



Shifting Energy Markets and Their Consequences

DIFC Economics Oil and Gas Workshop

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Financial
Centre

Agenda

Changes in Demand & Trade Patterns

Energy use in GCC and the world

New Energy Infrastructure & Transport Security

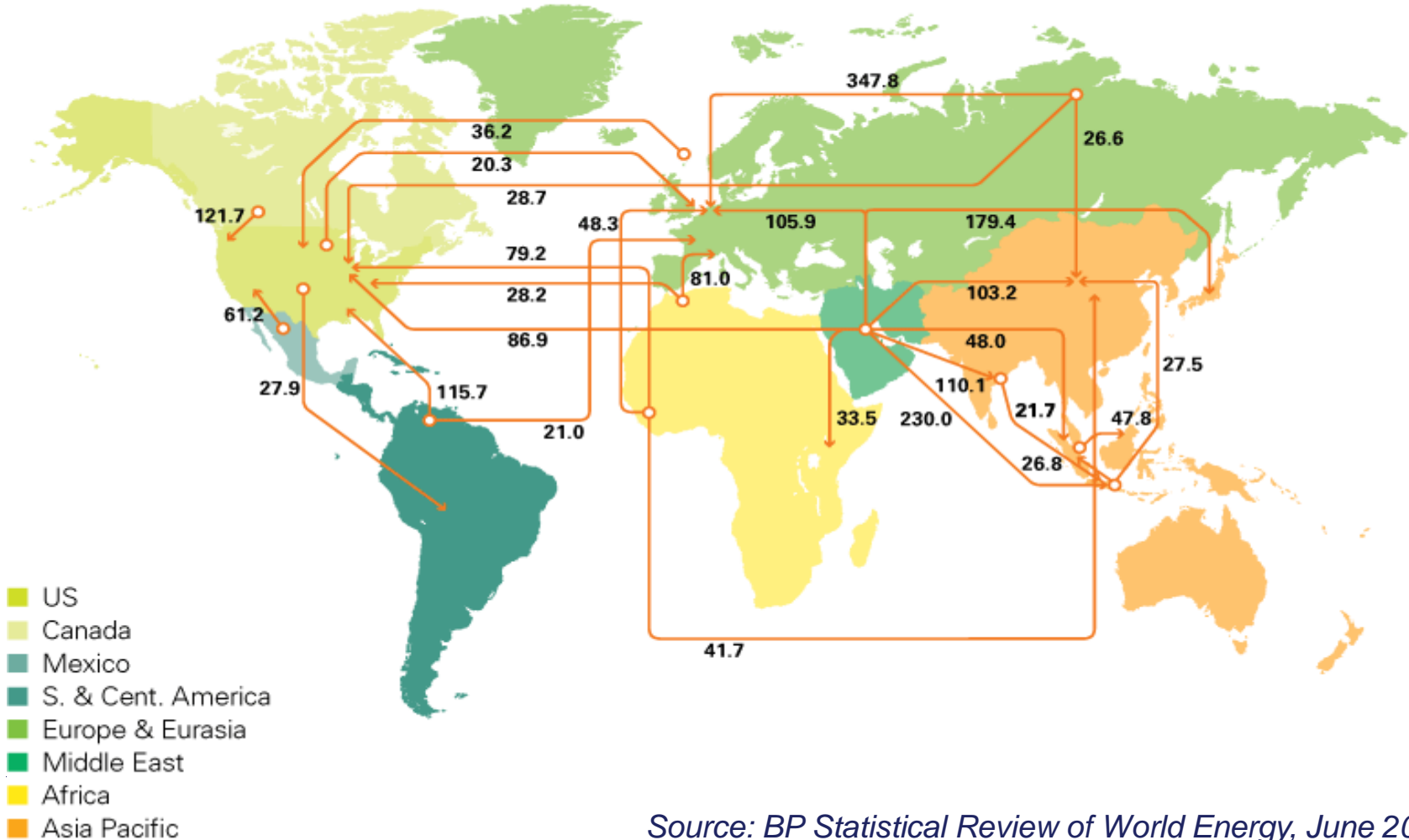
Uncertainty & Recent Developments

Some conclusions

Global Oil Trade Flows increasingly dominated by EMEs

Major trade movements 2009

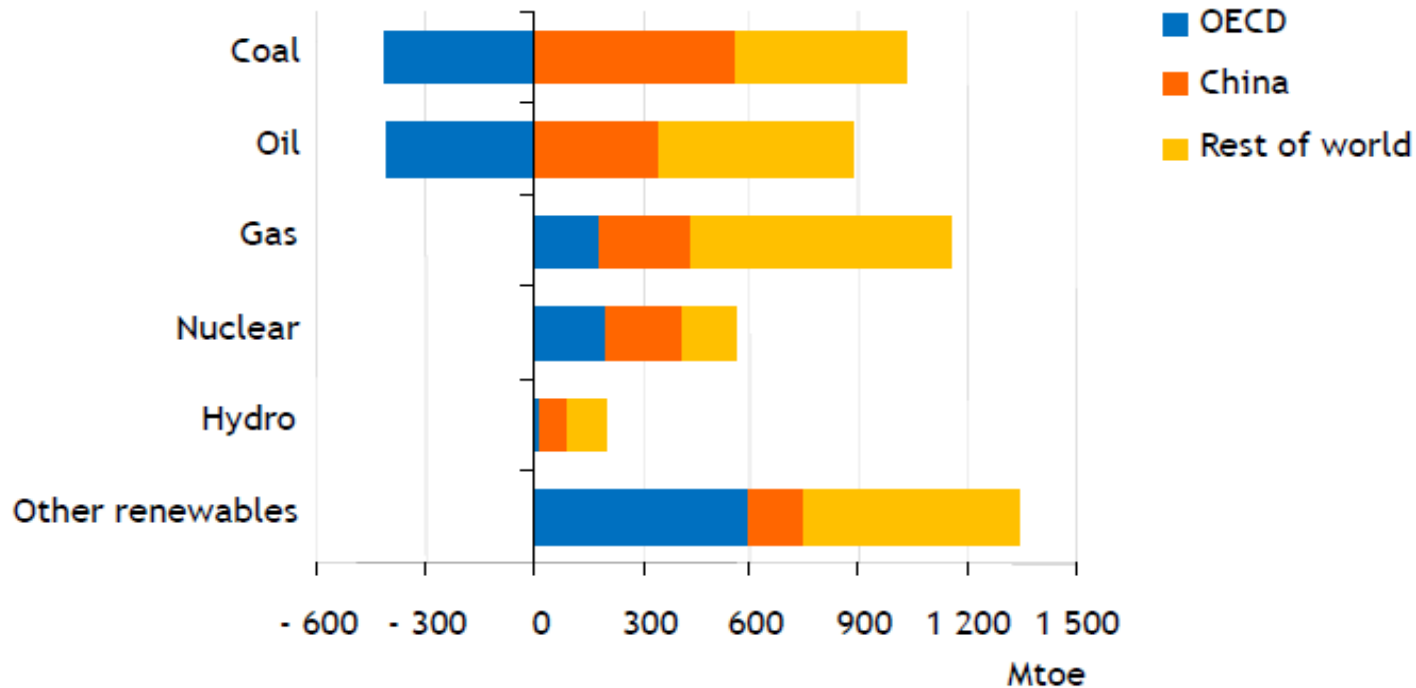
Trade flows worldwide (million tonnes)



