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Eugenides Foundation

“The Arab Spring, Oil Market Implications and the role of the East
Med Hydrocarbon resources”

The Arab Spring and Oil Market Implications

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Institute of Energy for S.E. Europe (IENE),

Introductory Remarks I

- ❑ Oil and gas production and transiting constitute a vital economic component of MENA countries
- ❑ Economic and social development depends largely on oil and gas production and exports.
- ❑ All countries involved in the Arab Spring uprising (and ensuing Islamist winter) are to a larger or smaller extent oil and gas producers.
- ❑ In 2010 Tunisia, Egypt, Libya, Bahrain, Yemen and Syria between them produced some 3.2 million barrels of oil per day and 102.0 BCMA of gas. In 2011 oil and gas production dropped to 1.85 mbpd and to 96.0 BCMA respectively.

North Africa and the Arab Peninsula



Introductory Remarks II

- ❑ Oil production from above six countries corresponds to 3.8% of global oil production which stood at 82.4 million barrels per day in 2010. In the same year, global gas production was 3,178 BCM.
- ❑ If we add Algeria, which is no part of Arab Spring, and produces some 1.7 million barrels a day and 78 BCMA, the total oil production from those MENA countries correspond to 6.0% of daily oil production and 180 BCMA or 5.6% of global production
- ❑ In 2011 oil production was badly affected in Libya and Syria while in 2012 oil production in Libya resumed at pro-Quadafi levels but deteriorated further in Syria.
- ❑ The shortfall was met by increased production from Saudi Arabia and other OPEC and non OPEC countries. However, this disruption in supplies to Western consuming countries affected prices which increased on average by 20% (first half of 2011).

“Arab Spring” Countries and Global Oil Production (2008-2012) in thousands barrels daily

	2008	2009	2010	2011	2011/2010
Syria	398	401	385	332	-53
Yemen	315	306	301	228	-73
Egypt	723	736	730	735	+5
Libya	1.820	1.658	1.659	479	-1.180
Tunisia	89	83	80	78	-2
FSU	12.776	13.174	13.448	13.487	+39
EU	2.219	2.086	1.950	1.692	-258
OPEC	36.203	33.897	34.753	35.830	+1.077
Non-OPEC	33.555	33.661	34.280	34.258	-22
Total World	82.335	80.732	82.480	83.756	+1.276



Implications for the Oil Market

- ❑ The Arab Spring had a clear and profound impact on the global and regional oil markets and to a much lesser extent affected gas markets.
- ❑ The impact affected oil exports through reduced production (i.e. Libya and Syria) and disruption in transiting (i.e. Suez Canal and oil pipelines through Syria) and is reflected by geopolitical risk in prices.
- ❑ Repercussions are still evident in the Mediterranean oil market mainly as a result of the crisis in Syria.
- ❑ Although the quantities of oil and gas produced are small by international standards the disruption of oil supplies and oil and gas transiting is having multiple effects.
- ❑ Because of reduced oil and gas exports and disruptions in supply the economies of the countries involved were negatively affected and is reflected in GDP change.
- ❑ The real impact of Arab Spring in the energy markets will be felt and understood in the years to come.



Arab Spring Latest

- ❑ Widespread public unrest in Egypt, with 50 people reported dead in riots in various part of the country, over last 6 days shows that Arab Spring uprising which led to overthrow of Mubarak regime, elections and the new Morsi led government is still evolving
- ❑ Latest terrorist attacks in Algeria show that there is a potential for unrest spill over driven by Islamist fundamentalists
- ❑ Killing of US Ambassador in Benghazi on 11, September 2012 and ensuing riots shows unrest in Libya is not yet over
- ❑ Continuing armed conflict in Syria with many thousands dead citizens and combatants shows that a well funded destabilization process (under the veil of Arab Spring) is continuing threatening fragile regional stability
- ❑ Common denominator of Arab Spring unrest is the overthrow of the Old Order, the rise of Islamist Fundamentalists and the loosening of government control. All of them detrimental factors to economic development and investment
- ❑ Hydrocarbon investment in Egypt, Libya and Algeria have so far remained largely intact while oil and gas operations in Syria have been badly affected
- ❑ As long as political unrest and public turmoil continues new hydrocarbon investment prospects in North Africa will remain constrained but with ongoing prospects not affected. However, the huge oil and gas potential of region cannot be unlocked as country risk will for some time remain high



GDP & Industrial Production in the Arab Spring Nations (percent change)

Table 1 – GDP and Industrial Production in the Arab Spring Nations (percent change)

	2008	2009	2010	2011	2012(F)	2013(F)
Inflation-Adjusted GDP						
Egypt	7.2	4.7	5.1	1.8	0.8	2.8
Libya	2.8	-1.6	2.9	-41.8	20.1	9.5
Tunisia	4.5	3.1	3.1	-1.1	2.5	3.7
Industrial Production						
Egypt	8.3	-3.5	10.0	-6.4	7.0	3.6
Libya	2.0	-4.5	0.8	-74.0	34.3	13.0
Tunisia	3.3	-4.5	7.7	-3.7	1.5	7.1

F=Forecast

Source(s): IMF and OECD and World Bank and MAPI



Egypt's Strategic Role

- ❑ Not on account of its oil production.
- ❑ In 2011 oil production was 735 thousand bpd and consumption stood at 709 th. bpd
- ❑ Egypt though is a net gas exporter with production at 61.3 BCM in 2011 and domestic consumption of 49.6 BCM
- ❑ Egypt is an important transit route for crude moving between Red Sea and Mediterranean through the Suez Canal and the SUMED pipeline



Egypt's Strategic Role (continued)

- ❑ 2.0 mbp moves daily through the Suez Canal in both directions and 1.9 mbp through the SUMED Pipeline (Gulf of Suez to Sidi Kerir)
- ❑ 35.000 ships transited the Suez Canal in 2010 with only 10% oil tankers as there are limitations in handling VLCC's and ULCC's. Suezmax is biggest category (160.000DWT)
- ❑ Suez Canal is strategically less important than the Strait of Hormuz through which some 40% of all seaborne traded oil flows.



Mediterranean Sea

Beirut
LEBANON

Damascus
Golan Heights
SYRIAN

Haifa
ISRAEL

West Bank
JERUSALEM
AMMAN
JORDAN

Alexandria

Port Said

Dead Sea
(lowest point in Asia -422 m)

