



“Turkish Natural Gas Market in Light of Global Energy Trends”

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Board Member – PETFORM

CEO & Board Member – Turcas Petrol

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Mare Forum Istanbul 2011

About PETFORM



Established in 2000, PETFORM has played a crucial role in the transfer of private sector views to the public authorities regarding to Turkish energy legislation amendments (Natural Gas Market Law, Petroleum Market Law, Turkish Petroleum Law...)

Member companies mainly have activities in 2 sectors:

- Exploration & Production Sector**
- Natural Gas Market**

PETFORM Member

45 Energy Companies



- AKENERJ
- AKSA DO ALGAZ
- ALADDIN MIDDLE EAST
- ATT LA DO AN N AAT
- AVRASYA GAZ
- AYGAZ DO AL GAZ
- BM N AAT
- BOSPHORUSGAZ
- BP
- ÇALIK ENERJ
- DO AL ENERJ
- EDISON
- EGE GAZ
- ENEL
- ENERCO ENERJ
- ENERJ SA
- ENI
- E.ON RUHRGAS
- ERDGAZ
- EWE ENERJ
- EXXONMOBIL
- GENEL ENERJ
- GÜNEY YILDIZI PETROL
- IBS RESEARCH
- NATURGAZ
- N.V.TURKSE PERENCO
- OMV
- OPAL T
- PALMET
- PETOIL
- PETROL OF S
- POZ T F DO ALGAZ
- SHELL ENERJ
- SOCAR & TURCAS ENERJ
- SOYAK ENERJ
- STATOIL
- TEKFEN N AAT
- TEMI
- THRACE BASIN
- TIWAY TURKEY
- TOTAL
- TRANSATLANTIC TURKEY
- TURCAS
- TURUSGAZ
- ZORLU DO ALGAZ

PETFORM Members' Value in Turkish Economy (2010)

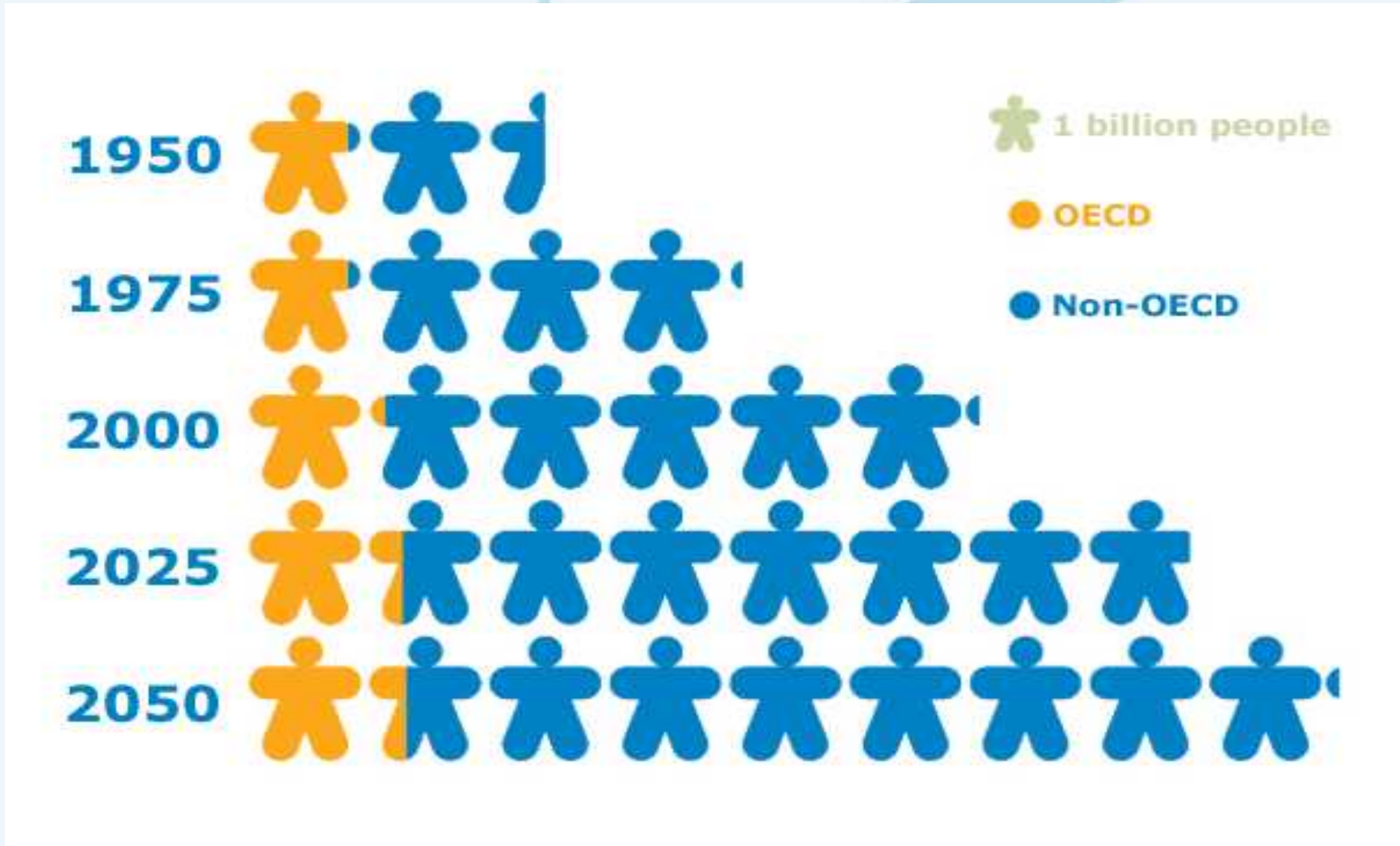


Total Turnover : 35.7 billion USD
(5% of GDP)

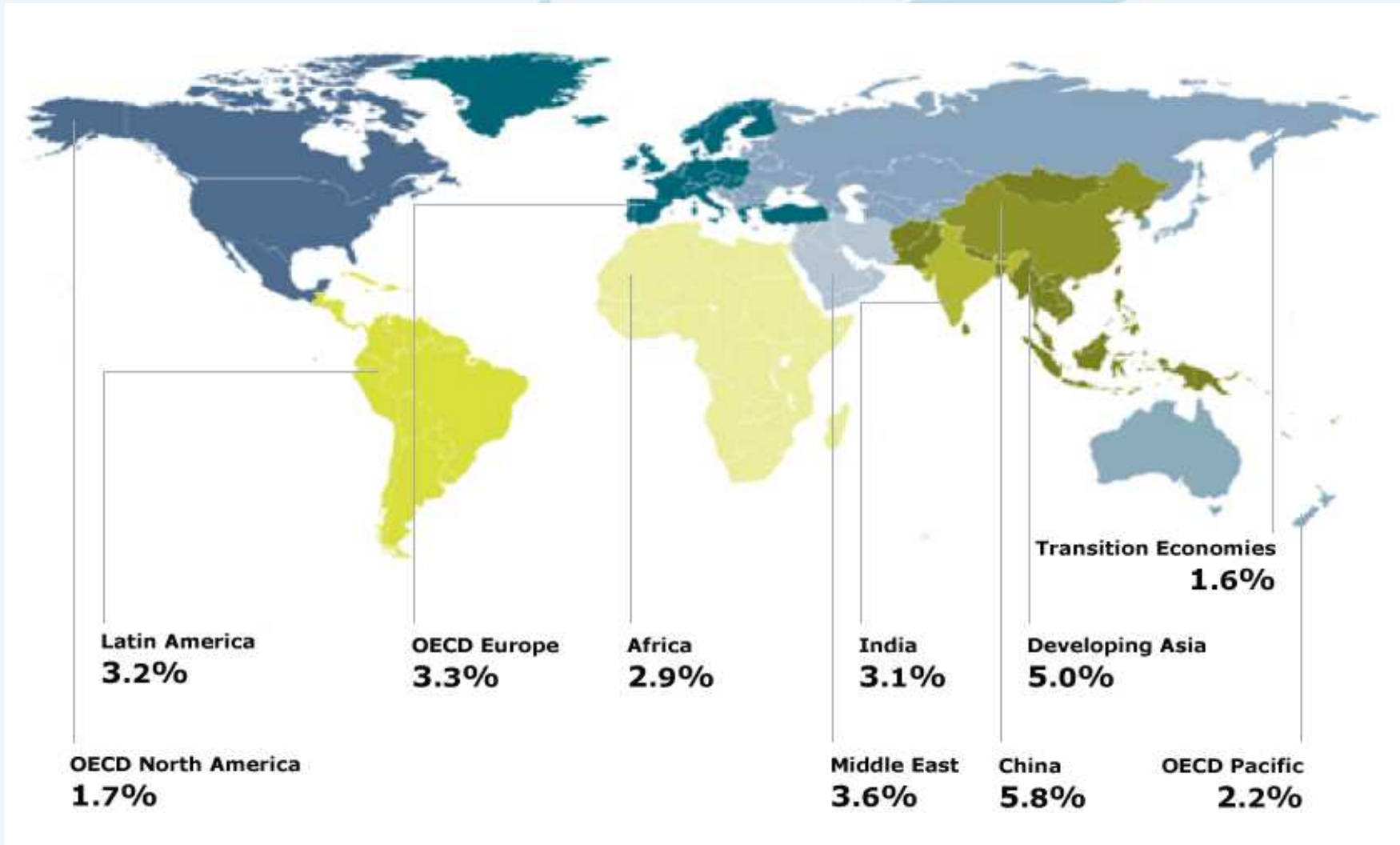
Total Tax : 2.1 billion USD

Total Employment : 31,200

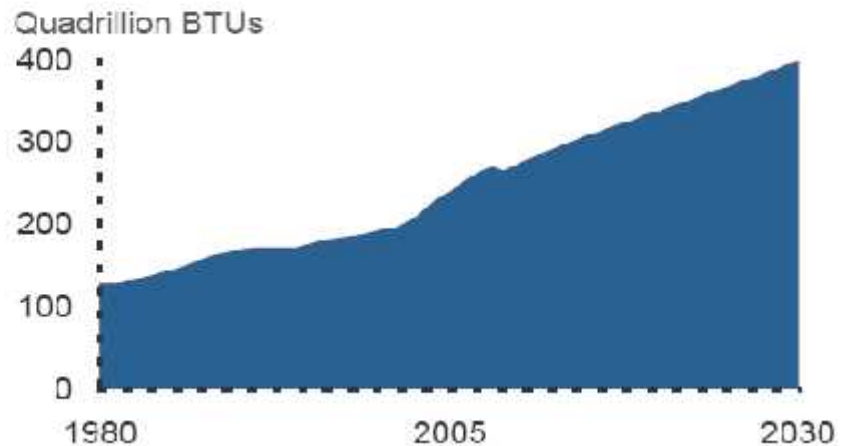
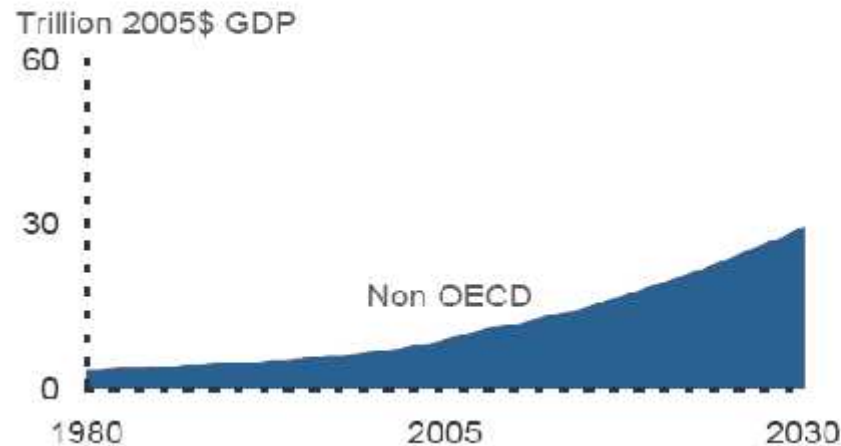
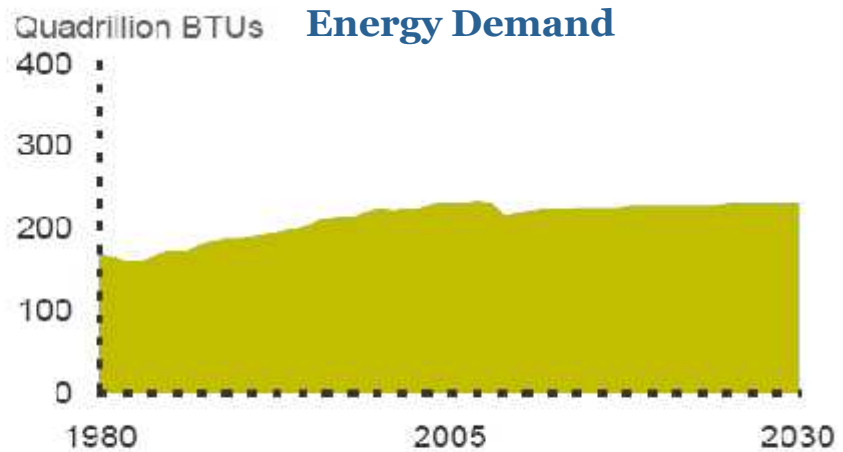
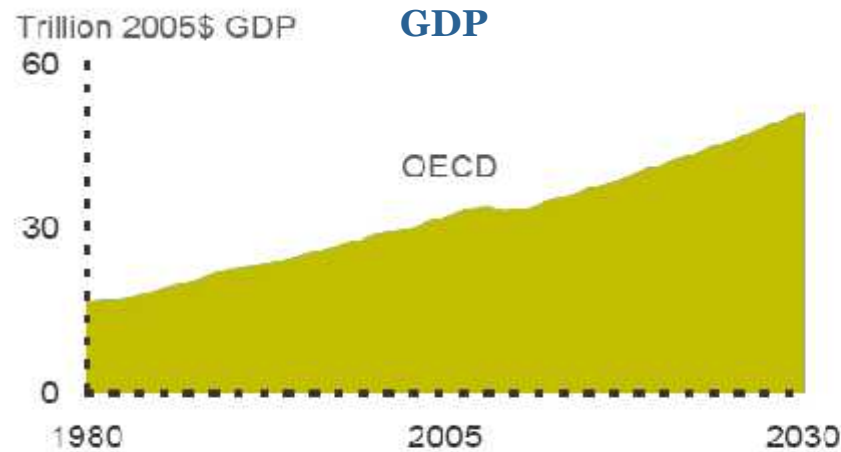
World Population Growth (1950 – 2050)



