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

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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
51 Energy Companies

- AKENERJİ
- AKSA DOĞALGAZ
- 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
- EXXONMOBIL
- GDF SUEZ
- GENEL ENERJİ
- GÜNEY YILDIZI PETROL
- HATTUŞA ENERJİ
- HONEYWELL
- IBS RESEARCH
- MARSA ENERGY
- MEDGAZ
- NATURGAZ
- N.V.TURKSE PERENCO
- OMV
- OPALİT
- PALMET
- PETROL OFİSİ
- POZİTİF DOĞALGAZ
- SHELL ENERJİ
- SOCAR & TURCAS ENERJİ
- SOYAK ENERJİ
- STATOIL
- TEKFEN İNŞAAT
- TEMI
- THRACE BASIN
- TIWAY TURKEY
- TOTAL
- TRANSATLANTIC TURKEY
- TURCAS
- TURUSGAZ
- VALEURA ENERGY
- ZMB GAZ DEPO
- ZORLU DOĞAL GAZ

PETFORM Members' Value in Turkish Economy (2010)

Total Turnover : 35.7 billion USD

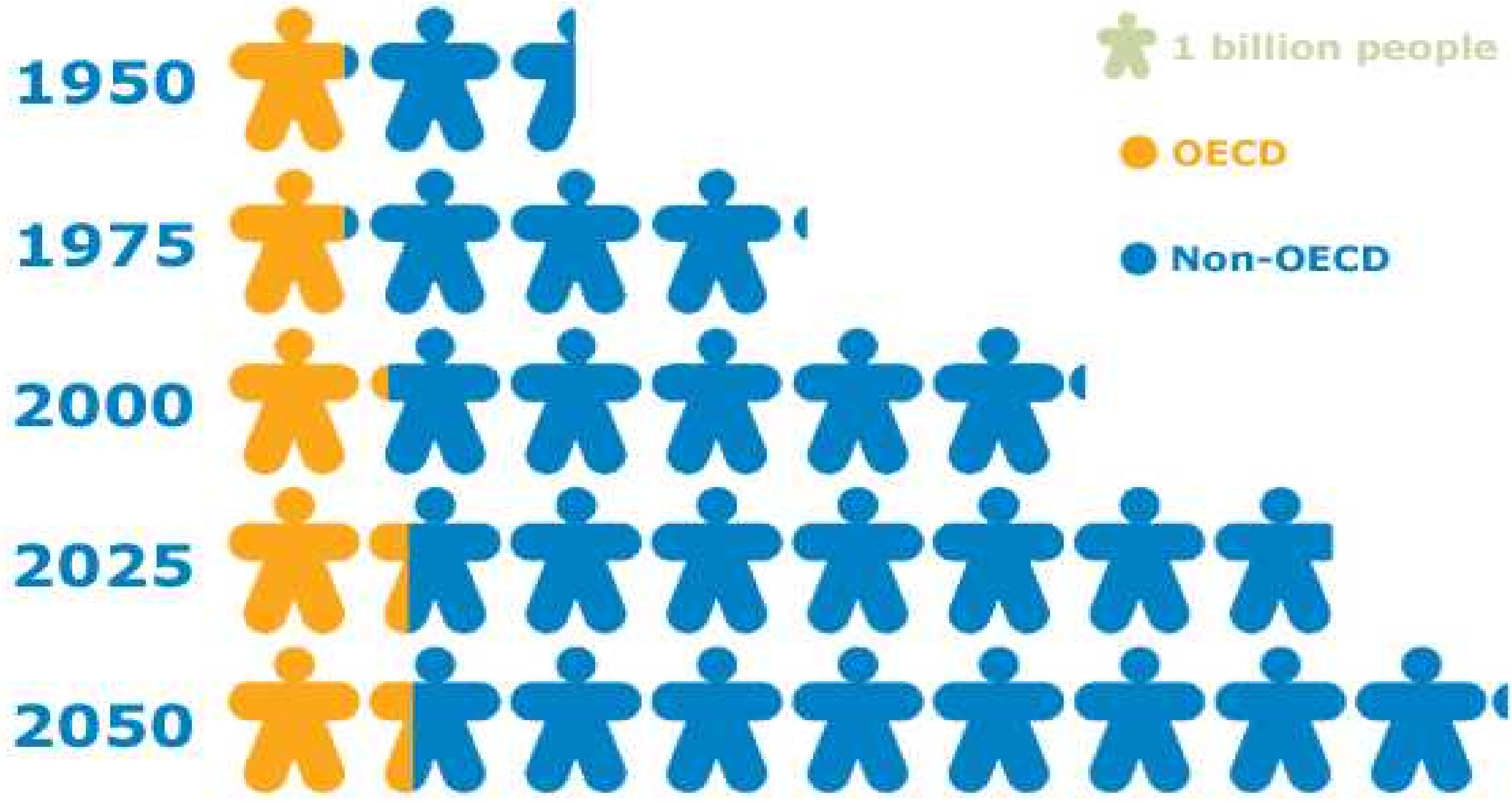
(5% of GDP)

