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

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October 27, 2010

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, Turkish Petroleum Law…)

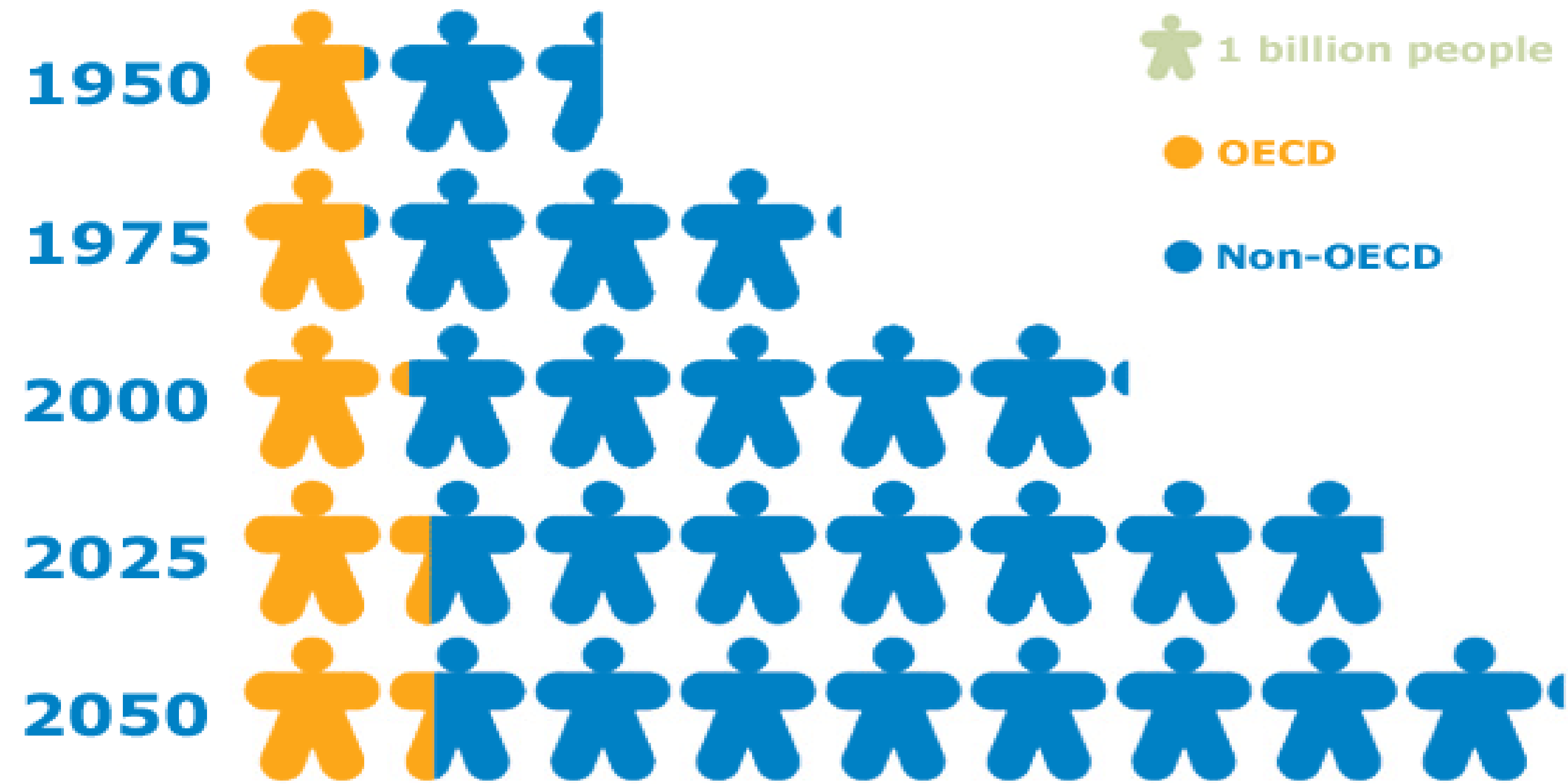
Member companies mainly have activities in 2 sectors:

- Exploration & Production
- Natural Gas Market

PETFORM Member
43 Energy Companies

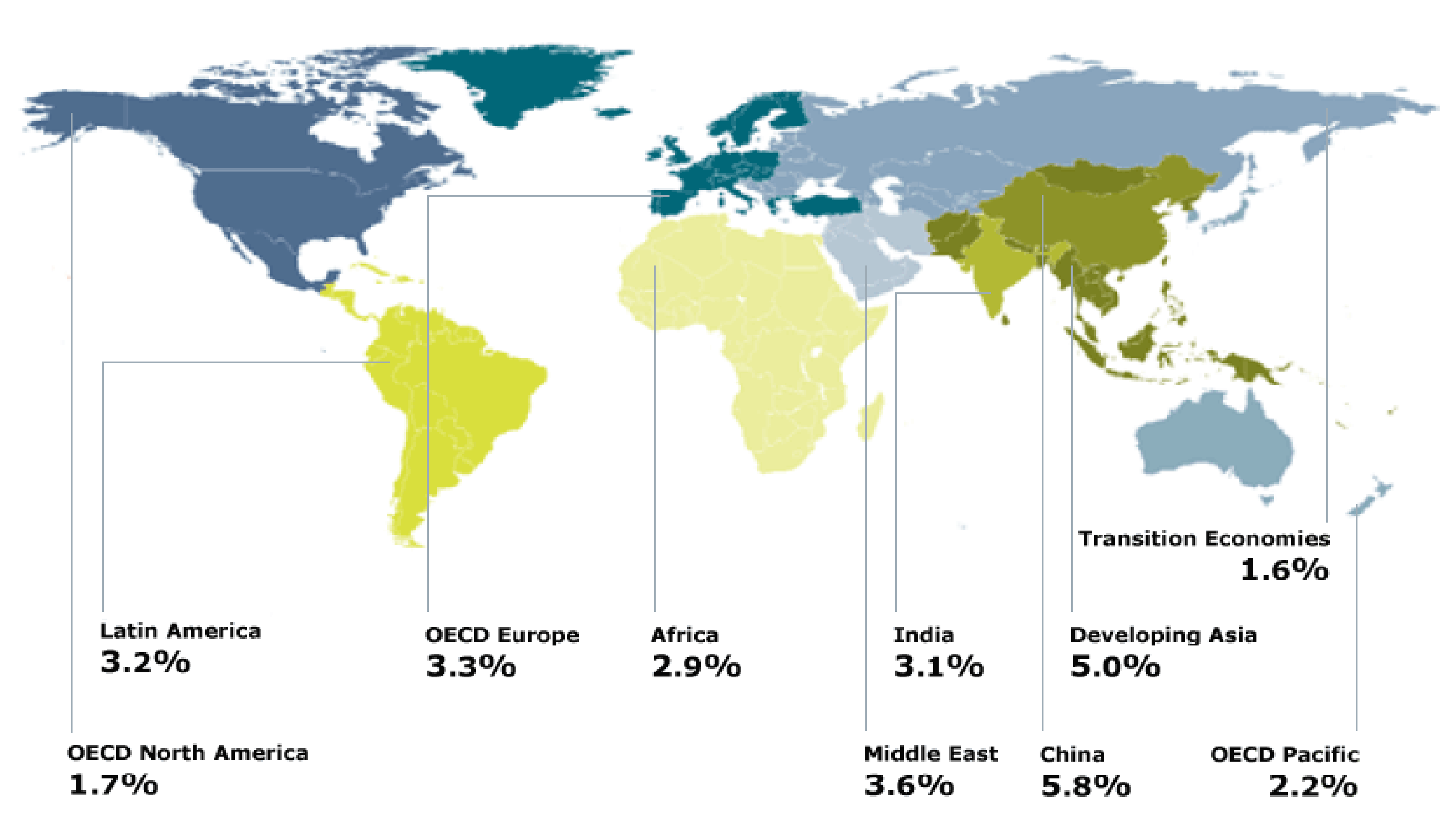
- AKENERJİ
- AKSA
- ALADDIN MIDDLE EAST
- ATTİLA DOĞAN İNŞAAT
- AVRASYA GAZ
- AYGAZ DOĞAL GAZ
- BM İNŞAAT
- BOSPHORUSGAZ
- BP
- ÇALIK ENERJİ
- DOĞAL ENERJİ
- EDISON
- EGE GAZ
- ENEL
- ENERCO ENERJİ
- ENERJİSA
- ENI
- E.ON RUHRGAS
- ERDGAZ
- EWE ENERJİ
- GENEL ENERJİ
- GÜNEY YILDIZI PETROL
- IBS RESEARCH
- NATURGAZ
- N.V.TURKSE PERENCO
- OMV
- OPALİT
- PALMET
- PEMI
- PETOIL
- PETROL OFİSİ
- POZİTİF DOĞALGAZ
- SHELL ENERJİ
- SOYAK ENERJİ
- STATOIL
- TEKFEN İNŞAAT
- THRACE BASIN
- TIWAY
- TOTAL
- TRANSATLANTIC TURKEY
- TURCAS
- TURUSGAZ
- ZORLU ENERJİ

World Population Growth (1950 – 2050)



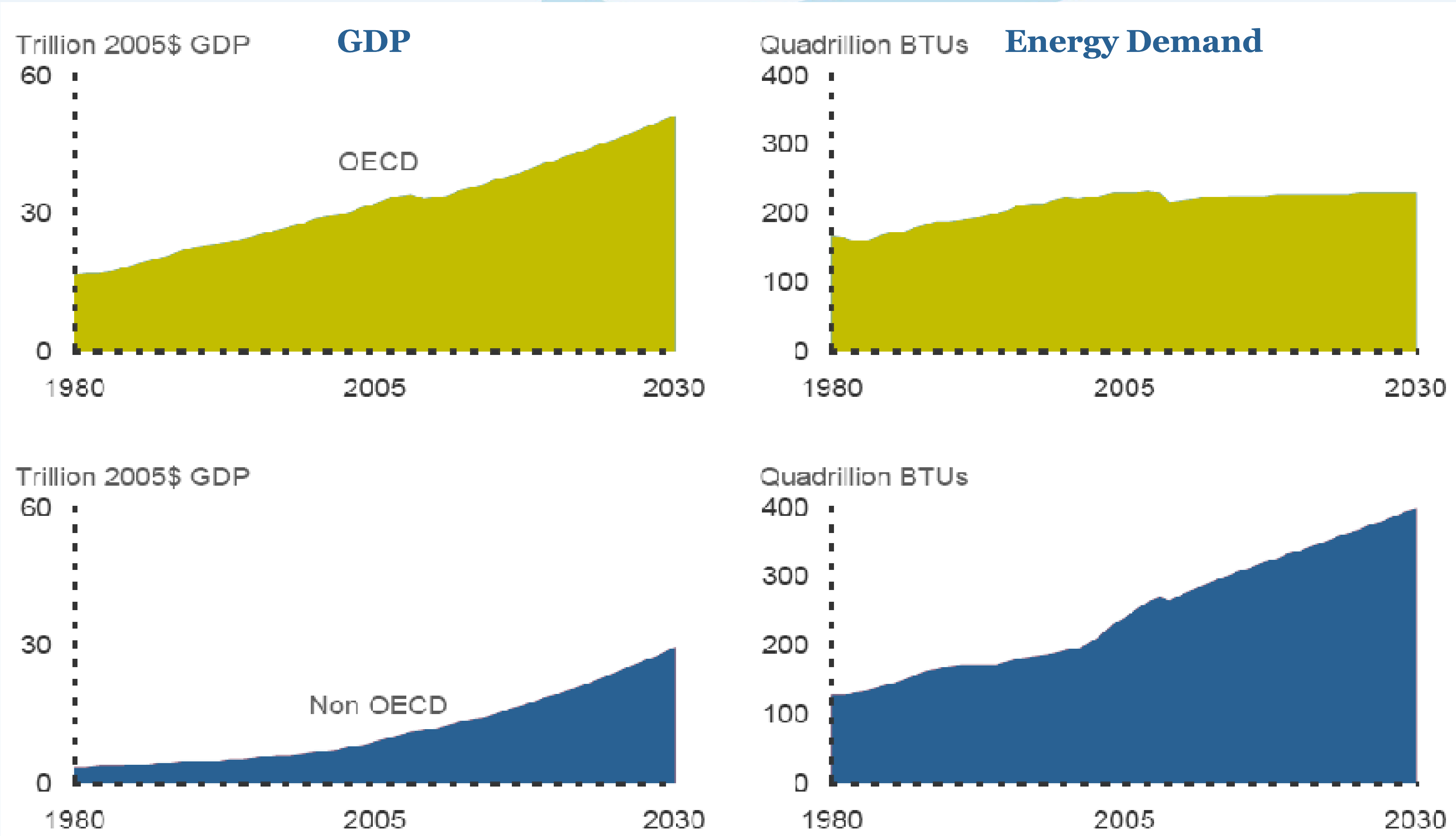
Source: Shell

World GDP Growth (2005 – 2050)