Source: BP Statistical Review of World Energy, June 2010

EMEs will dominate Demand for Energy (IEA)

Incremental primary energy demand in the New Policies Scenario, 2008-2035

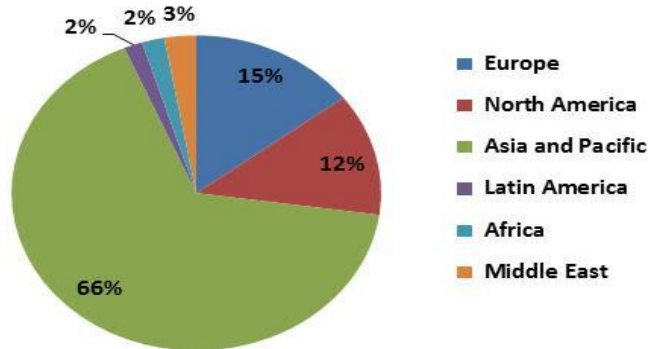


Demand for all types of energy increases in non-OECD countries, while demand for coal & oil declines in the OECD

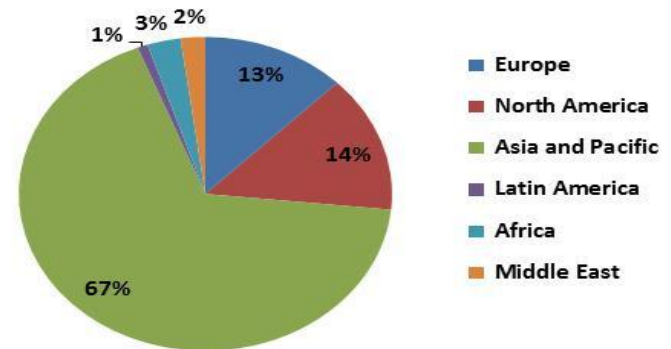
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Shift in oil trade patterns in the GCC region

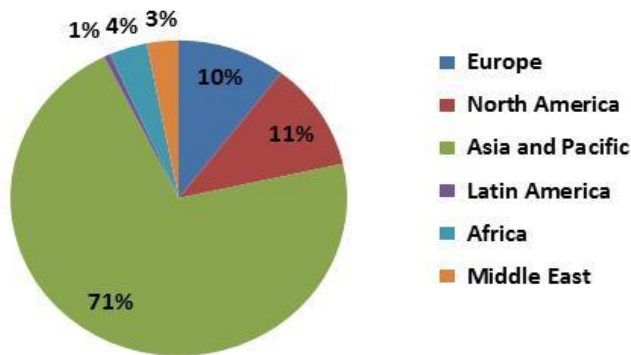
GCC refined products exports by destination (1,000 b/d), 1995



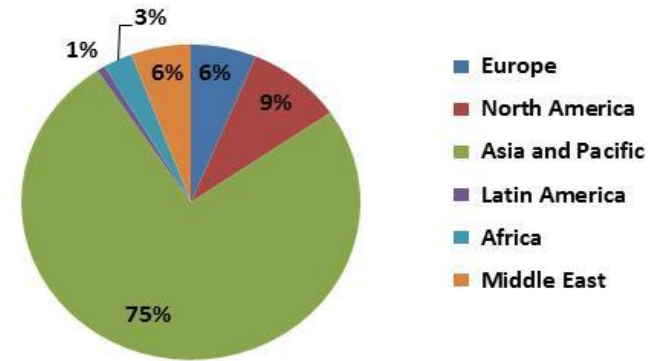
GCC exports of oil commodities by region (1,000 b/d), 2000