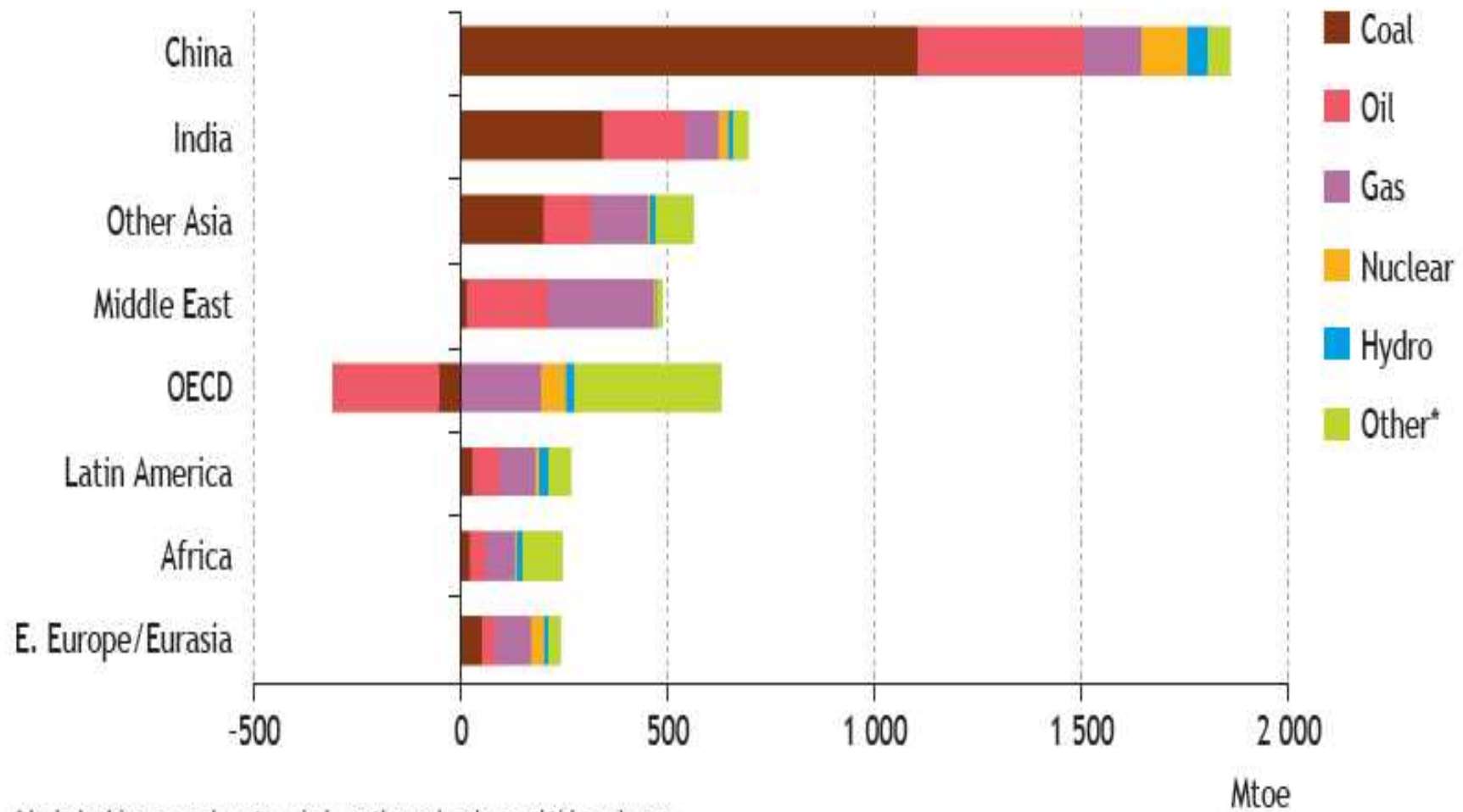
World GDP Growth (2005 – 2050)



GDP & Energy Demand Growth (1980 – 2005 – 2030)

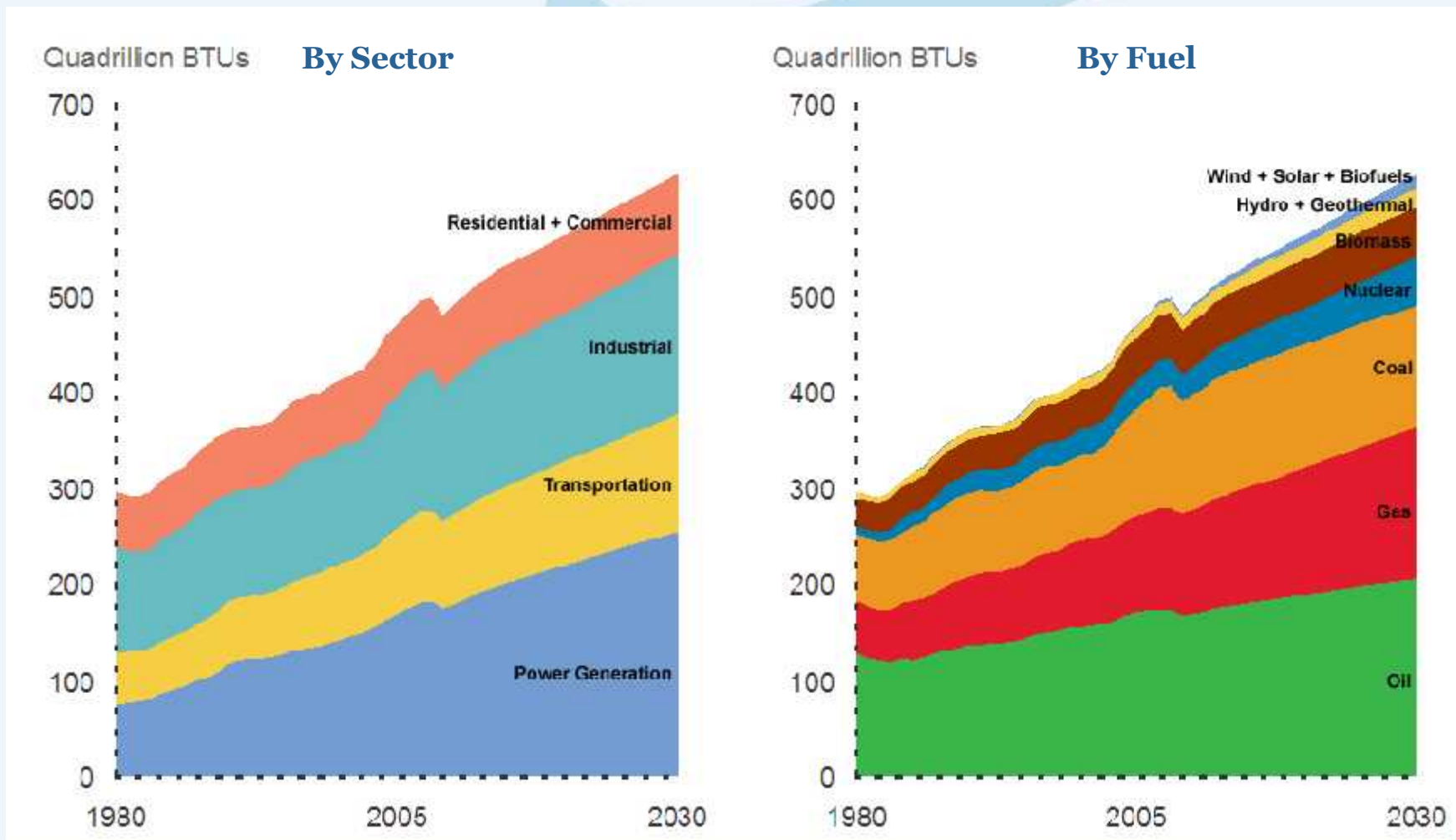


World Primary Energy Demand (2007 – 2030)



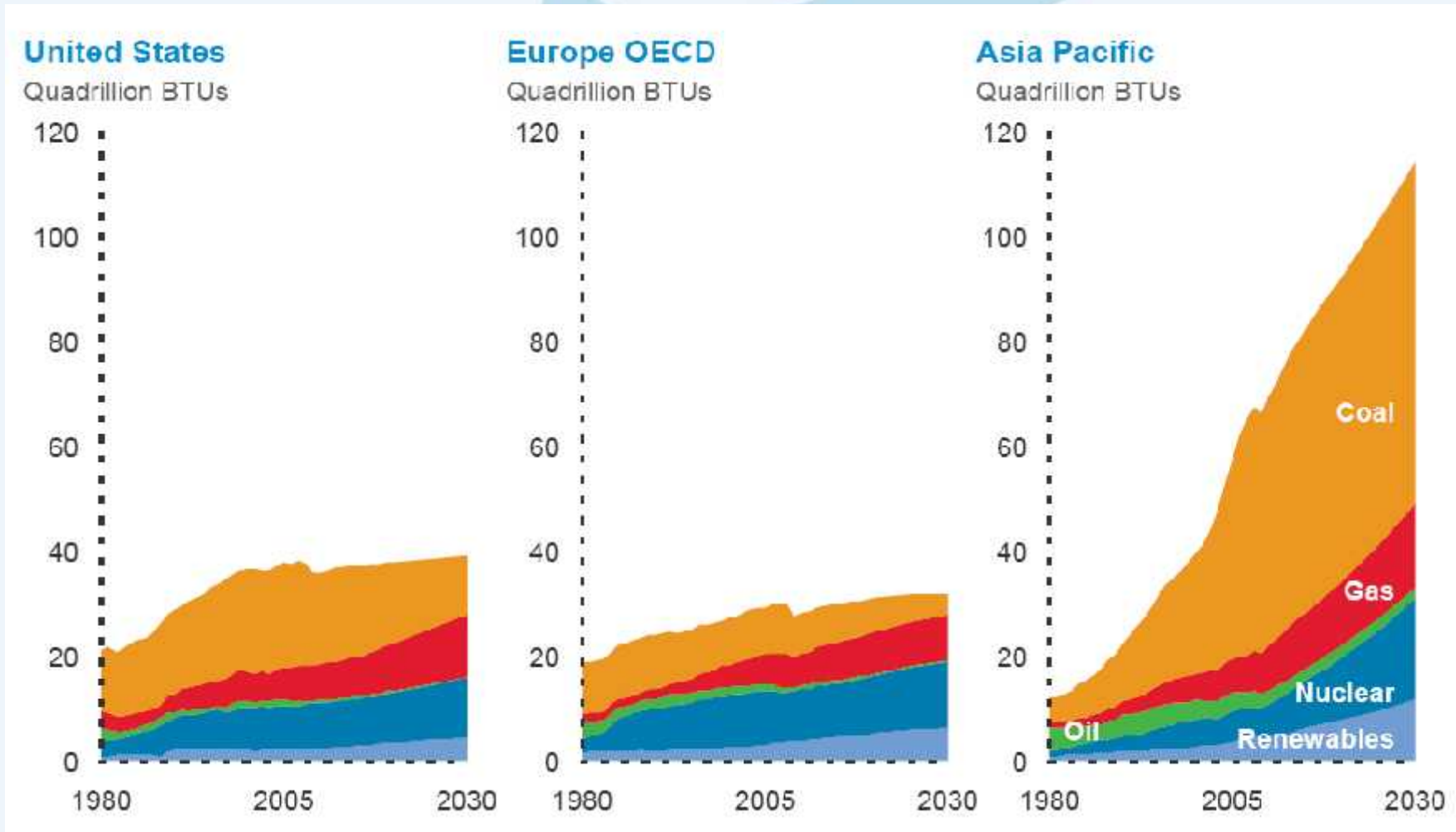
* Includes biomass and waste, wind, geothermal, solar, and tide and wave.