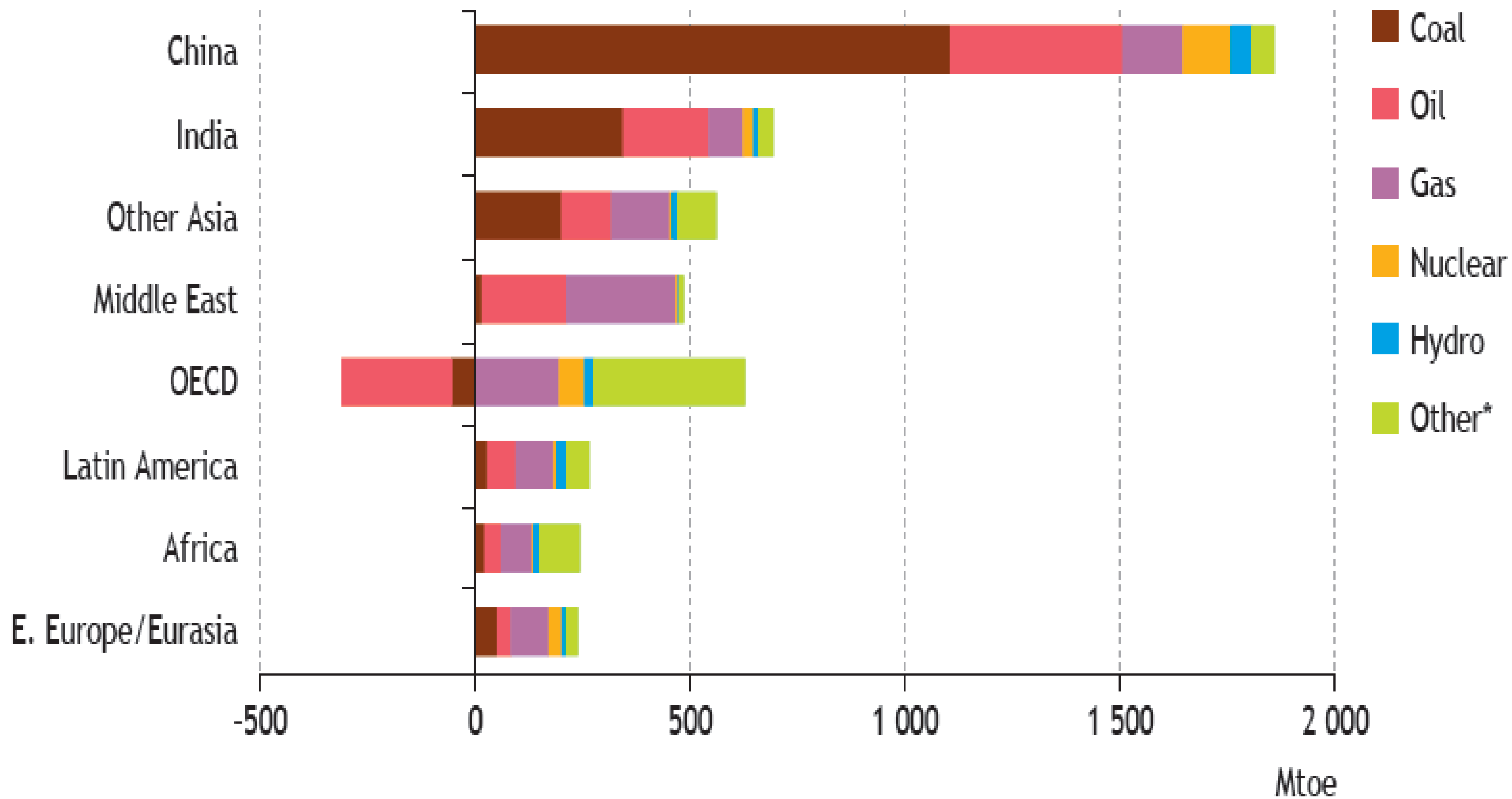
Source: IEA

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



Source: ExxonMobil

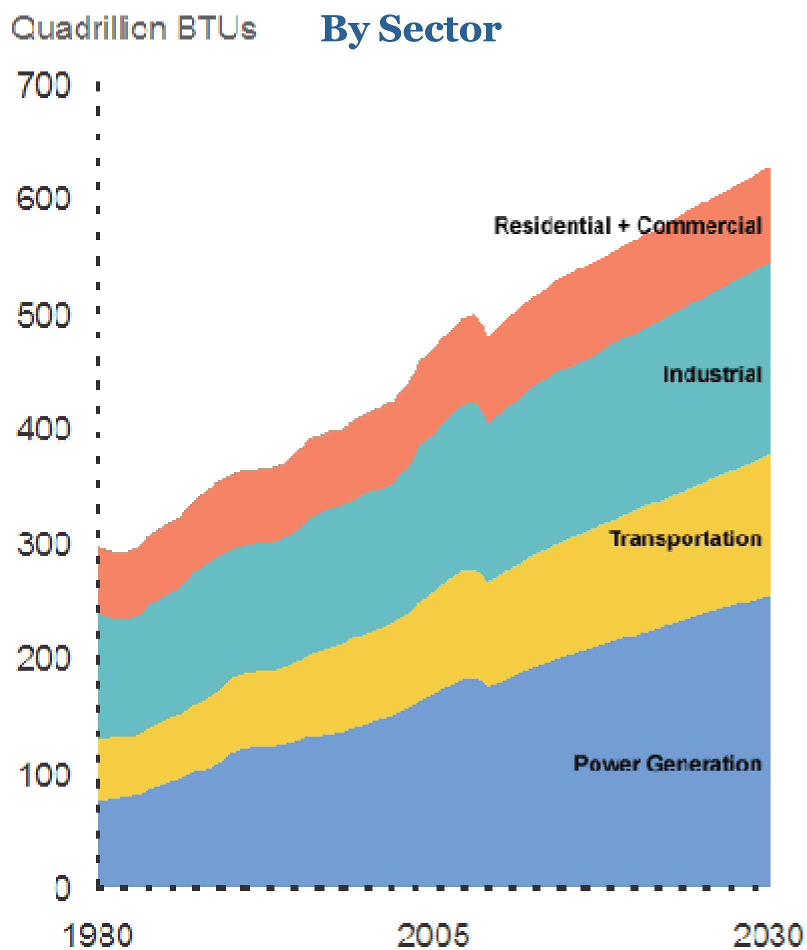
World Primary Energy Demand (2007 – 2030)

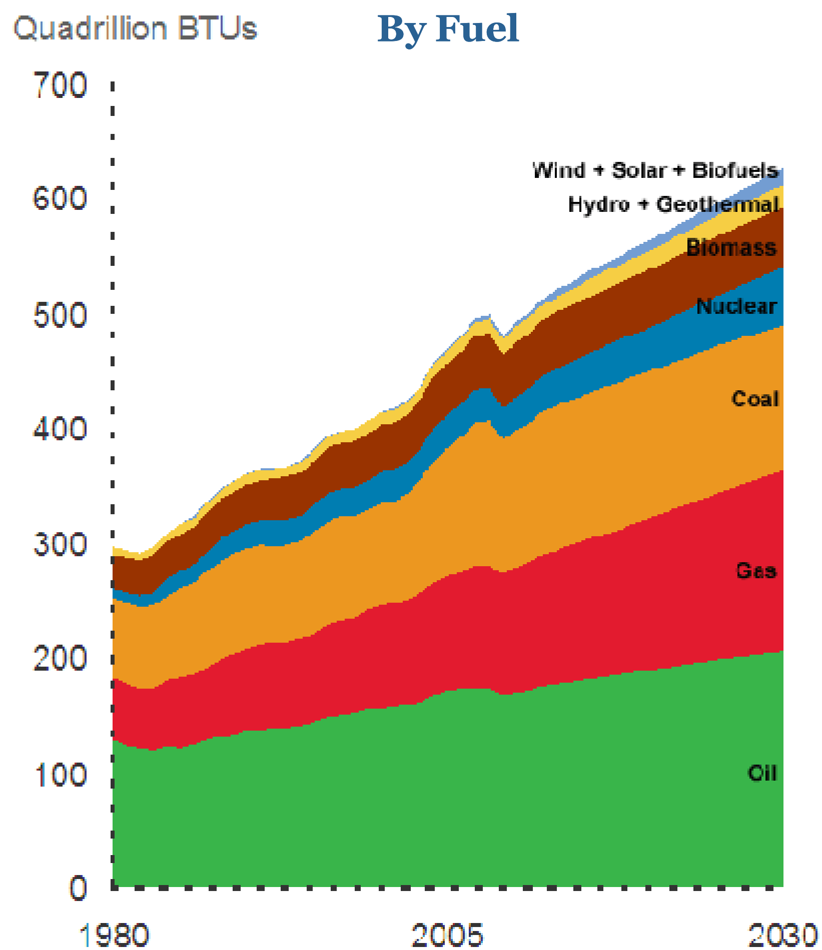


* Includes biomass and waste, wind, geothermal, solar, and tide and wave.