GCC exports of oil commodities by region (1,000 b/d), 2005

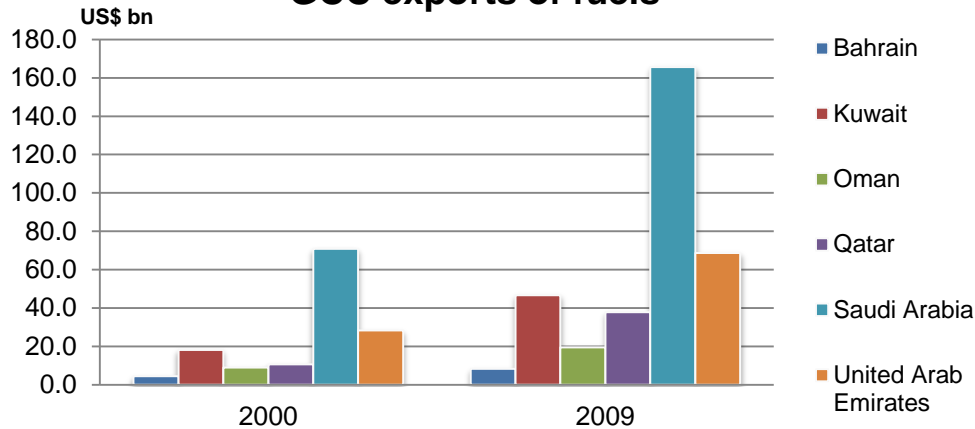


GCC exports of oil commodities by region (1,000 b/d), 2009



Geographical Distribution of Hydrocarbons Trade

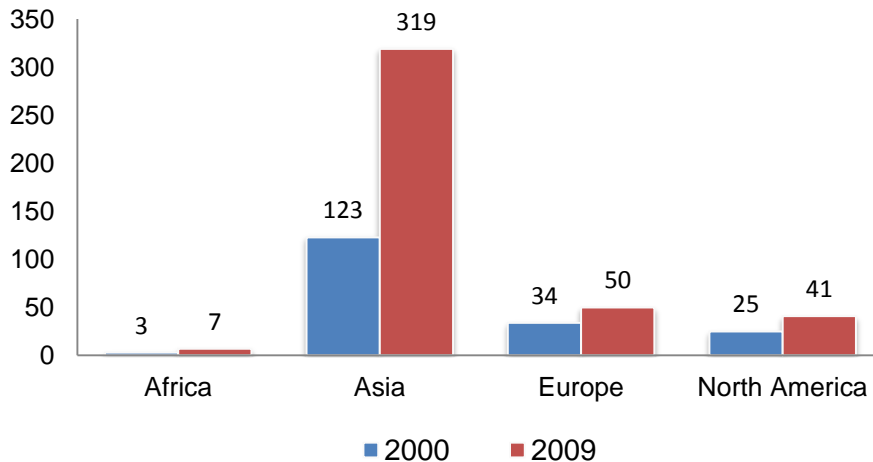
GCC exports of fuels



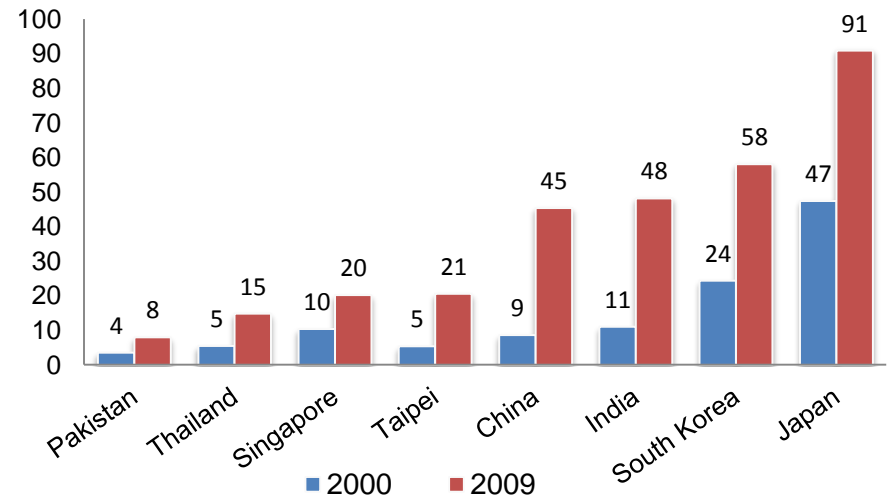
- Saudi Arabia has reinforced its position as the region's (and world's) biggest exporter - exporting 79% of its production.

- US remains the world's largest net importer of oil (564 mn tonnes), but **China has imported more fuels from the Middle East than the whole of North America in 2009 becoming main importer from KSA in 2010**

Imports of fuels from the Middle East (US\$ bn)



Imports of fuels from Middle East to Asia (US\$ bn)

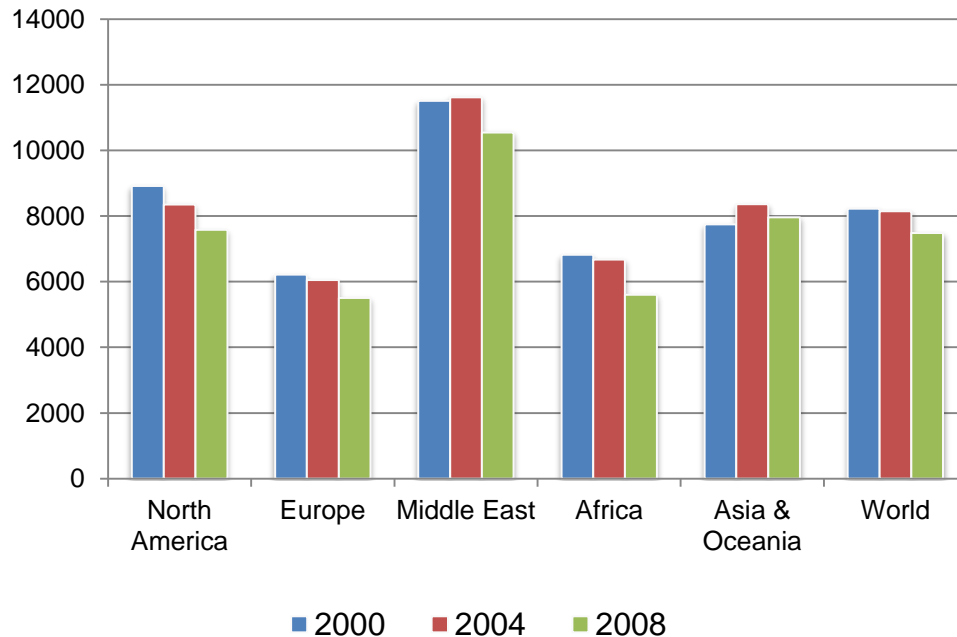


Changing World Energy Intensity

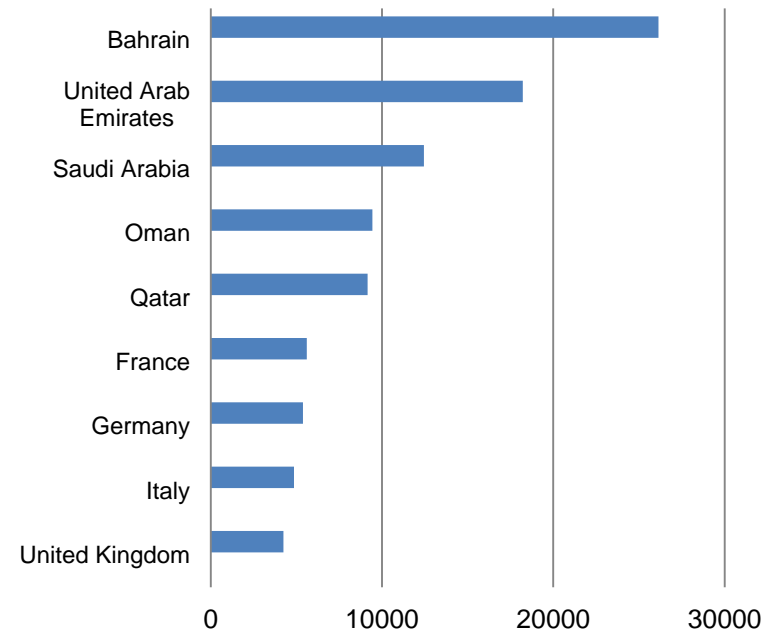
On a global level, energy intensity has been declining due to (a) technological innovation & (b) shift to less energy-intensive activities e.g. services

Europe displays almost half of the Middle East's energy intensity

Energy intensity in the World



Energy Intensity - Total Primary Energy Consumption per Dollar of GDP

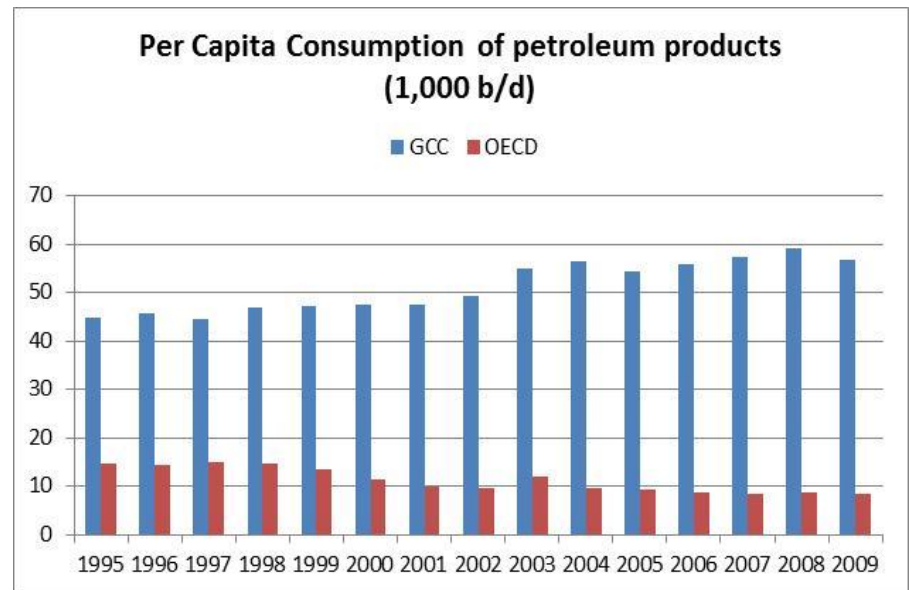
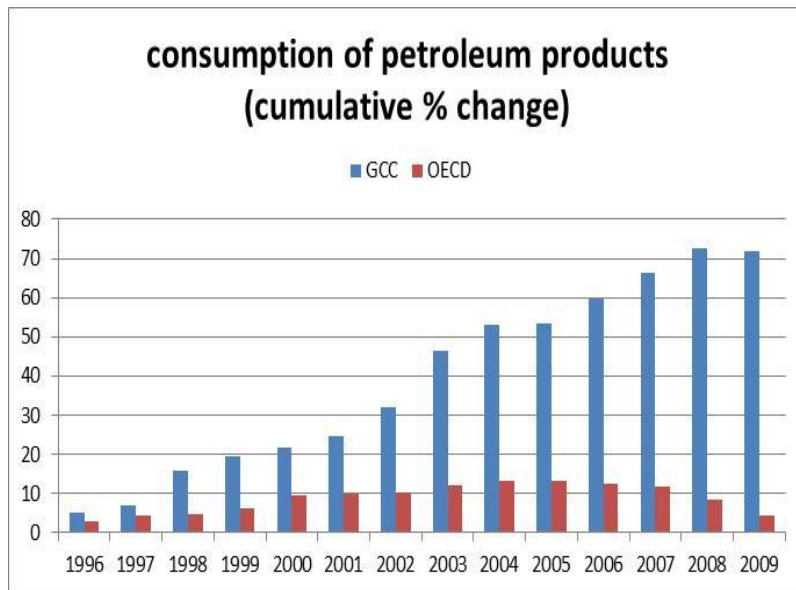