Energy Demand By Sector & By Fuel (1980 – 2005 – 2030)



Source: ExxonMobil

Power Generation Fuel Demand (1980 – 2005 – 2030)

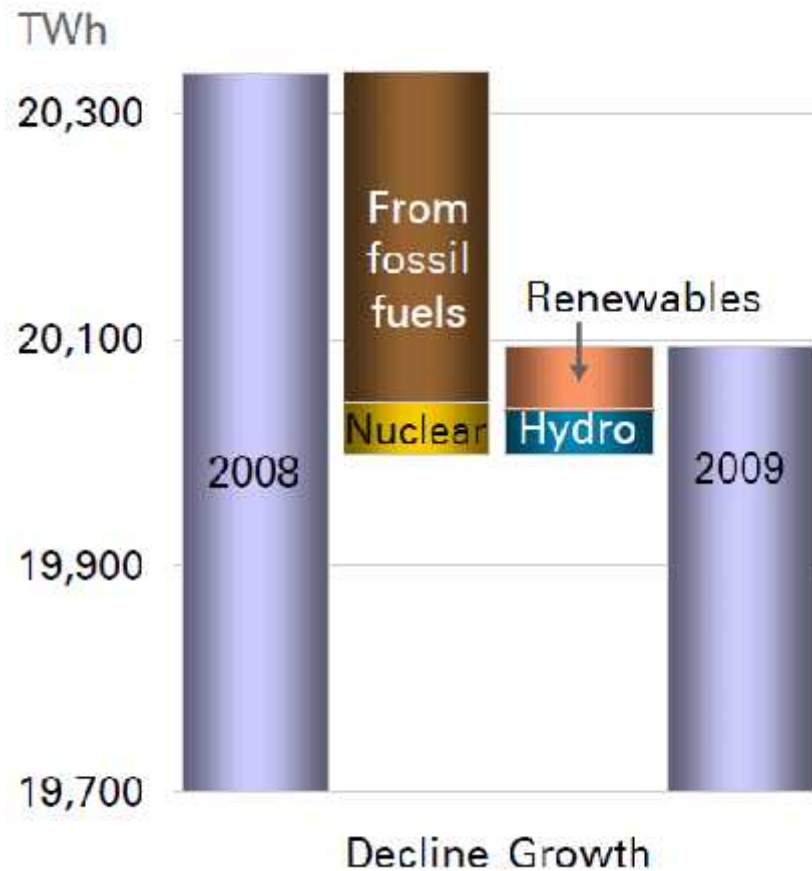


Source: ExxonMobil

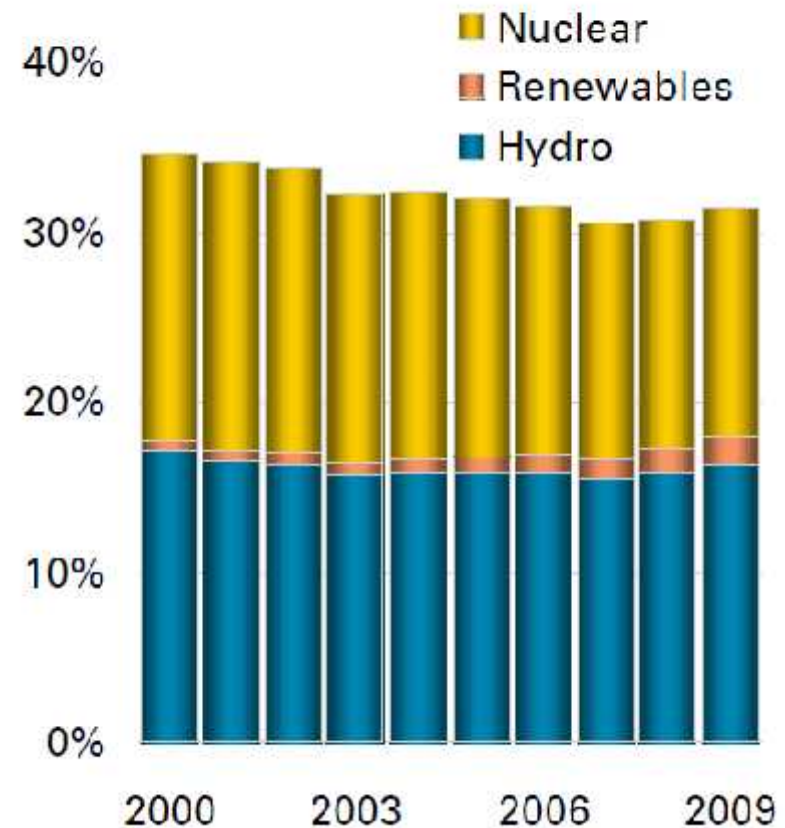
Share of Non-Fossil Fuels in Power Generation



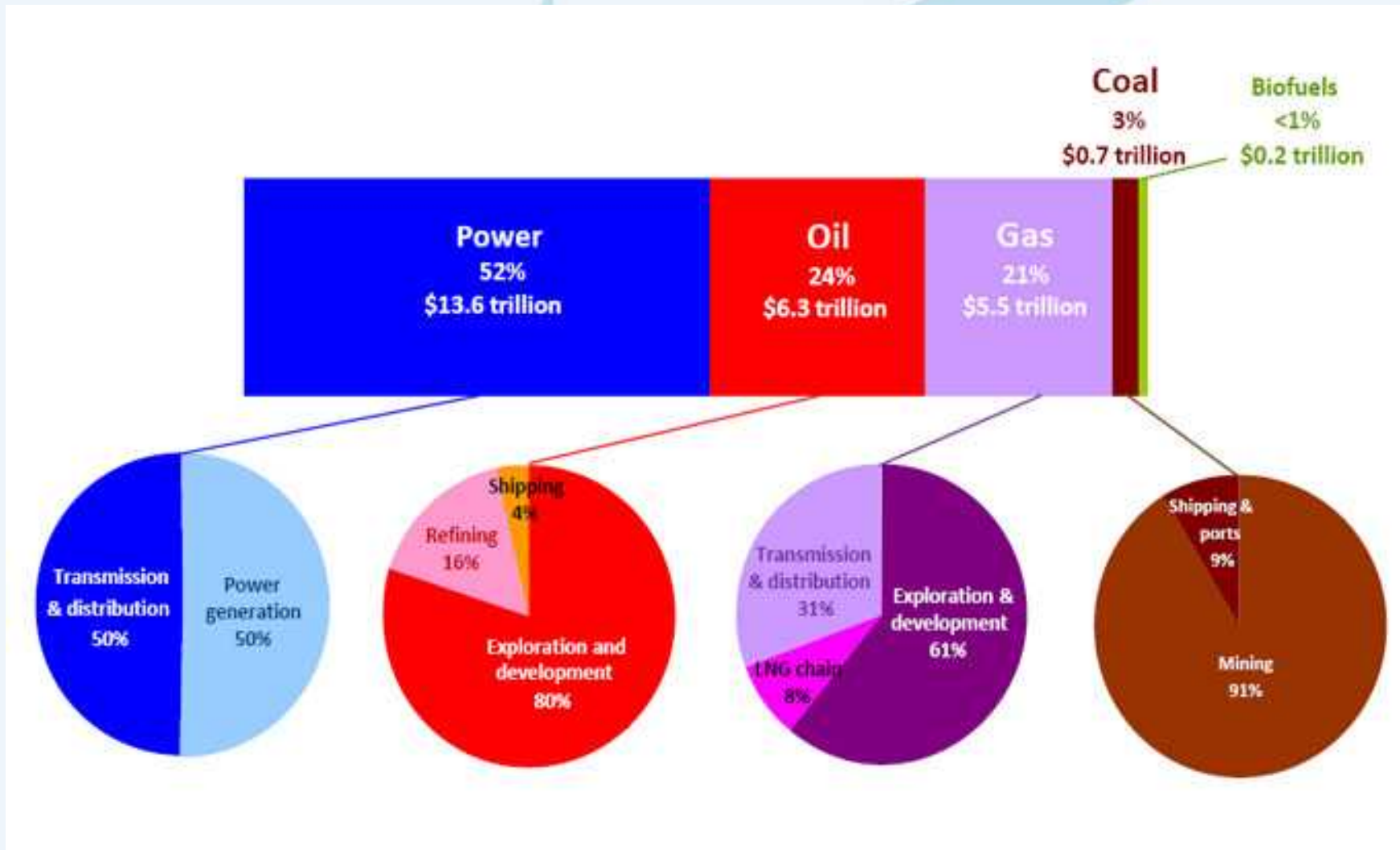
Total electricity generation



Share of total generation



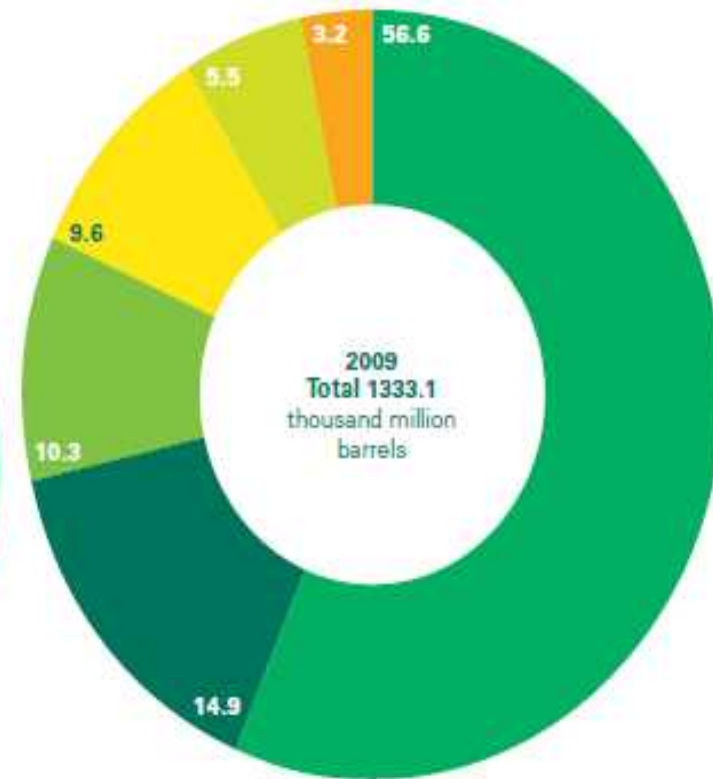
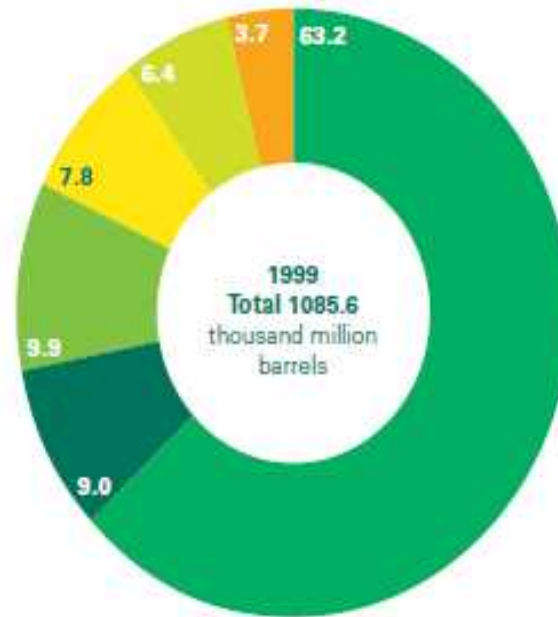
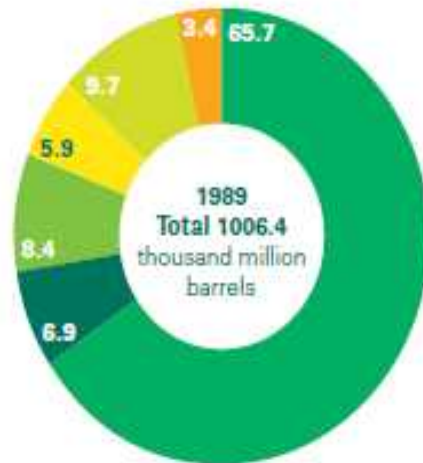
Primary Energy Investment Requirement (2007 – 2030)