Cairo
Al Jizah

Gaza Strip
SUEZ PENINSULA

AGABAH

GULF DESERT

Tabuk

EGYPT

SAUDI ARABIA

WESTERN
EGYPT
DESERT

Asyut

Luxor

Aswan

Yanbu' al-Bahr

Tropic of Cancer

Administrative Boundary

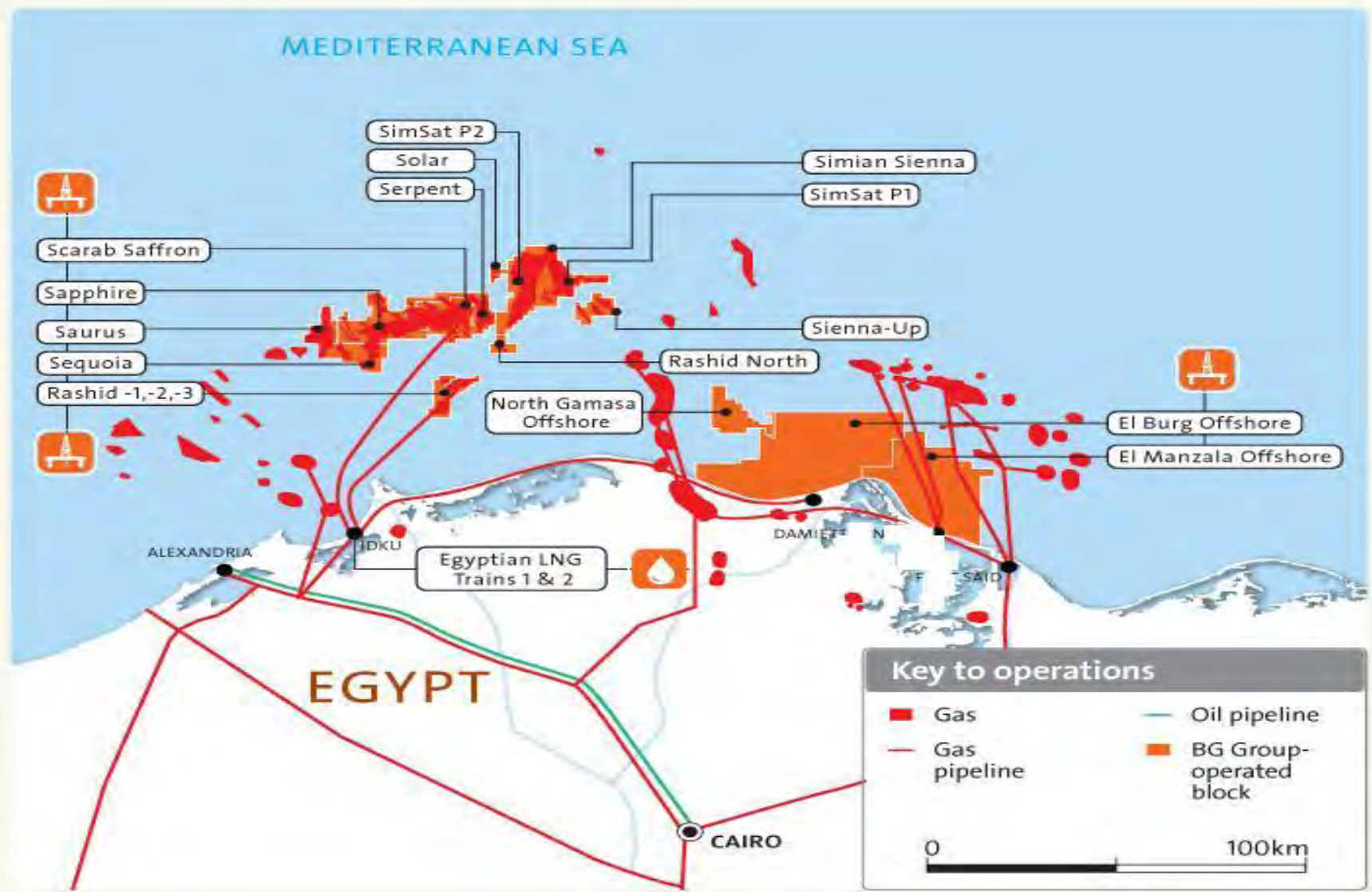
Hala'ib

Medina

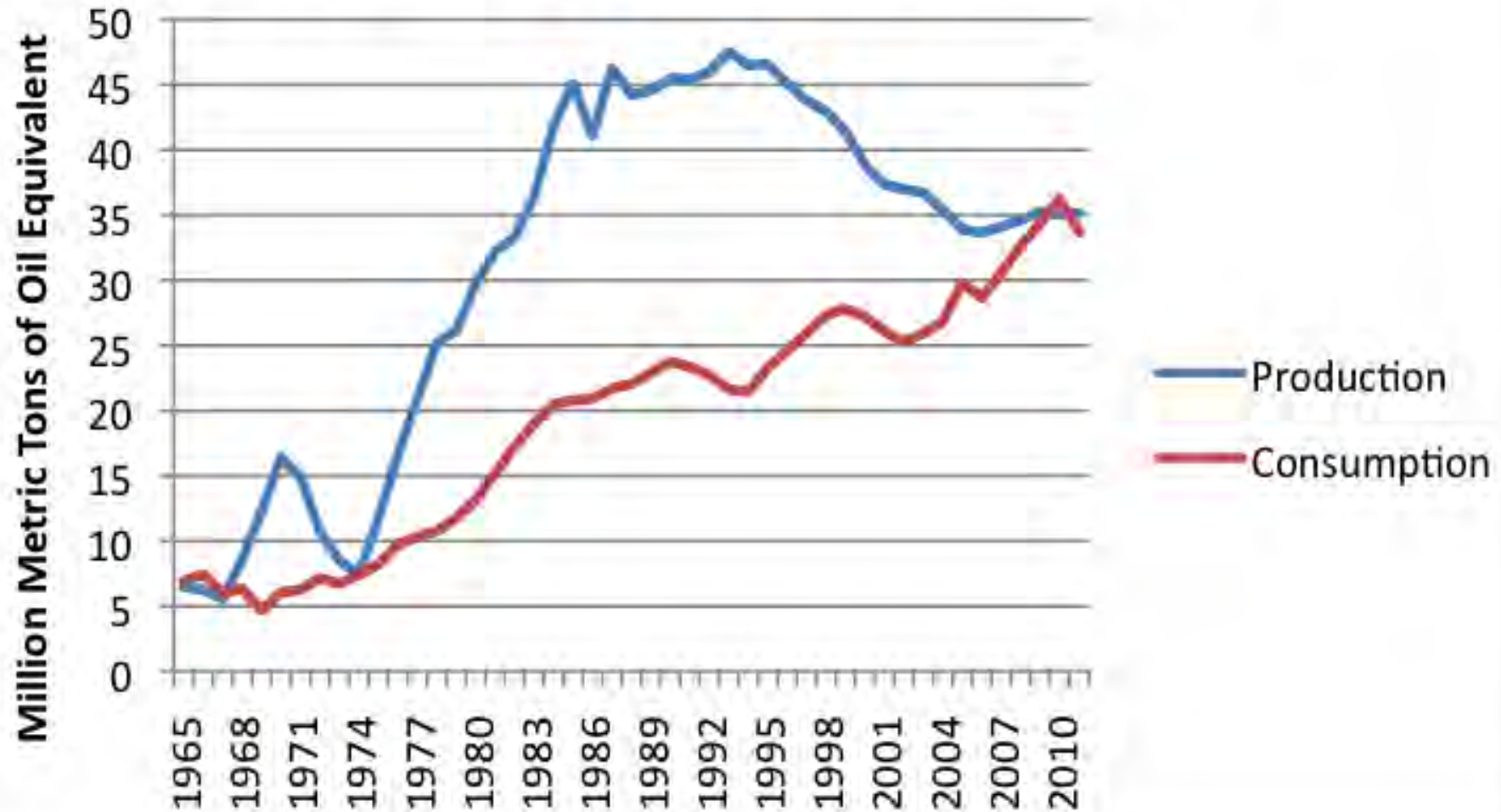
Egypt's oil and gas fields



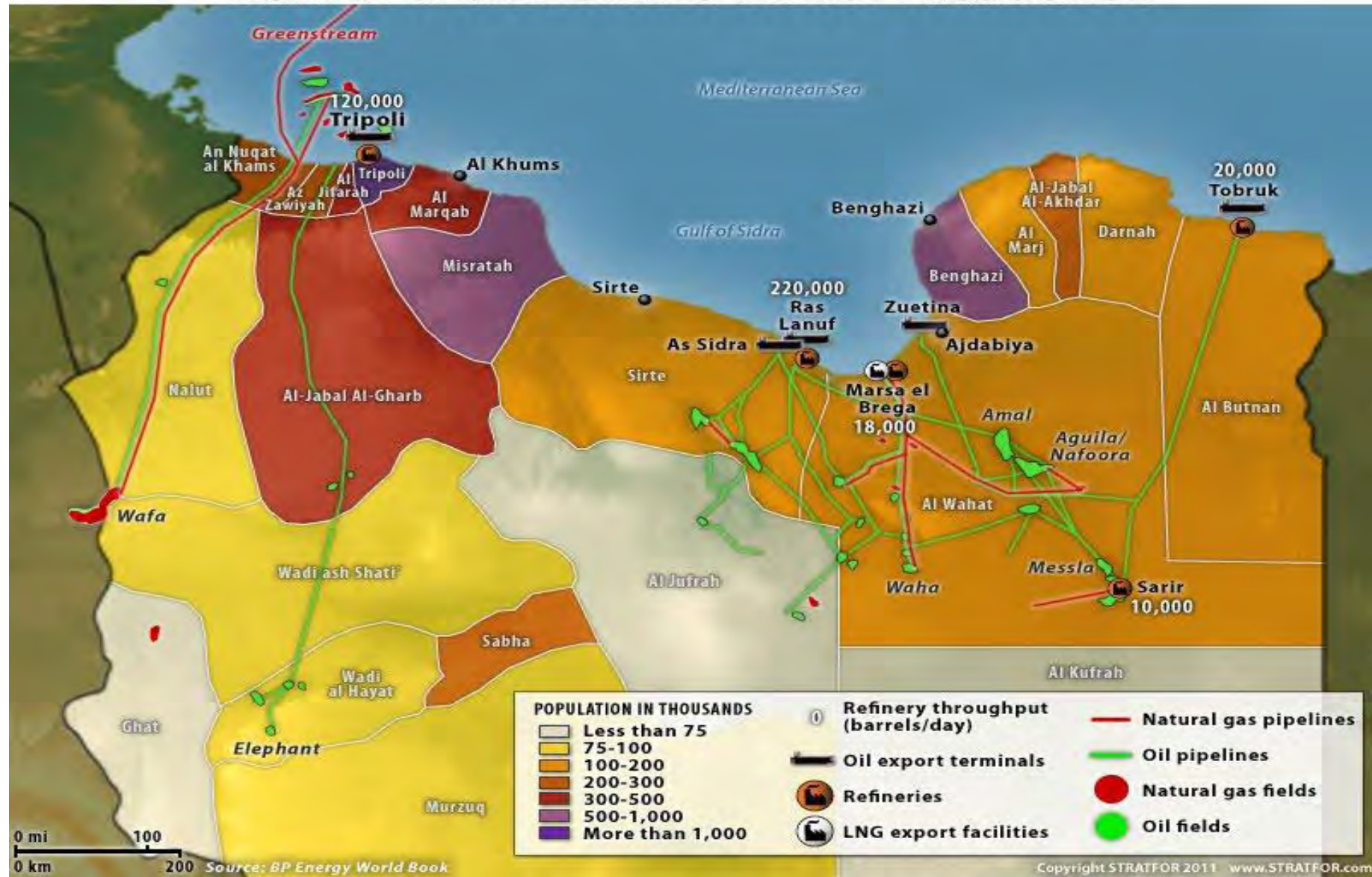
Egypt - Oil and Gas Infrastructure



Egypt - Oil Production and Consumption

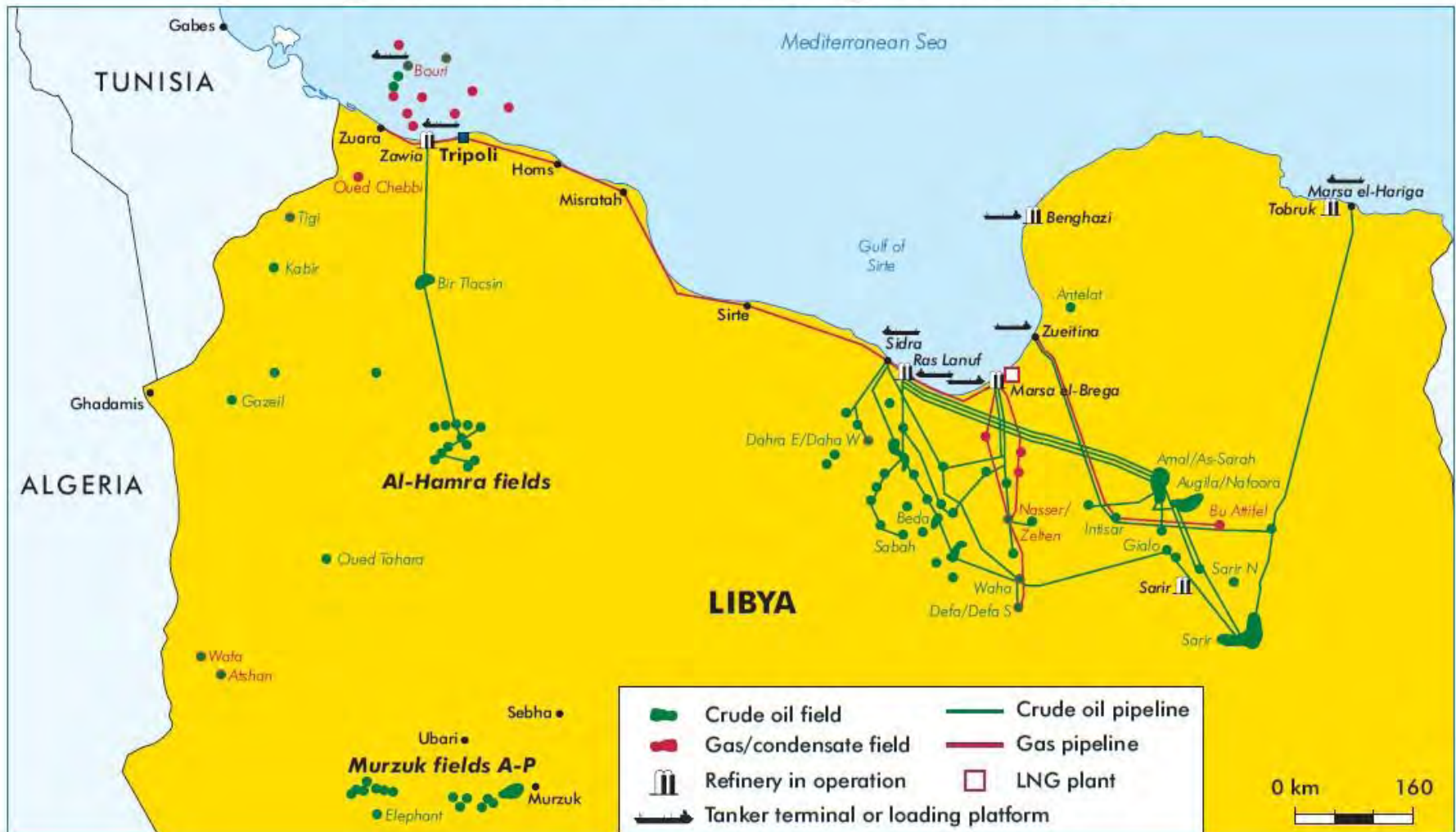


LIBYA'S POPULATION AND ENERGY PRODUCTION

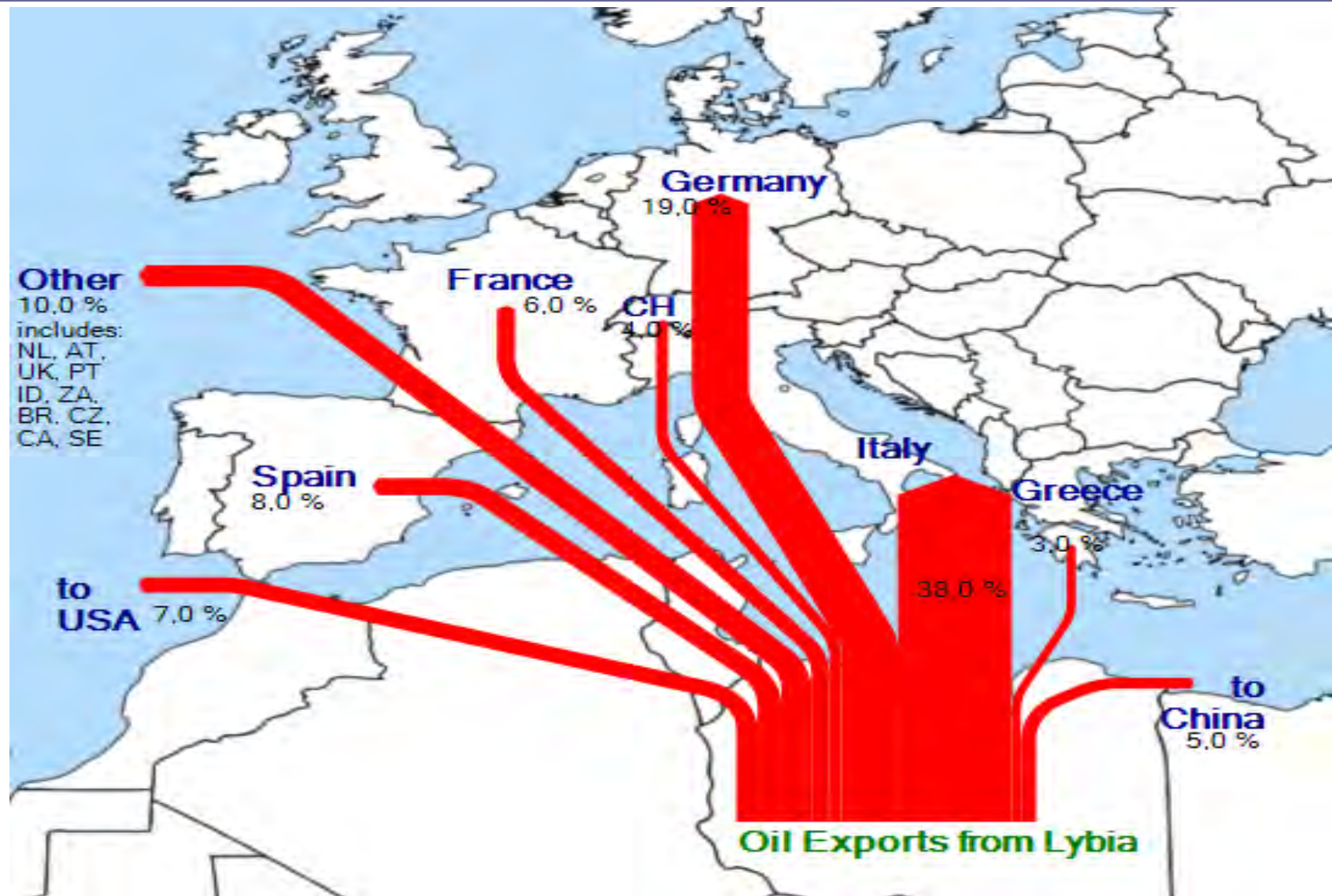


