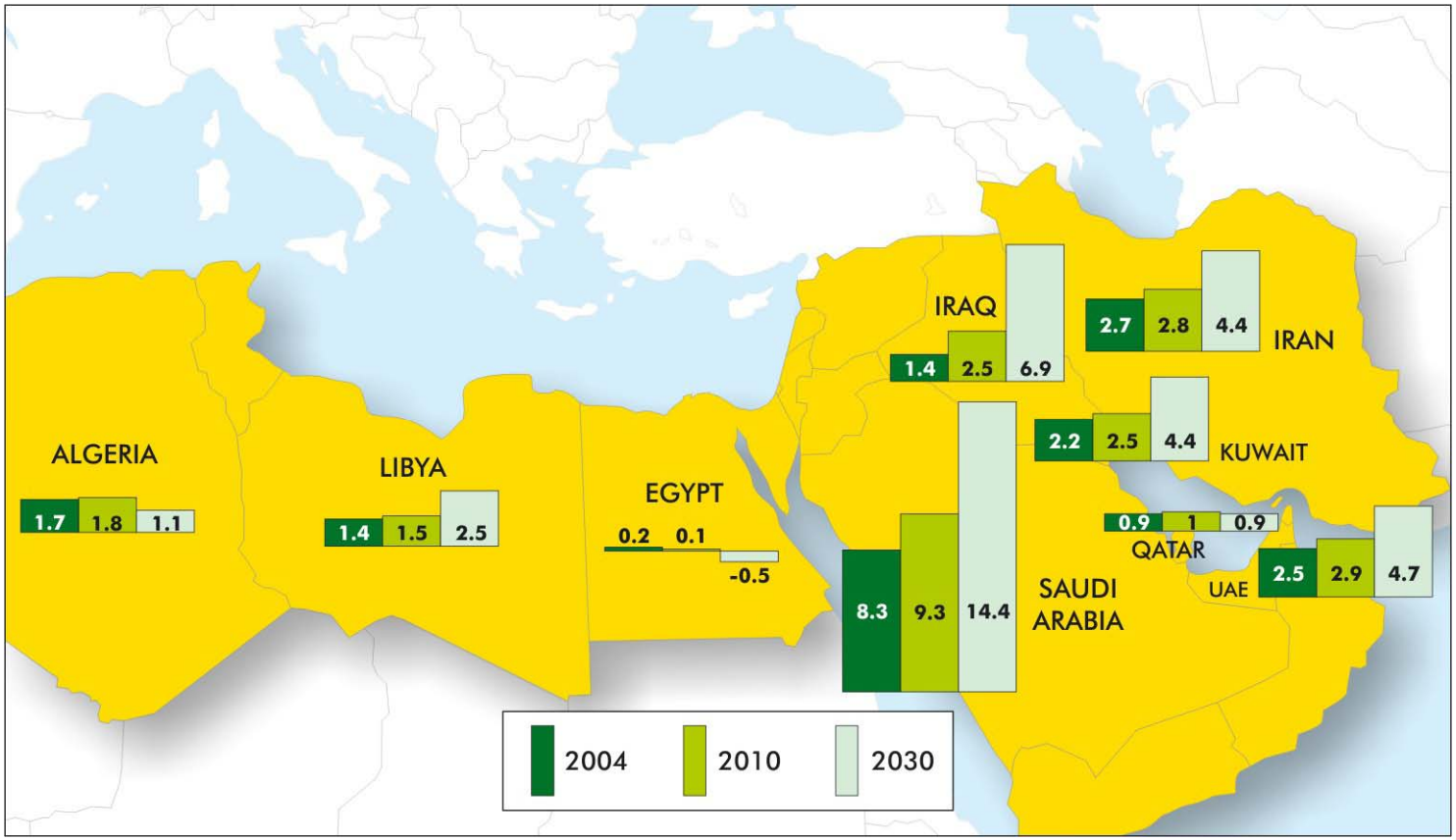
MENA Net Oil Exports



MENA plays an increasingly important role in international trade, its net exports surging from 22 mb/d in 2004 to 39 mb/d in 2030

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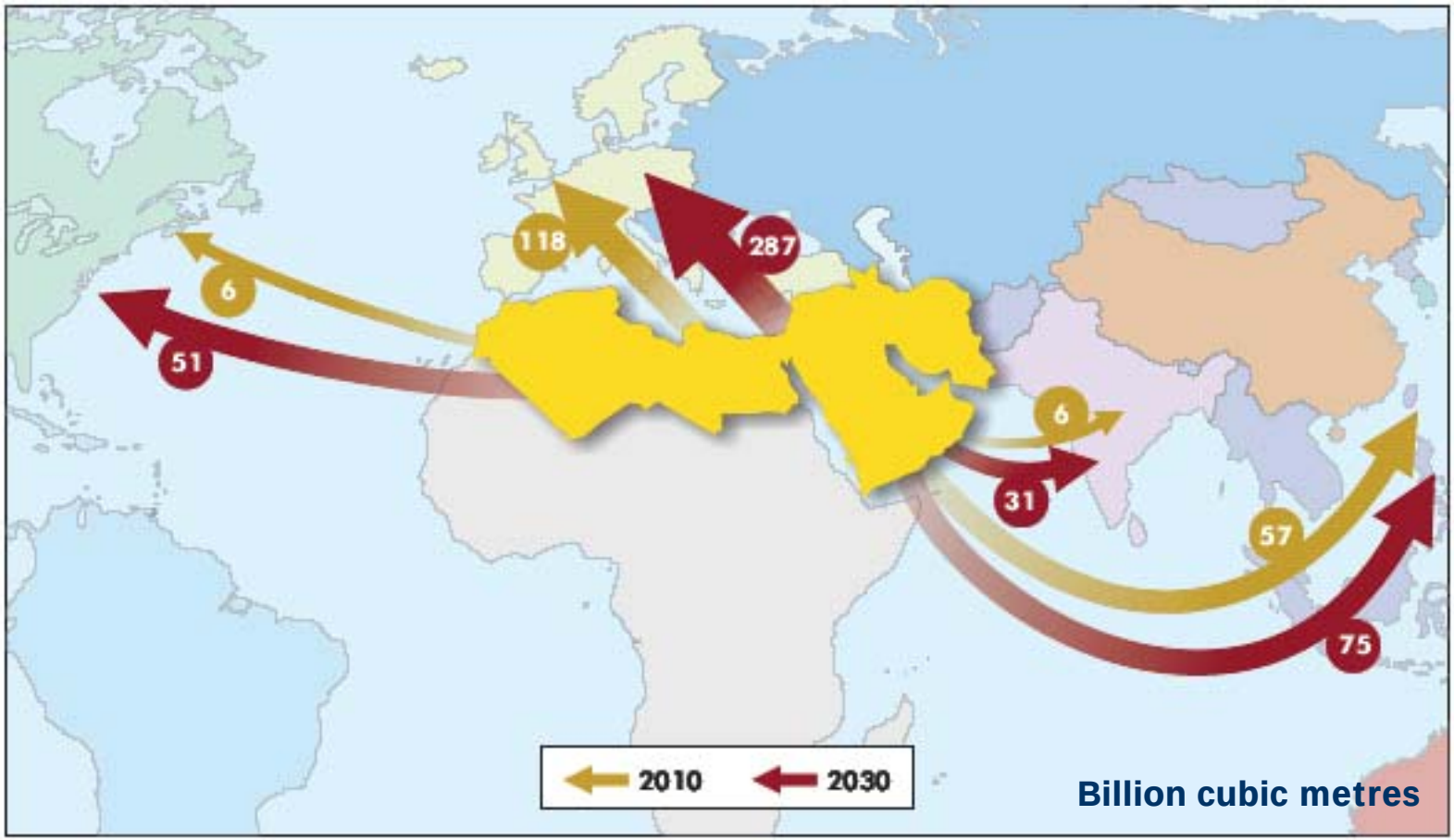
MENA Natural Gas Exports



MENA becomes the world's leading gas exporter, with most of the increase in exports meeting surging European & US LNG demand