Energy and Subsidies

GCC petroleum consumption grew **5% per year between 2000 & 2009**, a rate exceeding the OECD average, which between 2000 to 2007 registered a 0.2% decline

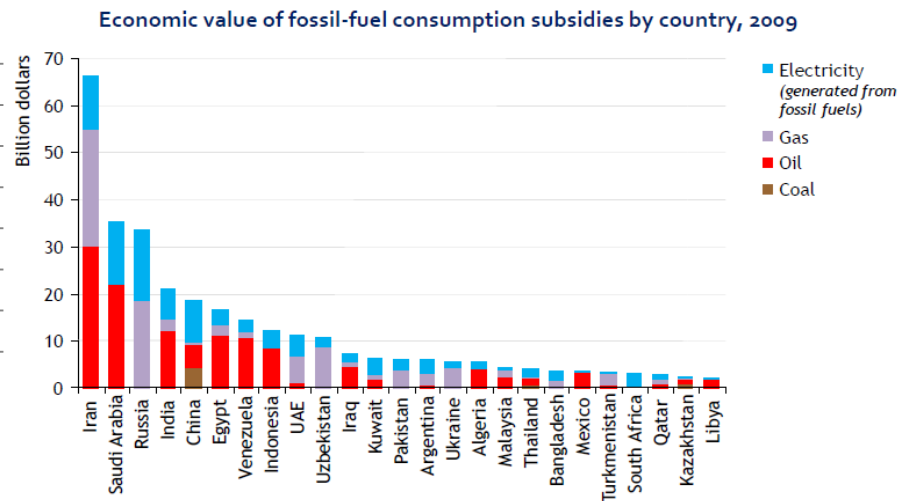
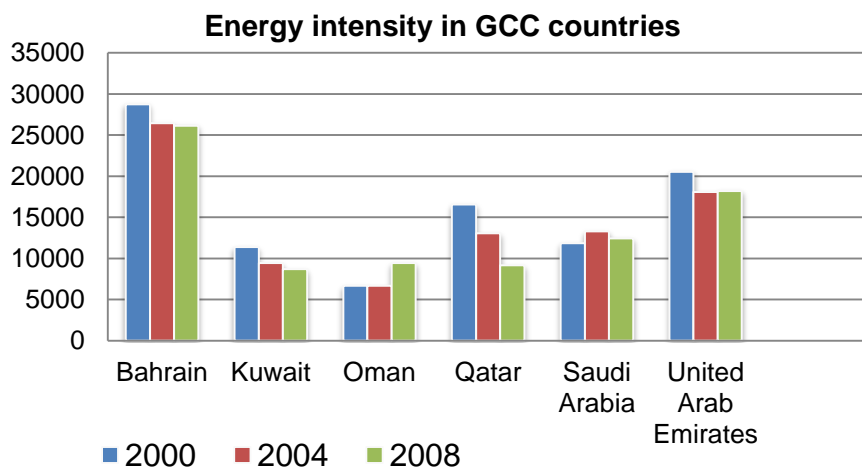
Region's hydrocarbons producing countries have displayed some of the fastest yearly growth in energy demand in the world (Saudi Arabia 5.9%, UAE 7.5%, Qatar 13.4%).

Saudi Arabia and the UAE, among other Middle Eastern nations, have **maintained fuel subsidies** despite the persistent high world oil prices of the past few years, and the subsidies have discouraged conservation or efficiency (in 2008, one gallon of gasoline cost consumers about 61 US\$ cents in Saudi Arabia).



Energy Utilization in GCC

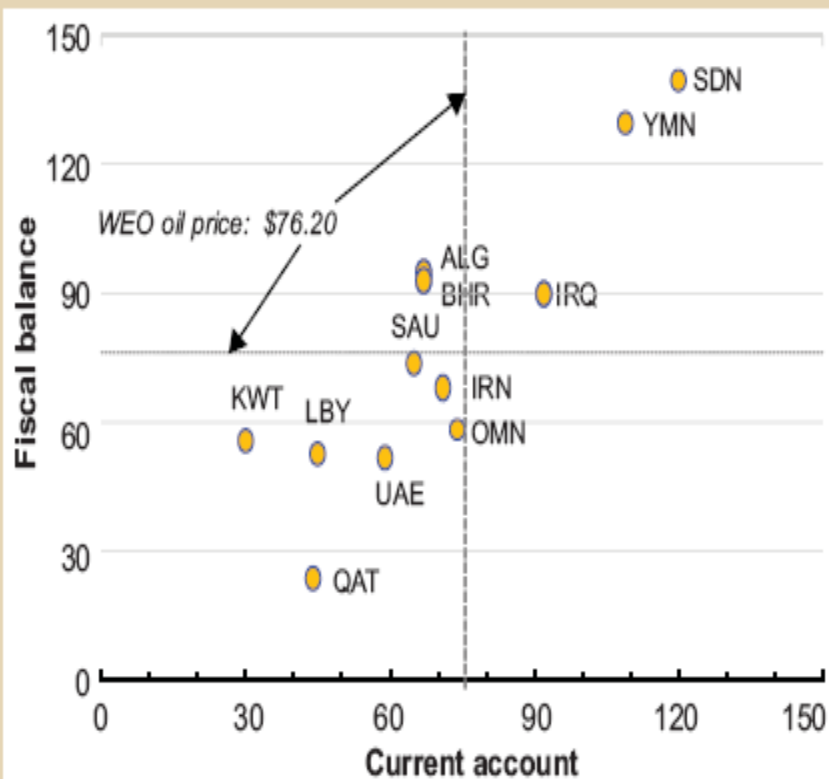
- **Within GCC energy intensity has been modestly declining**, while in some countries it has increased (Saudi Arabia), or remained stagnant over years (UAE)
- High energy intensity influences trade by diminishing amount of fuels available for exports: *Saudi Arabia uses more oil than Germany due to the high level of subsidies!*
- Industrial energy use in the GCC declined by 7% over the last ten years. GCC chemical sector is the largest in terms of energy consumption, with numerous "mega" petrochemical projects under construction
- ***Subsidies need to be reduced to slow demand for fuels and remove distortions to consumption & production***