Source: IEA

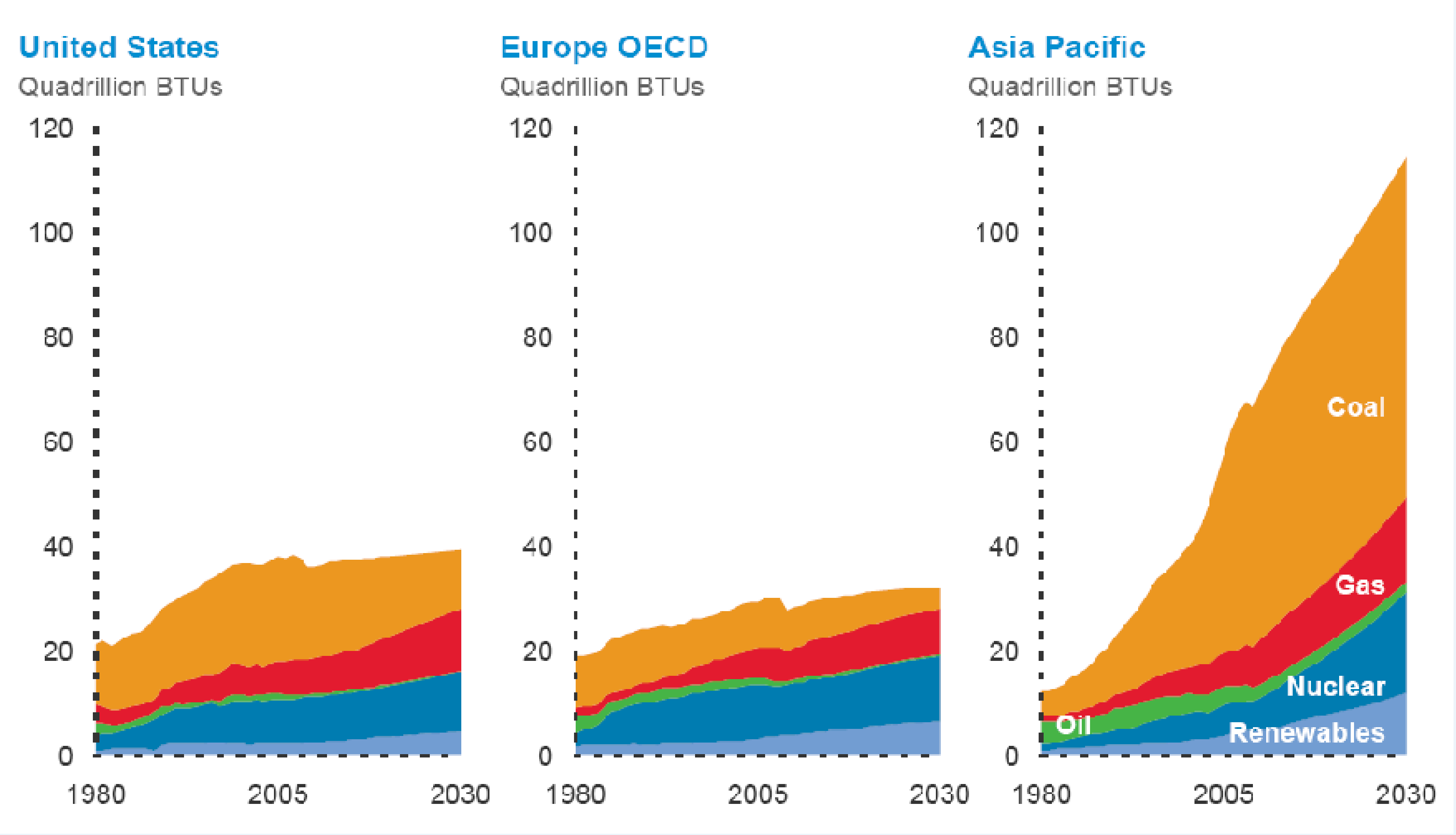
Energy Demand By Sector & By Fuel (1980 – 2005 – 2030)





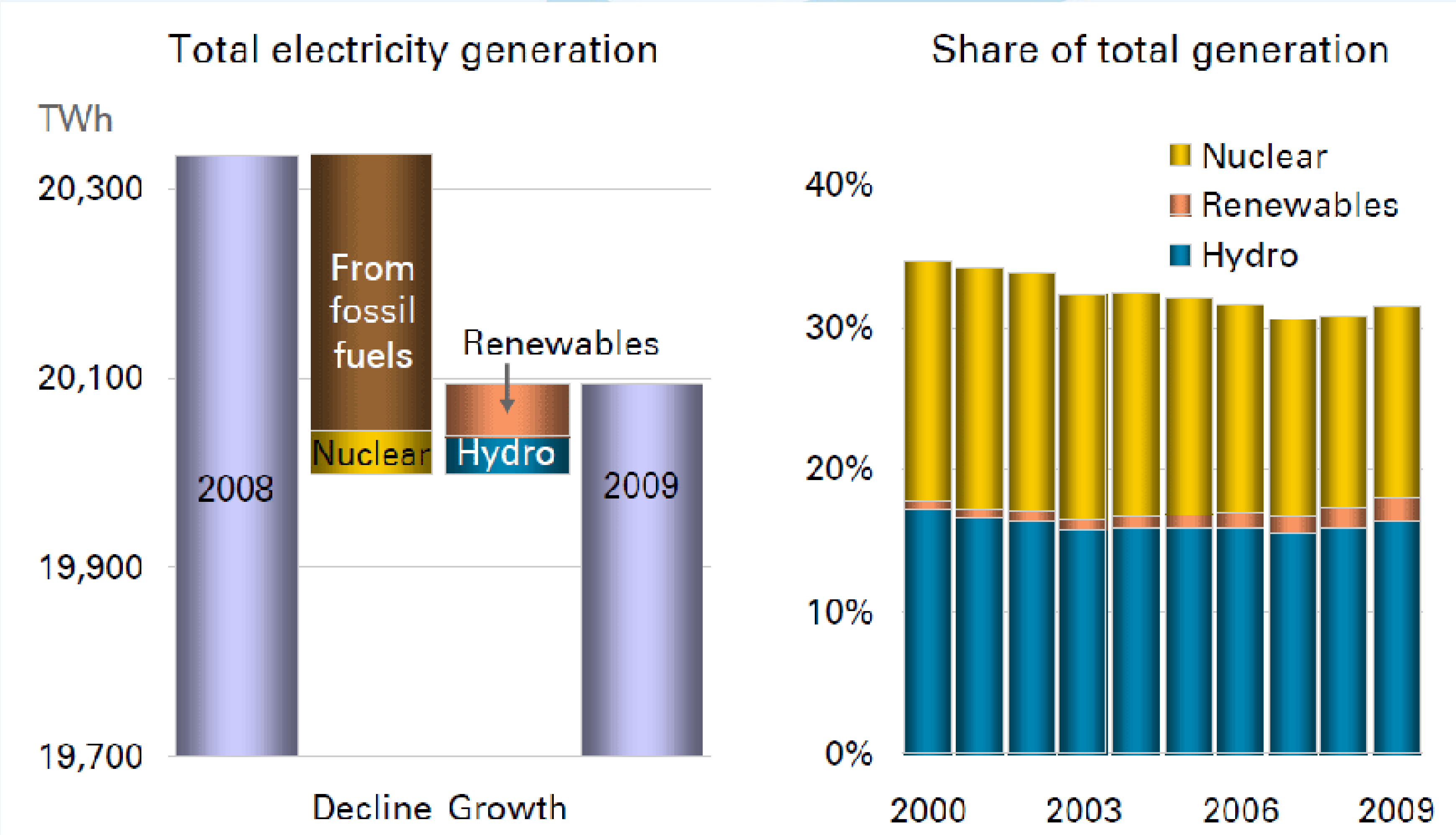
Source: ExxonMobil

Power Generation Fuel Demand (1980 – 2005 – 2030)