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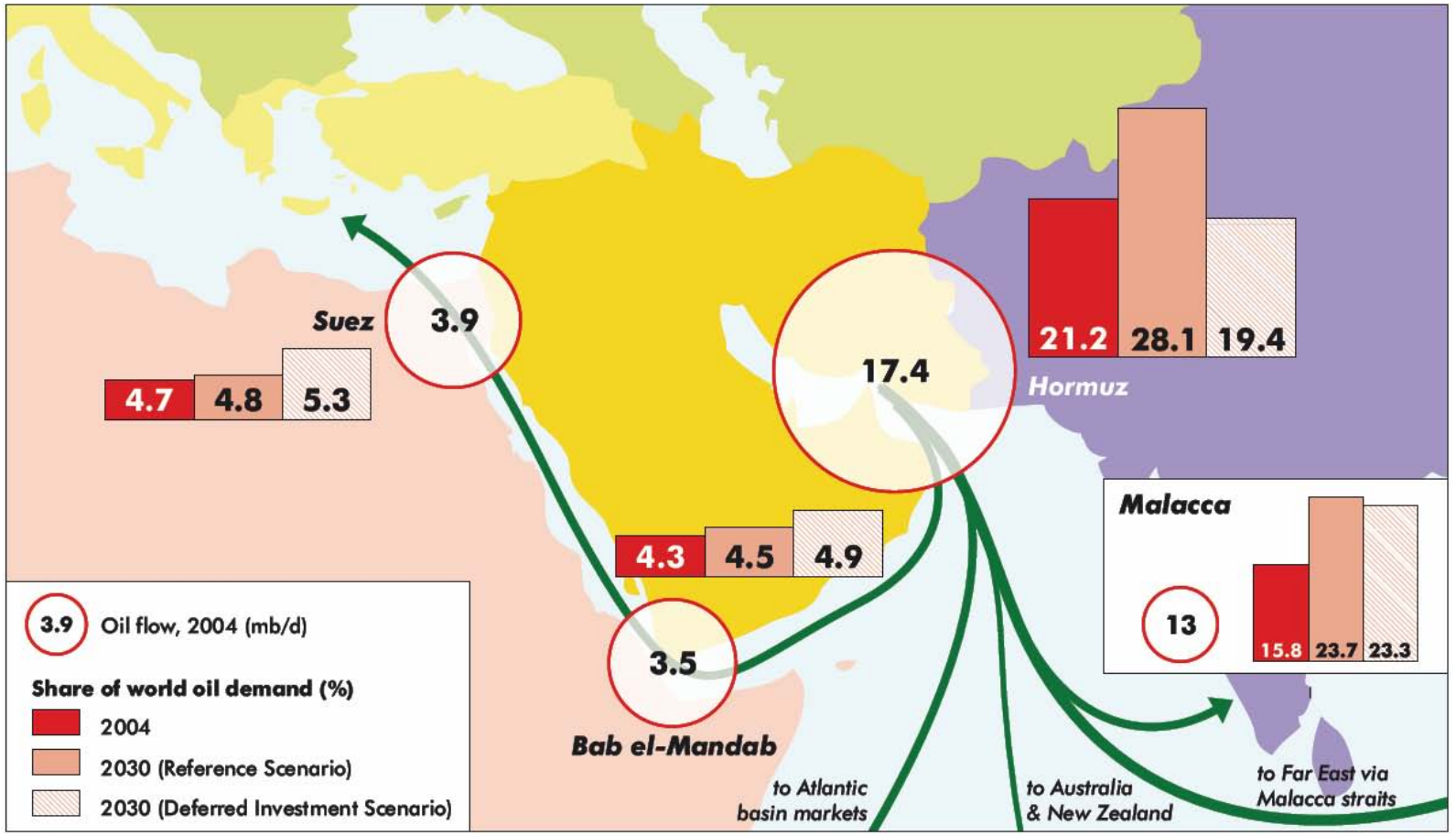
MENA Oil Exports through the "Dire Straits"



Much of the additional oil and LNG exports from MENA in the future will be shipped through just three maritime routes

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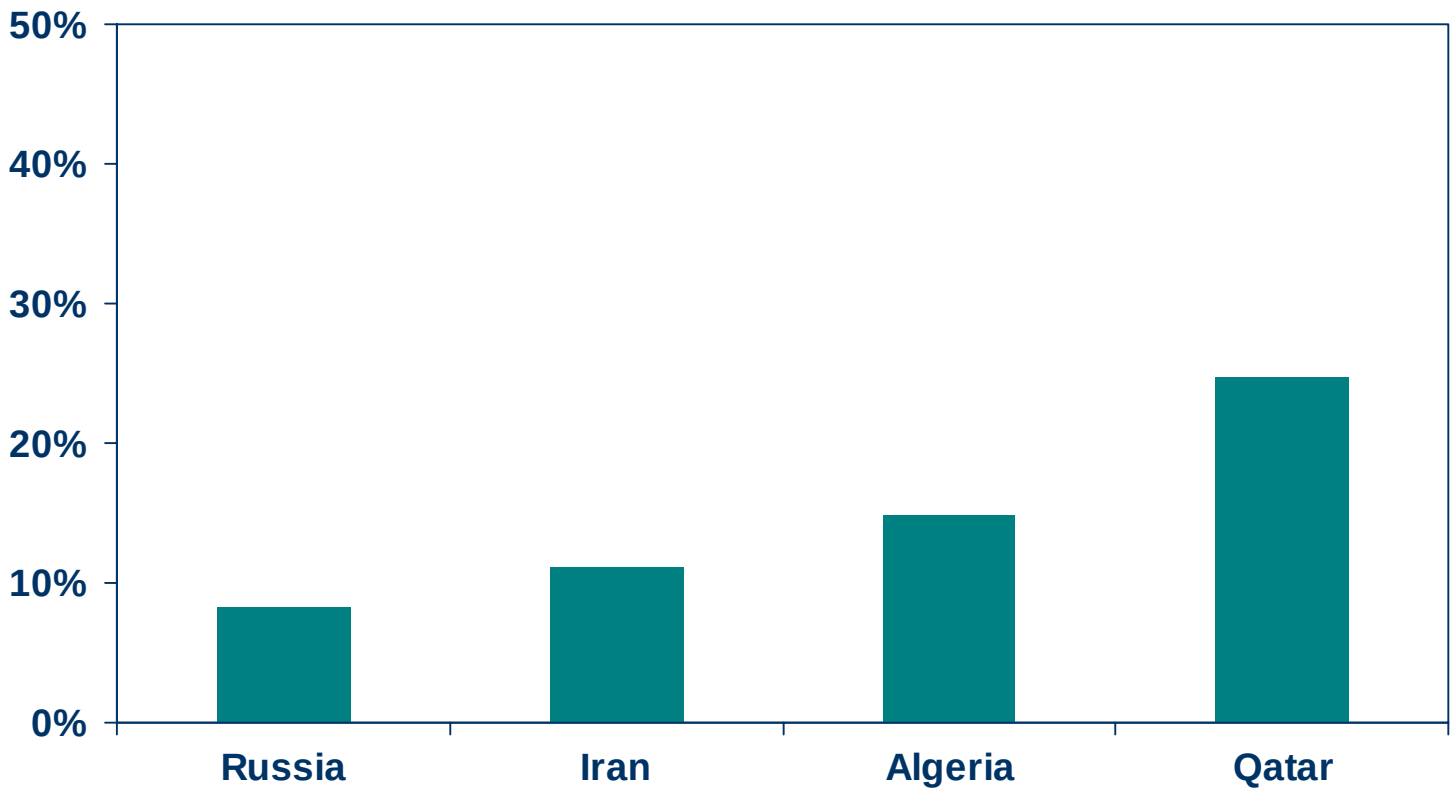
Share of International Gas Export Growth between 2004 and 2030



Qatar will account for almost one quarter of the increase in gas inter-regional trade between 2004 and 2030