Libya - Main Oil & Gas Fields and Infrastructure

Figure 14.4: Main Oil and Gas Fields and Energy Infrastructure in Libya

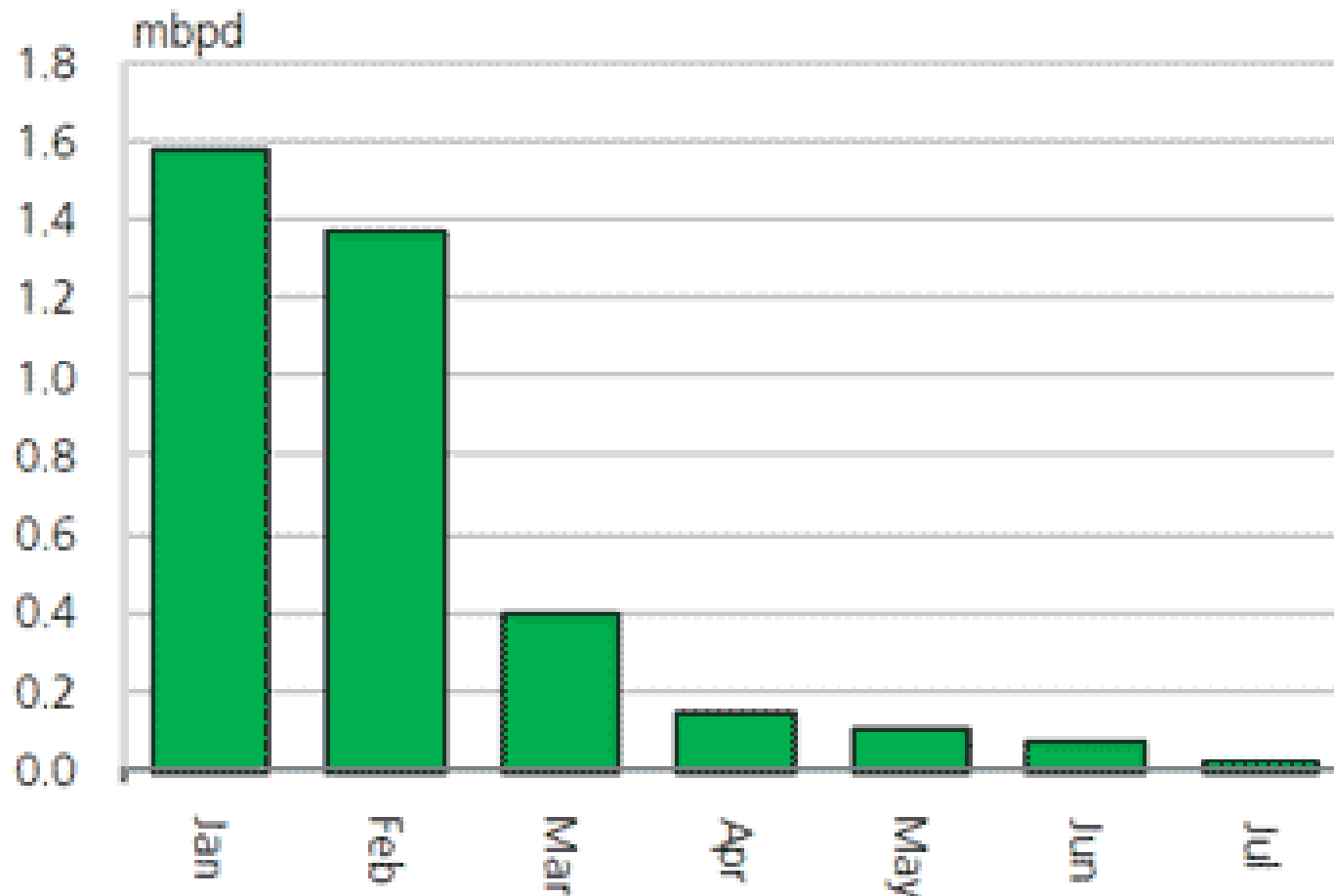


Oil Exports from Libya before the “Arab Spring”



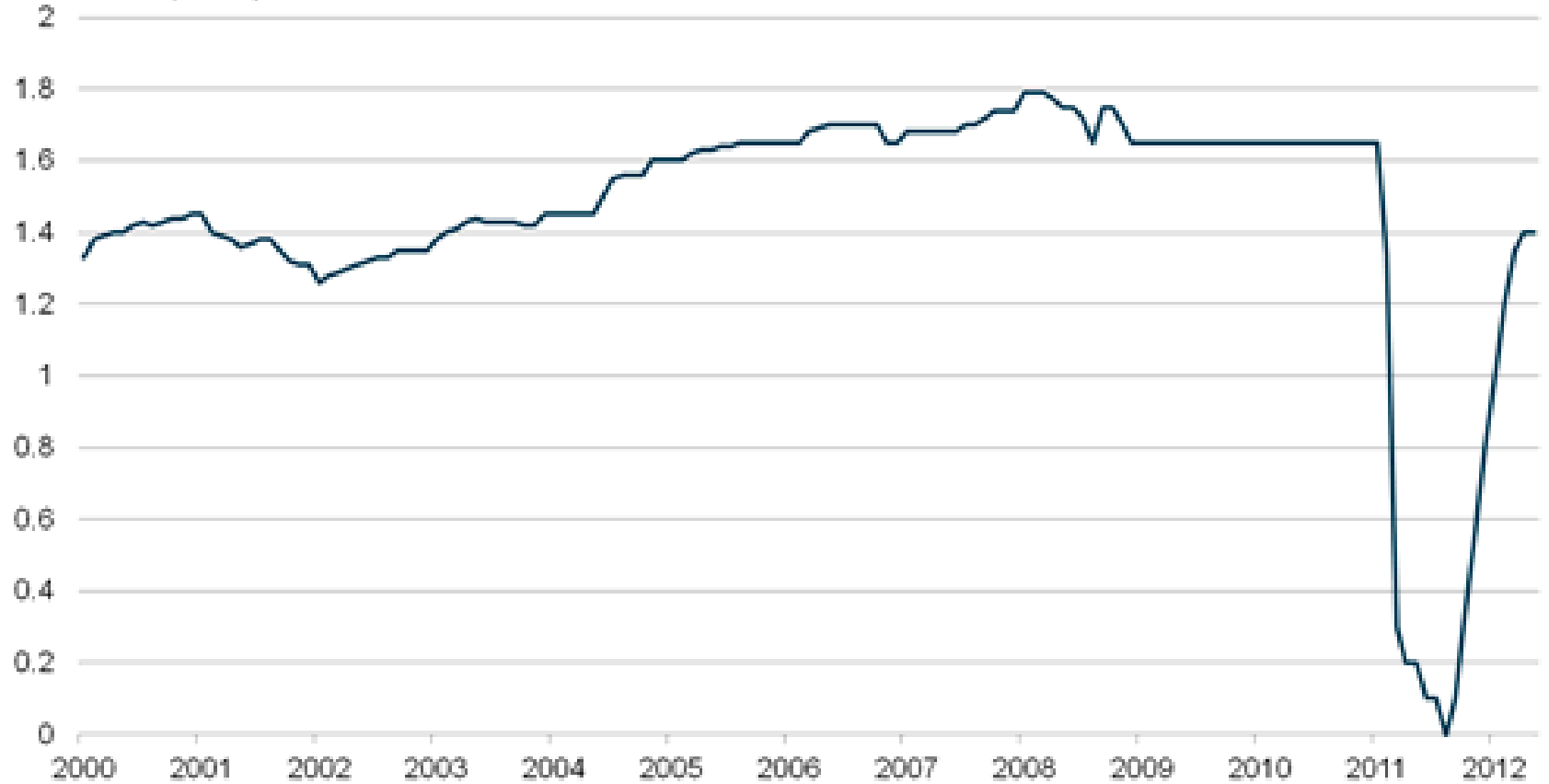
Libya's oil production in 2011

Figure 1: Libya's oil production in 2011



Libya's Crude Oil Production, January 2000 - May 2012

million barrels per day



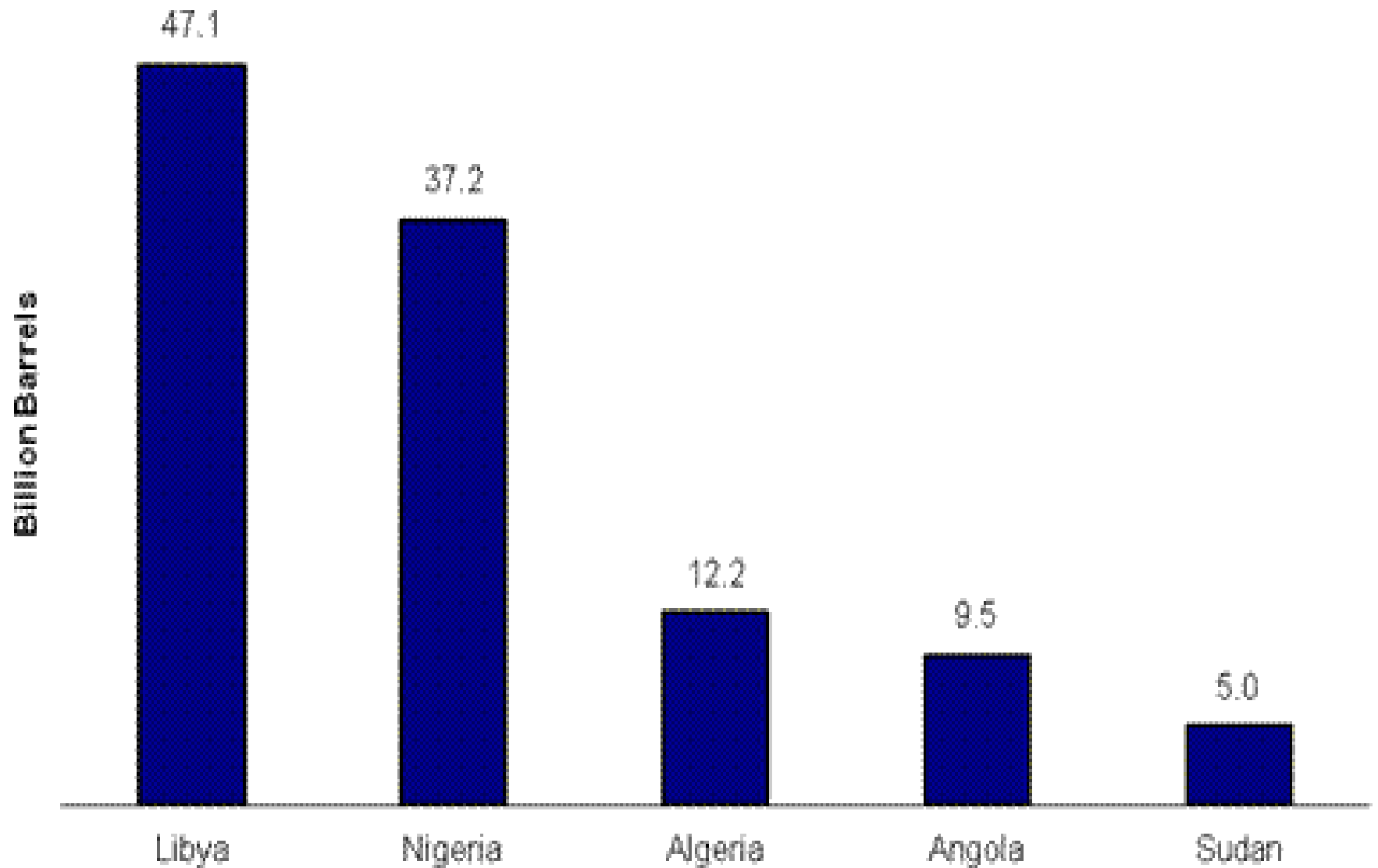
Source: U.S. Energy Information Administration, *International Energy Statistics and Short-Term Energy Outlook*