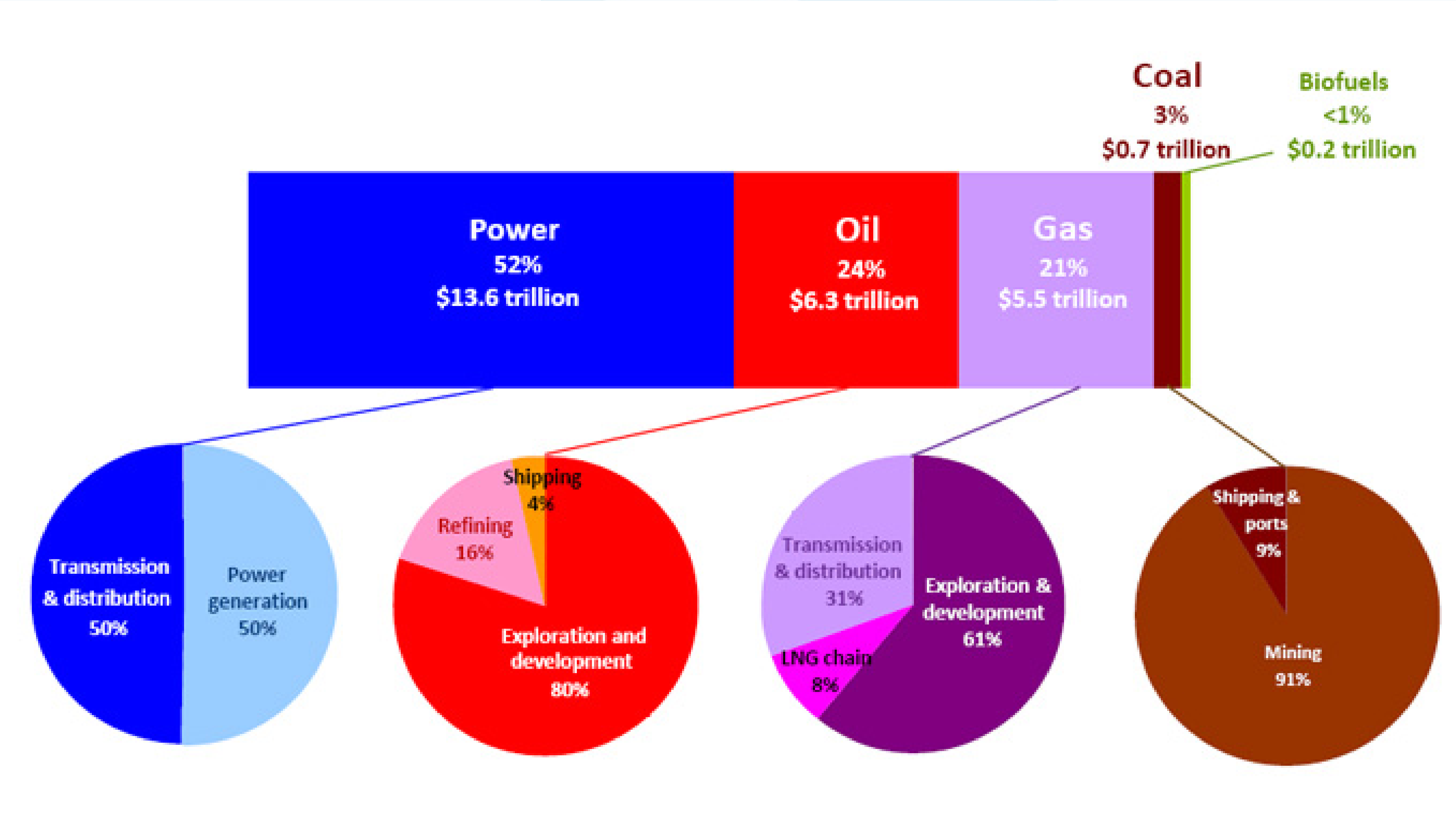
Source: ExxonMobil

Share of Non-Fossil Fuels in Power Generation



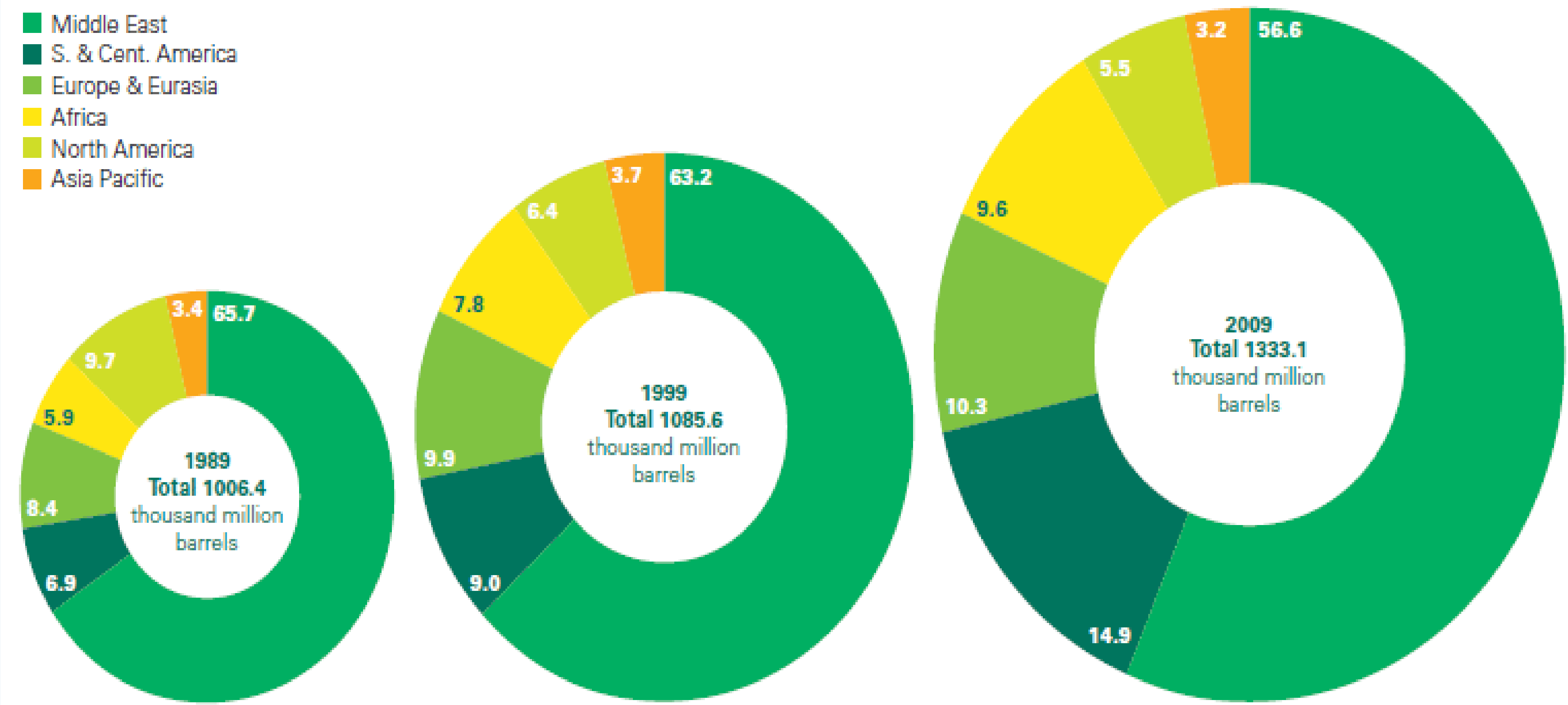
Source: BP

Primary Energy Investment Requirement (2007 – 2030)



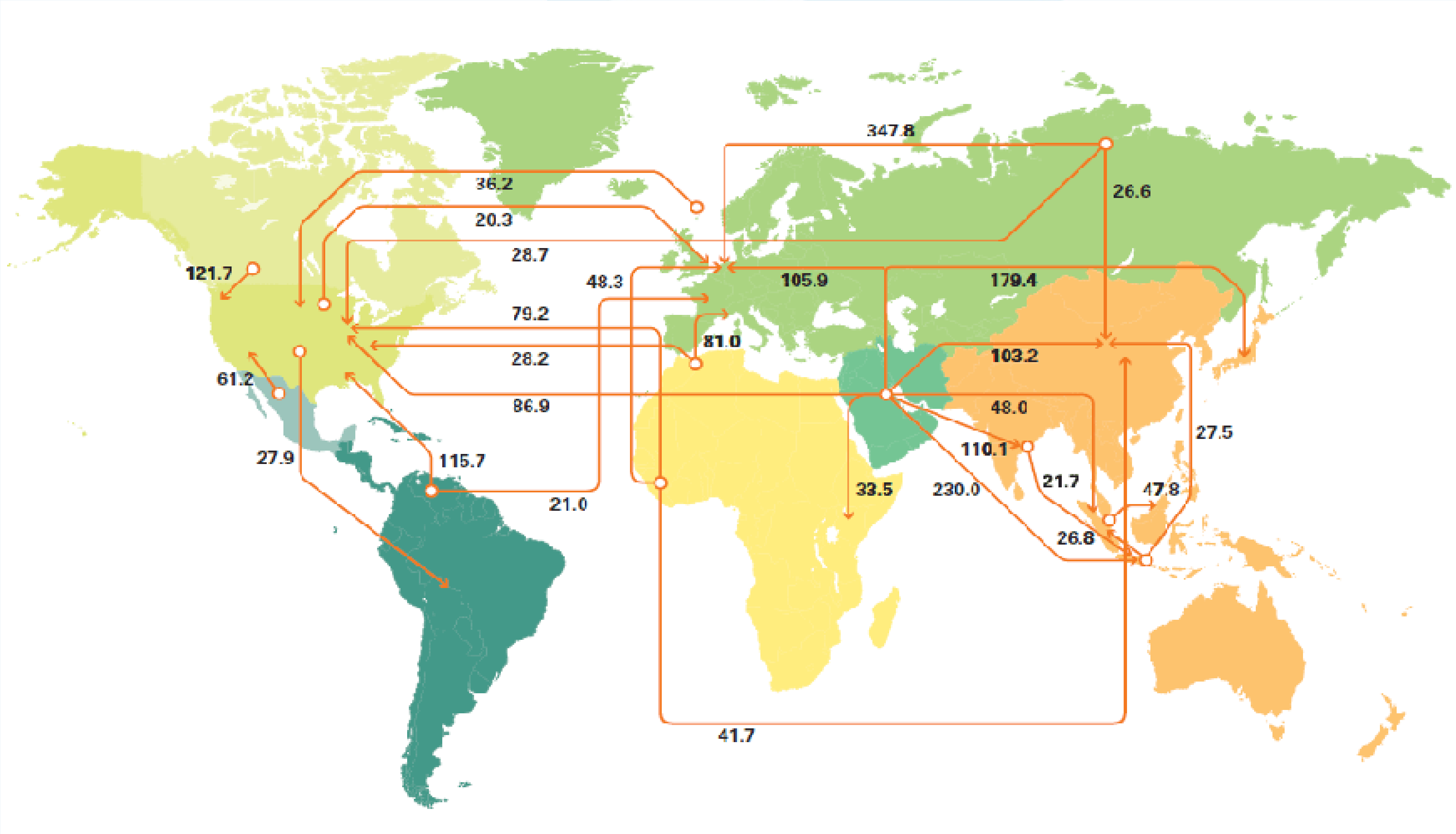
Source: IEA

Distribution of World Oil Reserves (1989 – 2009)