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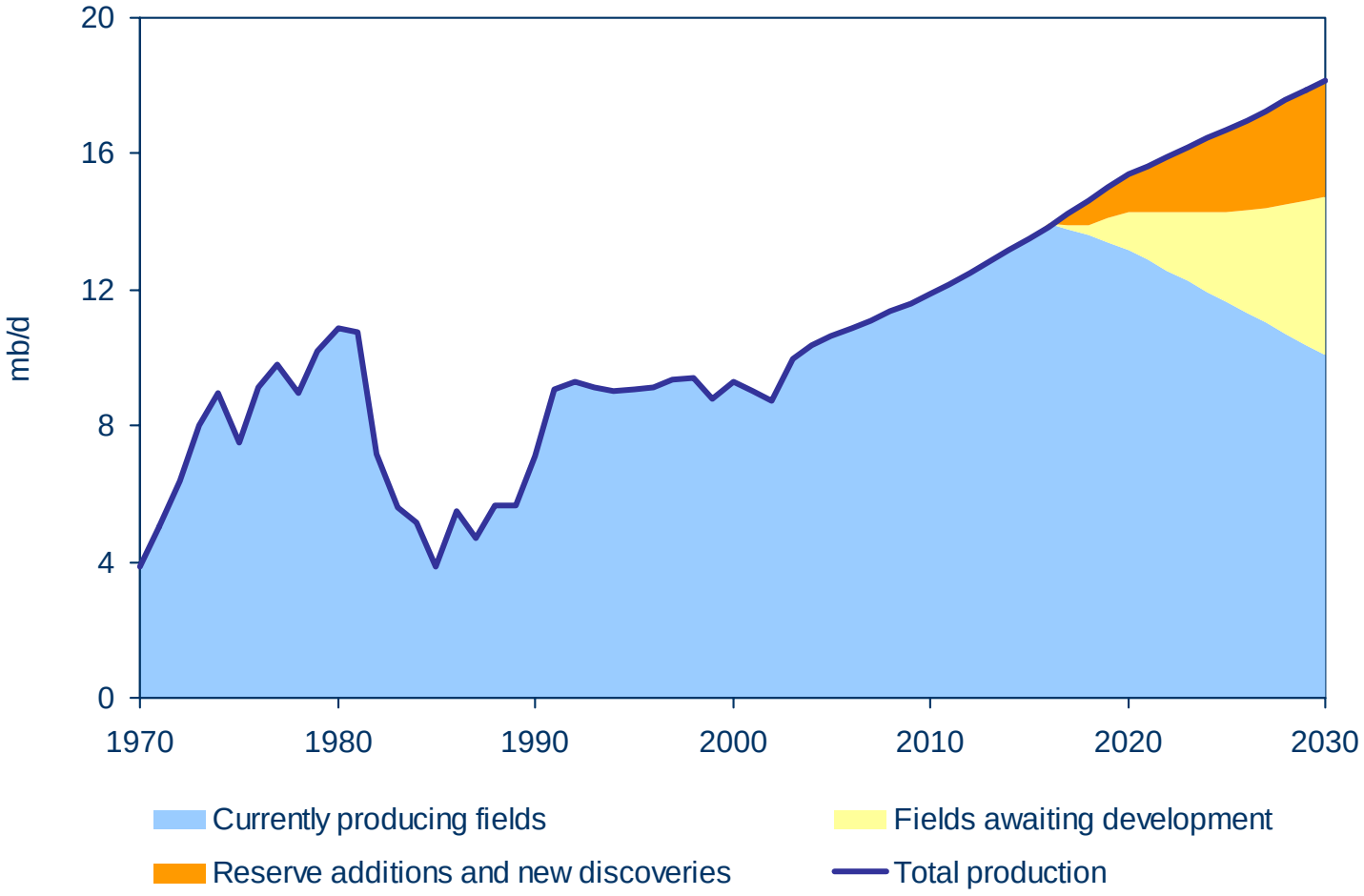
Saudi Arabia's Oil Production by Source in the Reference Scenario



Based on its reserves and global demand trends, Saudi oil production is projected to reach 18 mb/d in 2030

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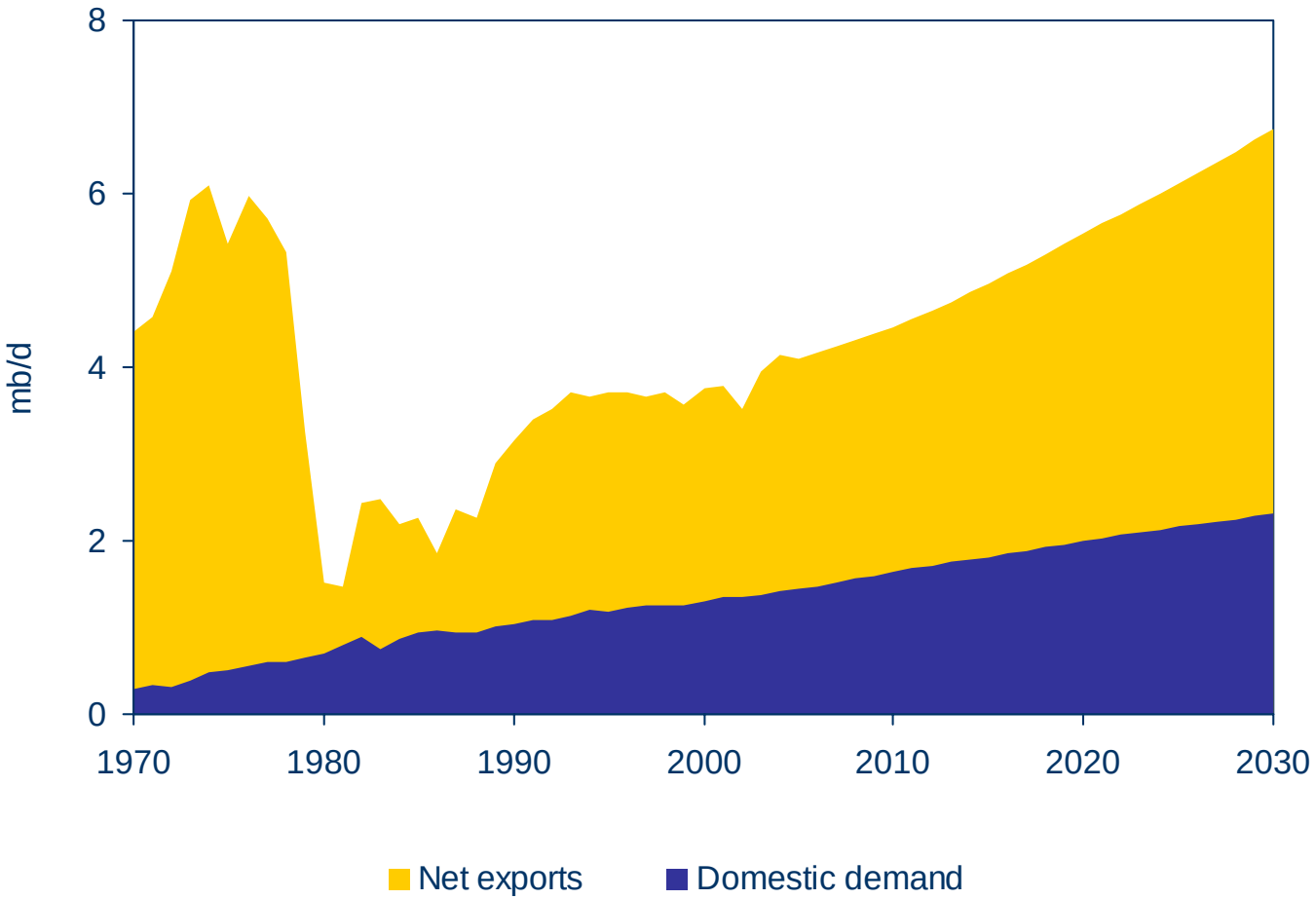
Iran's Oil Balance in the Reference Scenario



Iran oil production reaches 6.8 mb/d in 2030, but exports increase less rapidly due to strong growth in domestic demand

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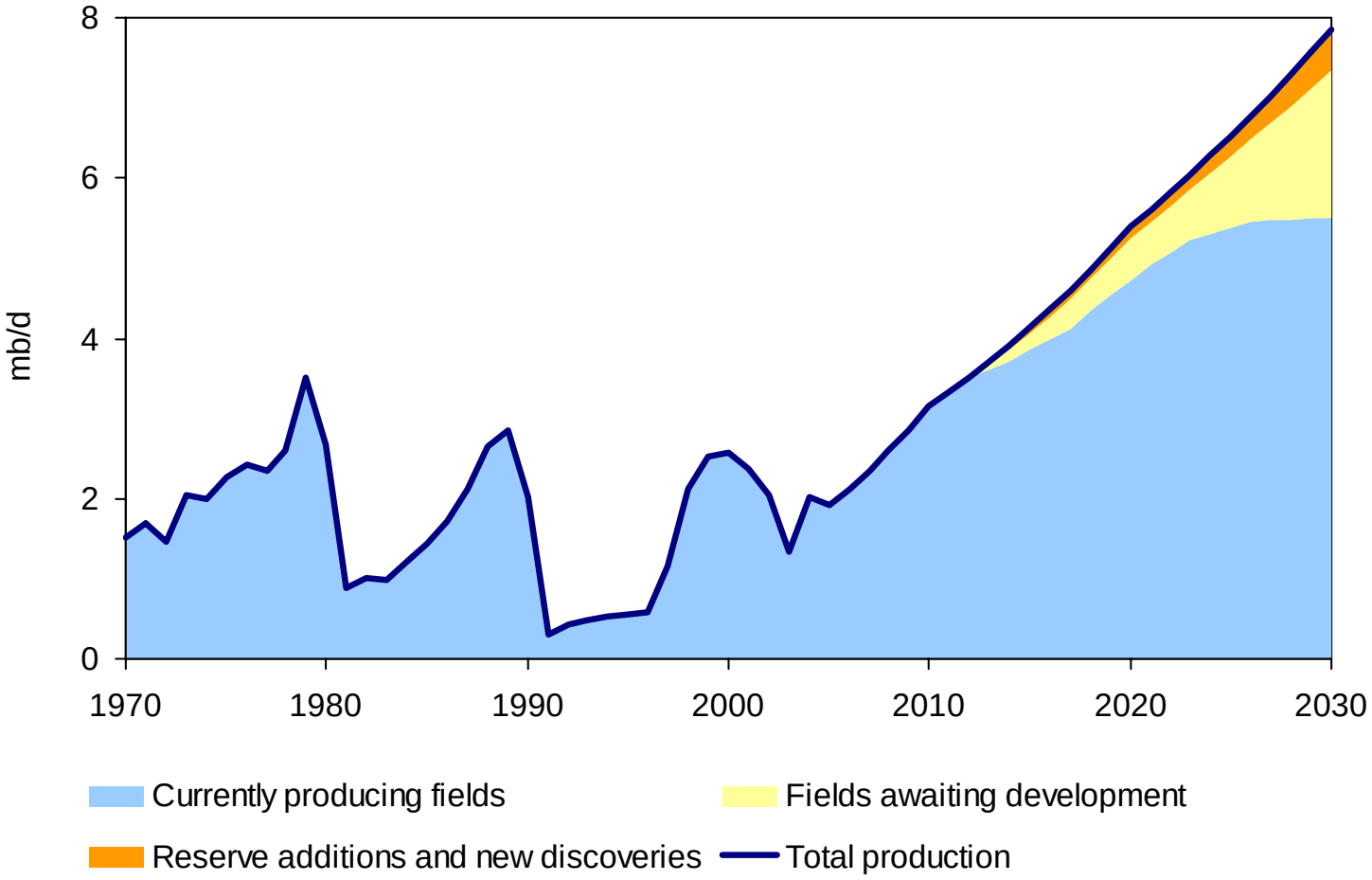
Oil Production Outlook in Iraq in the Reference Scenario