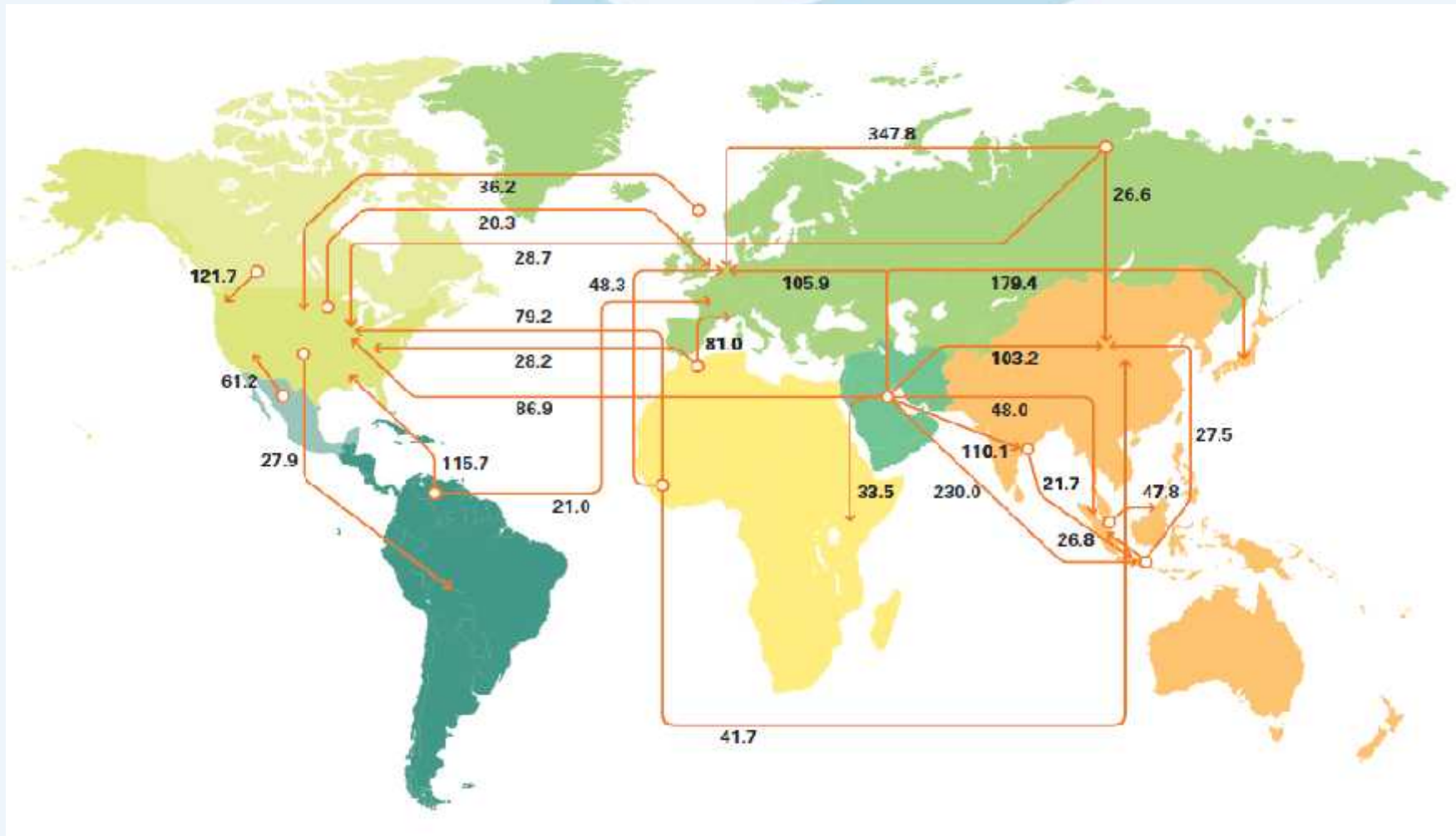
Distribution of World Oil Reserves (1989 – 2009)



- Middle East
- S. & Cent. America
- Europe & Eurasia
- Africa
- North America
- Asia Pacific

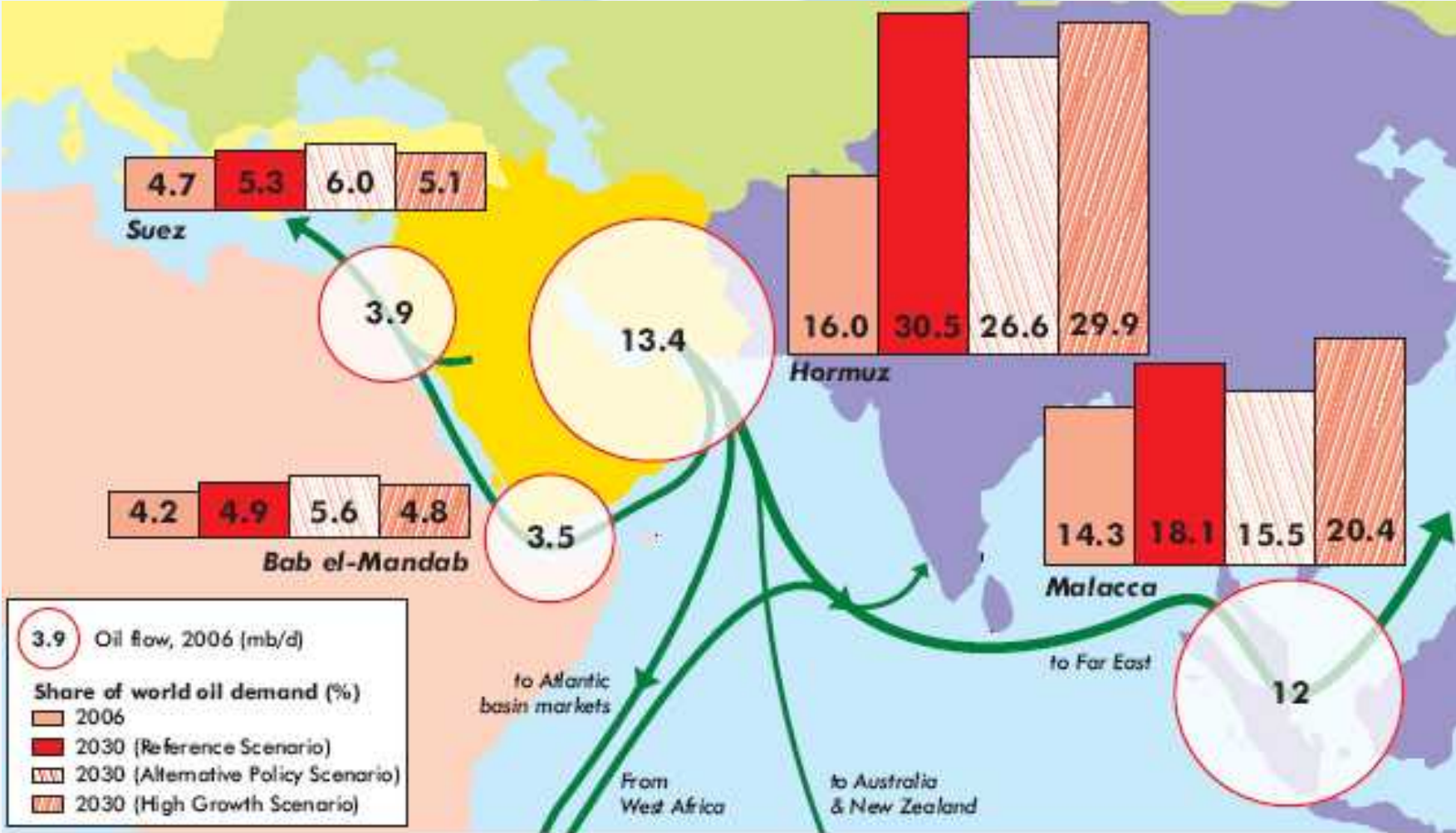


Global Oil Trade Routes



Source: BP

World Oil Transit Choke-points

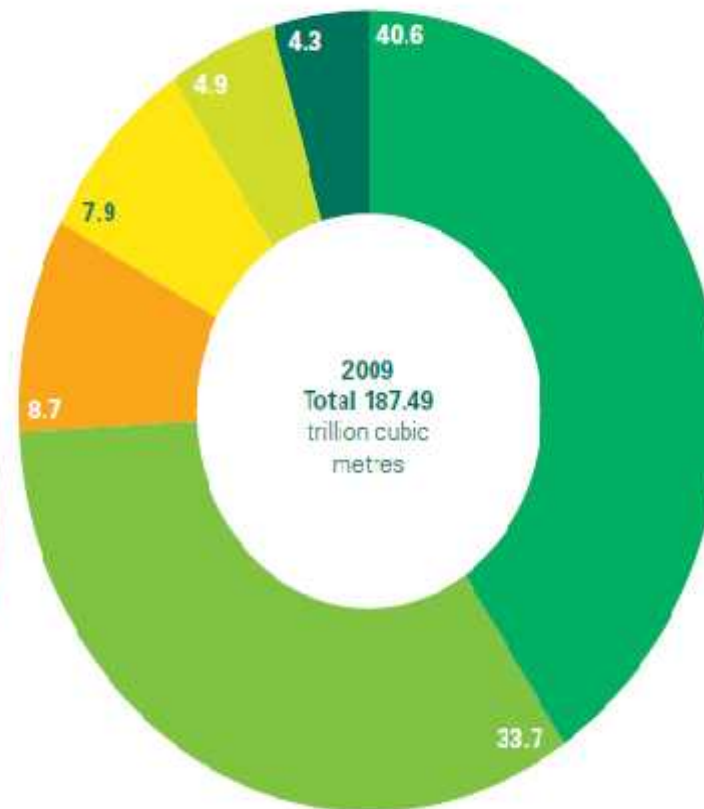
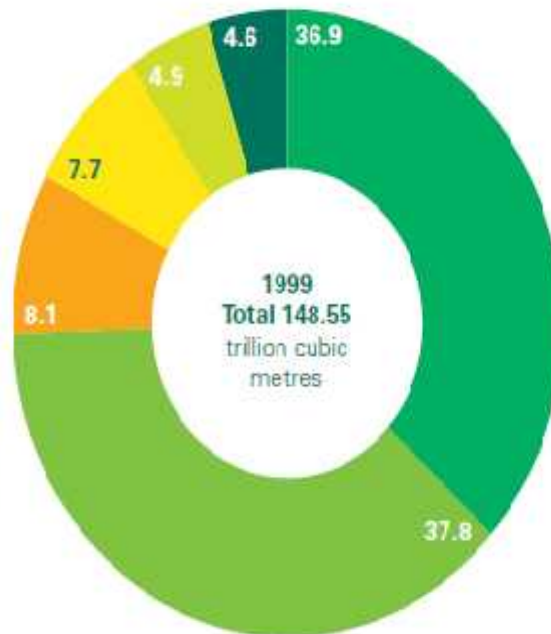
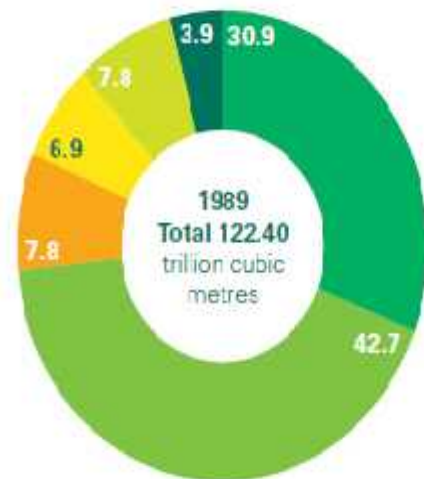