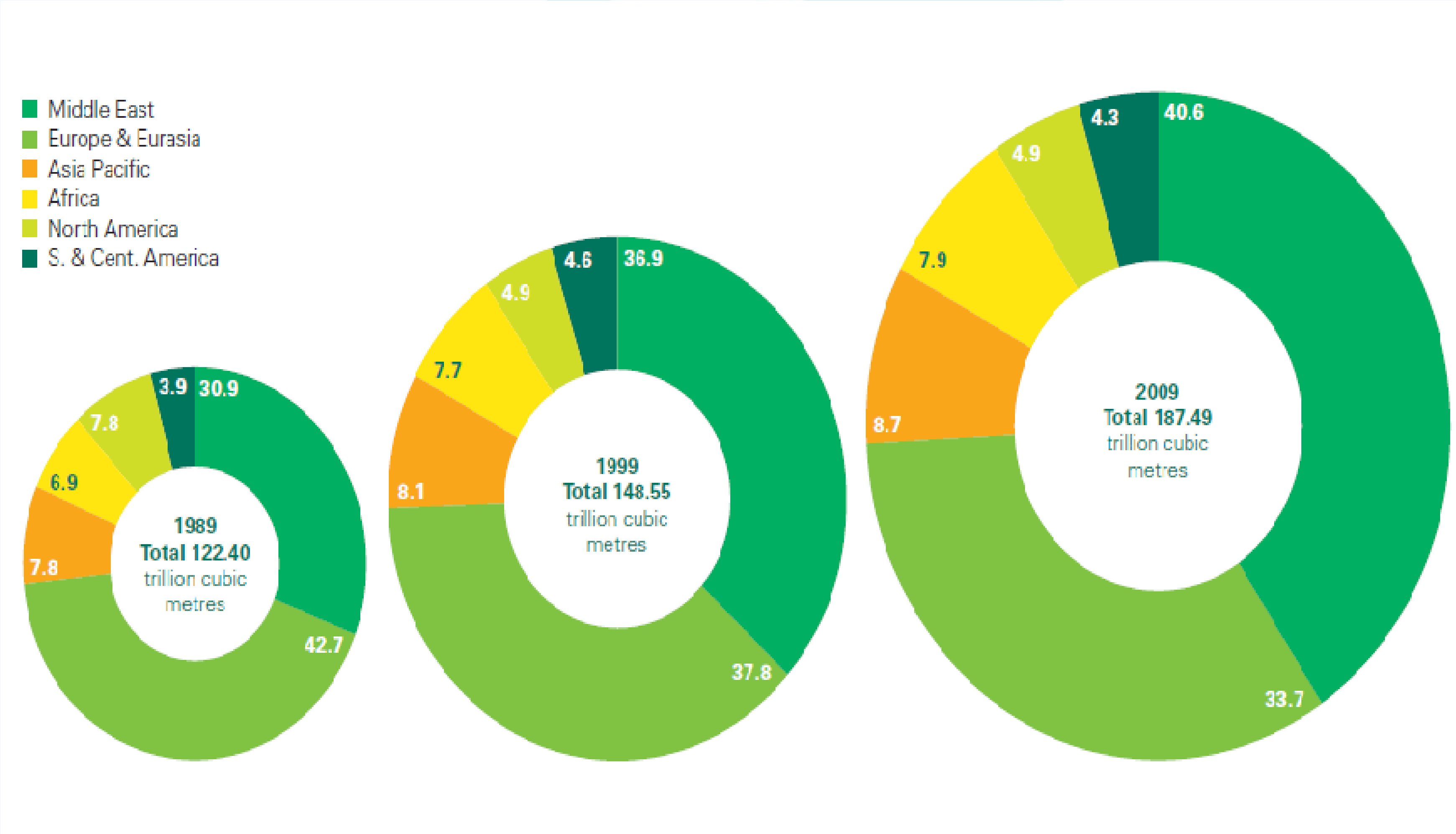
Source: BP

Global Oil Trade Routes



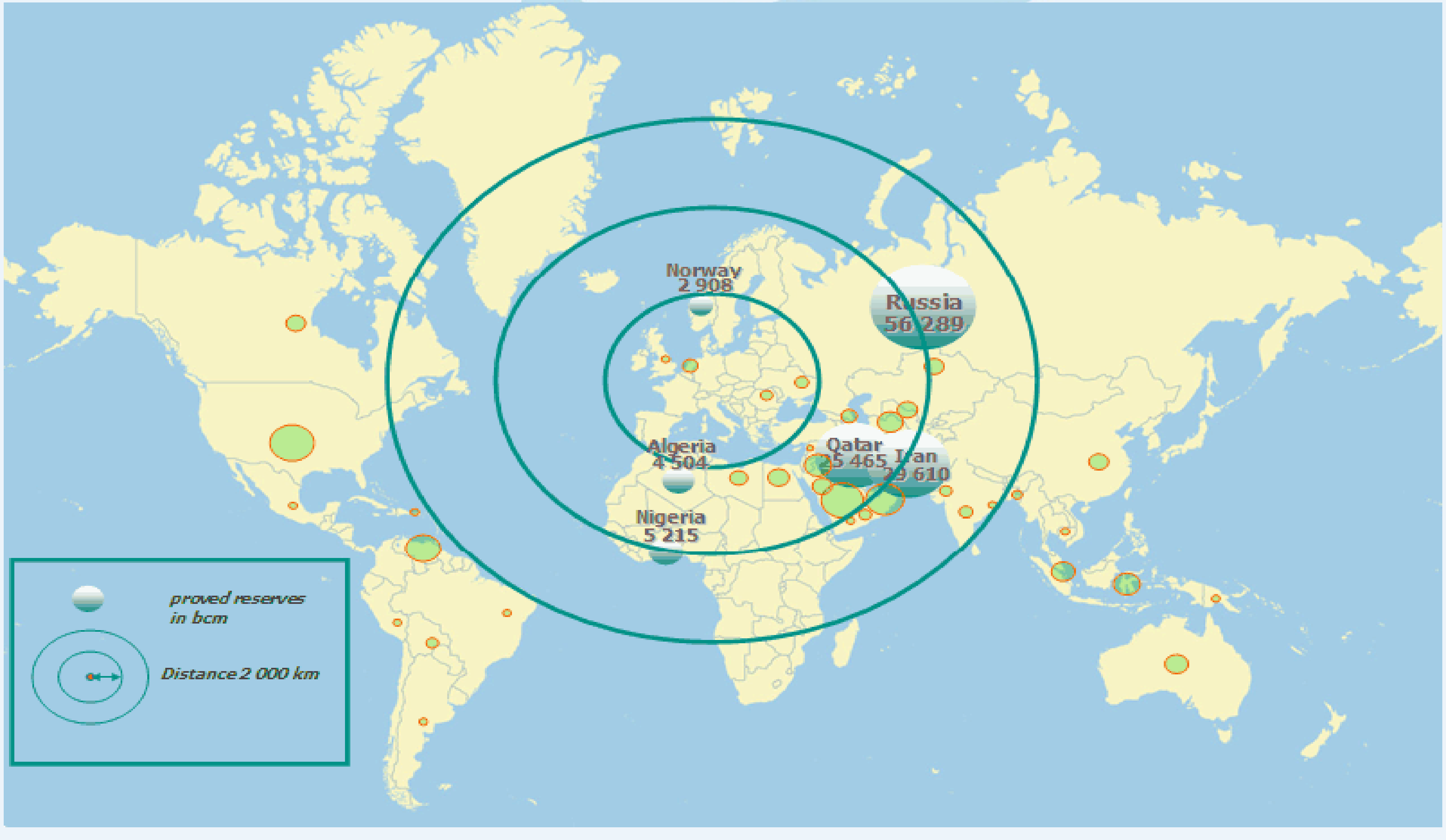
Source: BP

Distribution of World Gas Reserves (1989 – 2009)