Algeria as a Key Gas Supplier to Europe

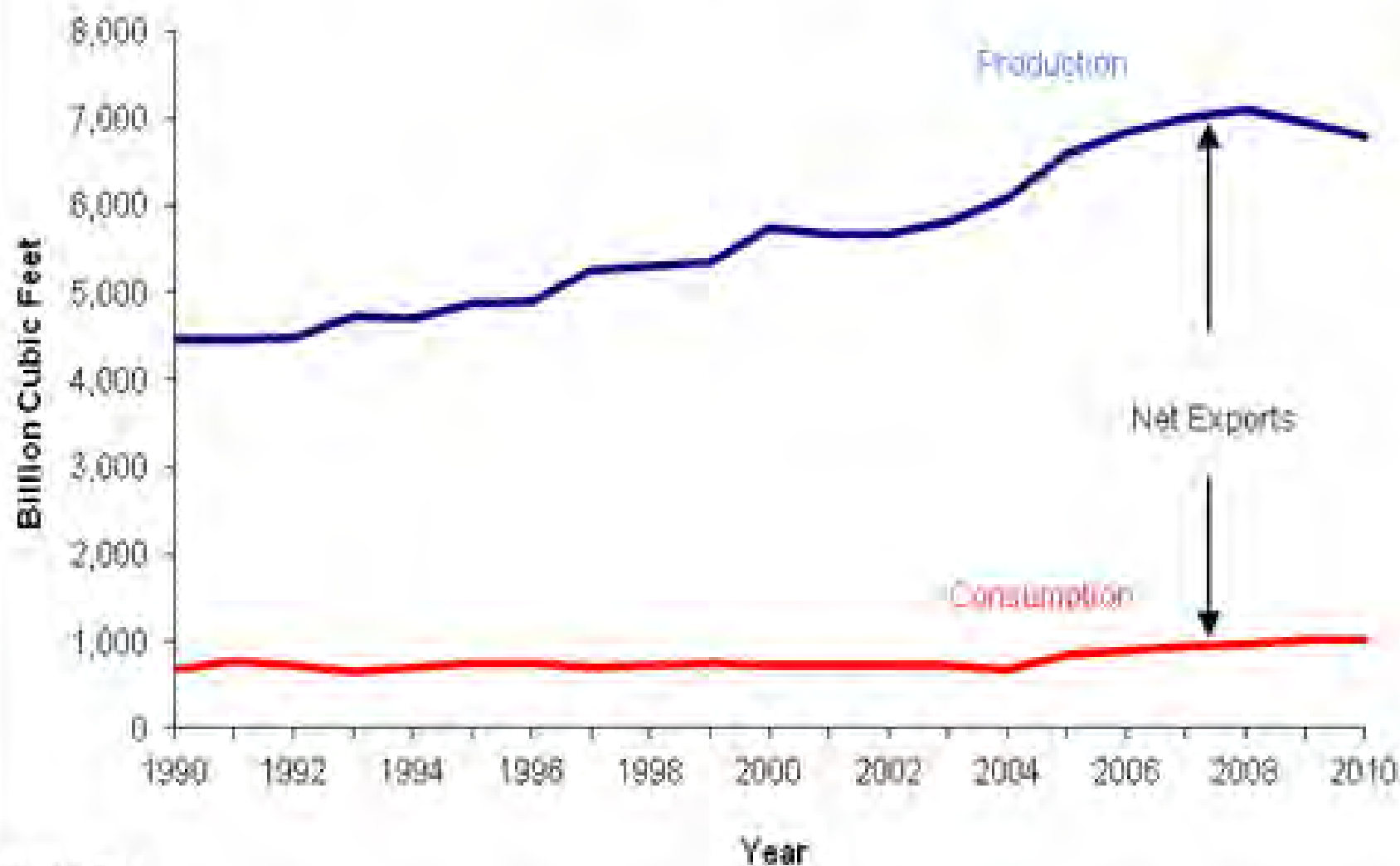
- ❑ Produced 78 BCMA in 2011 with anticipated slow rise to 85 BCMA by 2015
- ❑ Lack of adequate investment for new field development
- ❑ Exported 32.9 BCMA via pipeline to Italy, Spain and France
- ❑ Exported 16.8 BCMA via LNG to Europe
- ❑ Total gas exports in 2011 amounted to 51.5 BCMA
- ❑ Algeria supplied 9.5% of European gas needs in 2011
- ❑ However, latest terrorist incidents have raised uncertainty about country's future as key gas supplier to Europe