Source: IEA

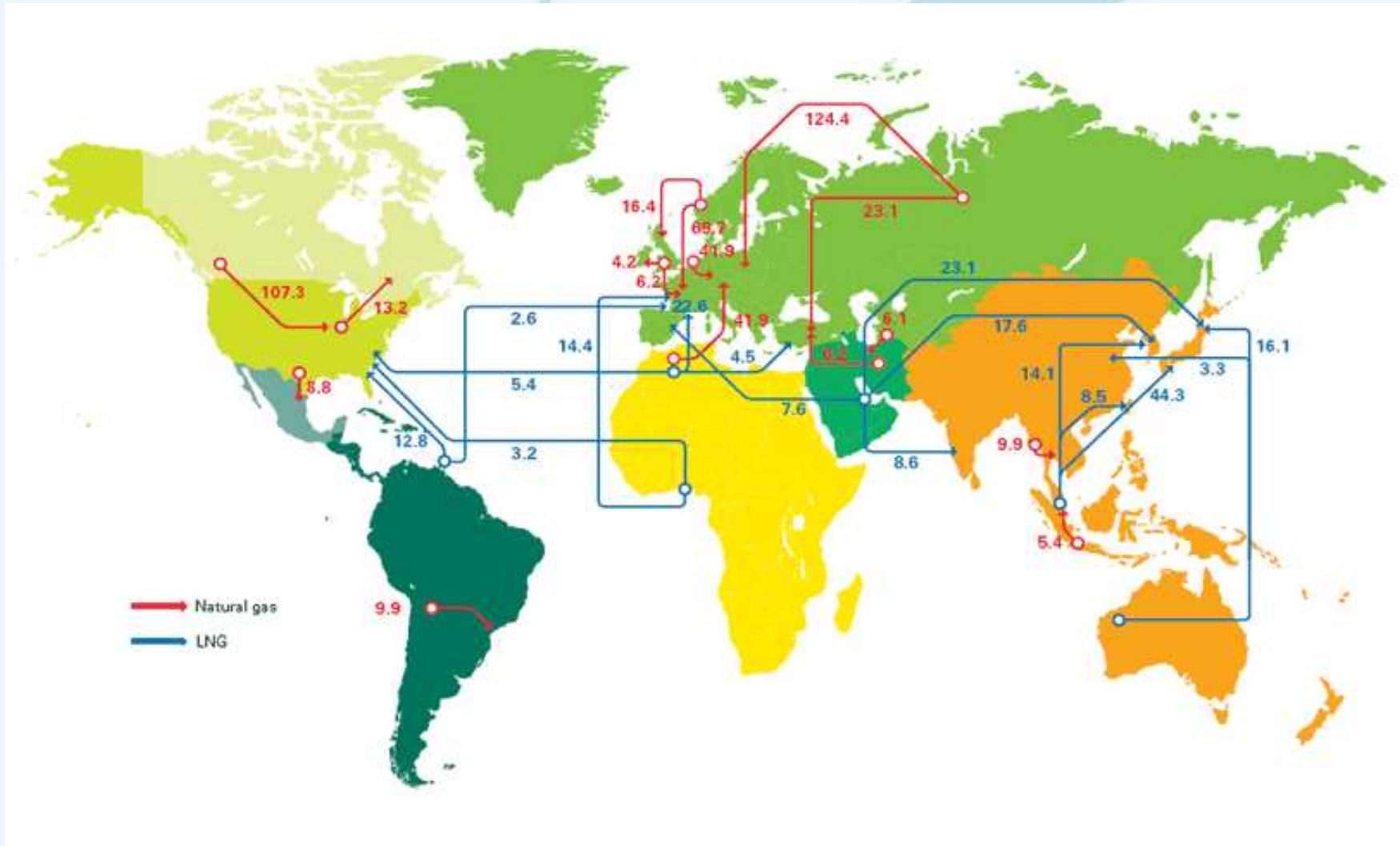
Distribution of World Gas Reserves (1989 – 2009)



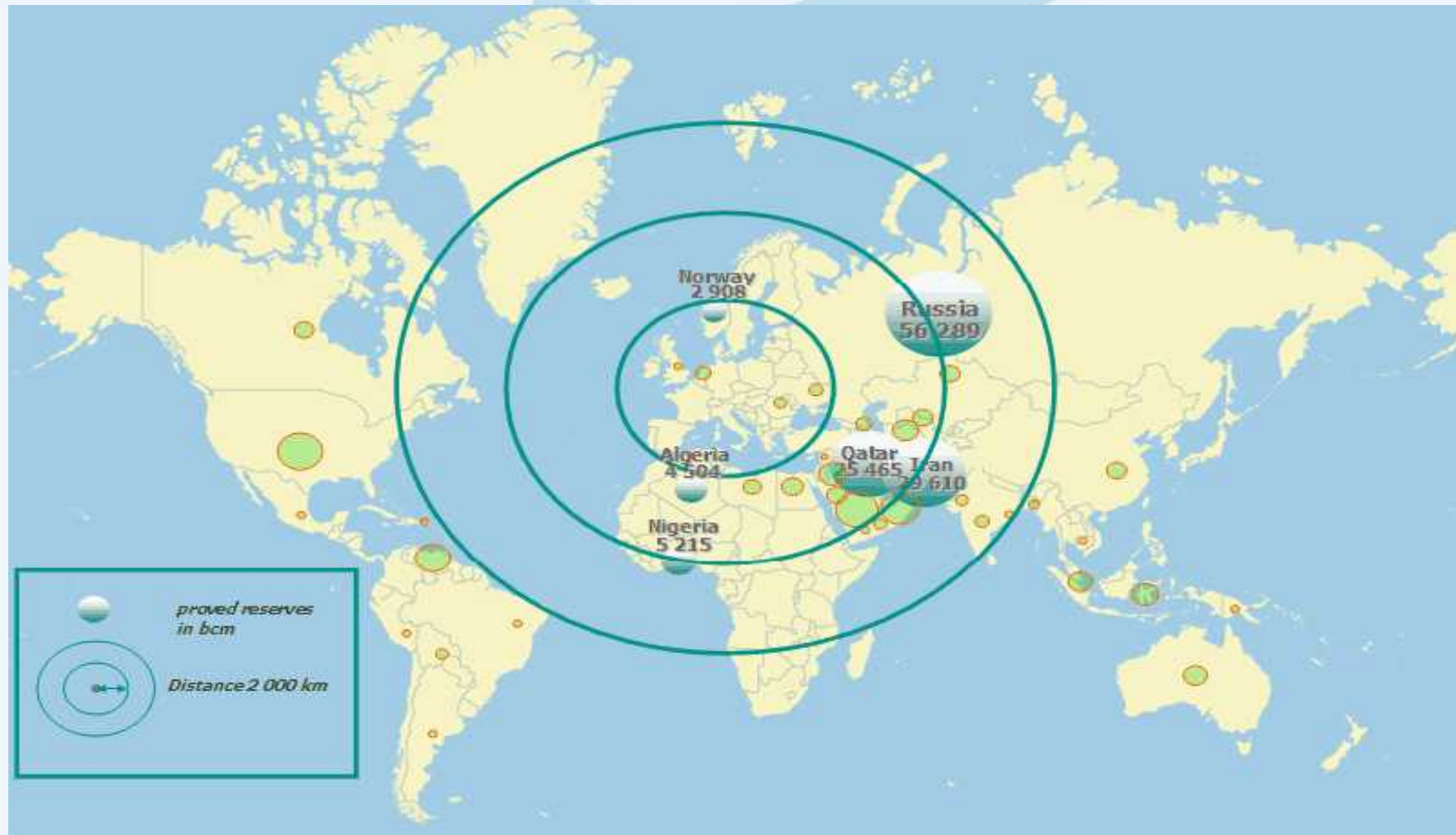
- Middle East
- Europe & Eurasia
- Asia Pacific
- Africa
- North America
- S. & Cent. America