Oil production in Iraq is expected to reach around 3 mb/d in 2010 and 8 mb/d in 2030, provided that stability and security are restored

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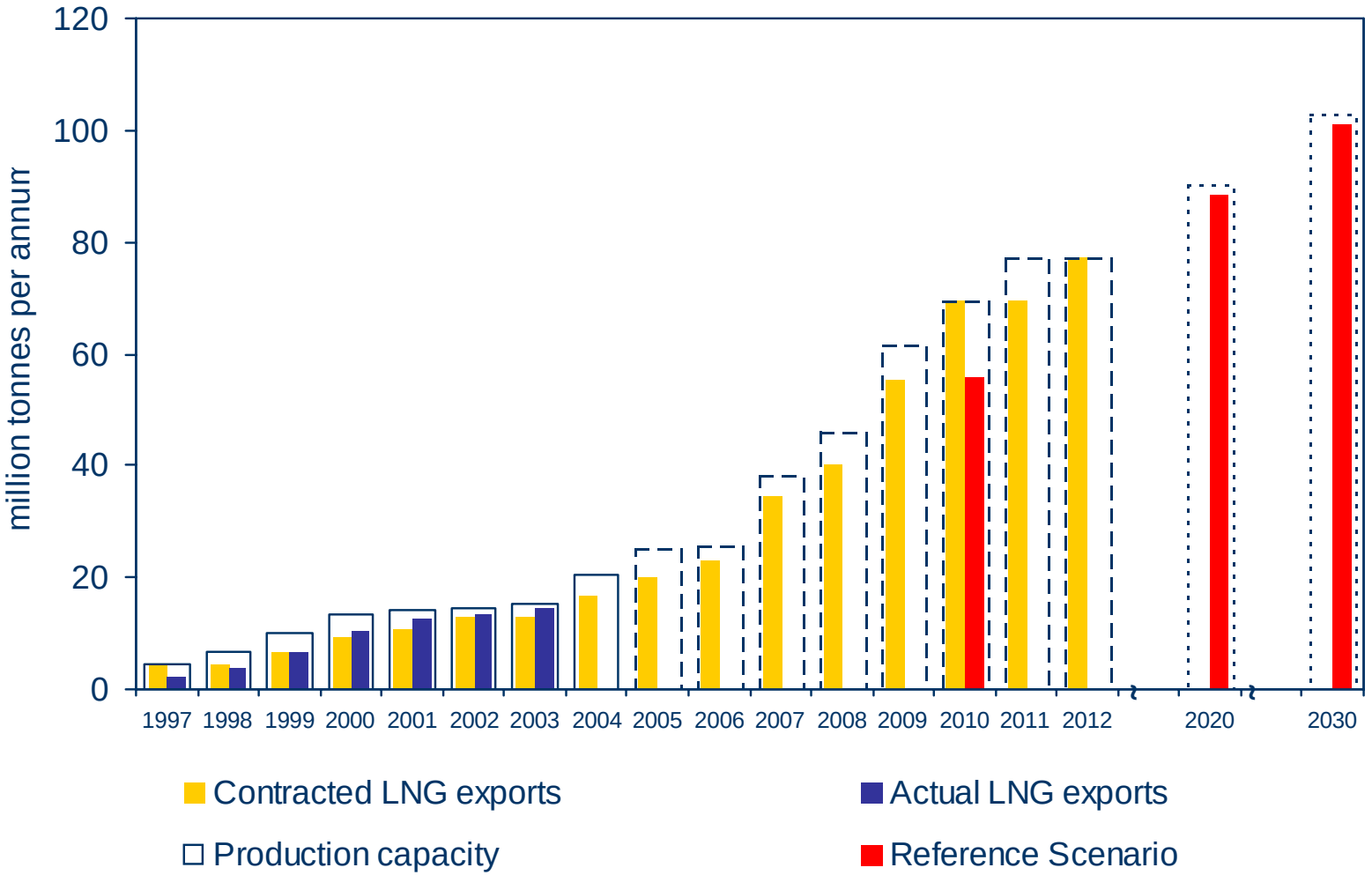
Qatar's LNG Capacity and Projected Exports in the Reference Scenario



In the Reference Scenario, Qatar's LNG exports are projected to be somewhat lower than contracted exports in 2010

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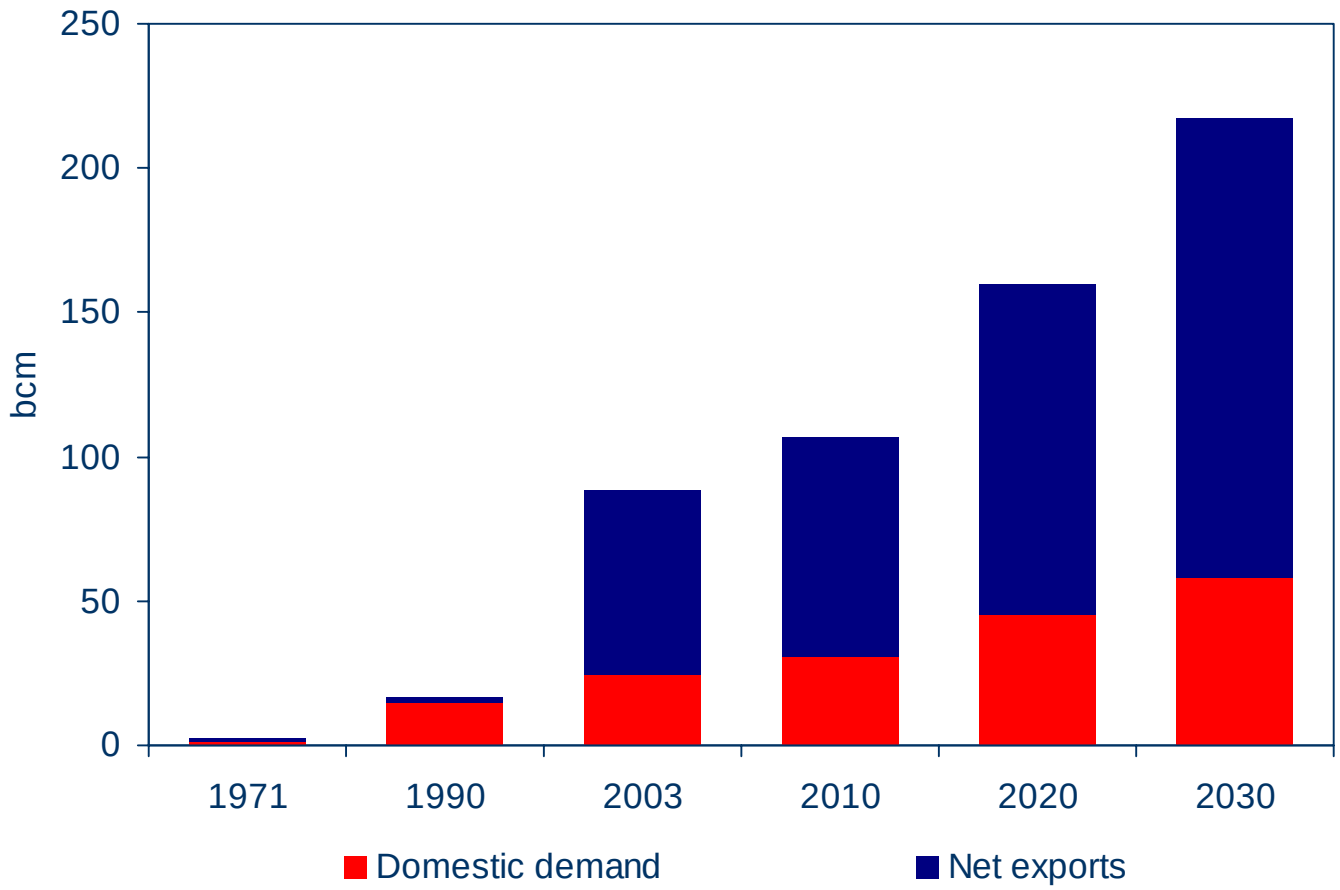
Algeria's Natural Gas Balance in the Reference Scenario