Top 5 African Proven Oil Reserve Holders, 2012



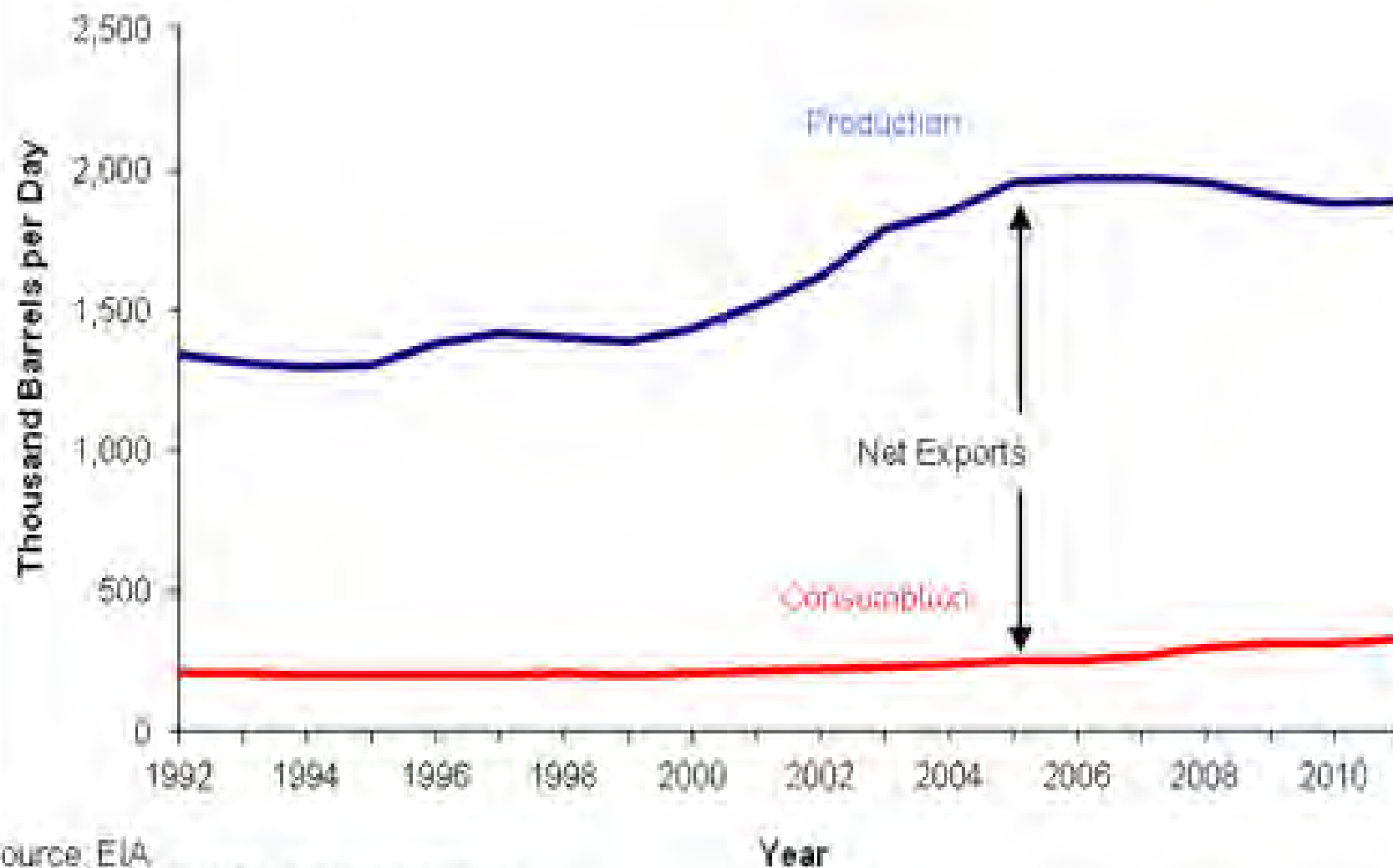
Source: *Oil and Gas Journal*

Algeria's Total Natural Gas Production and Consumption, 1990-2010



Source: EIA

Algeria's Total Oil Liquids* Production and Consumption, 1992-2011



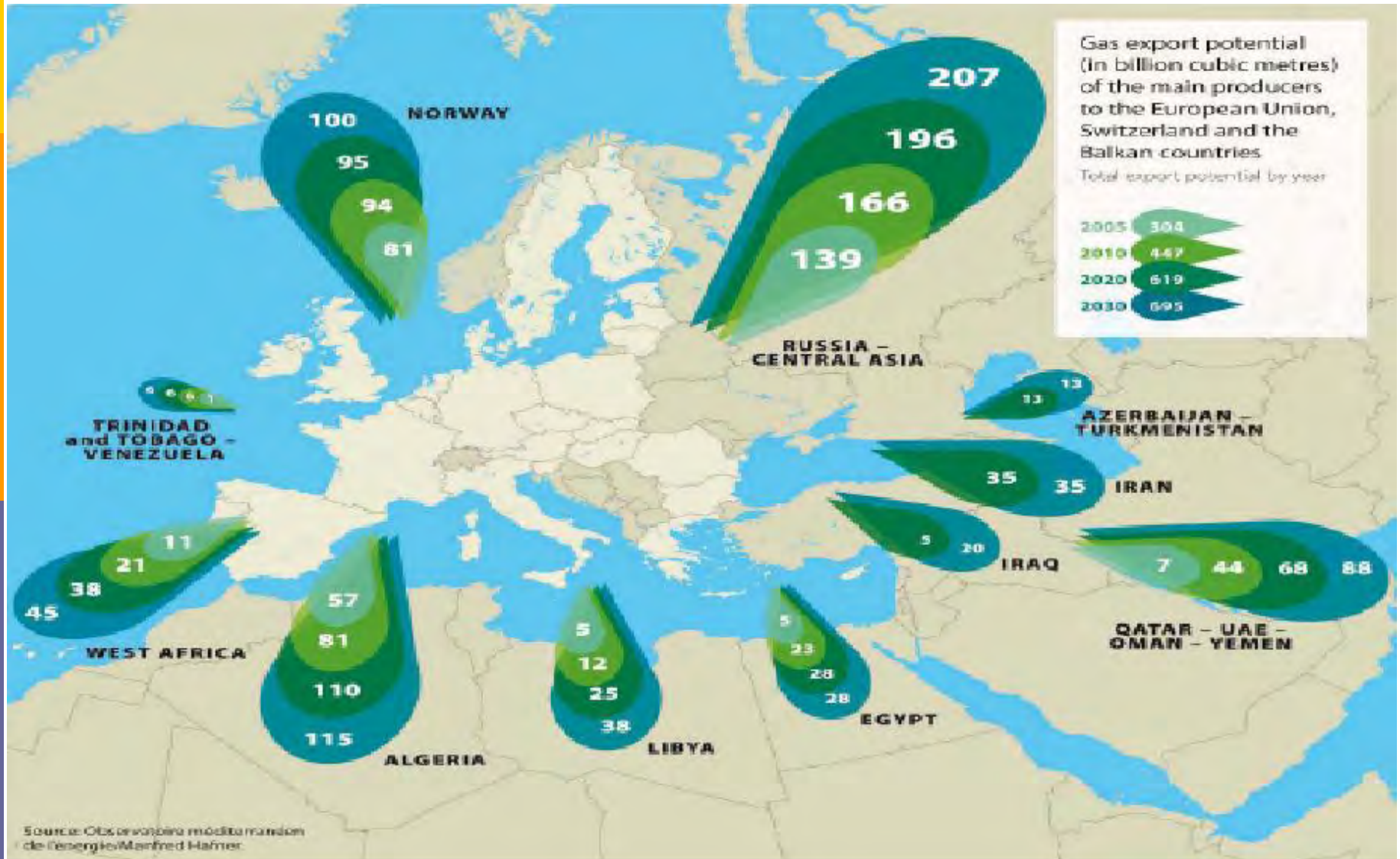
Source: EIA

* Crude oil plus NGL and Condensate

Major Oil & Gas Fields and Infrastructures in Algeria



Gas export potential to Europe

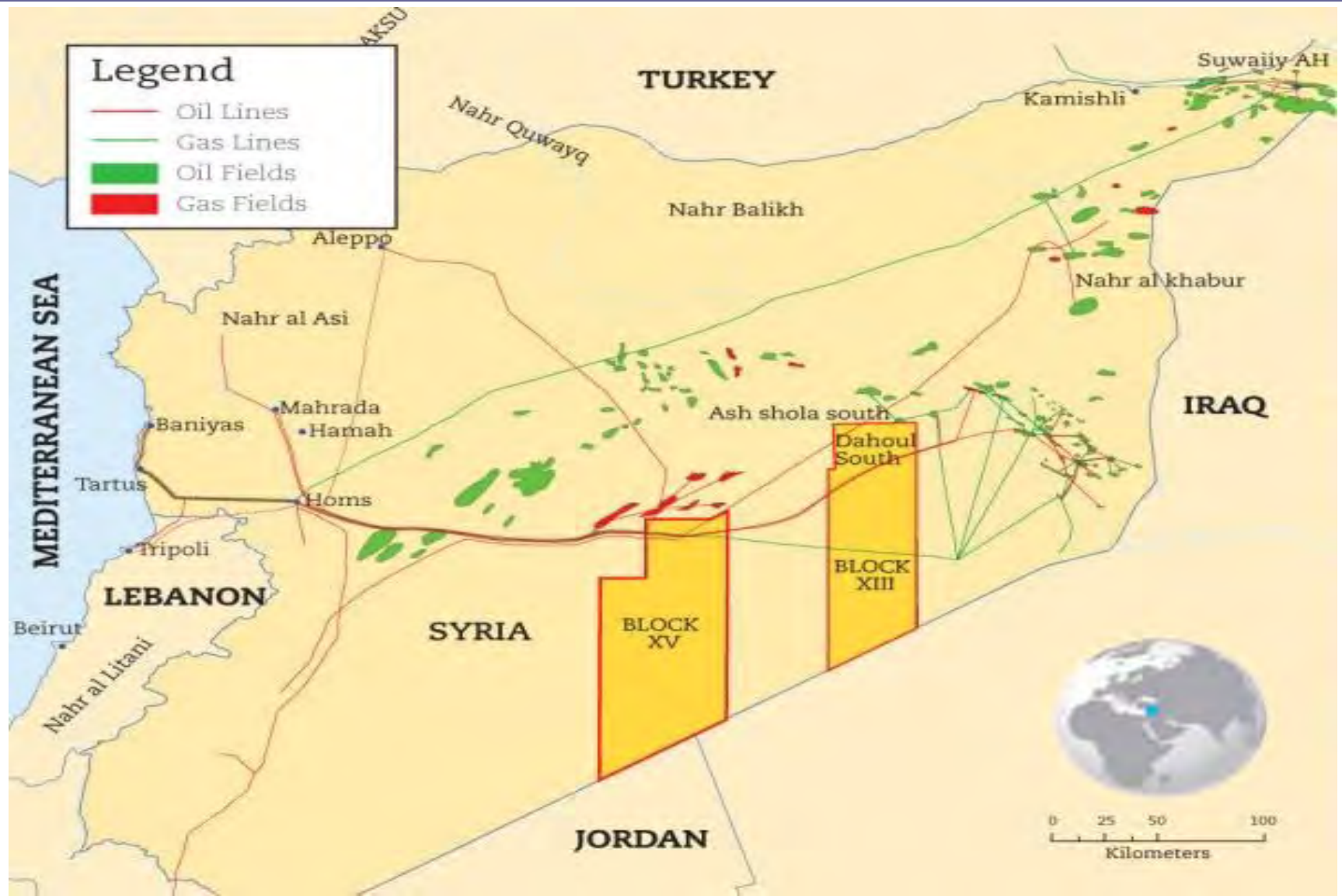




Oil and the Syrian Crisis

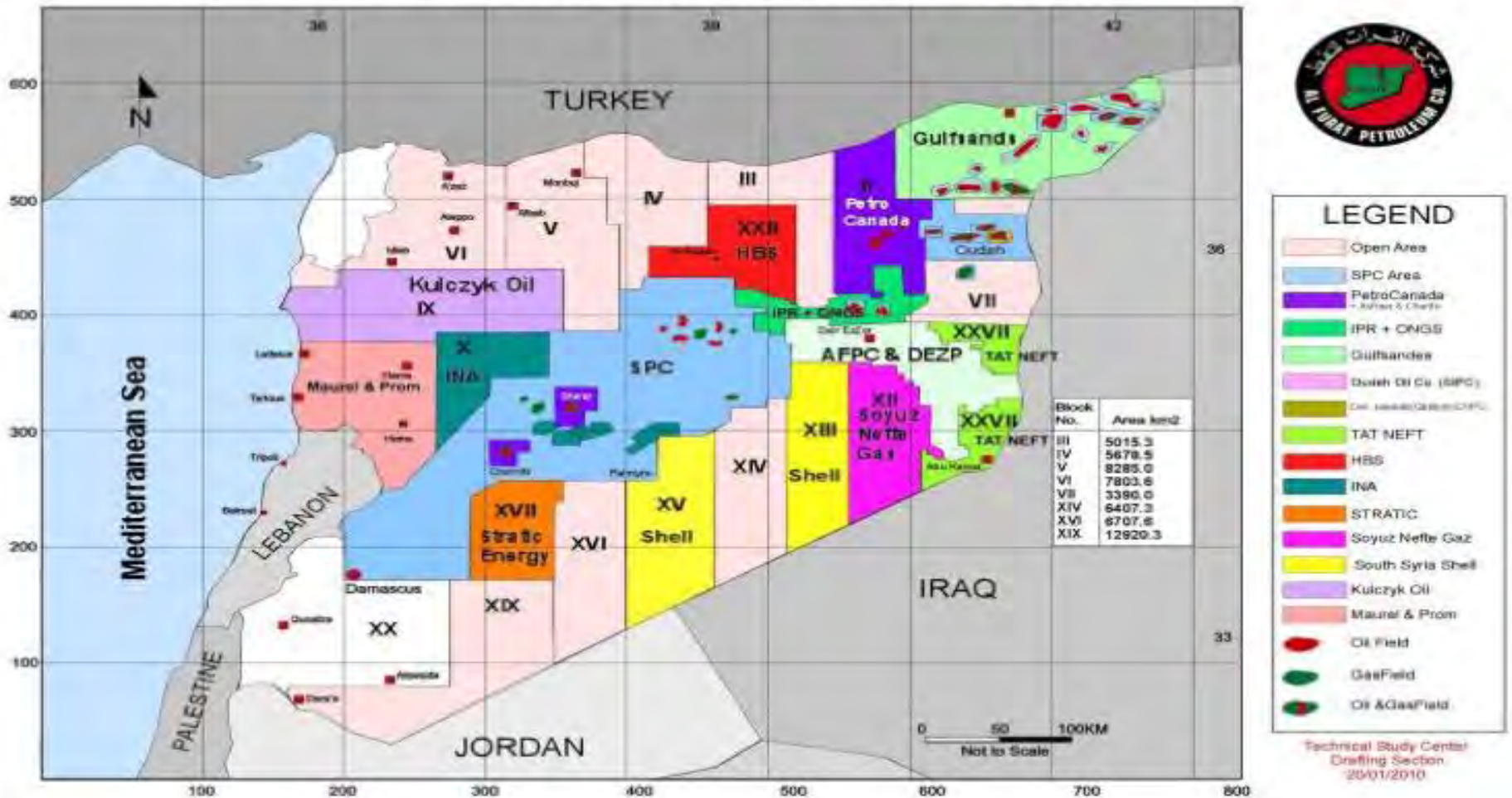
- ❑ Syria is small but traditional Middle East oil producer which for many years had been producing some 500,000 to 600,000 bpd from several onshore fields mainly in the Hasaka region in the north east and in Deir Ezzor
- ❑ According to BP's Statistical Review of 2011 Syria was producing 323 bpd with its domestic consumption nearing 260,000 bpd. Therefore only a limited amount of oil was exported, less than 80,000 bpd
- ❑ Following the overrun by rebels (in November/December 2012) of several oilfields in the eastern province of Deir Ezzor oil production has come under renewed pressure. A further decrease in production below the current 160,000 bpd is foreseen
- ❑ Syria's insurrection has already been discounted as a geopolitical risk and therefore the deepening crisis is not affecting further international oil prices
- ❑ If and when Iran is drawn openly into the conflict the markets will sense higher geopolitical risk and this inevitably will translate into higher oil prices

Syria: Oil & Gas and Infrastructure



Syria's Exploration Blocks

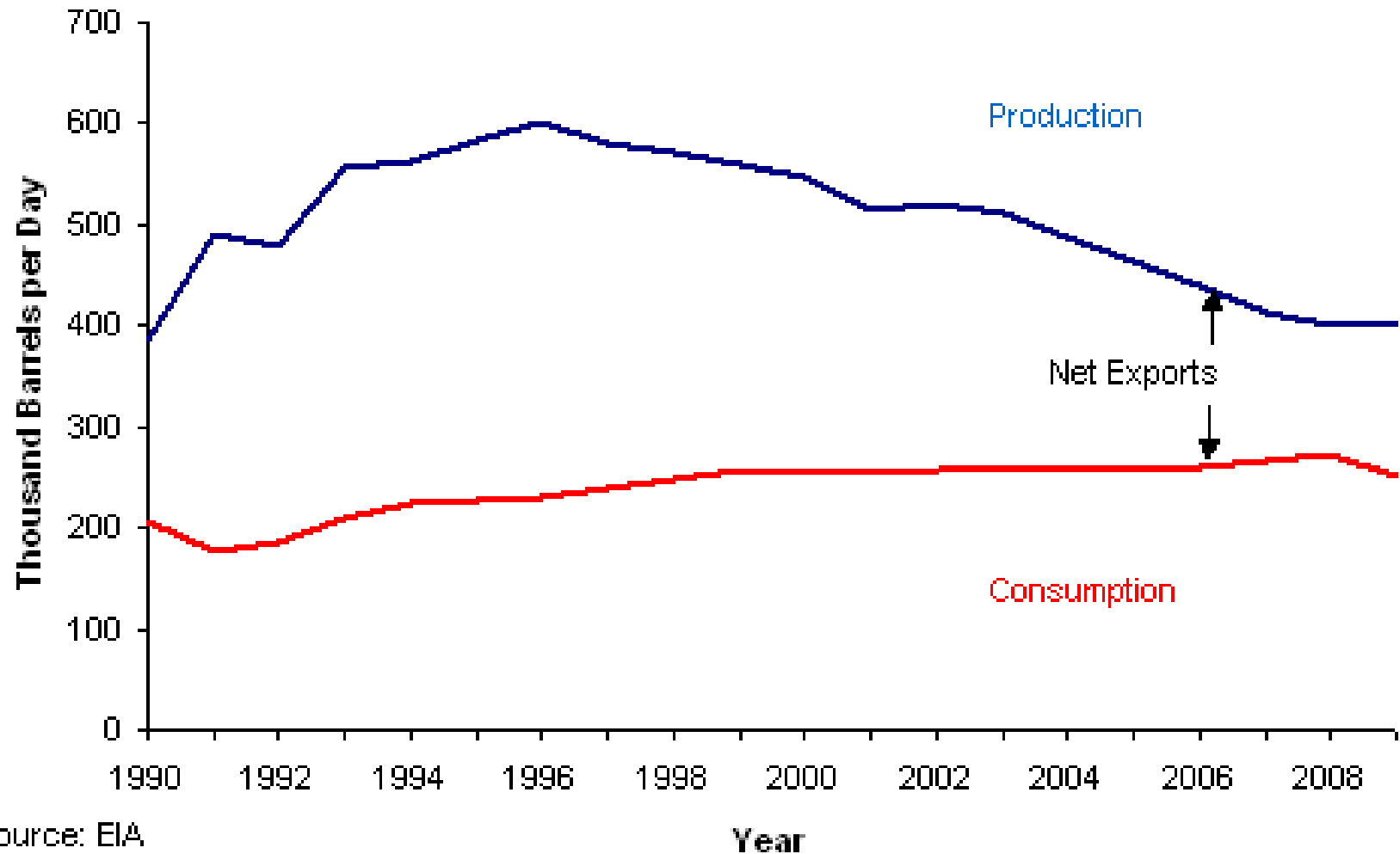
Map of Service Contract and Development Areas 2010