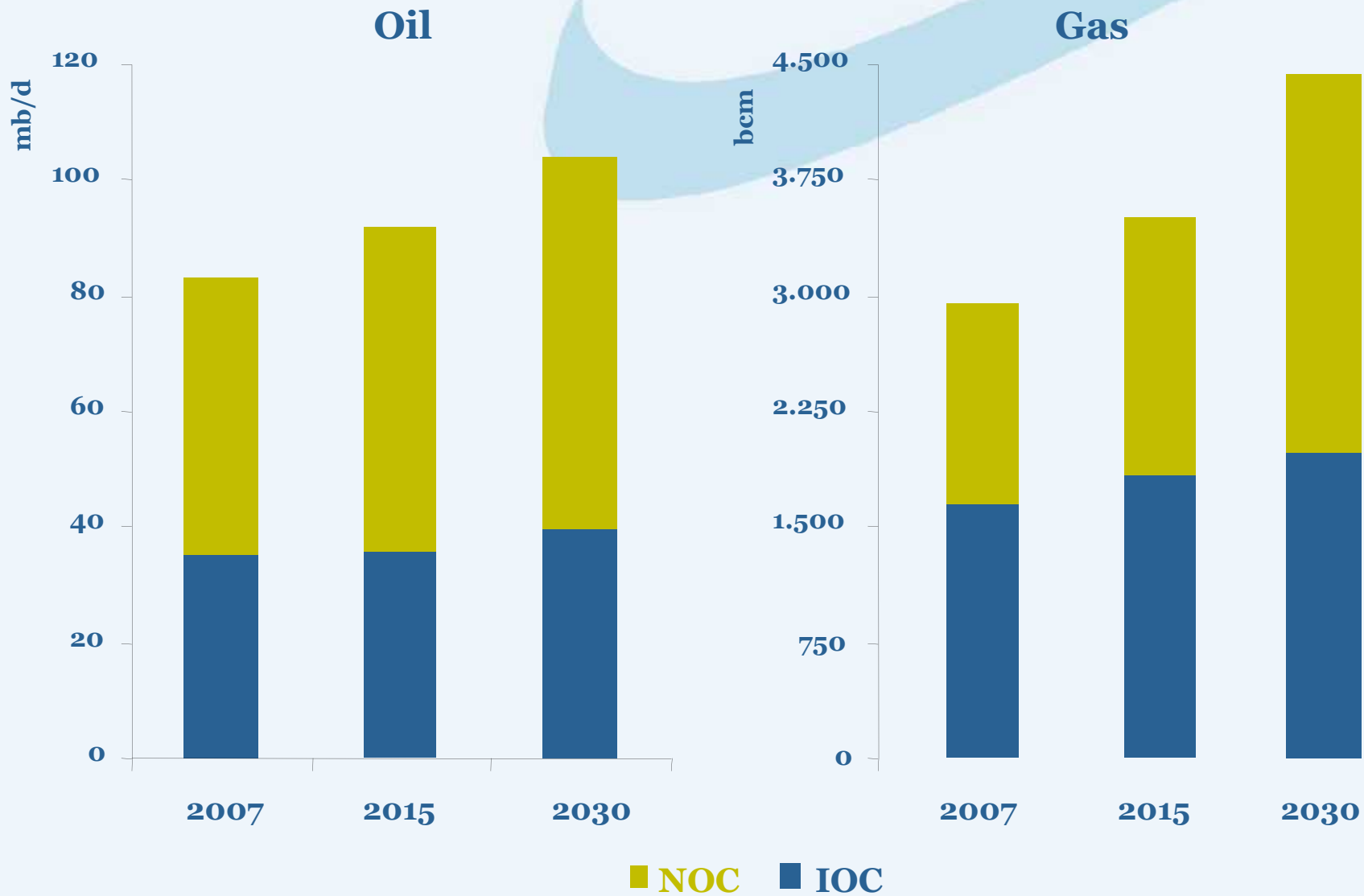
Global Gas Trade Routes



Distribution of World Gas Reserves

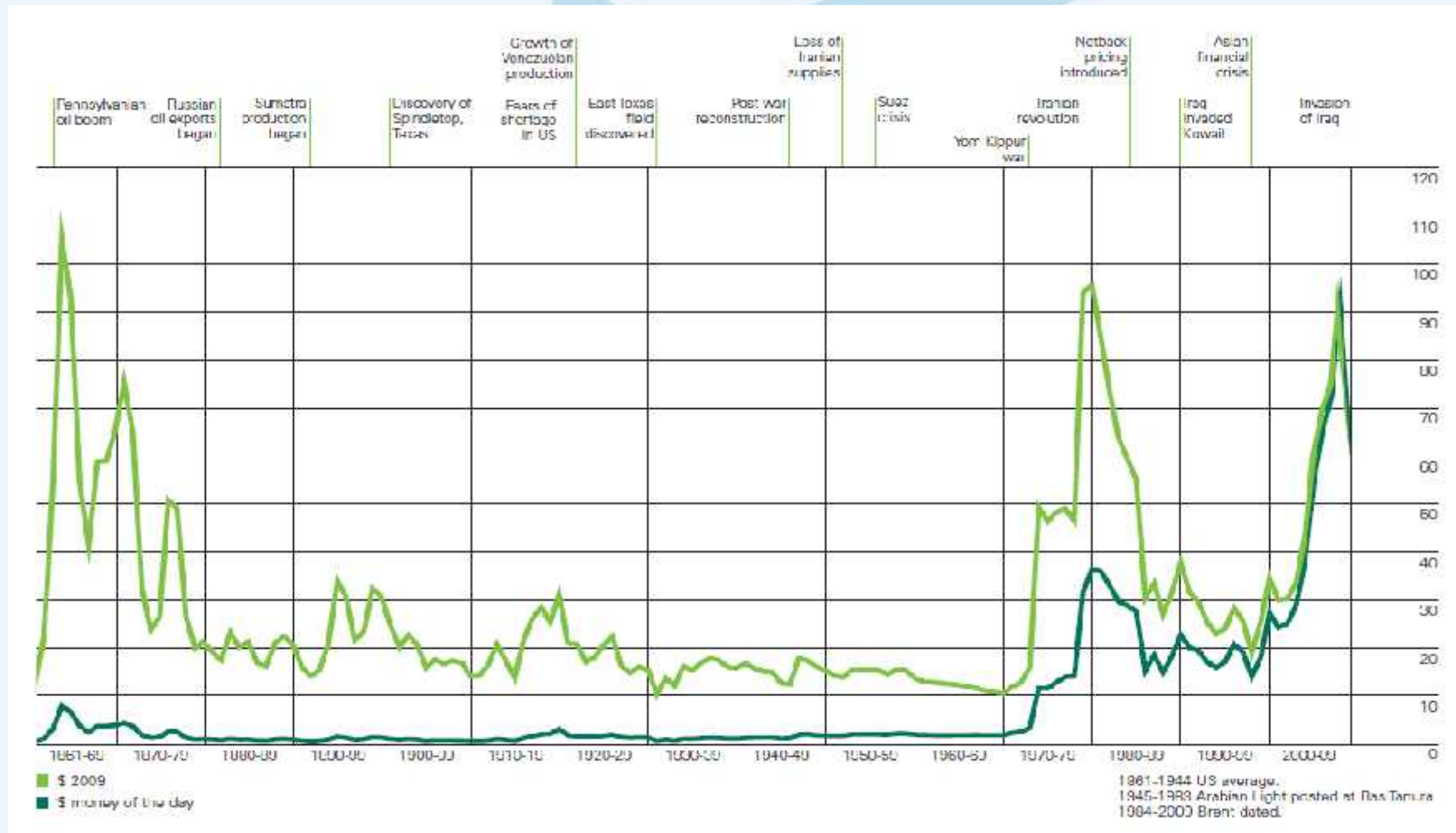


NOC & IOC Production Trends (2007 – 2015 – 2030)

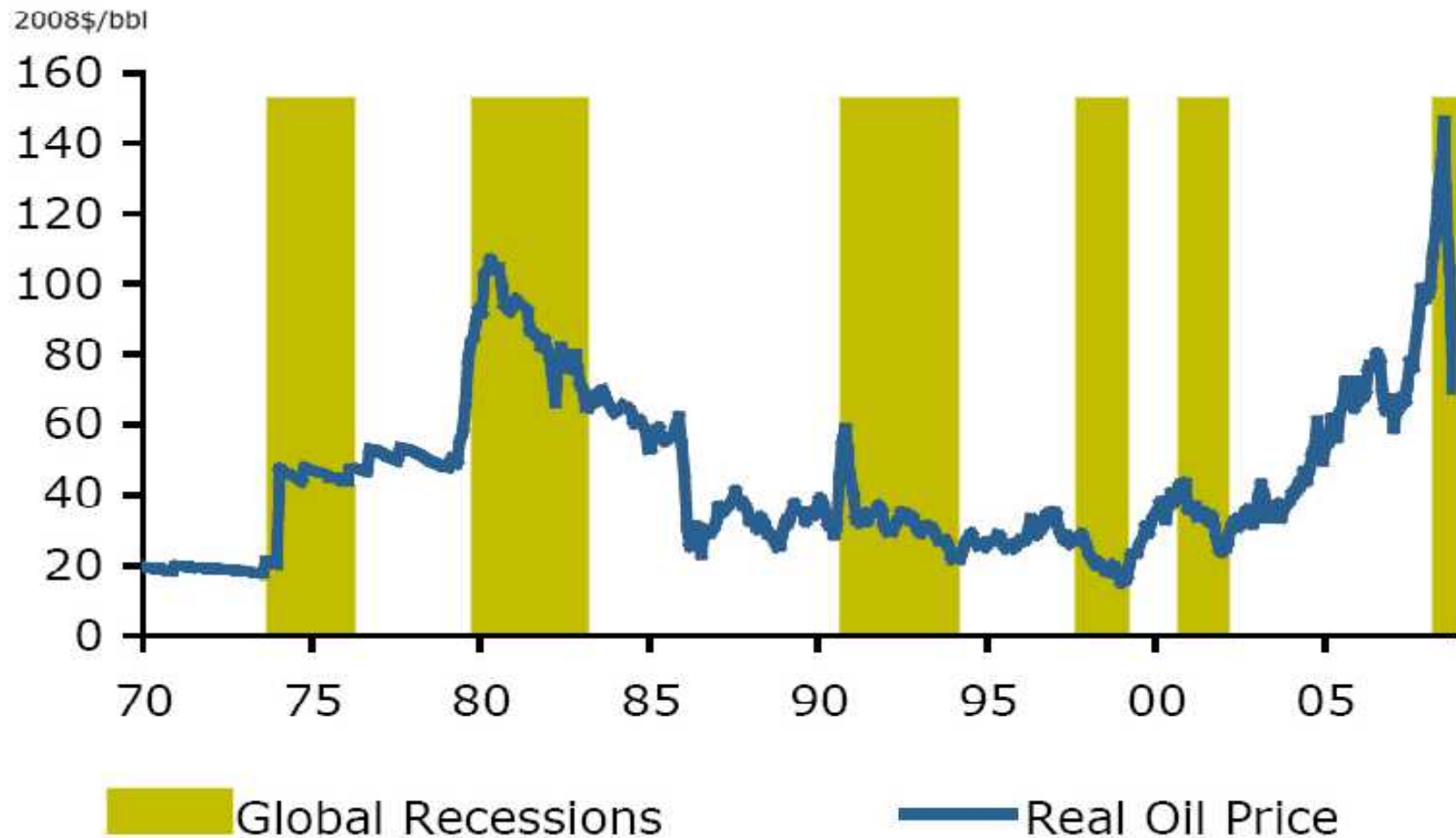


Source: IEA

Crude Oil Prices (1861 – 2009)



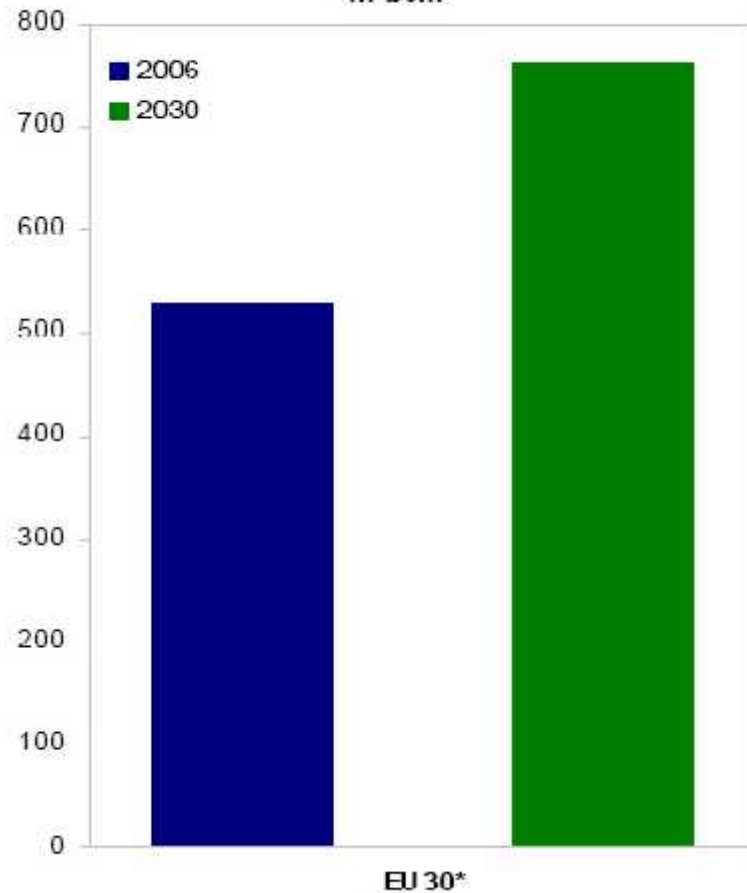
Oil Prices & Global Recessions



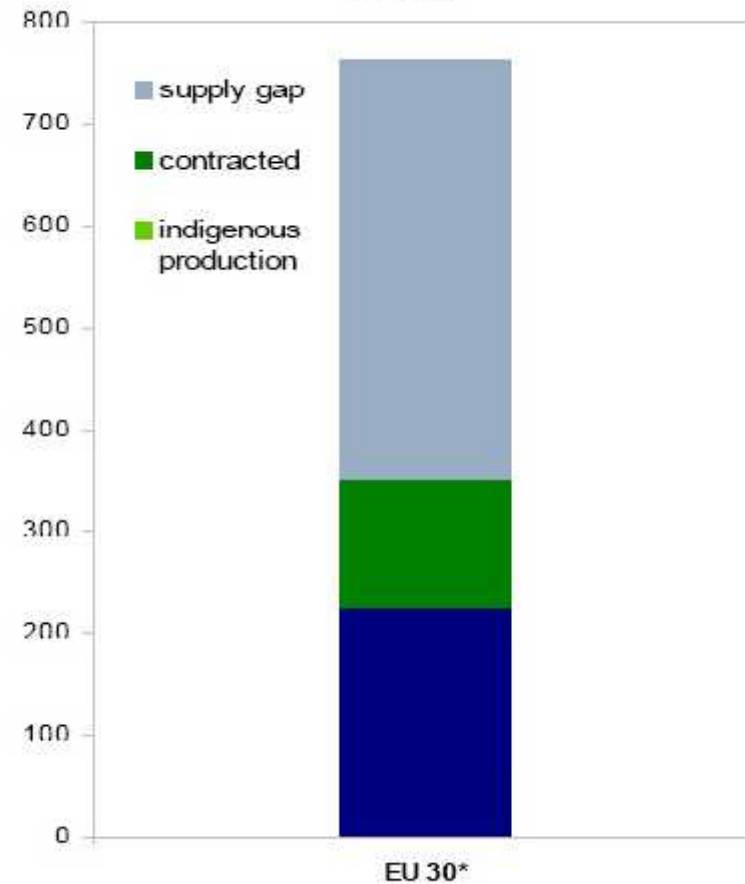
Gas Supply – Demand Gap in Europe (2006 – 2030)