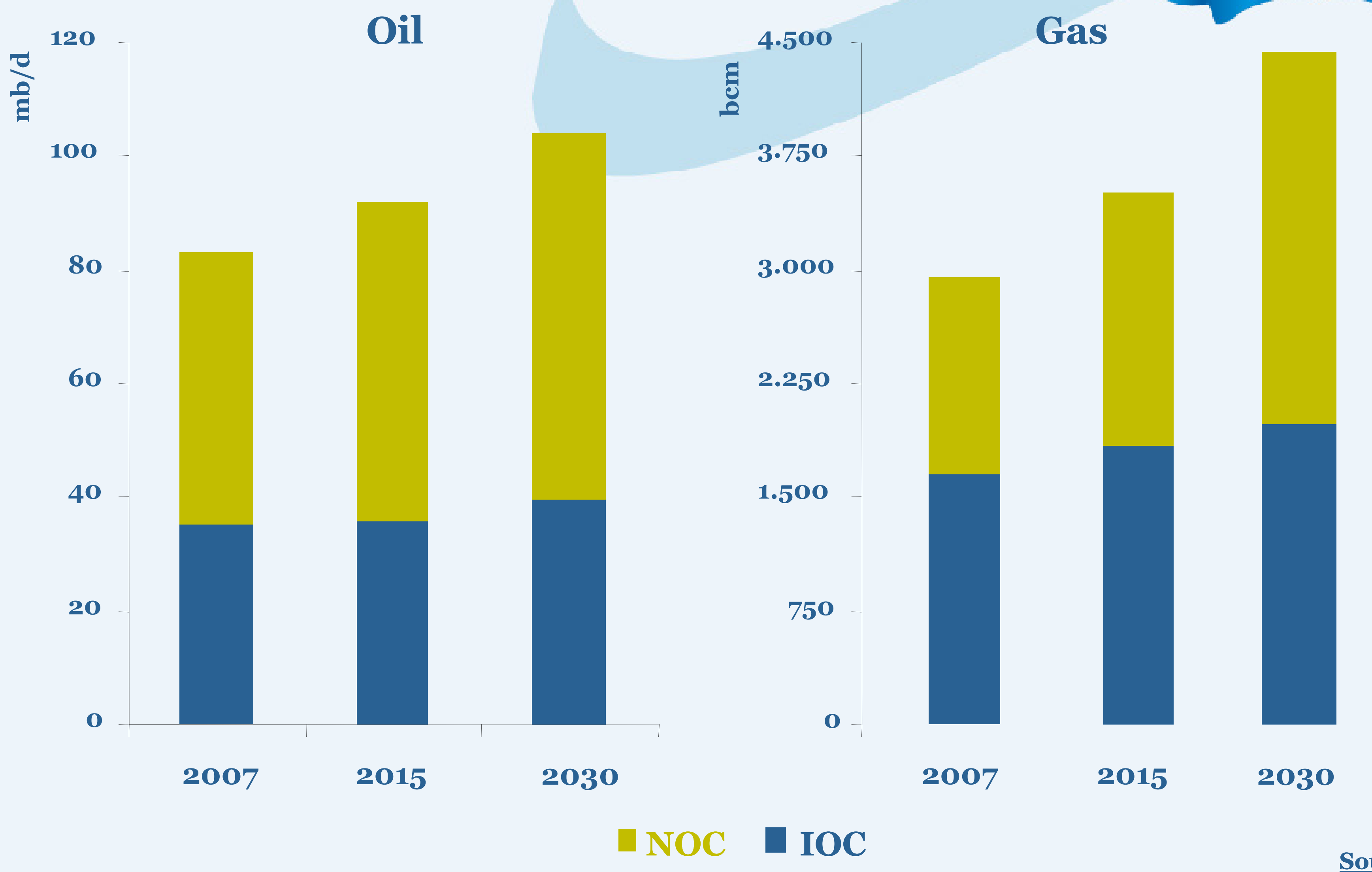
Source: BP

Distribution of World Gas Reserves



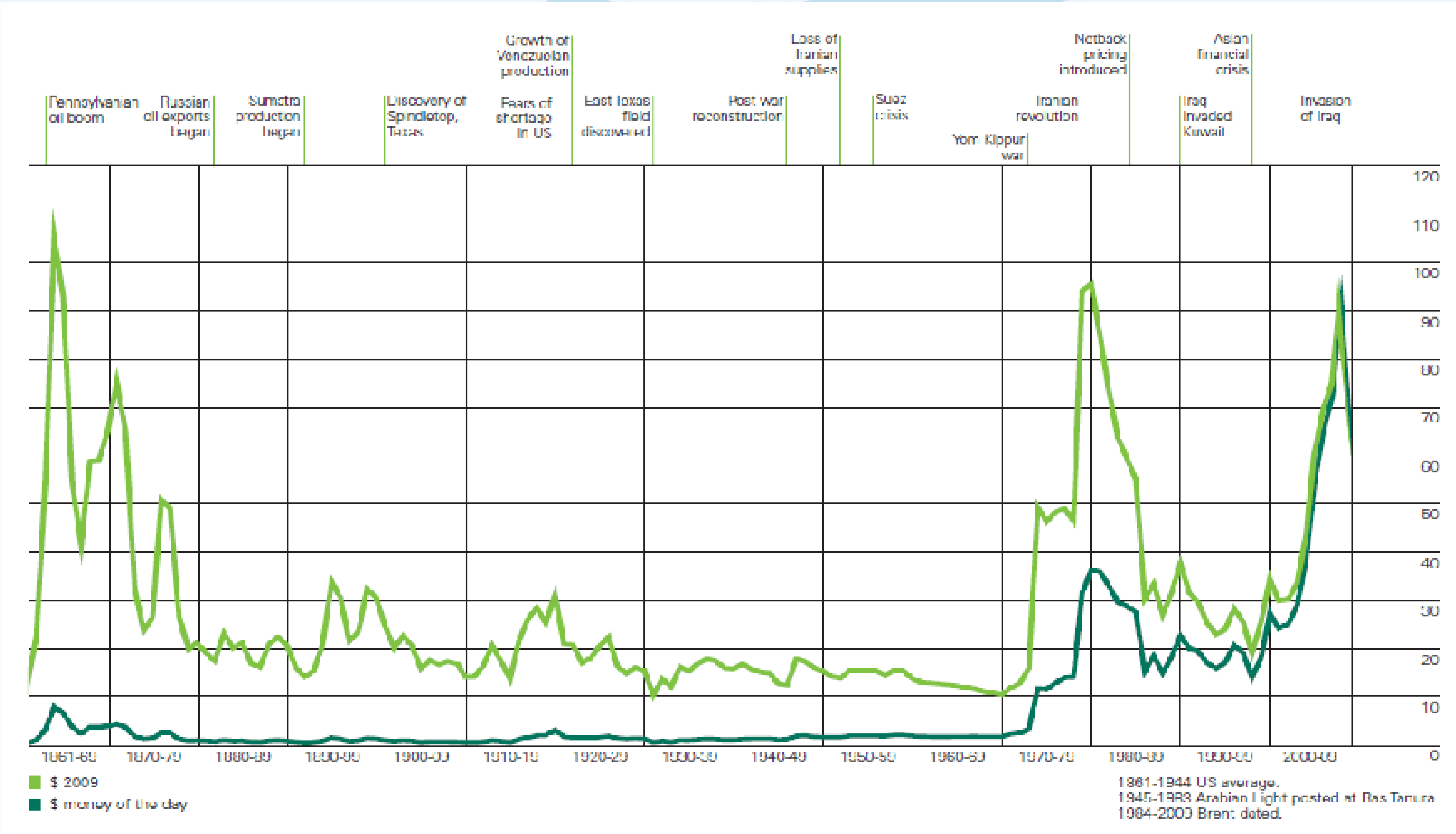
Source: GDF SUEZ

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



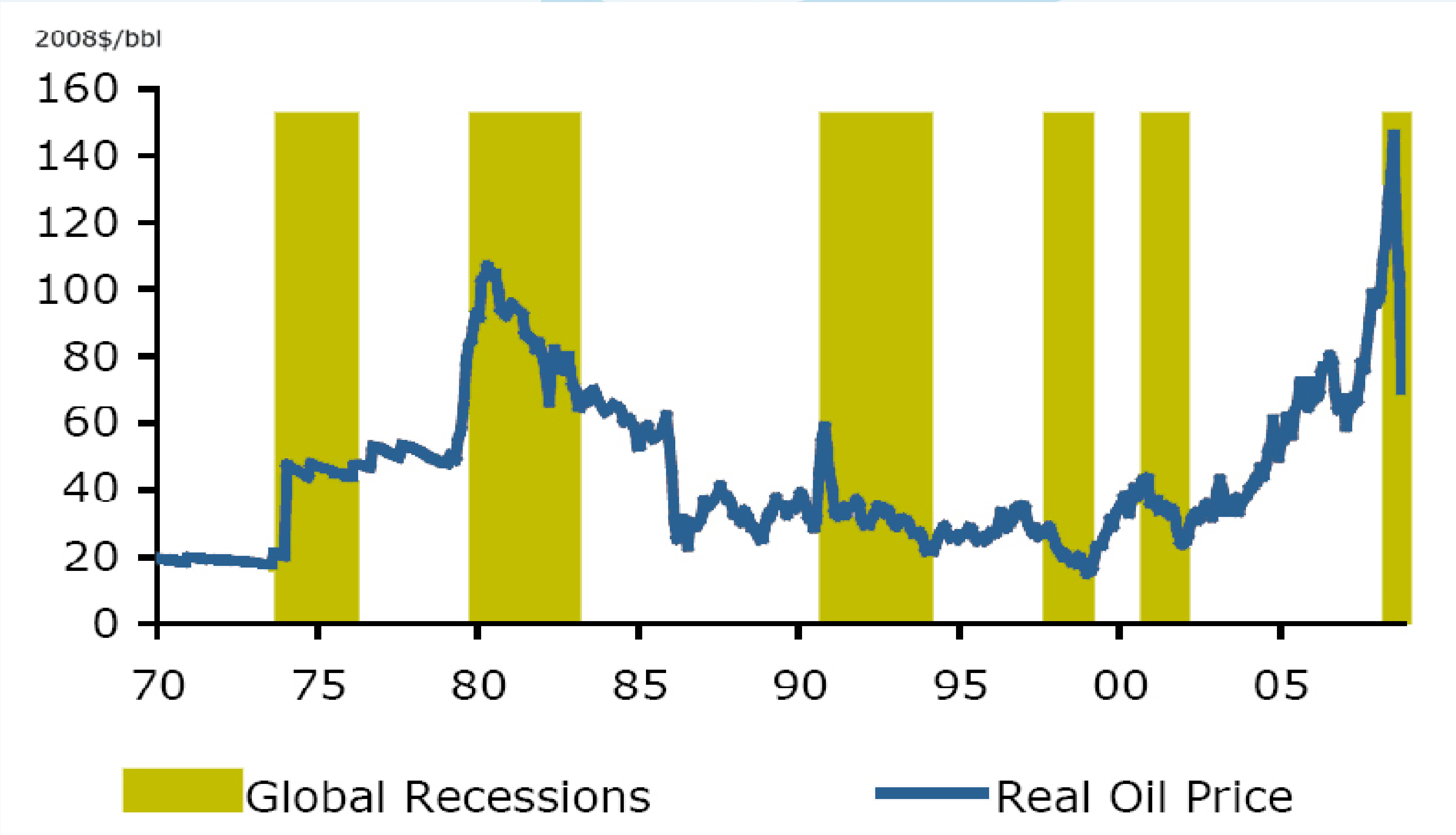
Source: IEA

Crude Oil Prices (1861 – 2009)



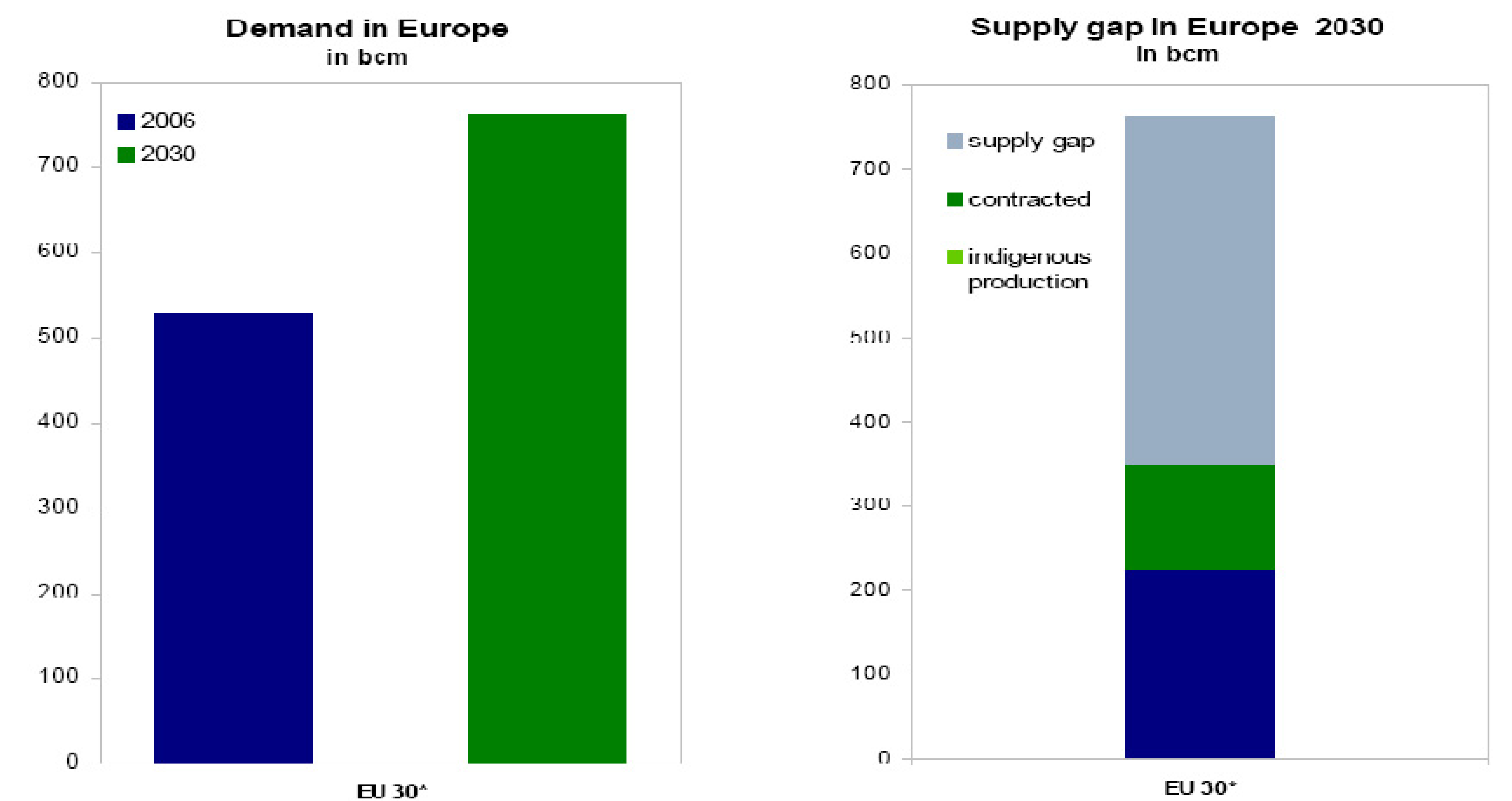
Source: BP

Oil Prices & Global Recessions



Source: CIBC

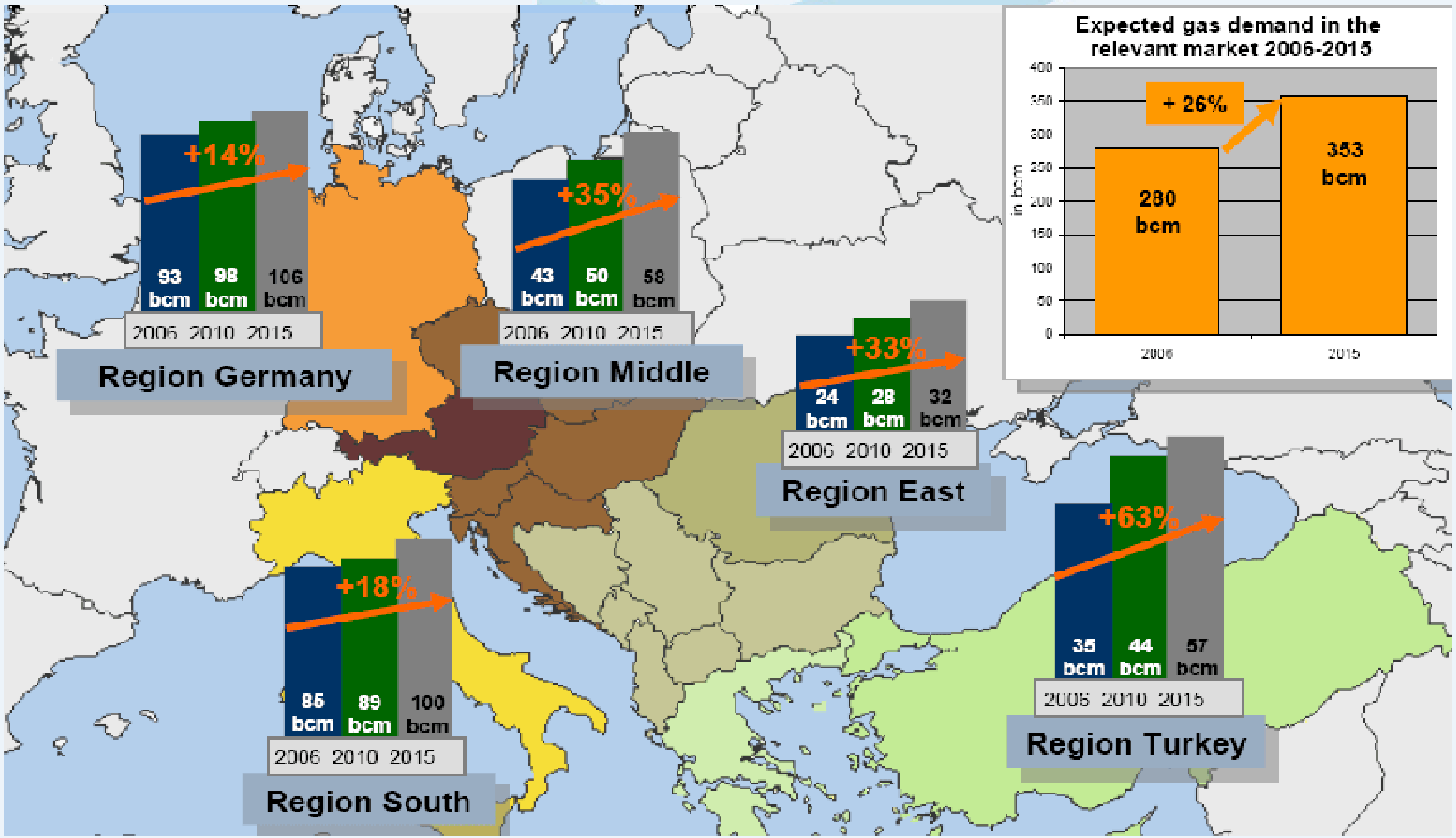
Gas Supply – Demand Gap in Europe (2006 – 2030)