KURDS NEED SYRIA



Syria's Total Petroleum* Balance, 1990-2009



Syria oil production & consumption

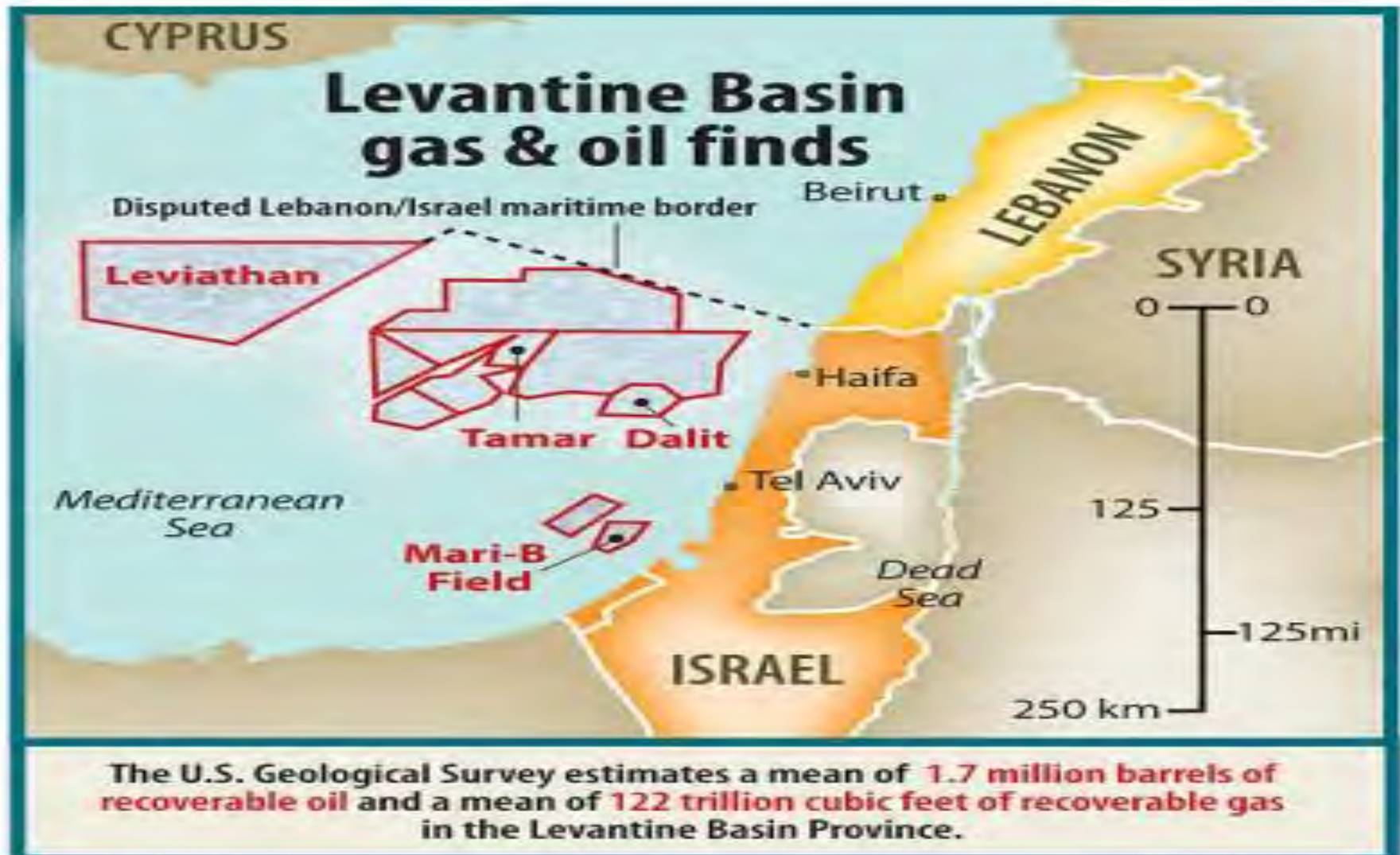


Source: IEA, Nômura research

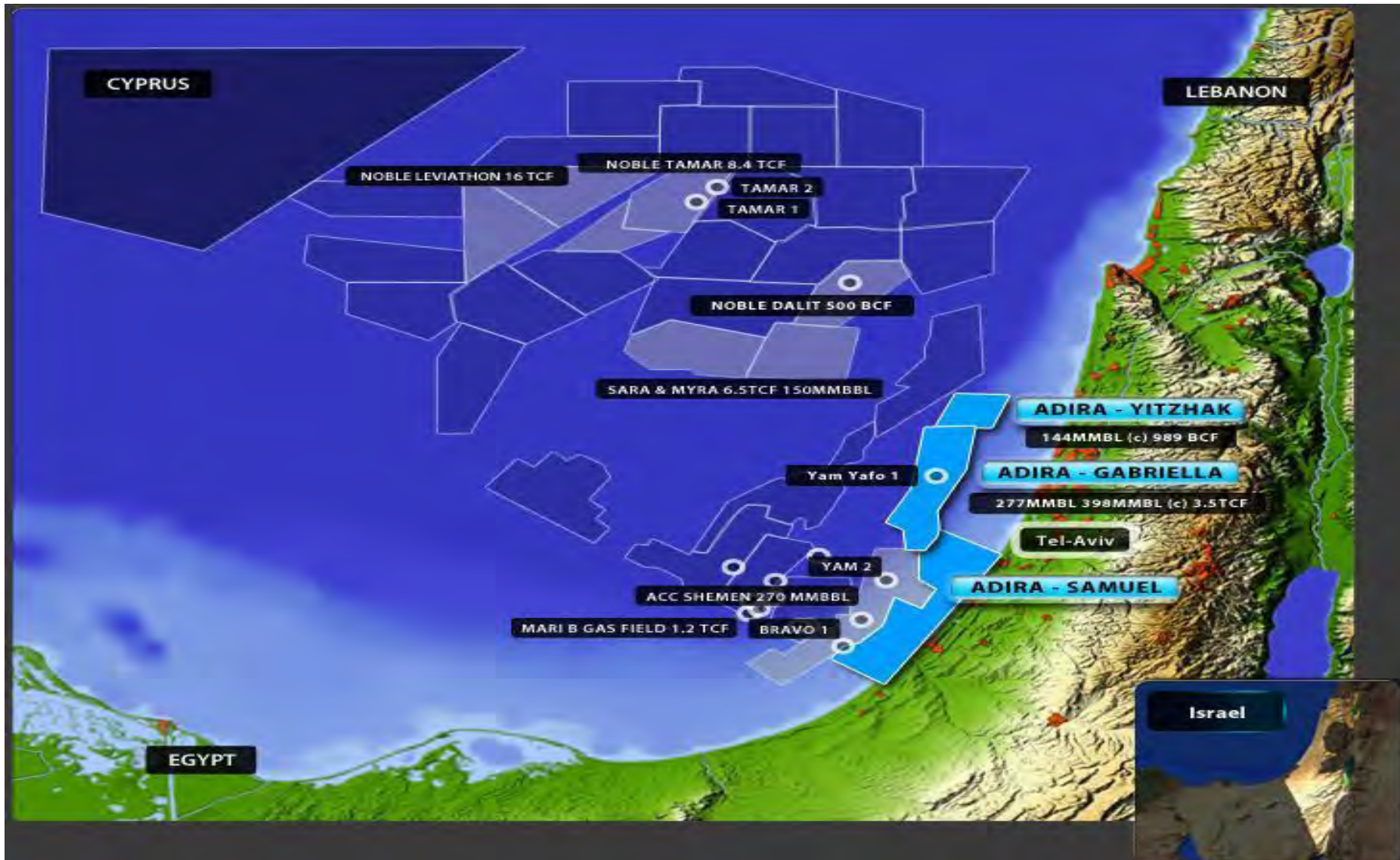
Egypt & Israel Hydrocarbon Fields



Israel – Oil and gas finds



Israel & Cyprus Exploration Blocks

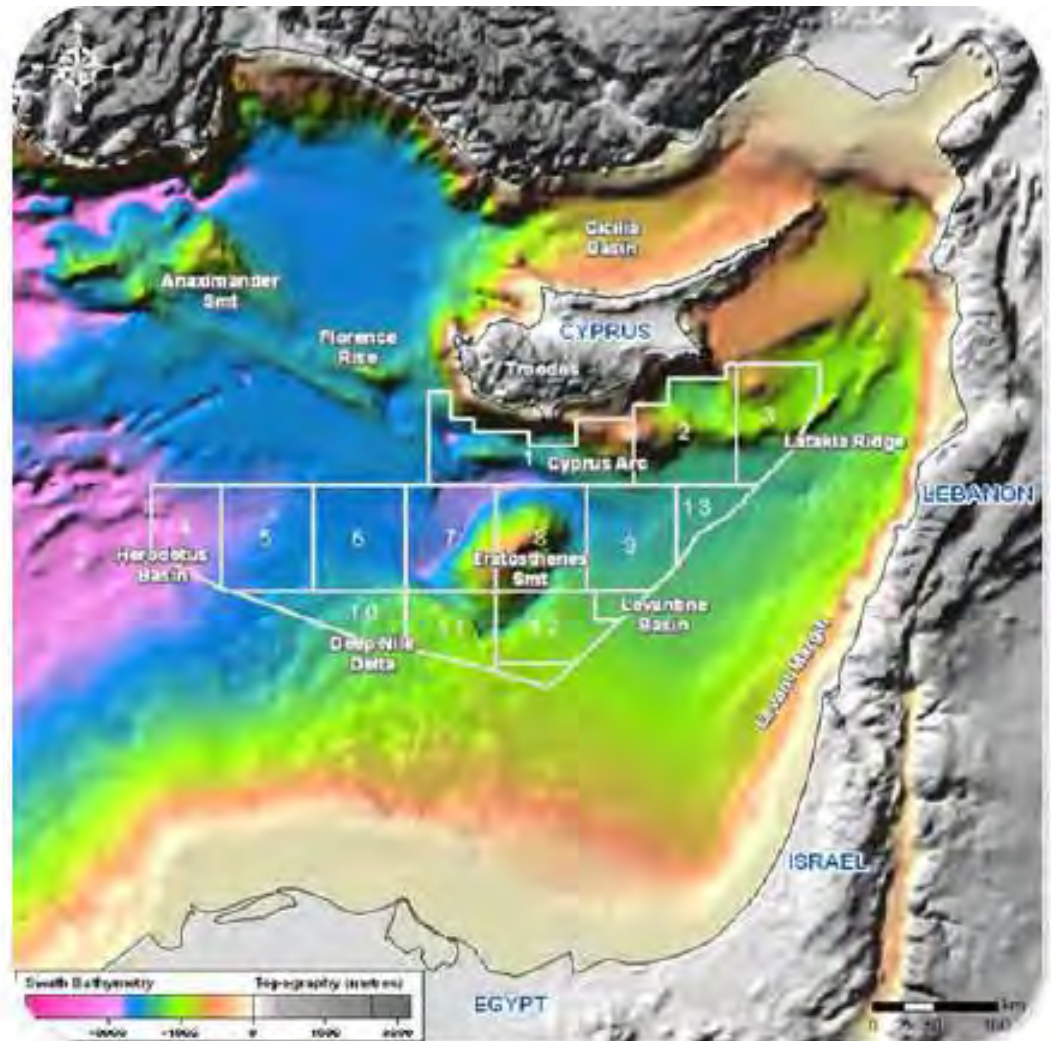


Israel & Cyprus Gas Fields

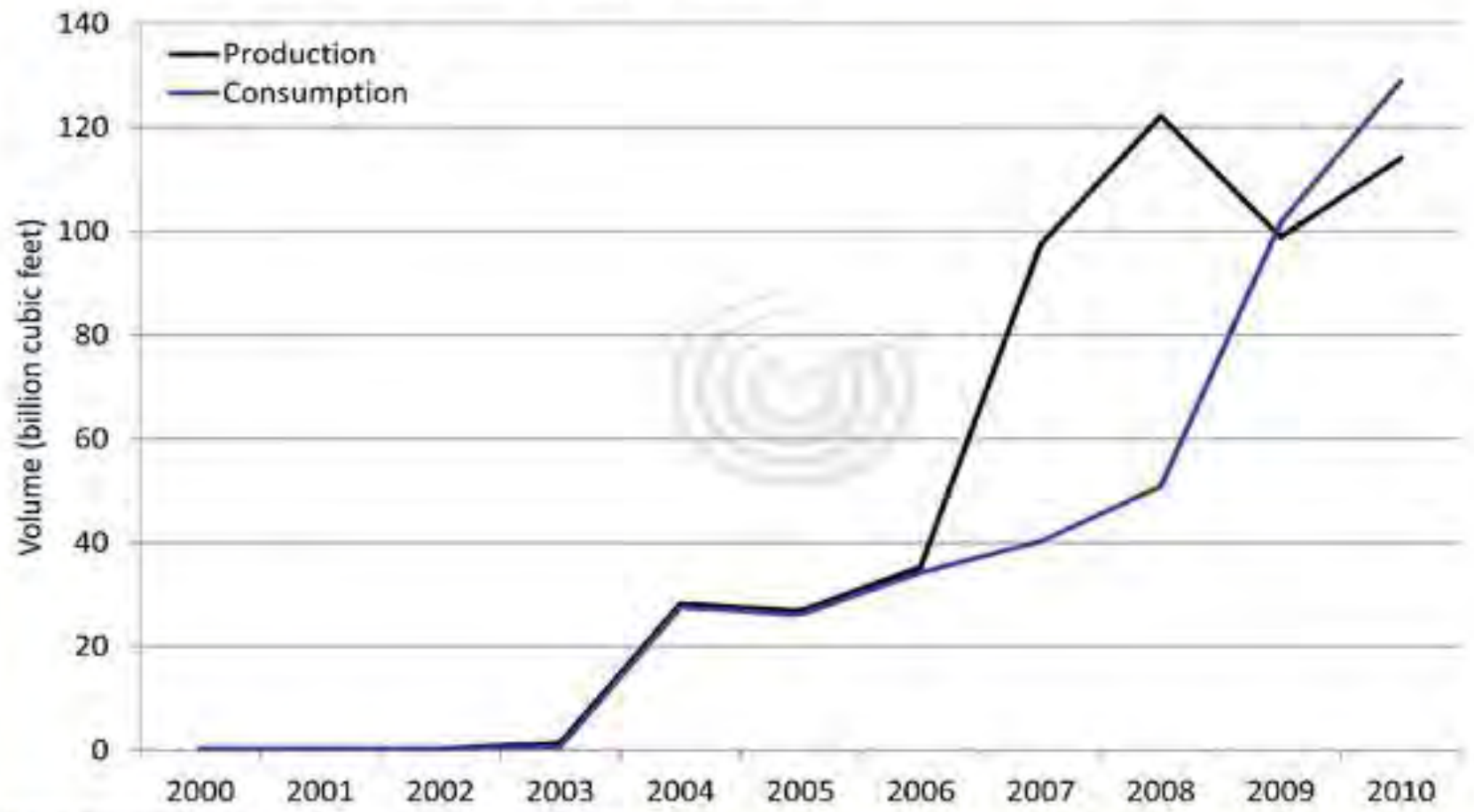


Offshore Cyprus: A New Frontier & Emerging Area

- ▶ Located at the crossroads of big international energy routes
- ▶ Full member state of the EU with stable business environment
- ▶ Open services-oriented market economy
- ▶ A strategic hub for business activities in the region
- ▶ Big hydrocarbon discoveries in the region
- ▶ A promising regional geological background
- ▶ Many leads of considerable size
- ▶ Access to the EU market and the Greater Mediterranean Region (large potential for oil and gas trading)



The Rise of Natural Gas in Israel

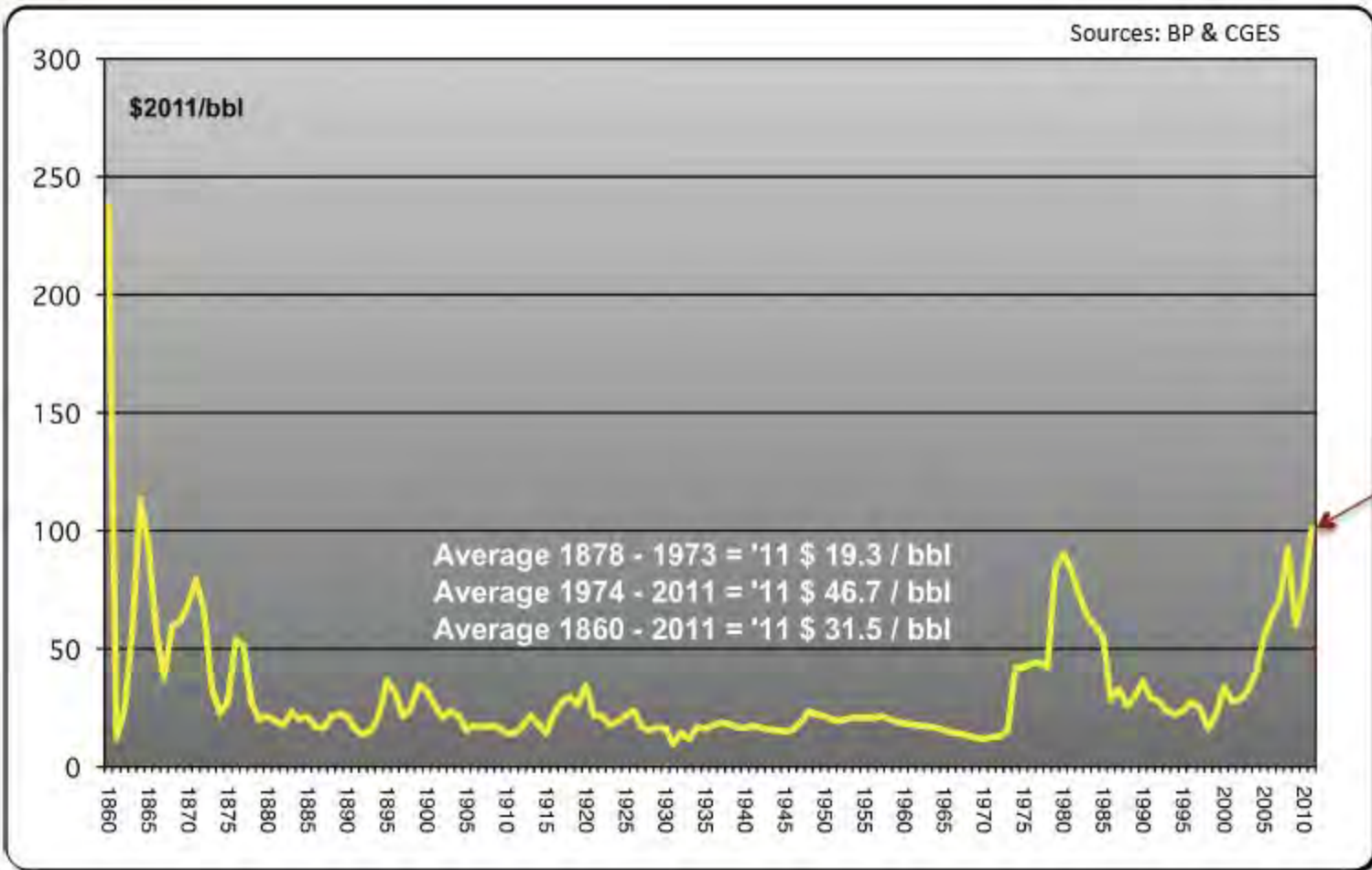




The Arab Spring and Oil Prices

- ❑ Between Jan. 20, 2011 and Feb. 22, 2011 the ICE Brent benchmark increased by \$12.0/bbl or 12.5% during the peak of Egyptian turmoil.
- ❑ In the 3 months from December 1 to Feb 28, 2011 the increase was \$22/bbl or 25.5%.
- ❑ As the Libyan crisis erupted oil prices shot up to \$126.0/bbl (May 2011).
- ❑ International oil prices were maintained at high levels between \$125 to \$129 as crisis spread to Yemen, Bahrain and Syria.
- ❑ The Arab Spring had a clear effect in considerably increasing geopolitical risk.
- ❑ In June 2011 the IEA released some 60 million barrels (2 million barrels a day over 30 days) , in order to prevent supply crunch and lower oil prices. Brent prices dropped by 10 -12\$ and traded below \$110.0/bbl in June-July 2011.