Demand in Europe
in bcm

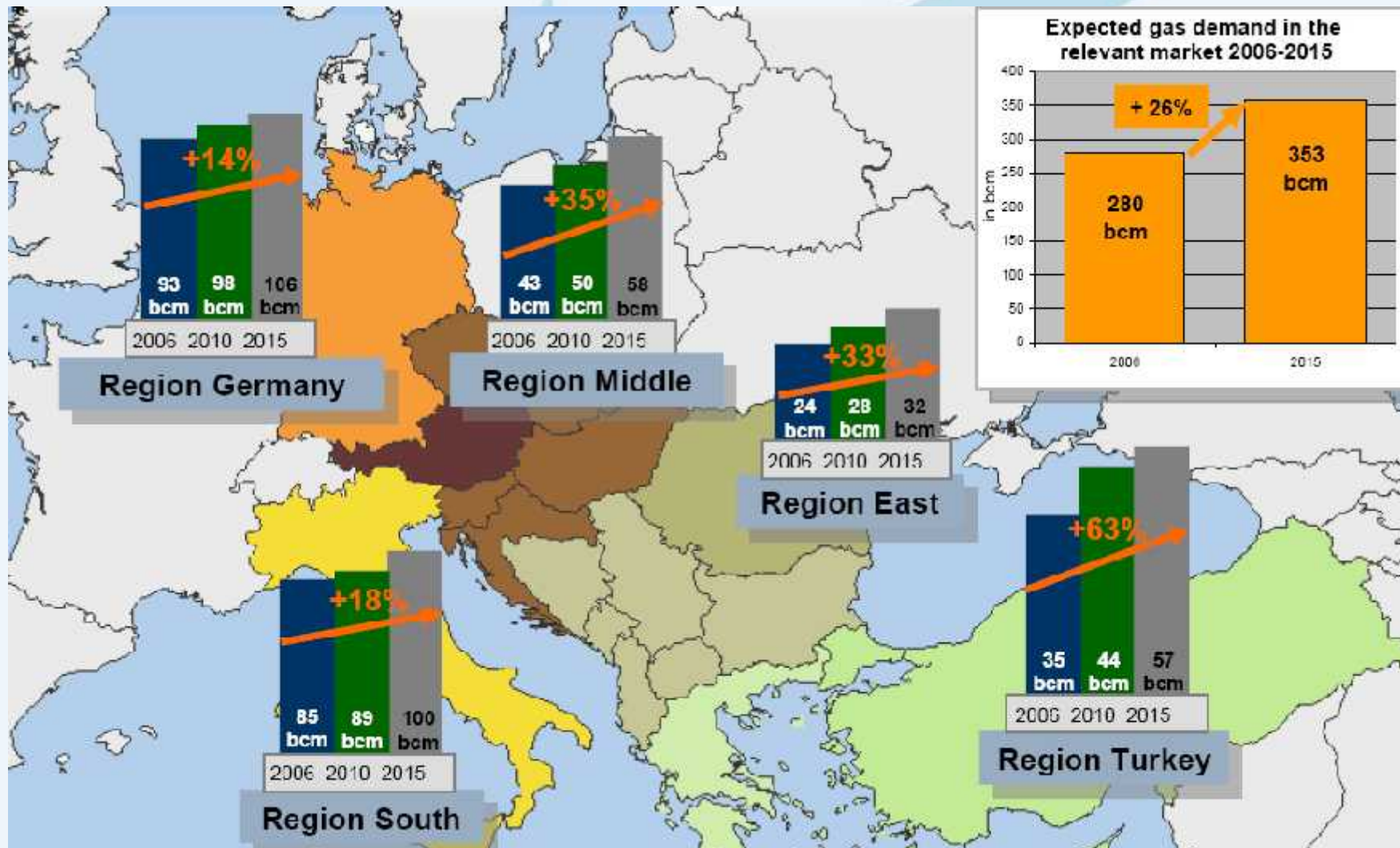


Supply gap in Europe 2030
in bcm

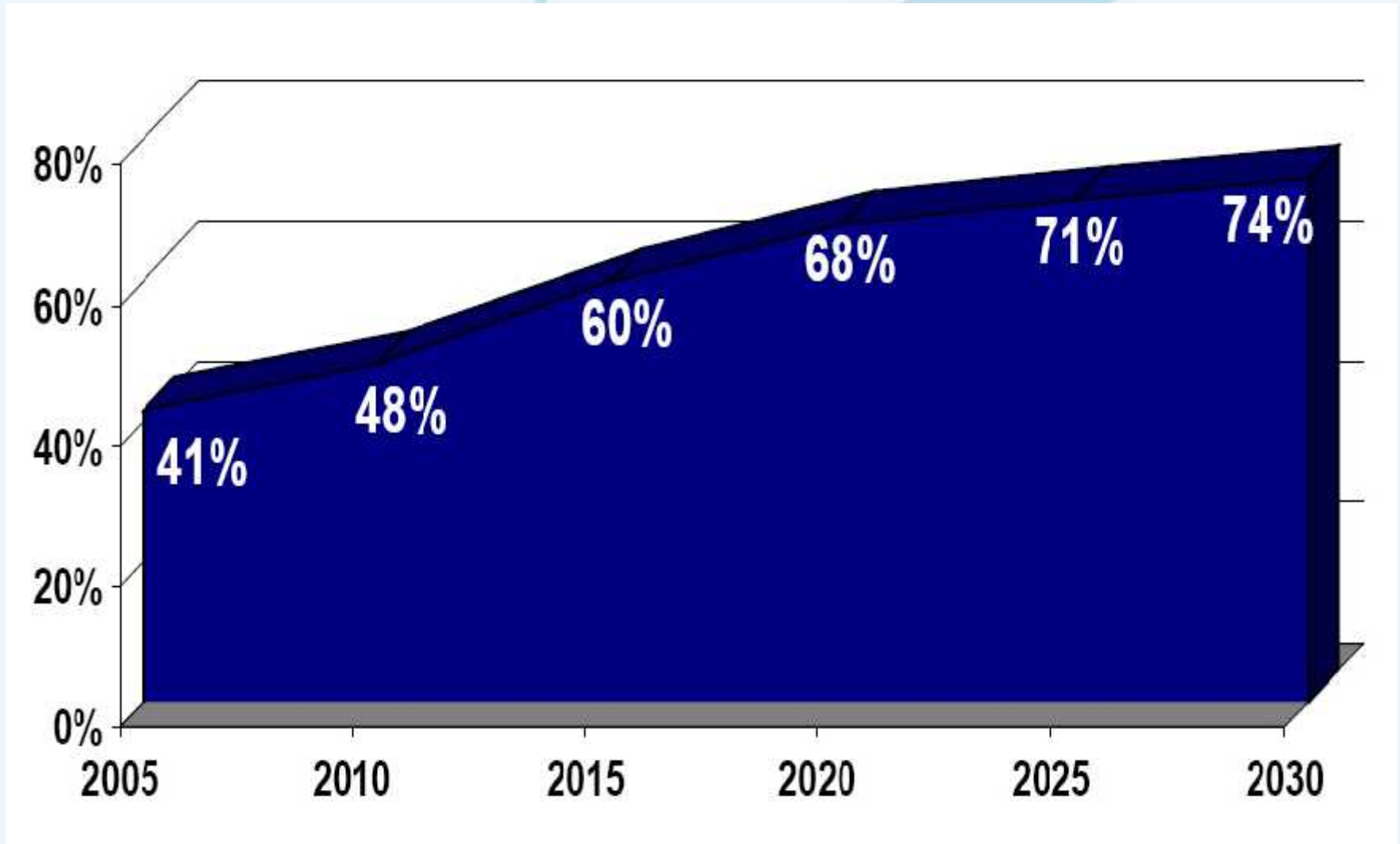


* Europe 30 (EU 25 + Rumania, Bulgaria, Croatia, Turkey, Norway)

Europe's Gas Demand Forecast (2006 – 2015)



Europe's Gas Import Dependency (2005 – 2030)

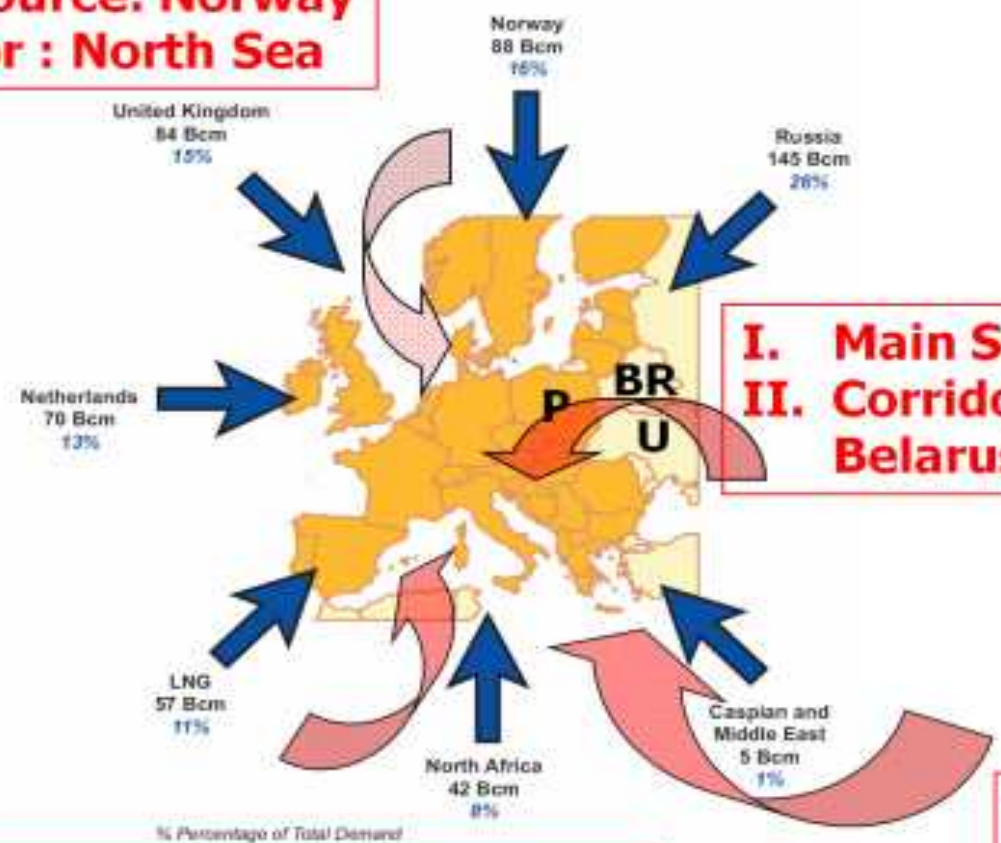


Source: OMV

Corridors to the European Gas Market



II. Main Source: Norway
II. Corridor : North Sea



III. Main Source: Algeria
III. Main Corridor: North Africa

IV.

Gas Pipelines via Turkey



Source: BOTAS

Energy Demand – Domestic Production Balance (1990–2009)



Source: MENR

	1990	1995	2000	2005	2009
Demand (million toe)	52.9	80.5	91.3	0.8	106.1
Production (million toe)	25.6	26.7	26.1	24.5	30.3
Import (million toe)	30.9	39.7	56.3	73.4	82.1
Export (million toe)	2.1	1.9	1.5	5.1	6.8
Bunker Fuel (million toe)	0.3	0.4	0.4	0.6	0.6
Net Import (million toe)	28.4	37.3	54.2	67.6	74.7
Coverage of Domestic Production to Total Consumption (%)	48.1	42.0	33.1	26.9	28.5

Primary Energy Consumption – Production Balance (2009)



Resources	Coal + Lignite	Other Solid Fuels	Oil	Natural Gas	Renewables	Total
Primary Energy Production (million toe)	16.9	5.1	2.3	0.6	5.2	30.3
Share in Primary Energy Production (%)	55.9	17.0	7.8	2.1	17.2	100.0
Primary Energy Consumption (million toe)	30.4	7.1	30.5	32.8	5.2	106.1
Share in Primary Energy Consumption (%)	28.7	6.7	28.8	31.0	5.0	100.0
Coverage of Production to Consumption (%)	55.6	72.0	7.7	2.0	100.0	28.5