Gas exports, mainly to Europe, are set to reach 144 bcm in 2030, more than double the current level – both via LNG and via pipelines

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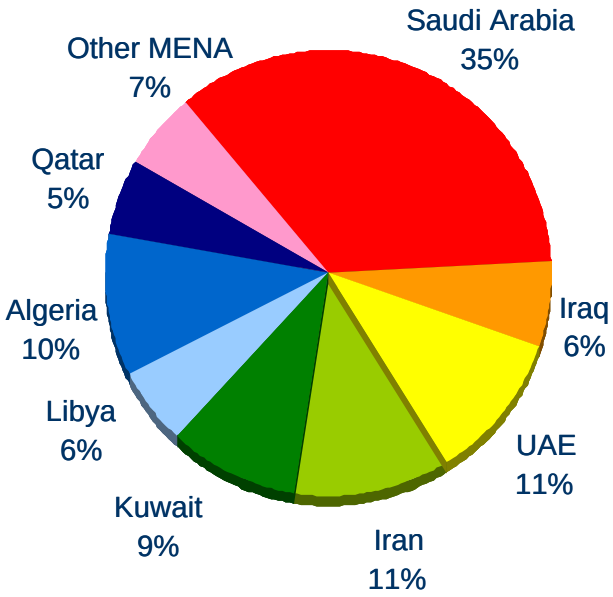
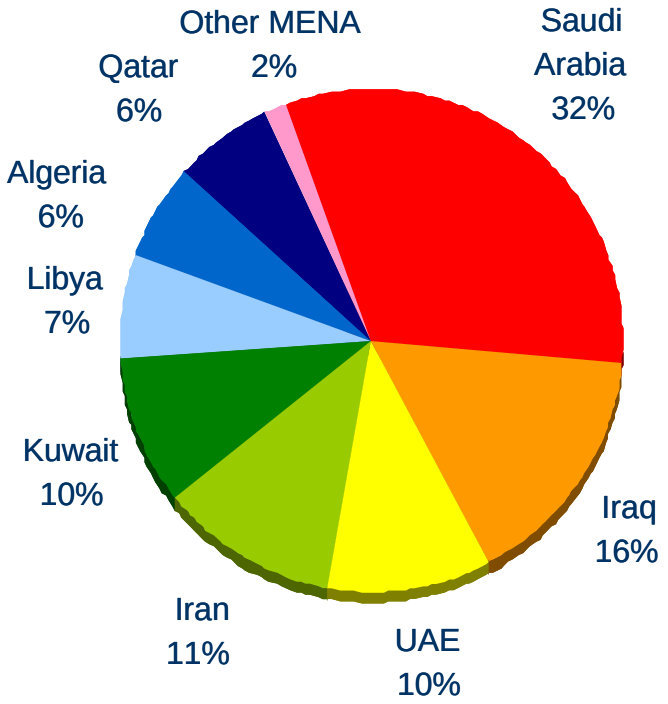
MENA Oil & Gas Export Revenues

2004



$313 billion (2004)

2030



$635 billion (2004)

MENA hydrocarbon revenues double by 2030 - the share from gas almost triples to 13 %

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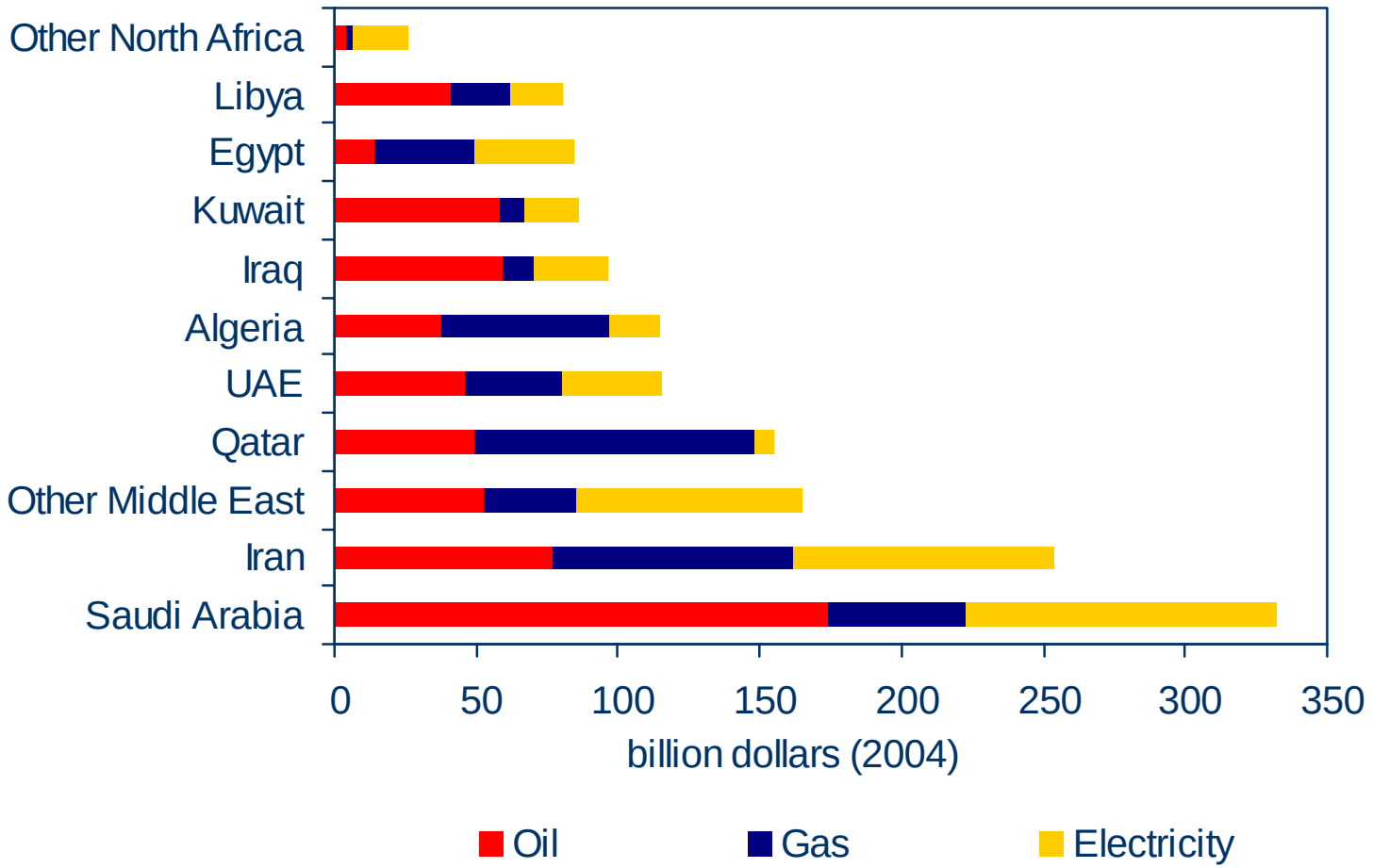
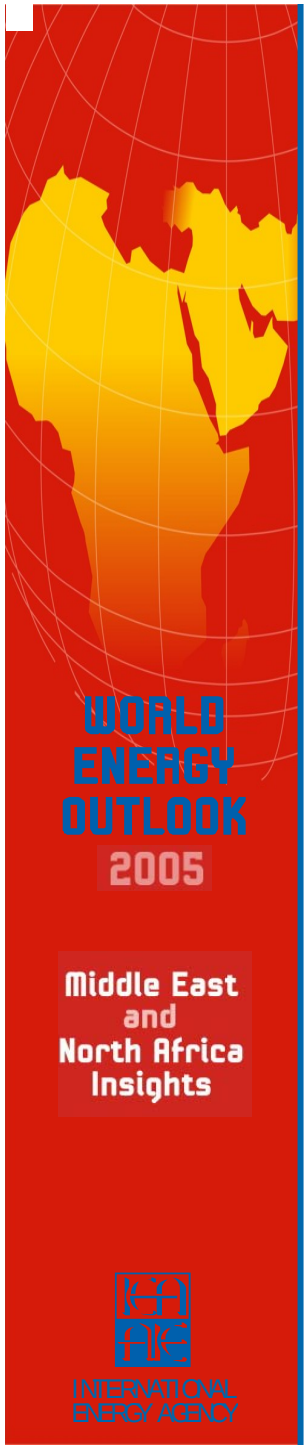
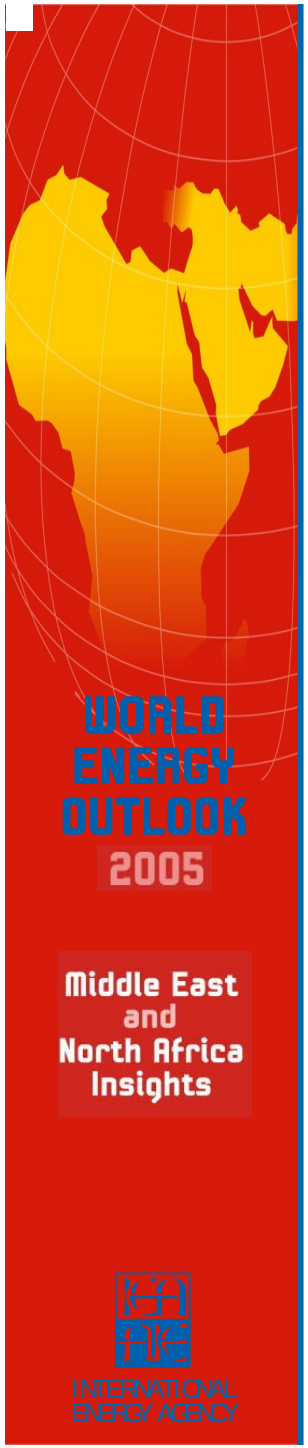
Total MENA Energy Investment, 2004-2030