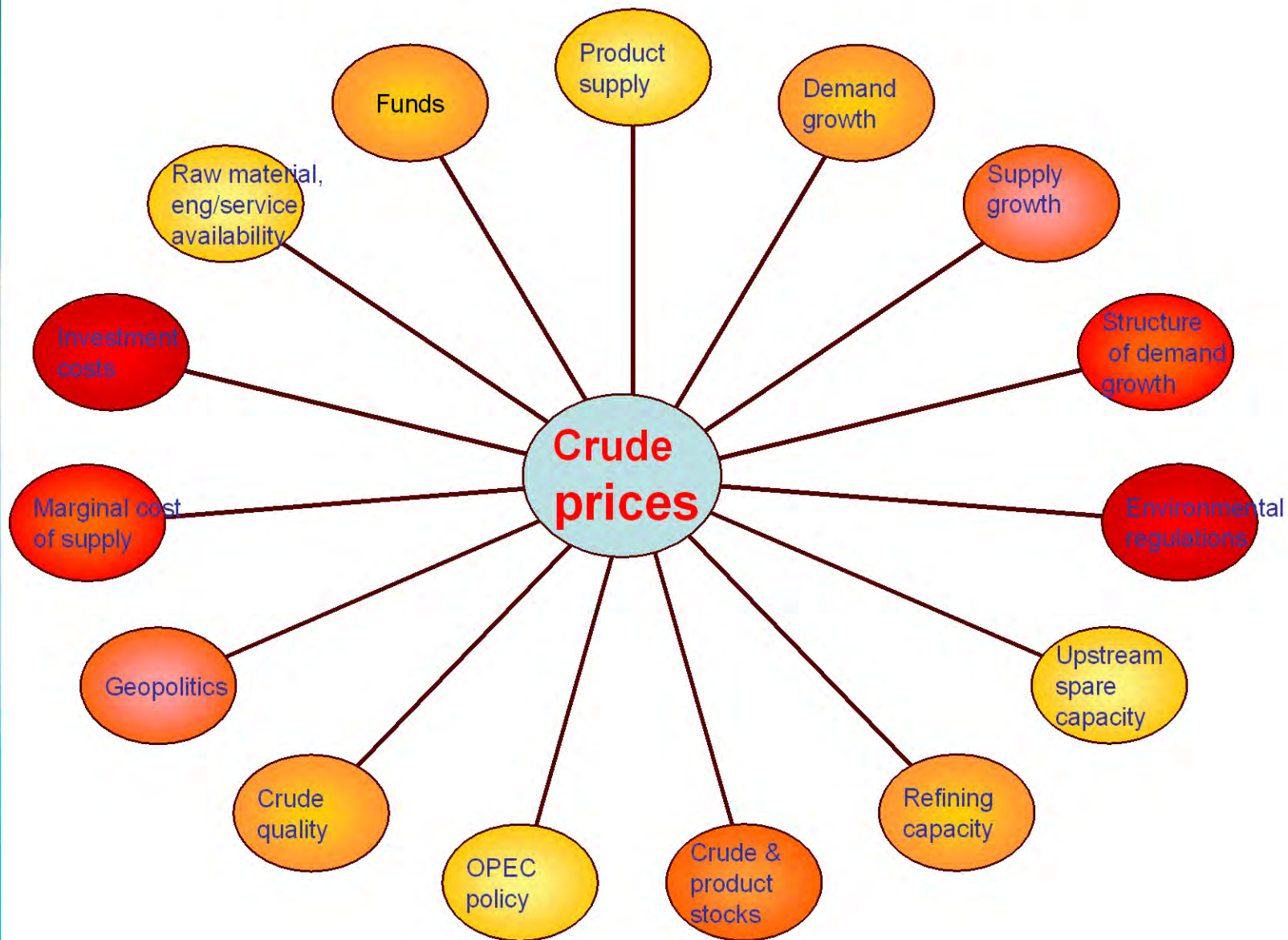
Real oil prices from 1860 to 2011



2011 saw the highest annual average oil price in real terms since 1864

From John D. Rockefeller's consolidation of the US oil industry in 1878 until the first oil price crisis of 1973-4 the price of oil averaged \$19.3/bbl in 2011 US Dollars and was fairly stable throughout this long period. After 1973 the real price of oil averaged around \$47/bbl in 2011 \$ and became volatile.

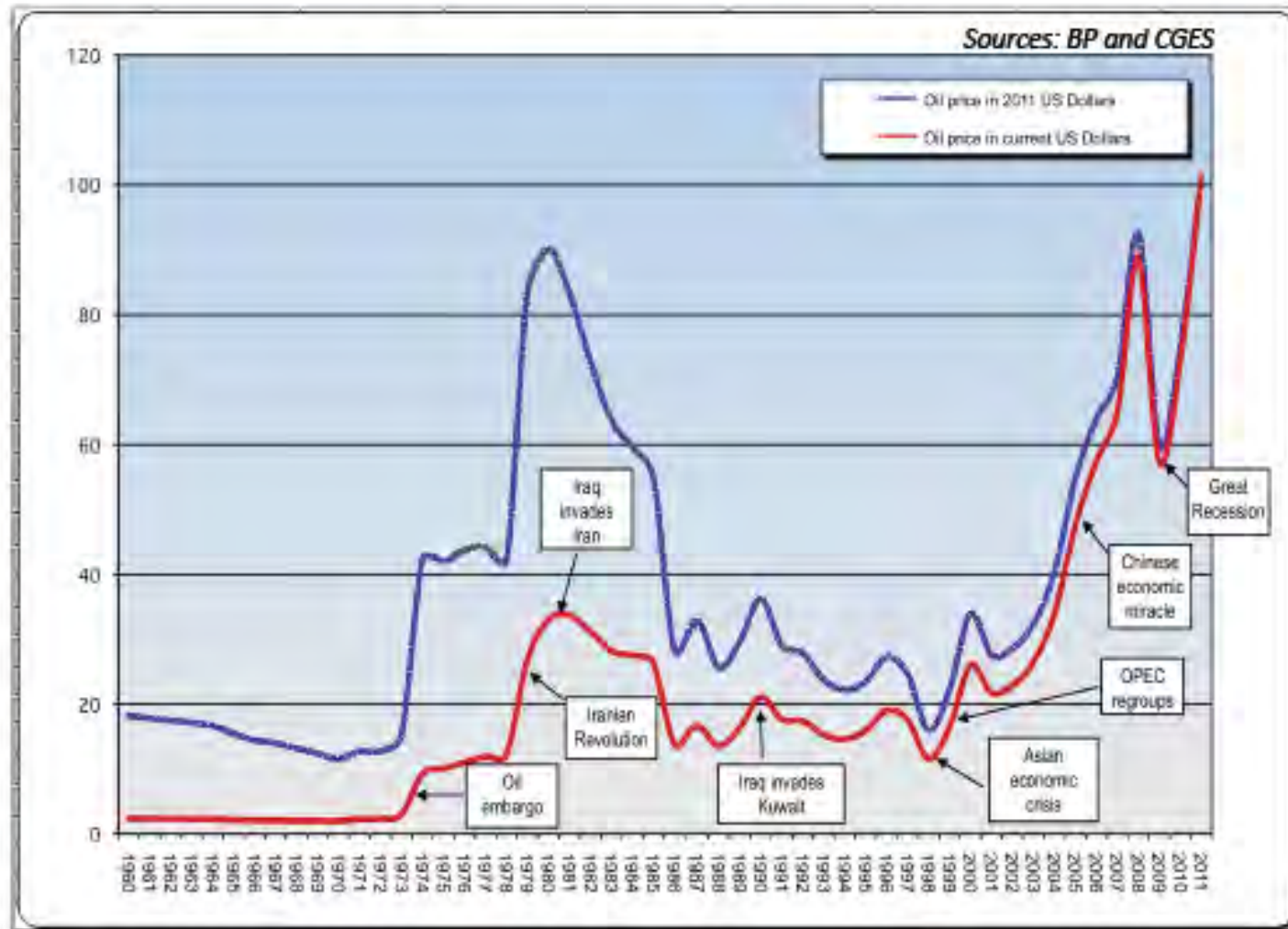
Price formation: no single driver



MEDIUM
TERM

Oil
Market
Report

Nominal and real oil prices, and their peaks and troughs, 1960 – 2011



ICE Brent futures over a 3 month period, up to February 24, 2011



Brent Crude Oil Spot Prices (2010 – 2011 – 2012)

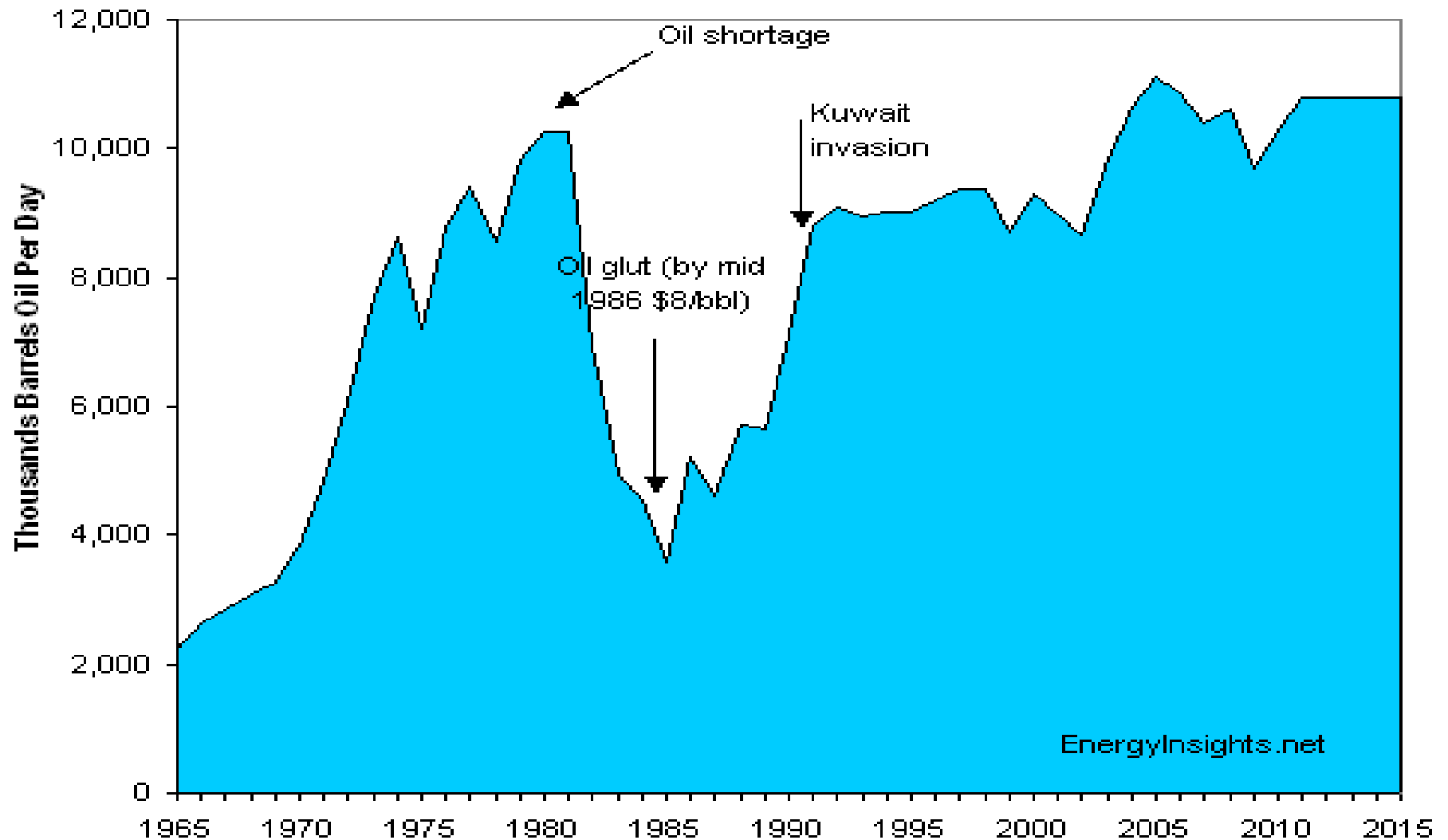


Source: Thomson Reuters.