Break Even Oil Price: Effects on Budgets and Current Accounts

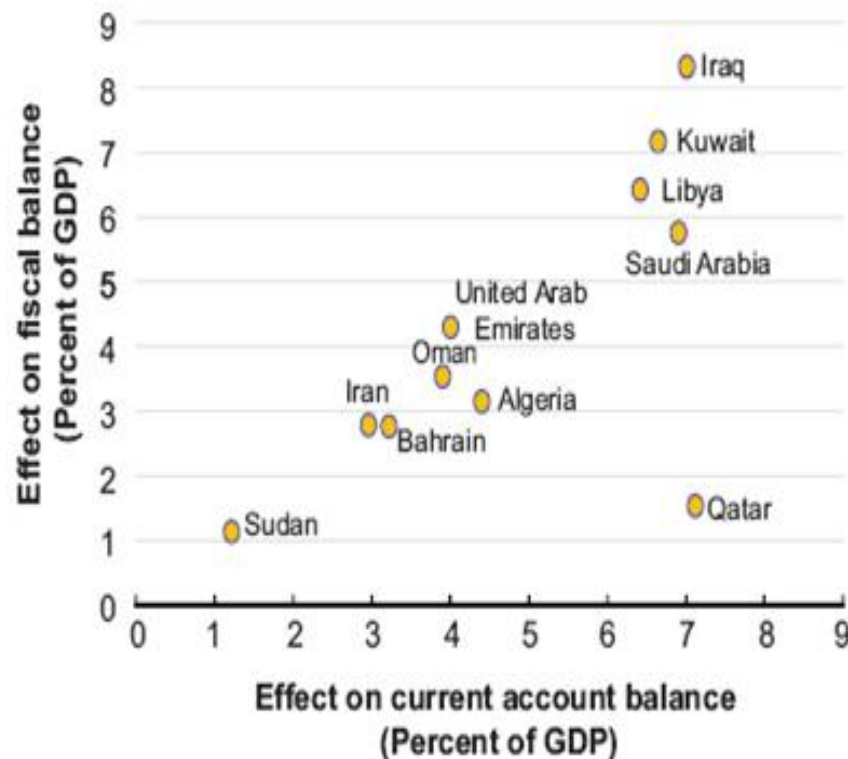
Break-Even Oil Prices in 2010

(U.S. dollars per barrel)



Sources: National authorities; and IMF staff estimates.

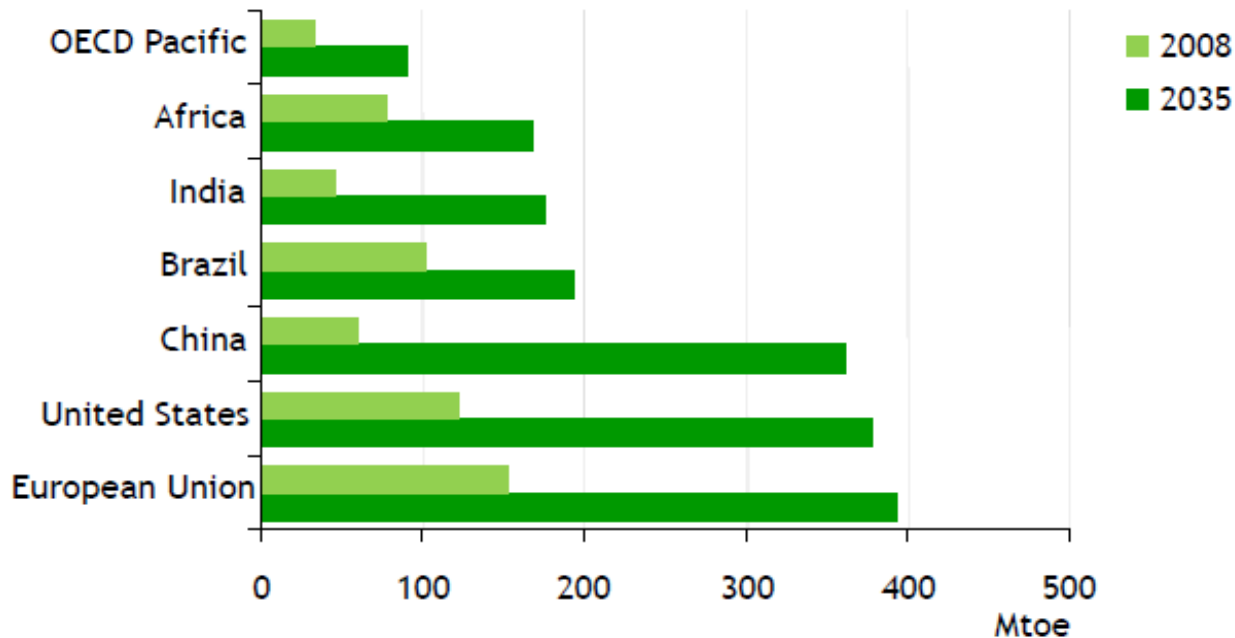
Impact of a US\$10 per Barrel Increase in Oil Prices, 2010



Sources: National authorities; and IMF staff estimates.