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

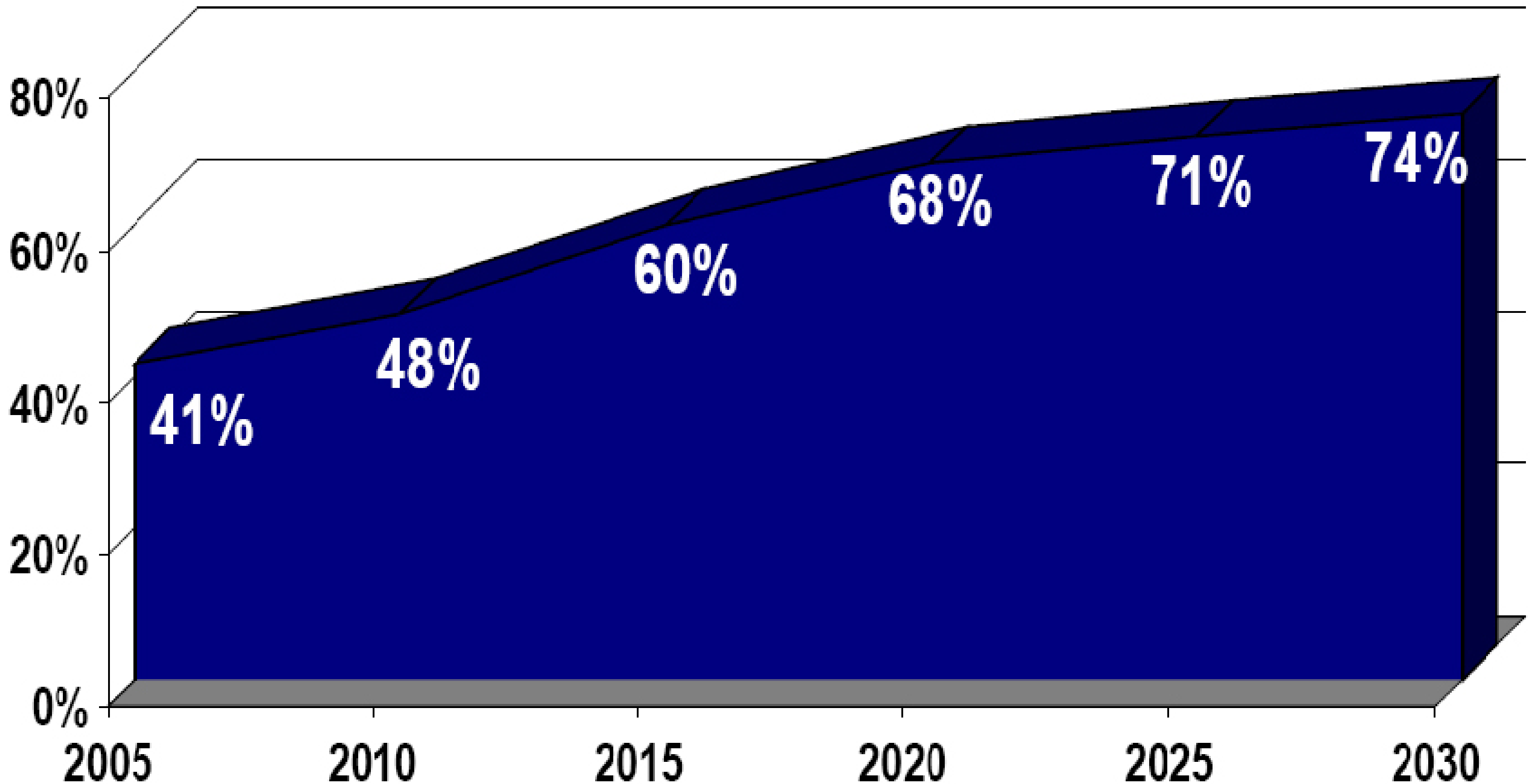
Source: OMV

Europe's Gas Demand Forecast (2006 – 2015)



Source: OMV

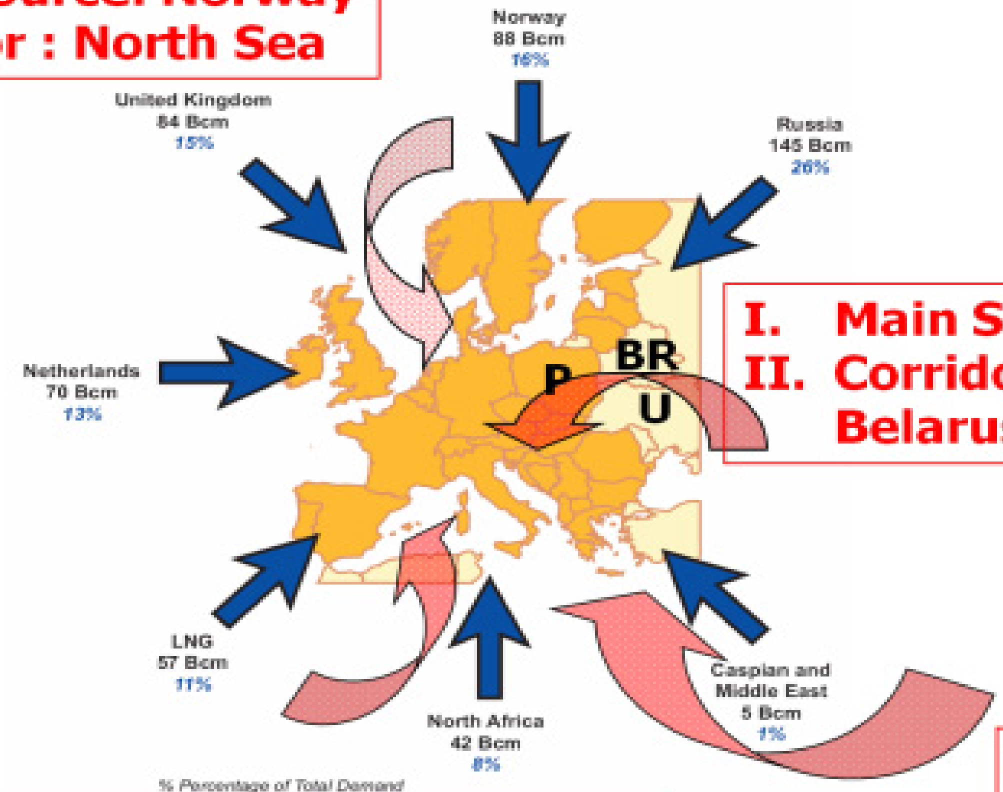
Europe's Gas Import Dependency (2005 – 2030)



Source: OMV

Corridors to the European Gas Market

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



I. Main Source: Russia
II. Corridor: Ukraine / Belarus + Polond

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

IV.

Source: CERA

Gas Pipelines via Turkey

Source: BOTAS

4 Main Principles for Transit Regulations

1. Long term gas cooperation

- ✓ Sustainable gas production
- ✓ Further gas potential in the region
- ✓ Commercial arrangements to underpin gas supply to other markets

2. Non discrimination

- ✓ Provisions of access to third parties and capacity allocation in the transportation system
- ✓ Provision of well defined rules and procedures about non discrimination on transit tariffs and transit operations
- ✓ Provision of specific responsibilities to the regulatory body to ensure non discrimination

4 Main Principles for Transit Regulations

3. Transparency

- ✓ Posting and publishing transit tariffs and the related methodology of calculation
- ✓ Preparing and putting in place well defined procedures for accessing the existing or future transit capacity either through regulated or negotiated access (such as open season procedures)
- ✓ Providing specific roles and responsibilities of a regulatory body

4. Cost reflective and objective tariff mechanism

- ✓ Allowed revenue requirement for the Transit System Operator (TSO) shall include depreciation of the investments (new and existing assets), reasonable and fair return on the asset value, annual operating costs
- ✓ All the relevant costs (depreciation of the investment + operational costs + reasonable revenue) should be shared evenly across all shippers in the system

Energy Demand – Local Production Balance of Turkey (1990–2008)

	1990	1995	2000	2005	2008
Demand (million toe)	52.9	80.5	91.3	0.8	106.2
Production (million toe)	25.6	26.7	26.1	24.5	29.1
Import (million toe)	30.9	39.7	56.3	73.4	85.5
Export (million toe)	2.1	1.9	1.5	5.1	7.1
Bunker Fuel (million toe)	0.3	0.4	0.4	0.6	0.7
Net Import (million toe)	28.4	37.3	54.2	67.6	77.4
Coverage of Local Production to Total Consumption (%)	48.1	42.0	33.1	26.9	27.2

Source: MENR

Primary Energy Production – Consumption Balance (2007)

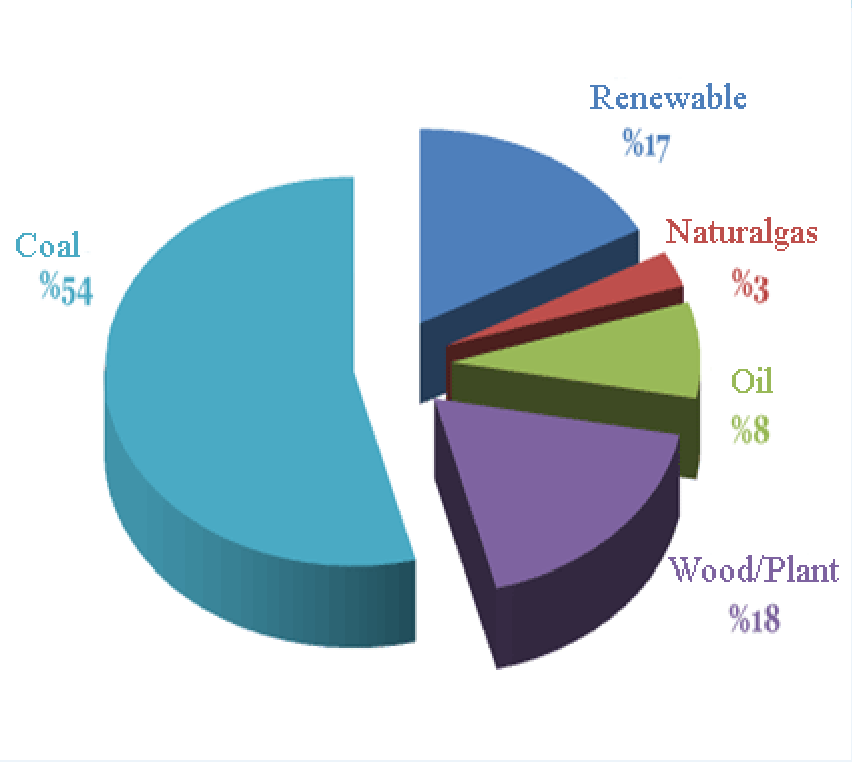
Resources	Coal	Wood & Plant	Oil	Natural Gas	Renewables	Total
Primary Energy Production (million toe)	14.7	4.9	2.2	0.8	4.5	27.4
Share in Primary Energy Production (%)	53.9	18.2	8.2	3.0	16.7	100.0
Primary Energy Consumption (million toe)	30.9	4.9	33.3	33.9	4.5	107.6
Share in Primary Energy Consumption (%)	28.7	4.6	30.9	31.5	4.3	100.0
Coverage of Production to Consumption (%)	47.9	100.0	6.7	2.4	100.0	25.5

Source: MENR

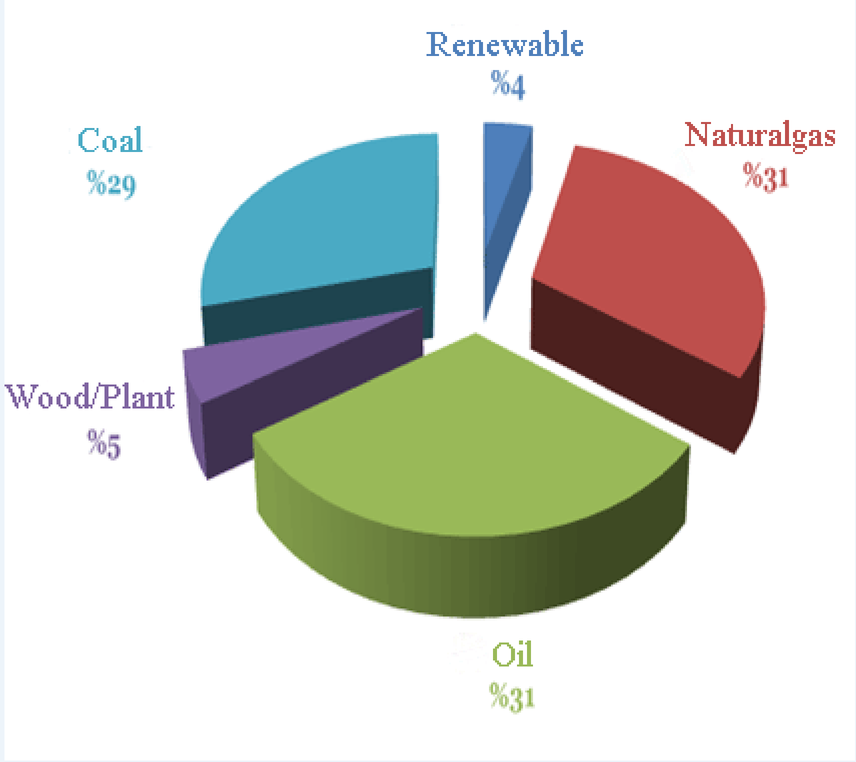
Primary Energy Production – Consumption Balance (2007)