About $1.5 trillion, or $56 billion per year, of investment are needed to expand capacity & replace facilities that are retired



Implications of Deferred Investment



Deferred Investment Scenario

- How would global energy markets evolve if investment MENA upstream oil industry grew slower than in the Reference Scenario?
- Investment is assumed to remain constant at its share of historical GDP in each country
- MENA oil production is lower compared to the Reference Scenario, and the gap is widening over time
- Oil prices are driven higher - an increase of 32% over the Reference Scenario in 2030 - dragging up gas, coal and electricity prices
- MENA gas production is also lower compared to the Reference Scenario due to
  - Reduced global gas demand & call on MENA gas
  - Lower associated oil/gas output

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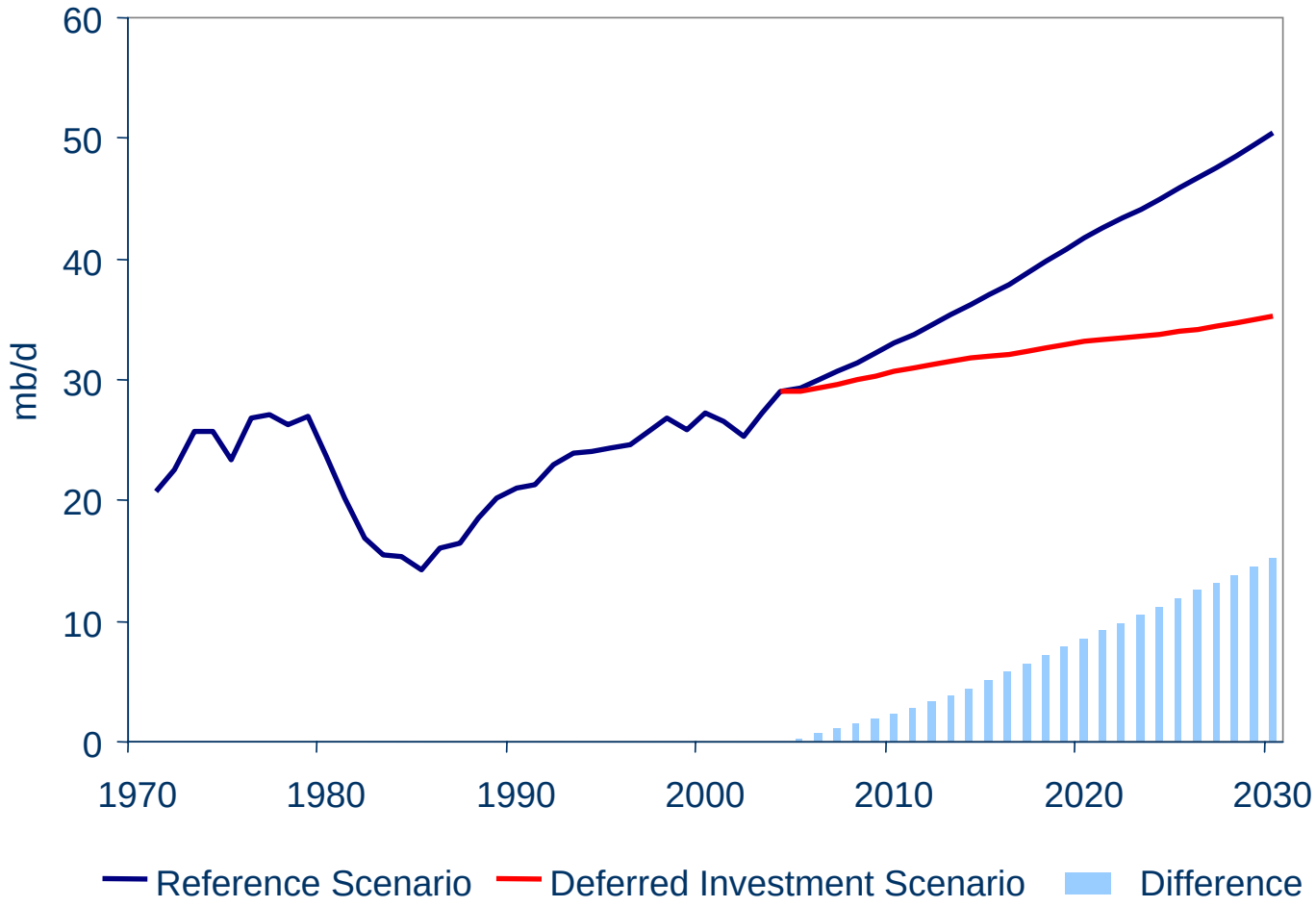
MENA Crude Oil Production (including NGLs)



MENA's share of global oil production falls from 35% in 2004 to 33% in the DIS. Saudi production reaches 14 mb/d in 2030