Higher Oil Prices & New Policies: Impetus for Renewables

Renewable primary energy demand in the New Policies Scenario

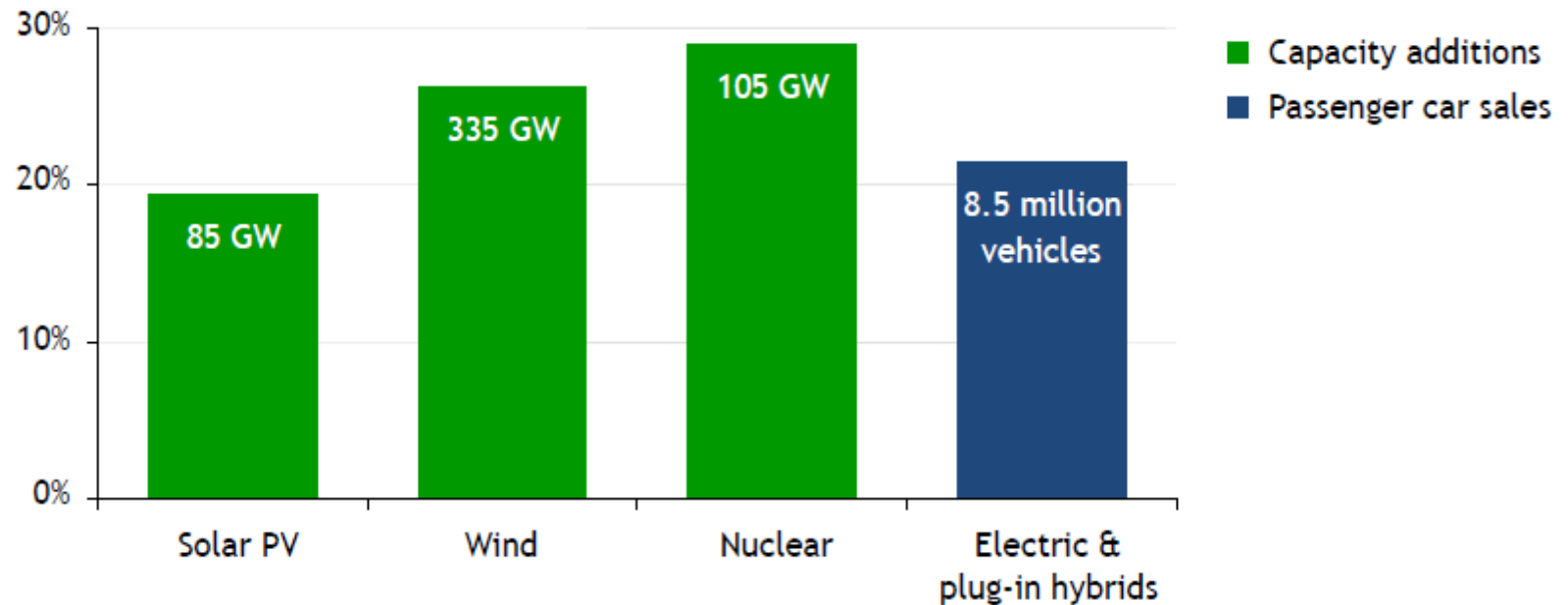


The use of renewable energy triples between 2008 & 2035, driven by the power sector where their share in electricity supply rises from 19% in 2008 to 32% in 2035

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China likely to become market leader in low carbon (IEA)

China's share of cumulative global additions to 2035 for selected technologies



Given the sheer scale of China's market, its push to expand the role of low-carbon energy technologies is poised to play a key role in driving down costs, to the benefit of all countries

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The Clean Energy Business Council (CEBC) is...



- an association of leading local and international organisations participating in MENA's emerging low carbon energy sector.
- unique in the region as a peak industry body for the clean energy sector and in its reach across the MENA region.
- an inclusive forum

As developers, investors, and governments in MENA increasingly focus on low carbon energy solutions, an inclusive forum will help businesses and the public sector share ideas to promote effective policies and best practices.



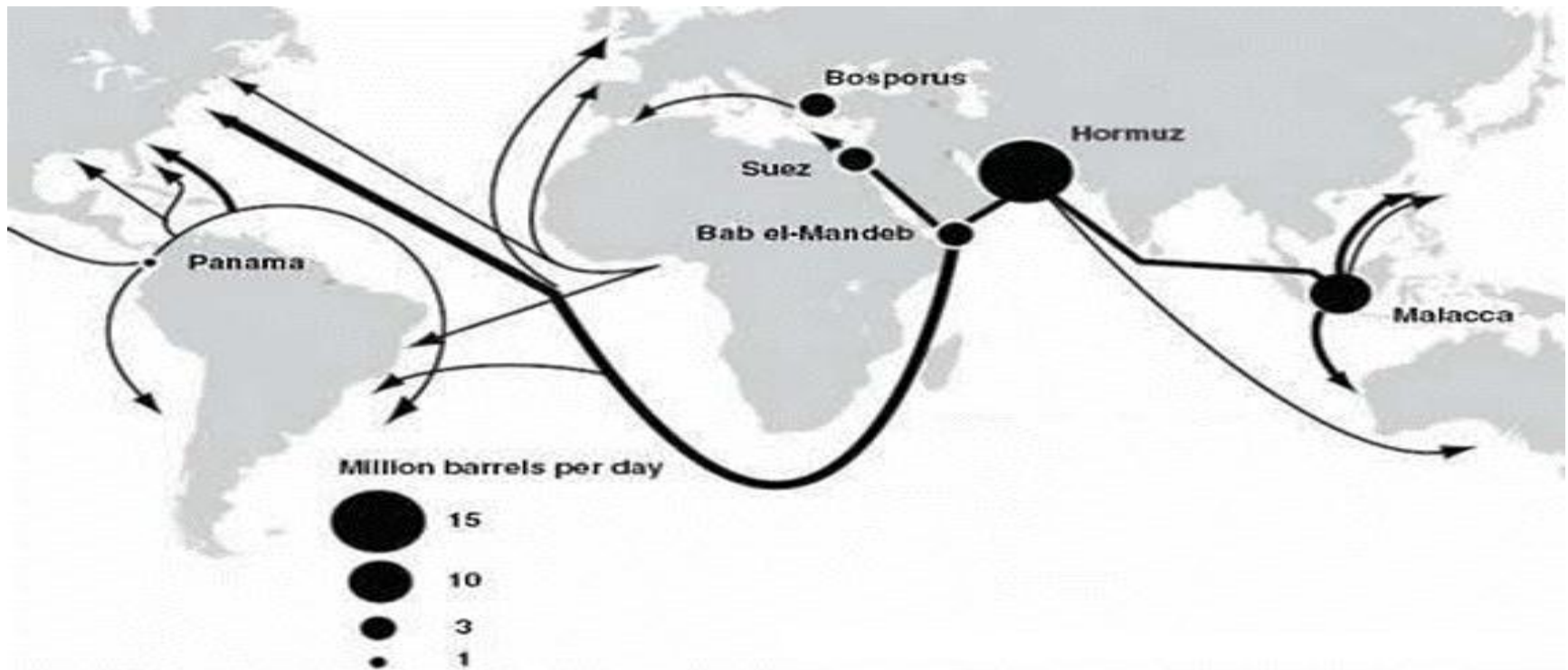
Why CEBC in MENA?

- Middle East and North Africa have significant clean energy resources in solar, wind and CCS
- Growing populations and industry create significant demand for power generation
- Governments in the region are under pressure to meet that demand without increasing pollution or environment impacts
- Clean energy sector is in the very early stages but is growing fast
- Region is becoming a centre for clean energy investment and trade, research and development
- It's also an emerging centre for international policy with the IRENA HQ
- R&D and investment opportunities abound

In this rapidly developing market, the private sector, through CEBC can help the governments of the region create a thriving sector.



Maritime chokepoints critical to petroleum markets



Source: EIA

Note: Circles represent millions of barrels per day transported through each chokepoint. Arrows represent common petroleum maritime routes

Maritime transit chokepoints are narrow channels along widely used global sea routes. Because about one half of the world's crude oil supply is moved by tankers on maritime shipping routes, world oil transit chokepoints are a critical part of global energy security.