PETFORM 10. Yıl

Distribution of Production (27.4 million toe)



Distribution of Consumption (107.6 million toe)



Share of Imported Energy Resources: 75%

Source: MENR

Development of Turkish Natural Gas Market

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- USSR – Turkey Contract (18.09.1984)
- Contract № 1 → 14.02.1986 (6 bcm)
- Contract № 2 → 10.12.1996 (Turusgaz)
- Russia - Turkey (29.08.1997 & 15.12.1997 – Blue Stream)
- Contract № 3 → February 1998
- LNG Supply from Algeria (1998)
- Natural Gas Market Law (03.03.2001)
- Gas Supply from Iran (2002)
- Blue Stream Project (December 2002)

1987 | 1998 | 2003 | 2005 | 2009

- Preparation Process
- Market Development Based on Russian Gas
- Increase in Gas Supply Sources
- First Steps in Liberalization Process
- Market Development in Liberalization Process

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

Long Term Gas Supply Contracts

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 Imports by Source Countries (2008 – 2009)

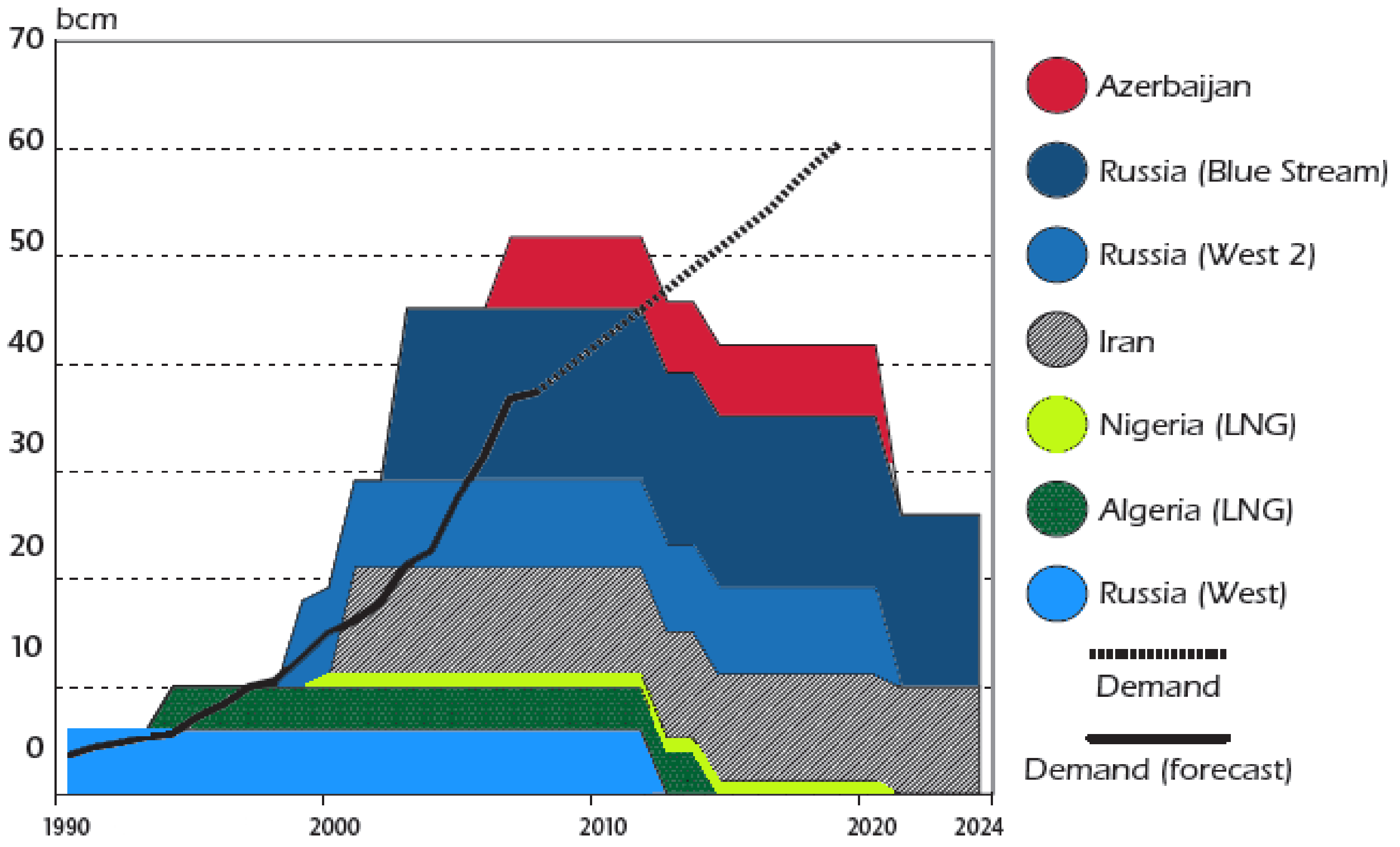
	2008		2009
Russia	23,159 (60,5%)	→	19,894 (55,6%)
Iran	4,113 (10,7%)	→	5,253 (14,8%)
Azerbaijan	4,580 (12,0%)	→	4,960 (13,8%)
Others	6,465 (16,8%)	→	5,648 (15,8%)
	38,317 bcm	→	35,755 bcm

(- 6,7 %)

Distribution of Gas Imports by Companies (2008 – 2009)

	2008		2009
BOTAS	38,120 (%99,5)	→	33,068 (%92,5)
Private Co's	0,197 (%0,5)	→	2,687 (%7,5)
	38,317	→	35,755

Gas Supply Contracts – Demand (1990 – 2025)



Source: IEA Turkey 2009 Review

Natural Gas Market Law
Main Purpose

To form a <u>liberal, transparent and competitive market</u> in order to provide quality, sustainable and cost competitive gas for the consumers

Natural Gas Market Law Methodology

1. Reducing the market share of BOTAS to 20% by 2009 through a gas release programme and doing no new gas purchase agreements except LNG imports

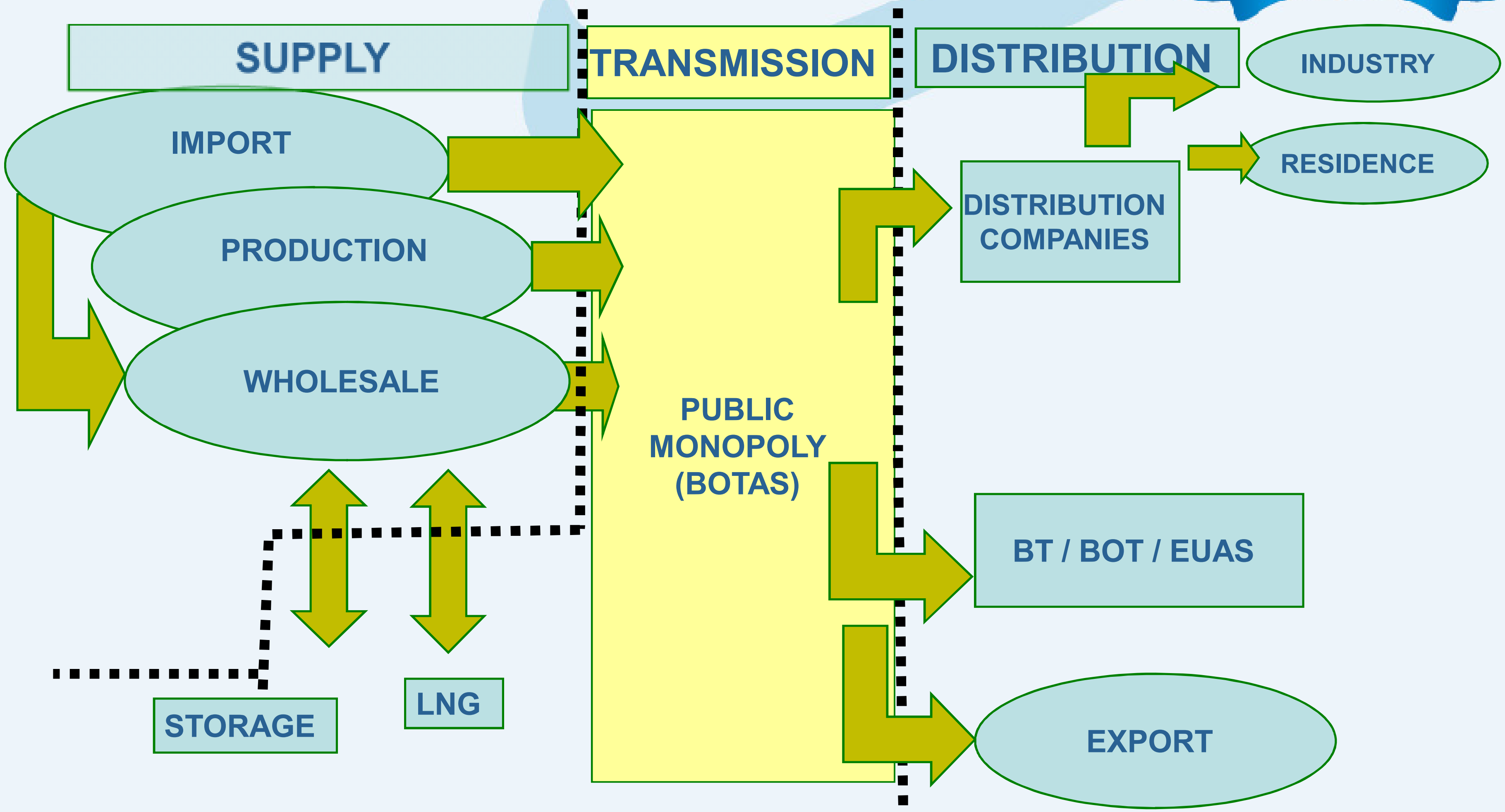
2. Volumes released by BOTAS at each calendar year may not be less than 10% of total gas volume undertaken to be purchased on the effective date of the law

3. Limitation of each supplier not to exceed 20% market share

4. Legal unbundling of BOTAS into different legal entities in order to do transmission, storage and trading activities through various entities

5. Local distribution should be done by private companies winning tenders held by EMRA

Natural Gas Market Law
Market Structure



Natural Gas Market Law Realization

1. First Contract Release Tender was held in 2005 by BOTAS and four private companies has started their operations by 2009. This first attempt has been privatized only 10% of the market.

2. Targets envisaged by the law about local distribution have been reached and 60 distribution areas have been privatized.

3. Spot LNG imports started.

4. Wholesale companies, although remained limited amount, have begun operations.

1st Contract Release Programme

	Amount (bcm)	Starting Date of Importation
Shell Enerji	0.25	Dec 2007
BosphorusGaz	0.75	Jan 2009
Enerco Enerji	2.50	Apr 2009
Avrasya Gaz	0.50	Apr 2009
	4.00 bcm	*(10 % of the market)*

Natural Gas Market Law Yet to be Realized

1. The market share of BOTAS still remains around 90% in spite of 20% envisaged by the law.

2. BOTAS did not continue to the contract release tenders in spite of the law.

3. An efficient wholesale segment and a balance between private sector and public sector could not be established since BOTAS did not make contract releases as indicated in the law.

4. As of 2010, BOTAS has still not legally unbundled to Transmission, Storage and Trading entities in accordance with the Law.

PETFORM's Suggestions

1. Increasing the import share of private sector through Contract and/or Volume Release and by removing restrictions in gas import for the private sector

2. Completing legal unbundling of BOTAS as per the Natural Gas Market Law

3. Implementing the Cost-Based Pricing Mechanism for BOTAS until BOTAS' share is reduced to a level enabling gas to gas competition

THANK YOU…