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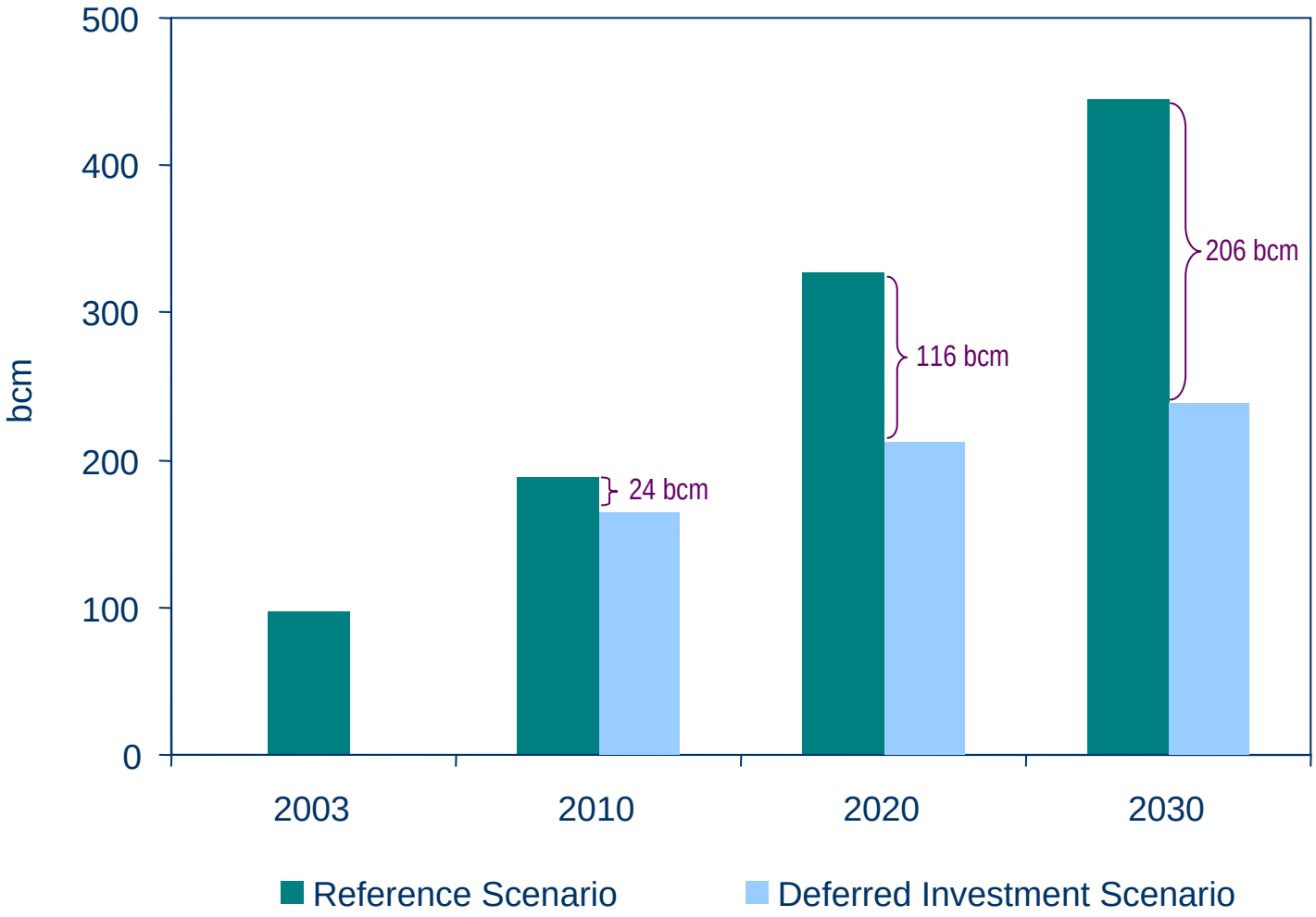
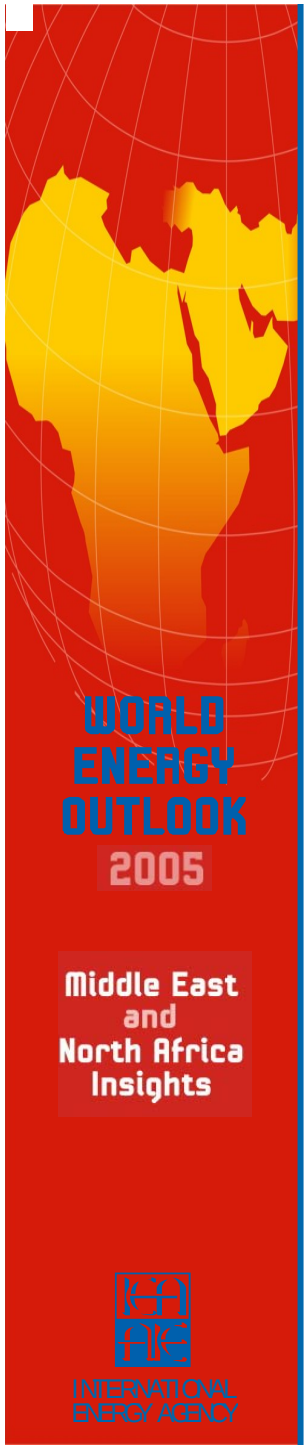
MENA Net Natural Gas Exports



MENA gas exports are much lower in the DIS, as higher gas prices & lower GDP choke off demand in the main importing regions



World Alternative Policy Scenario

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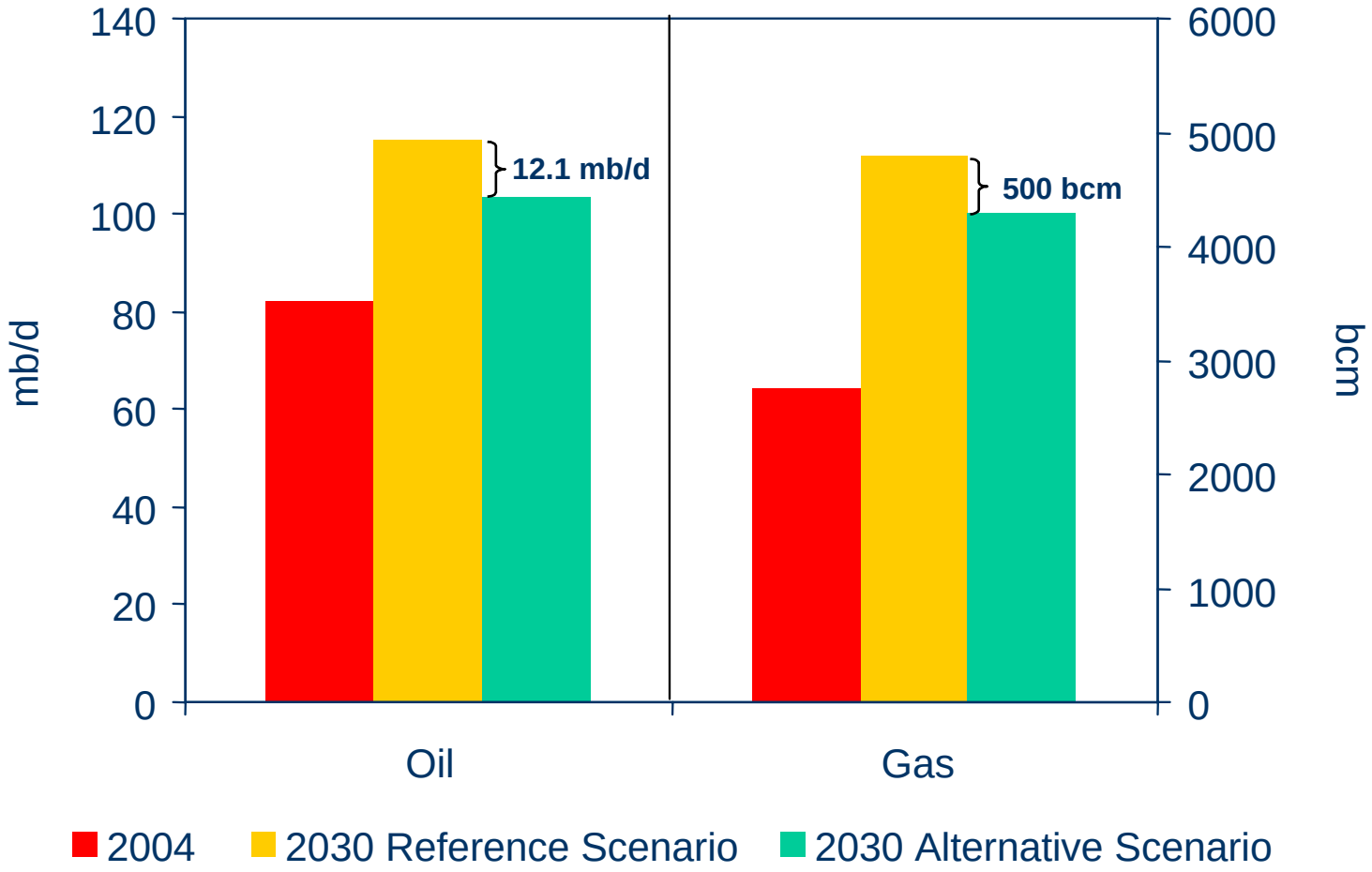
Oil/Gas Demand in the Reference and Alternative Policy Scenarios



Oil & gas demand in the Alternative Scenario are both 10 % lower in 2030 due to significant energy savings and a shift in the energy mix