Maritime chokepoints are critical to GCC Oil Exports

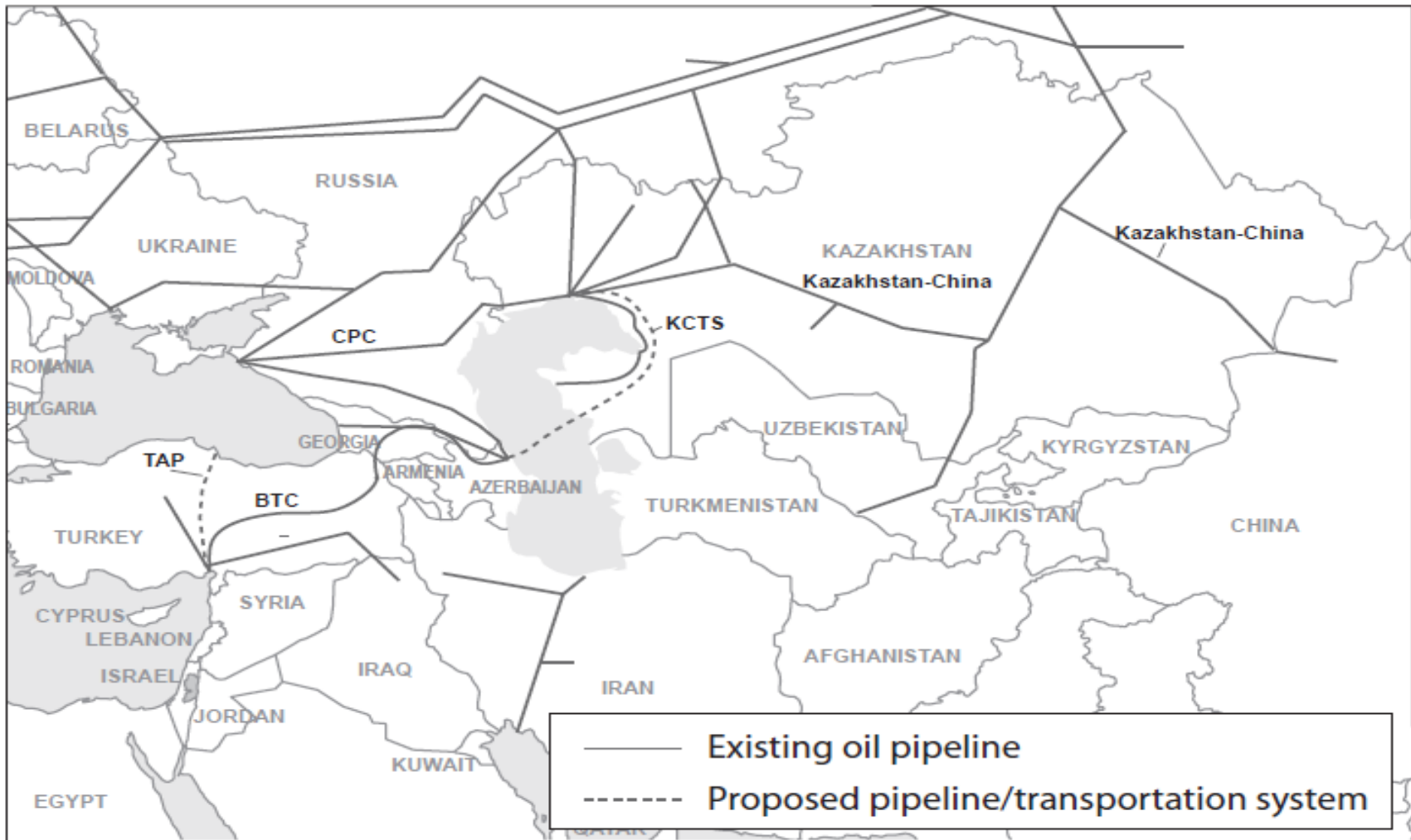
Blockage of a chokepoint can disrupt energy markets. Closure of some chokepoints would require the use of longer **alternate routes**, increasing transportation costs, but for key chokepoints there are limited alternate routes.

The Strait of Hormuz, the world's major oil transport chokepoint, saw an oil flow of 15.5 mn barrels per day (bbl/d) in 2009, 1/3 of all seaborne traded oil, or **17% of oil traded worldwide**. Closure would require the use of longer alternate routes at increased transportation costs. Alternate routes include the East-West Pipeline across Saudi Arabia, with a nameplate capacity of 4.8 million bbl/d. The Abqaiq-Yanbu natural gas liquids pipeline, which runs parallel to the Petroline to the Red Sea, has a 290,000-bbl/d capacity.

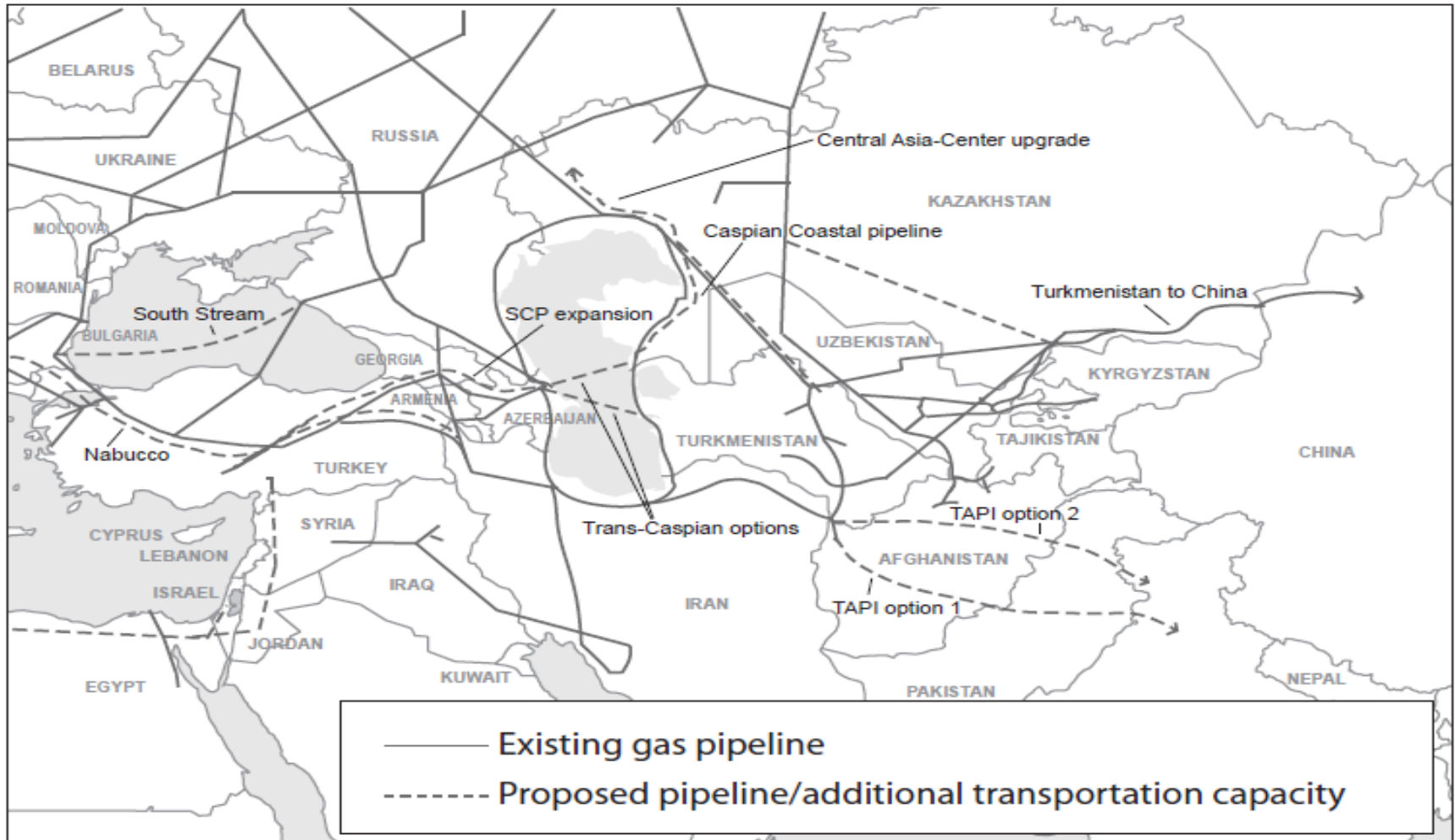
New bypass across the **UAE** is already in operation. The 1.5 million bbl/d **Habshan-Fujairah pipeline** crosses the emirate of Abu Dhabi and ends at the port of Fujairah. Other alternate routes could include the deactivated 1.65-million bbl/d Iraqi Pipeline across Saudi Arabia (IPSA), and the deactivated 0.5 million-bbl/d Tapline & IPC pipelines to Lebanon. Additional oil could also be pumped north via the Iraq-Turkey pipeline to the port of Ceyhan on the Mediterranean Sea.