Oil Prices Trends



Oil Production Saudi Arabia since 1965 and forecast to 2015

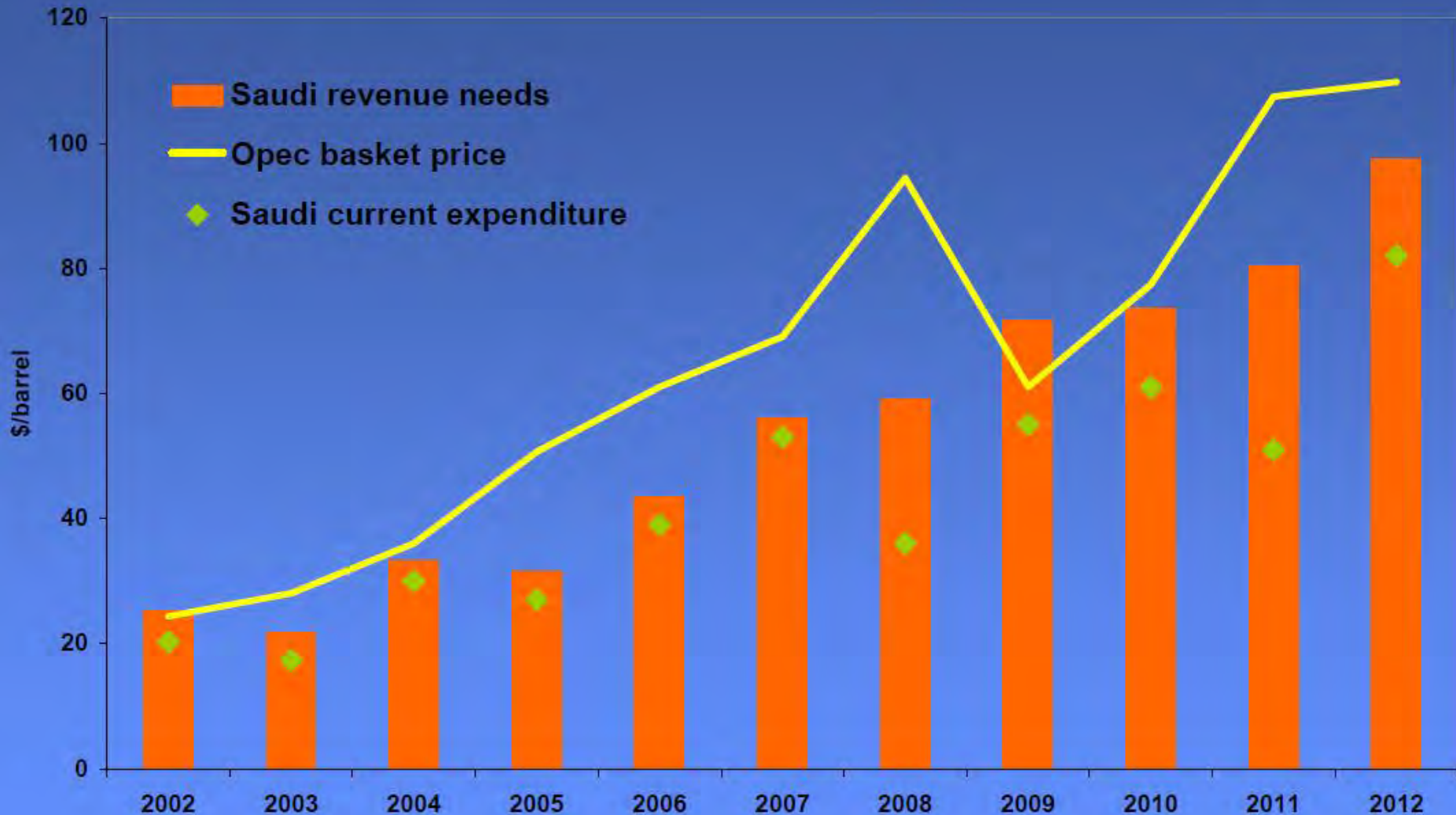


Oil Infrastructure in Saudi Arabia

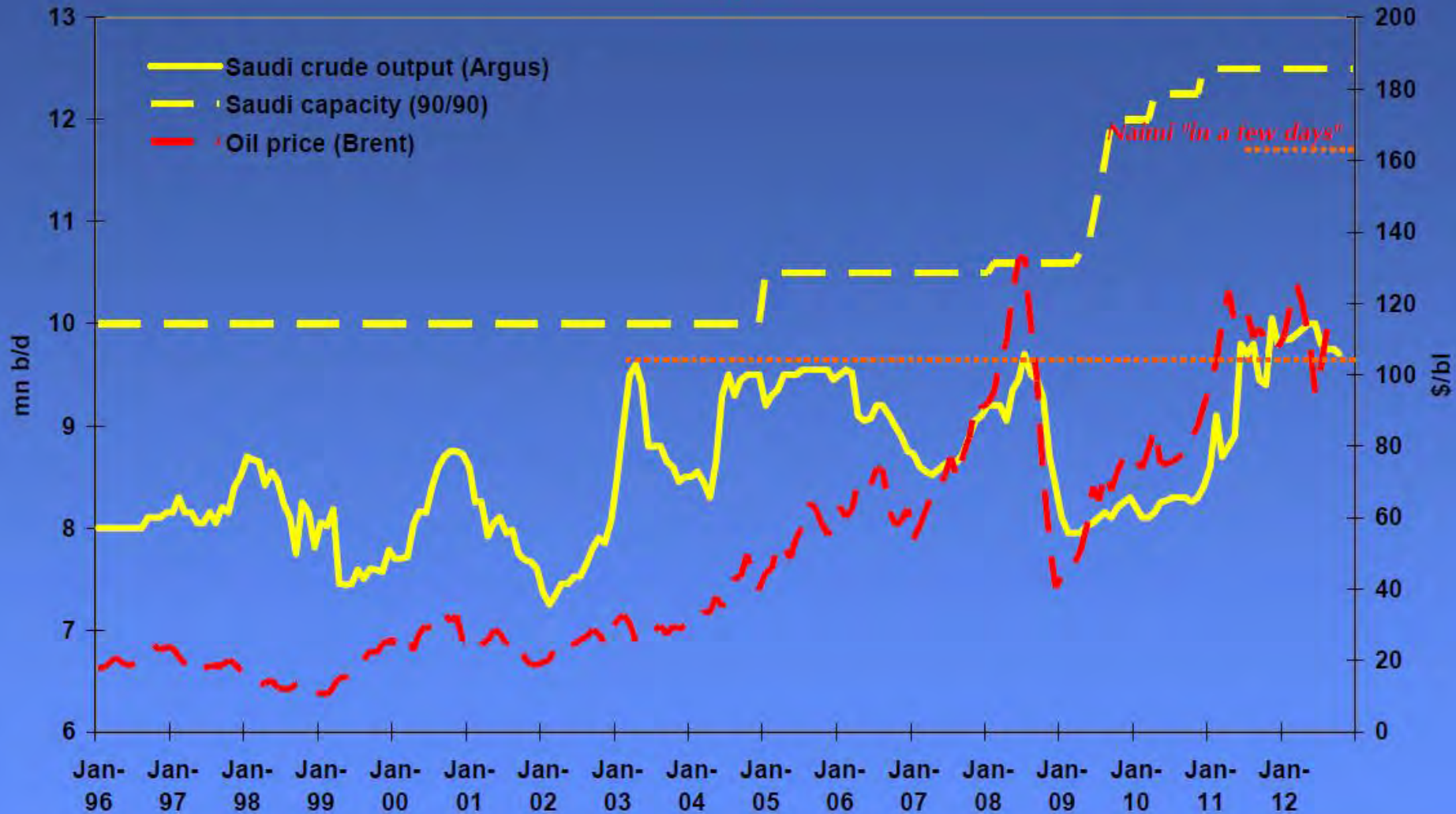




Saudi Budgets

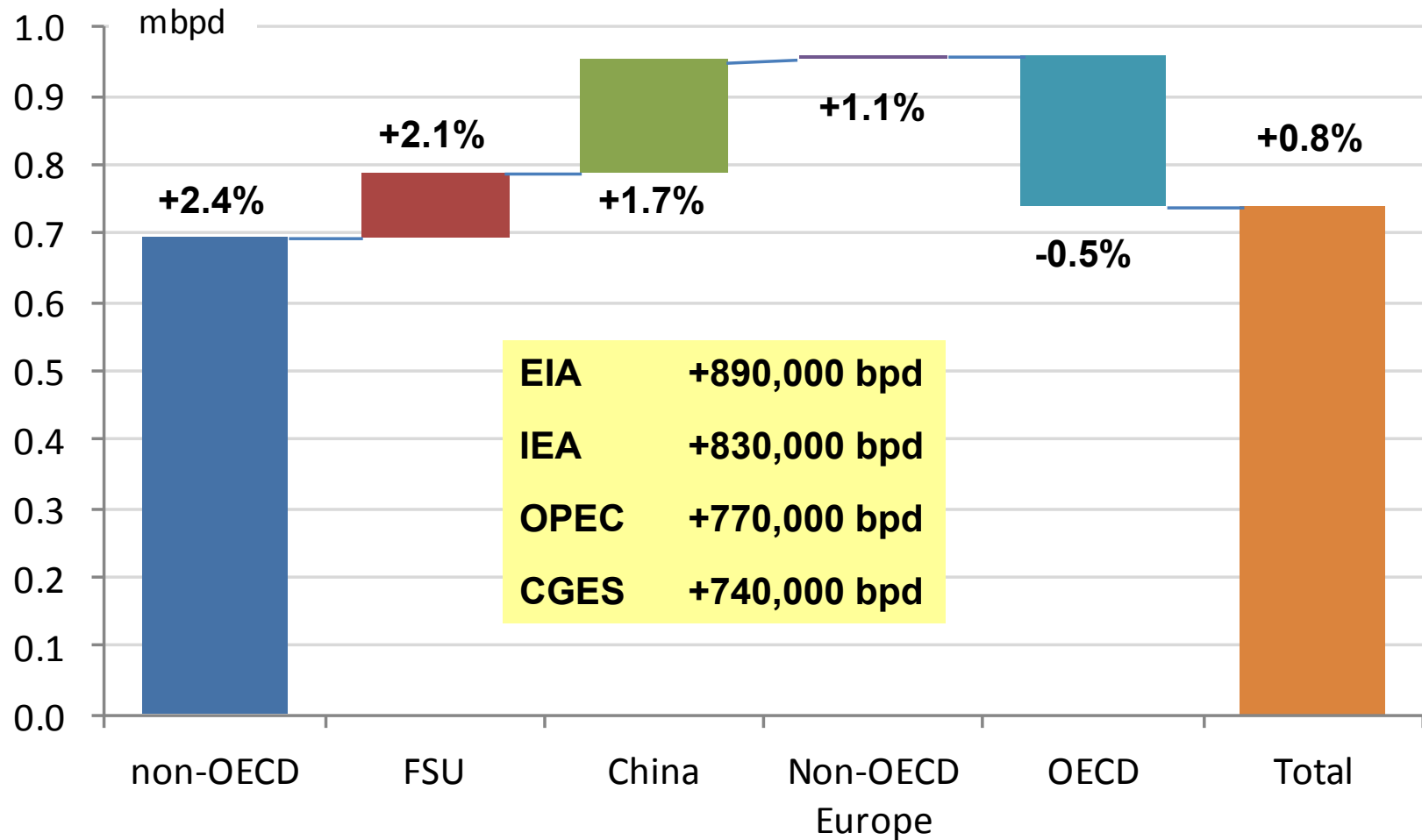


Saudi Power



Demand growth forecasts - 2013

Forecast of incremental global oil demand in 2013





Concluding Remarks (I)

- Arab Spring's impact so far on oil markets has been temporary (8-10 months during 2011) and marginal in view of limited oil and gas quantities exported (less than 2.5% of global oil requirements)
- The impact has been more pronounced in terms of increased geopolitical risk thus affecting international oil prices
- Geopolitical risk amplified by spillover effect (i.e. Yemen, Bahrain, Syria) and renewed terrorist threats (i.e. Libya and Algeria)



Concluding Remarks (II)

- If the present Arab insurrection had taken place 25 to 30 years ago the geopolitical impact and oil market ramifications would have been a lot greater because of a much weaker global information gathering and analysis capability as it happened in the case of the first oil crisis in 1973/74 and the second one in 1979/80
- IEA's organization, its strategic oil reserves and active role helped to a large extent diffuse market volatility and dampen uncontrolled price rises during the Arab Spring, especially following Libya's oil production demise in 2011



Concluding Remarks (III)

- ❑ Arab Spring has acted as an accelerating factor for the development of alternative oil and gas supply sources in East Med.
- ❑ Israel and Cyprus have been forced to speed up efforts in developing their offshore gas deposits and install LNG storage and gasification facilities; following Egyptian gas exports suspension to Israel via Arab Pipeline
- ❑ The new political regimes that will result from the “Arab Spring” could help increase transparency in oil gas and thus attract much needed foreign investment to the region.
- ❑ Finally, Israel & Cyprus gas deposit development presents a new paradigm shift as large scale hydrocarbon production can develop outside Arab-Muslim domain



**Thank you for
your attention**

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