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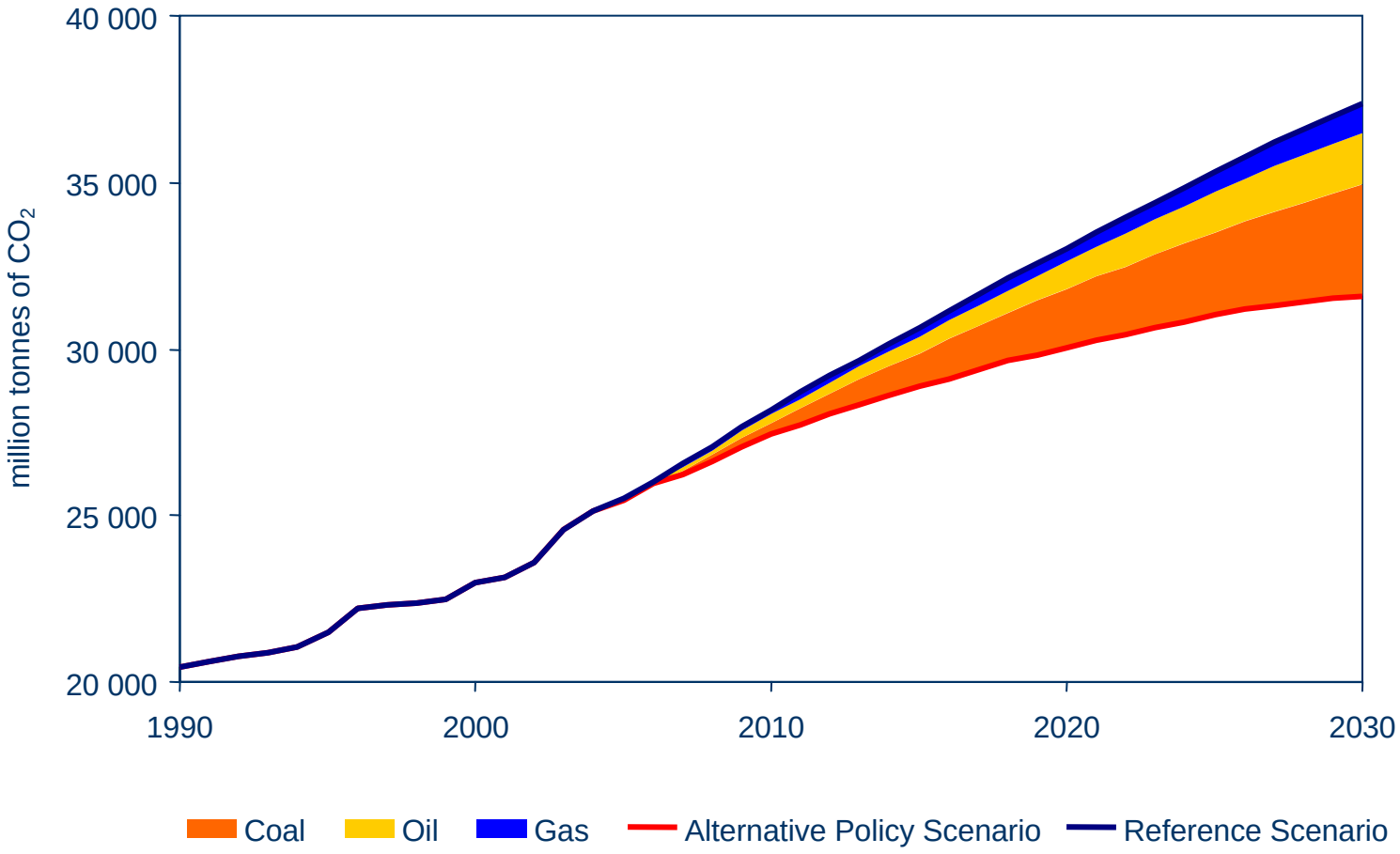
Global Energy-Related CO_2 Emissions in the Reference and Alternative Policy Scenarios



In 2030, CO_2 emissions are 16 % lower than in the Reference Scenario, but are still more than 50 % higher than 1990

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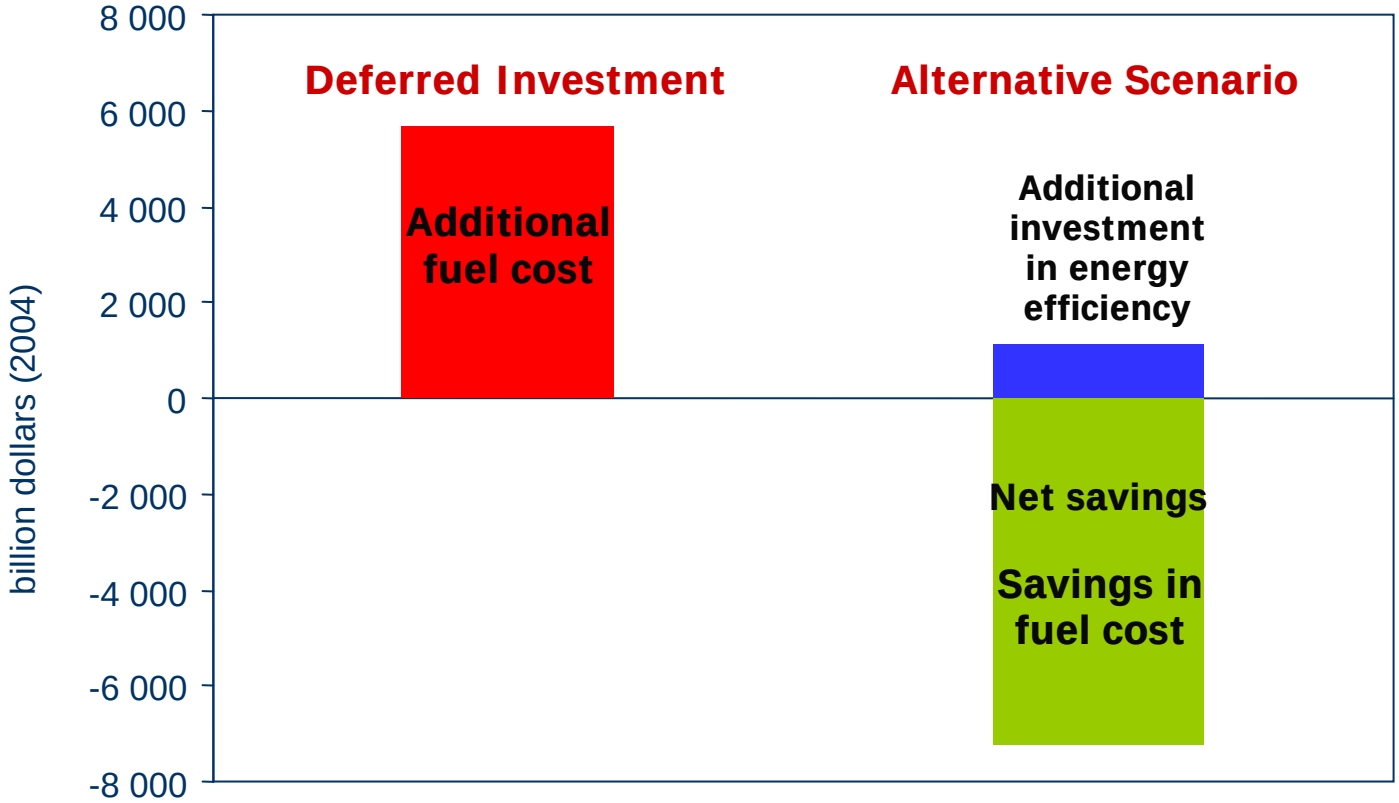
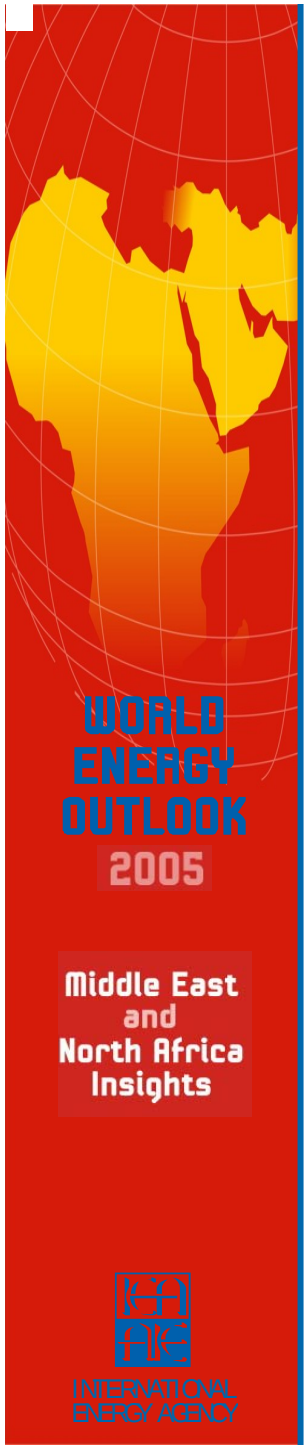
Difference in Cost of Oil Consumption in the Alternative and Deferred Investment vs. Reference Scenario, 2005-2030



In the Alternative Scenario, the cost of additional investments in energy efficiency are more than offset by savings in fuel cost. CO_2 emissions are also significantly lower



Key Messages

- If governments stick with current policies, global energy needs will be more than 50% higher in 2030 than today
- In any plausible scenario, MENA oil & gas resources will be critical to meeting the world's growing appetite for energy
  - Countries like Saudi Arabia, Iran, Iraq, Qatar and Algeria will play key roles
- Further underinvestment in oil and gas would drive up prices & depress global GDP growth, eventually harming producers too
- Major importing countries are already considering more vigorous policies to curb demand growth & reduce reliance on oil and gas
- Continued need for dialogue between producers and consumers to find mutually beneficial outcomes