But new infrastructure is being built in Central Asia

Oil pipelines in Central Asia



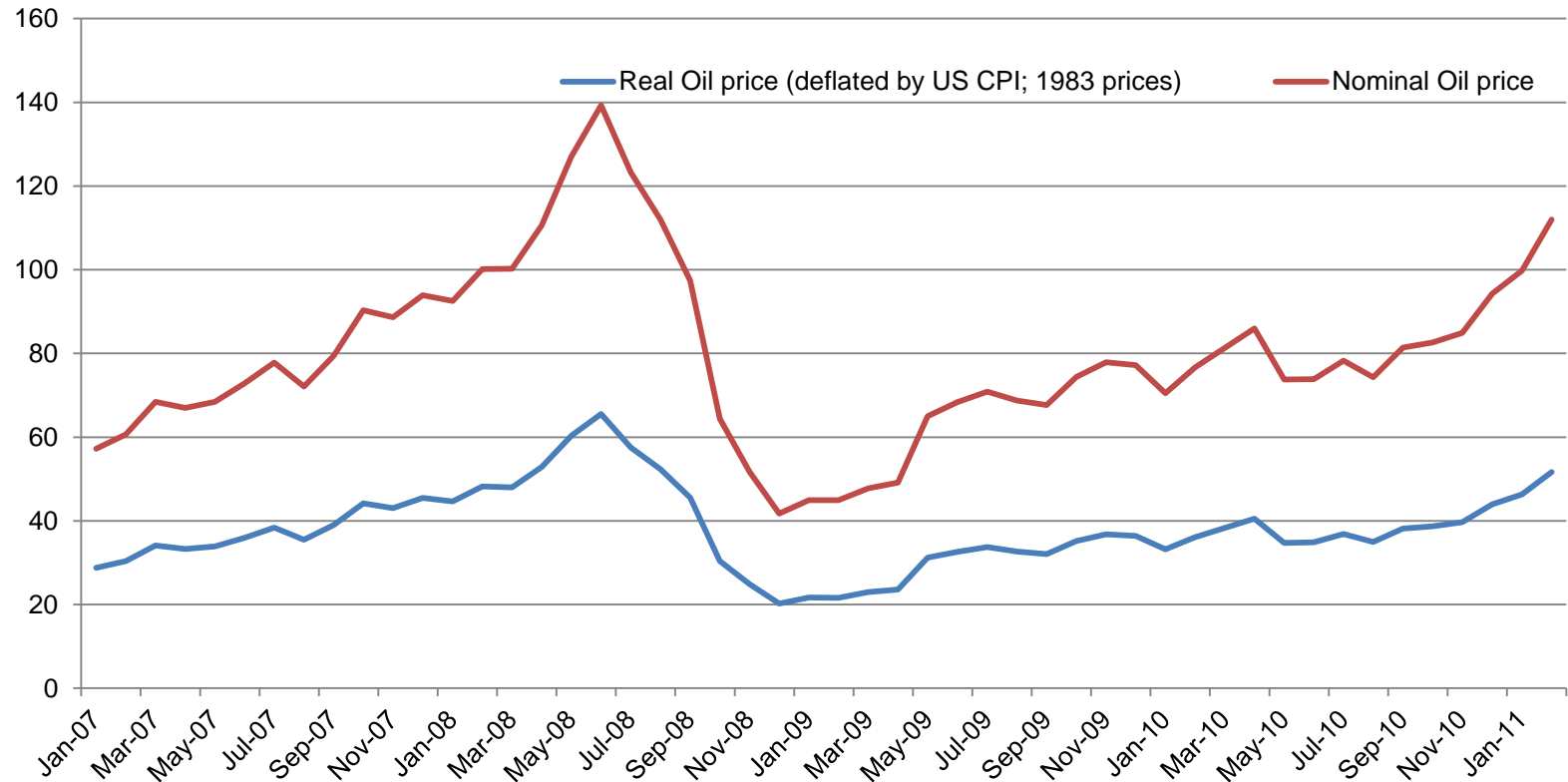
Natural gas pipelines in Central Asia



Oil Price and Unrest in MENA region



Real & Nominal Oil Prices: still below peaks



Uncertainty & Unrest in the MENA region

MENA political upheaval and the associated risk premium have **pushed crude oil prices to the highest level since September 2008**. Some countries experienced disruptions in production, which could further influence the oil supply.

Sharp volatility in oil prices has led to a substantial inflow of investment funds into the futures market. Speculators' activity on the Nymex crude oil futures market volumes surged by 42.4% on ICE and 29% on Nymex.

Impact of disruption in North African crude oil exports will be mainly felt by European refineries. With utilization rates currently at low levels, refiners able to run available sour crudes could boost runs, while refineries based on North African crudes could look into switching to other grades if their configuration permits.

Despite the onset of the low seasonal demand period, recent disruptions may create some anxiety in the market, providing grounds for speculative activity. However, OPEC spare capacity, which has risen close to 6 mb/d over the last year, serves an effective market stabilizer ready to accommodate any sudden disruption.

Additional **uncertainties** include the recessionary effects of energy prices on the world economy, higher prices for industrial goods and technical services that would negatively affect oil production, the **sovereign debt** crisis in the **Euro-zone**, overheating in the emerging economies.

Some Conclusions

- **Energy market dynamics has shifted towards Emerging Market Economies**
- **China & other EMEs are shaping future of global energy**
- **Energy intensity & Subsidies very high in GCC and oil exporters: leading to fiscal vulnerability**
- **Age of cheap oil is over: need to focus on Renewable Energy**
- **GCC/MENA need to focus on investments in Renewable Energy & Technology**
- **New Energy Transport Infrastructure is changing Energy Geography & Geo-Strategic importance of Marine Chokepoints**

Thank You!
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