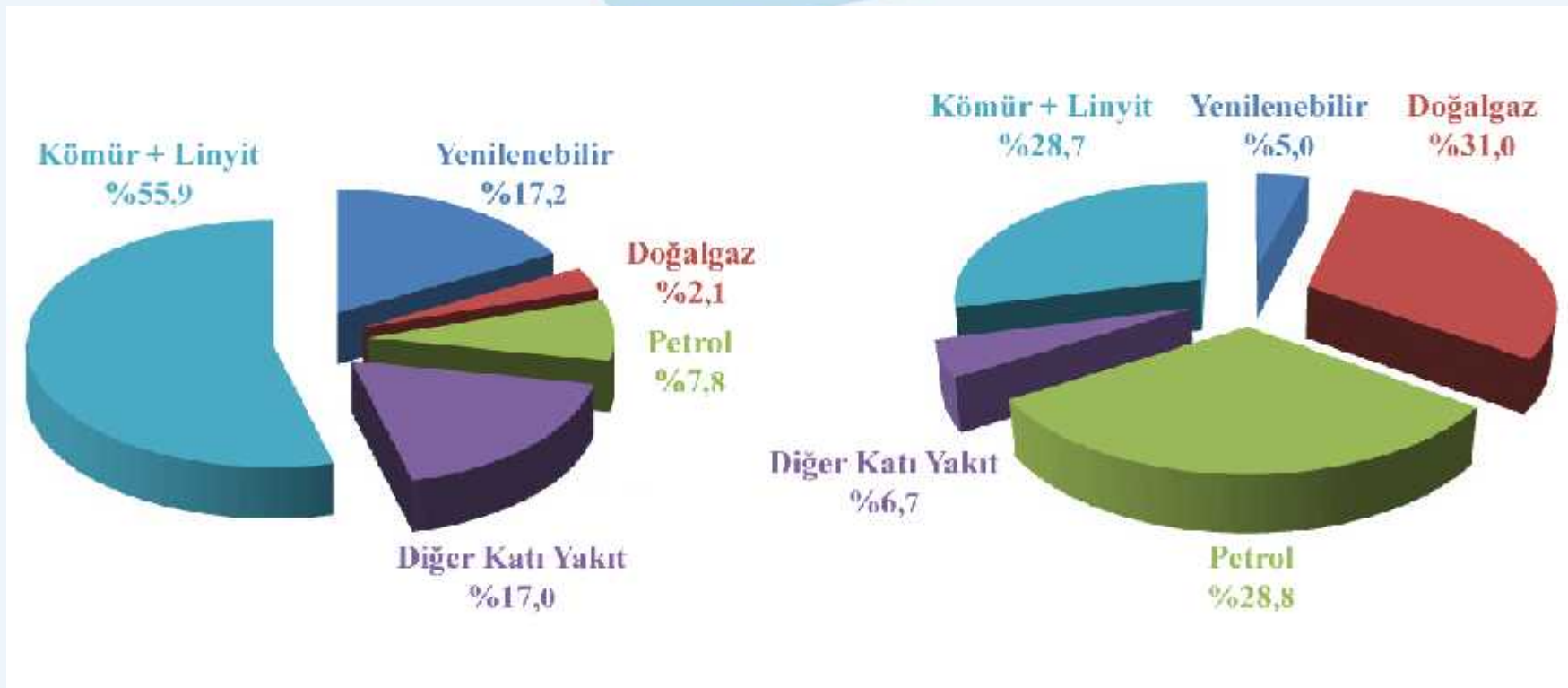
Source: MENR

Primary Energy Production – Consumption Balance (2009)



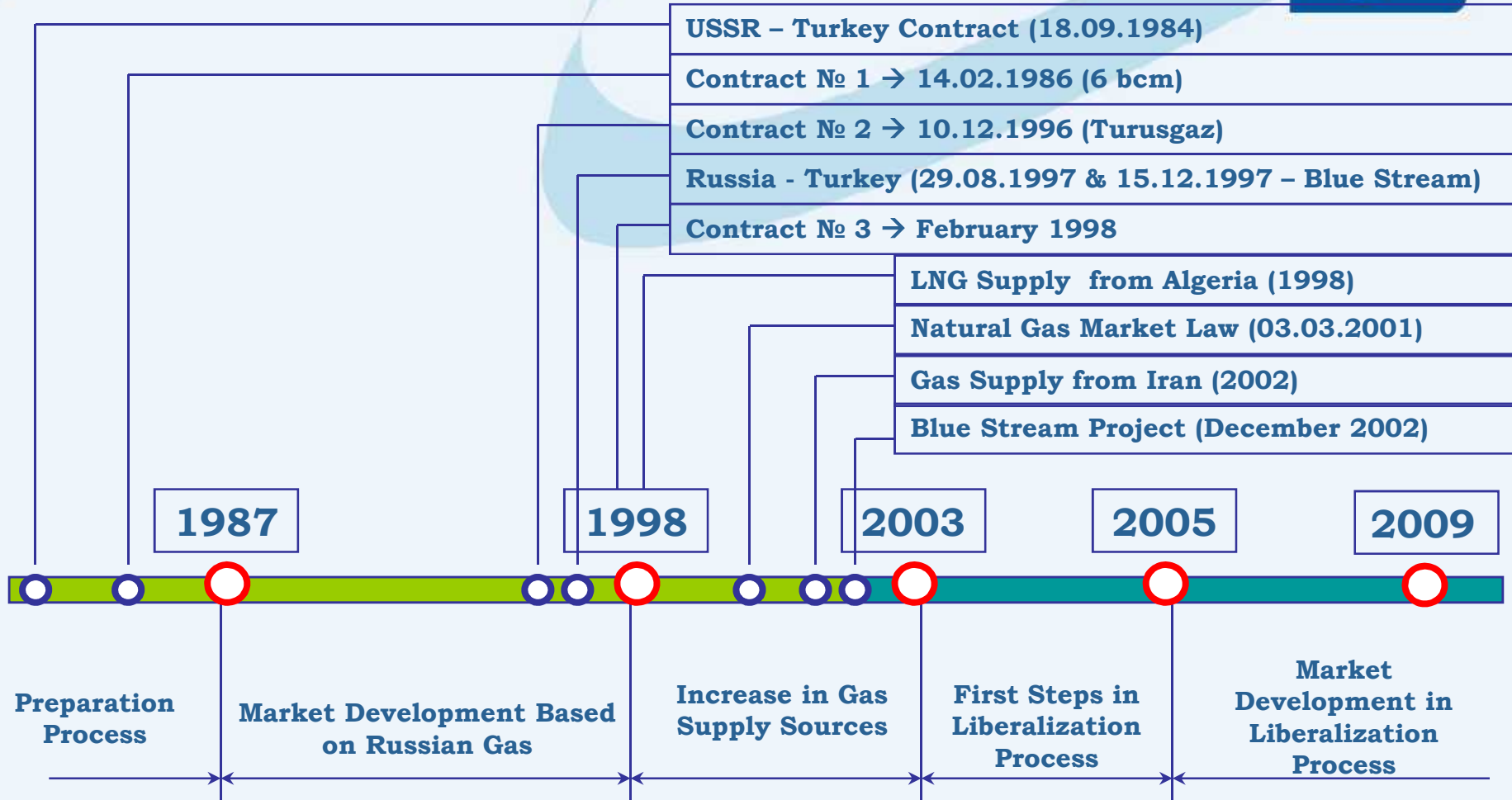
Distribution of Production
(30.3 million toe)

Distribution of Consumption
(106.1 million toe)



Share of Imported Energy Resources: 71.5%

Development of the Turkish Natural Gas Market



2005 - 2010

- 2005 Nov - Contract Release Tender to be done
- 2006 Dec - Announcement of Tender Results
- 2007 Dec - First Private Importer's Access into Market
- 2009 Jan - Second Private Importer's Access into Market
- 2009 Apr - Other Two Private Importers' Access into Market
- 2009 May - LNG Importer's Access into Market
- 2009 Jun/Jul - Wholesale Companies Access into Market
- 2010 Jan - 5 Wholesale Companies in Operation

Gas Purchase Agreements



Contract	Date of Signature	Date of Operation	Duration (Years)	Volume (Plateau bcma)	Date of Expiration
Russia (West)	Feb 1986	Jun 1987	25	6	2011
Algeria (LNG)	Apr 1988	Aug 1994	20	4	2014
Nigeria (LNG)	Nov 1995	Nov 1999	22	1.2	2021
Iran	Aug 1996	Dec 2001	25	10	2026
Russia (B.Stream)	Dec 1997	Feb 2003	25	16	2028
Russia (West)	Feb 1998	Mar 1998	23	8	2021
Azerbaijan	Mar 2001	Jul 2007	15	6.6	2022

Distribution of Gas Import Based on Source Country



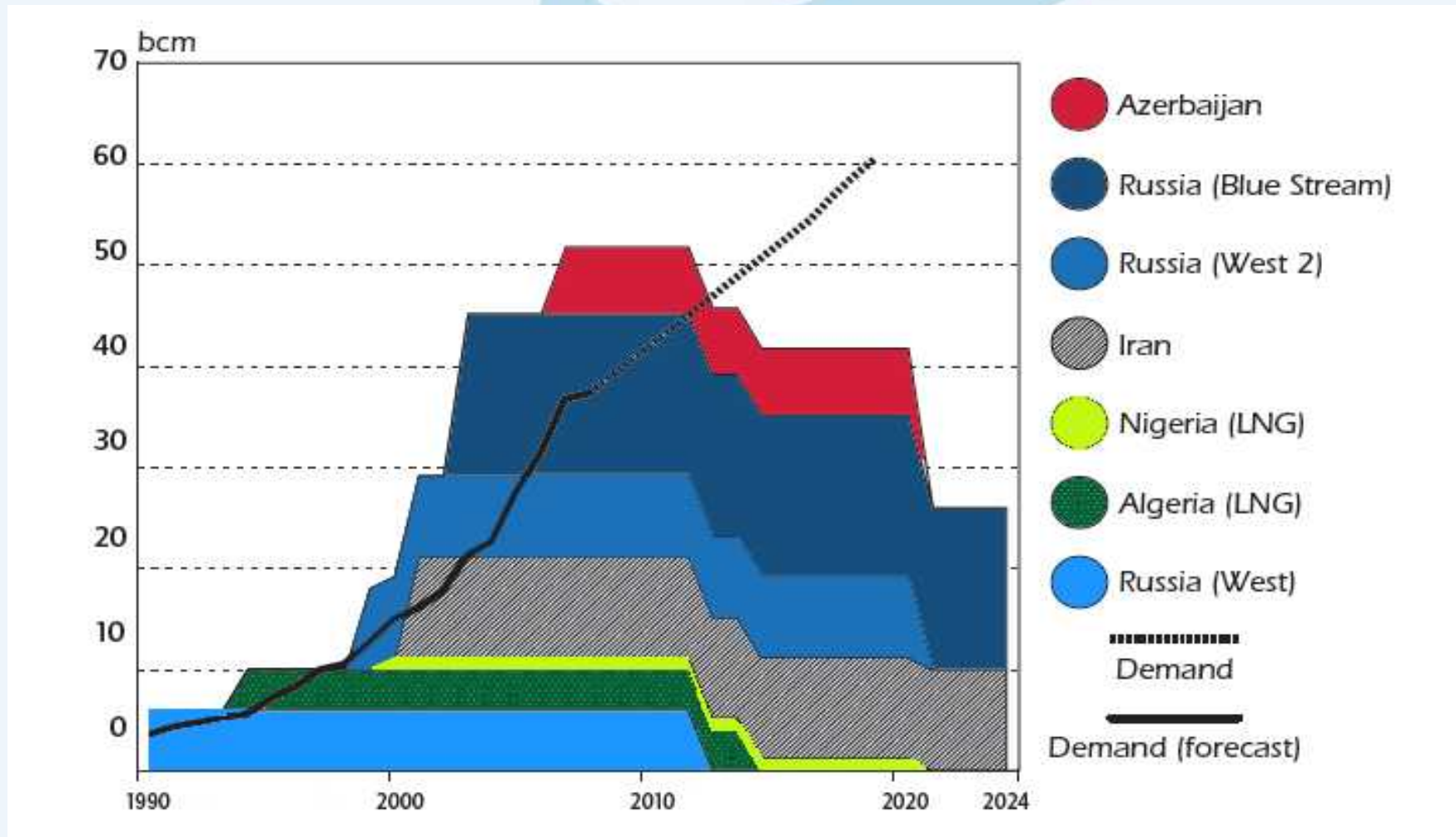
	<u>2009</u>	<u>2010</u>
Russia	19.894 (55.6%)	17.576 (46.9%)
Iran	5.253 (14.8%)	7.766 (20.7%)
Azerbaijan	4.960 (13,8%)	4.521 (12.1%)
Others (Algeria + Nigeria + Ege Gaz)	5.648 (15.8%)	7.593 (20.3%)
<hr/>		
	35.755 bcm	37.456 bcm
	(%4.7)	

Distribution of Gas Imports Between State and Private Sector



	<u>2009</u>	<u>2010</u>
BOTAS	33.068 (92.5%)	31.730 (84.7%)
Private Co's	2.687 (7.5%)	5.726 (15.3%)
<hr/>		
	35.755	37.456

Gas Supply – Demand Balance (1990 – 2024)



Source: ; IEA Turkey 2009 Review



THANK YOU...