Total Tax : 2.1 billion USD

Total Employment : 31,200

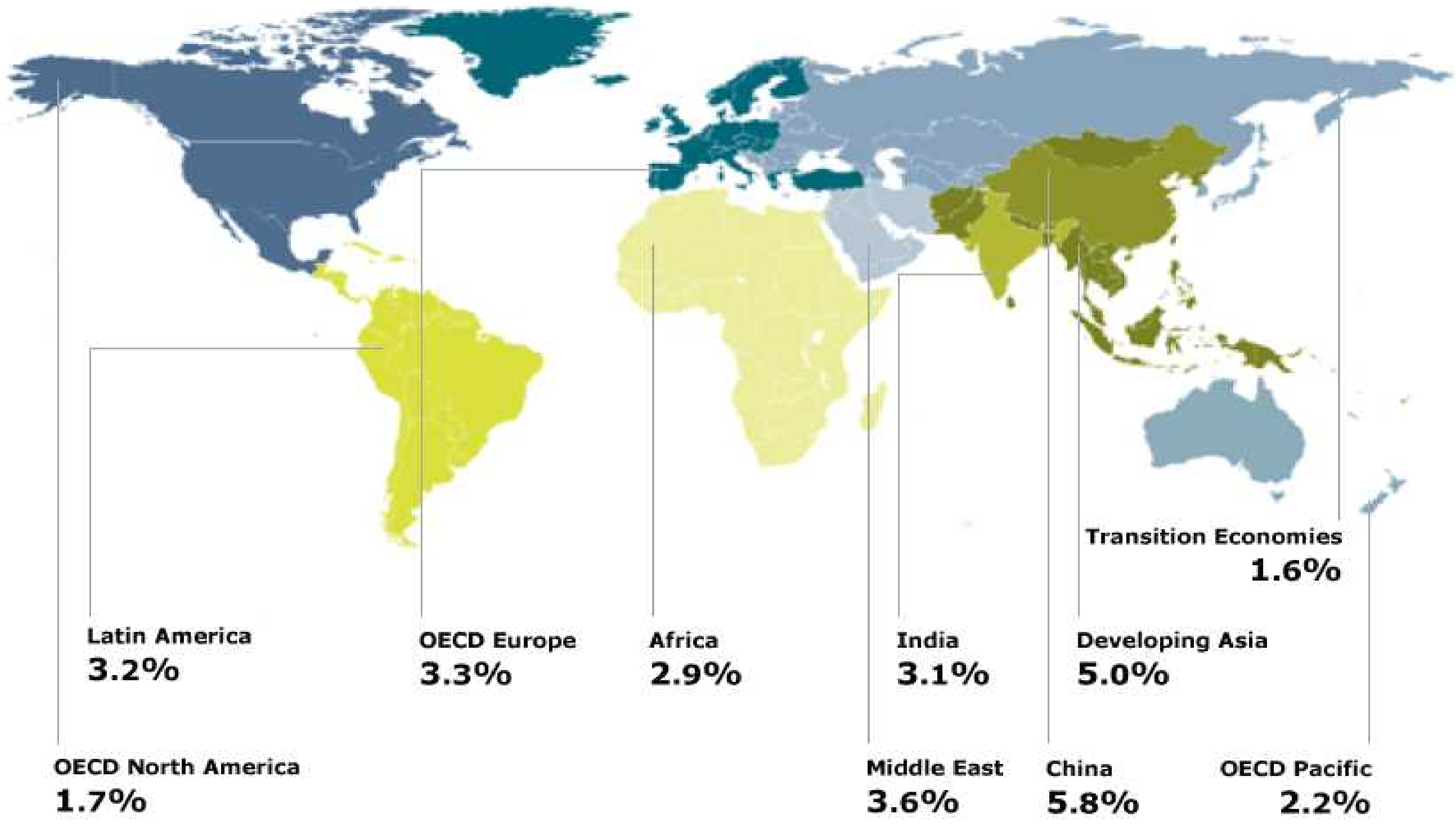
Global Energy Trends

World Population Growth (1950 – 2050)



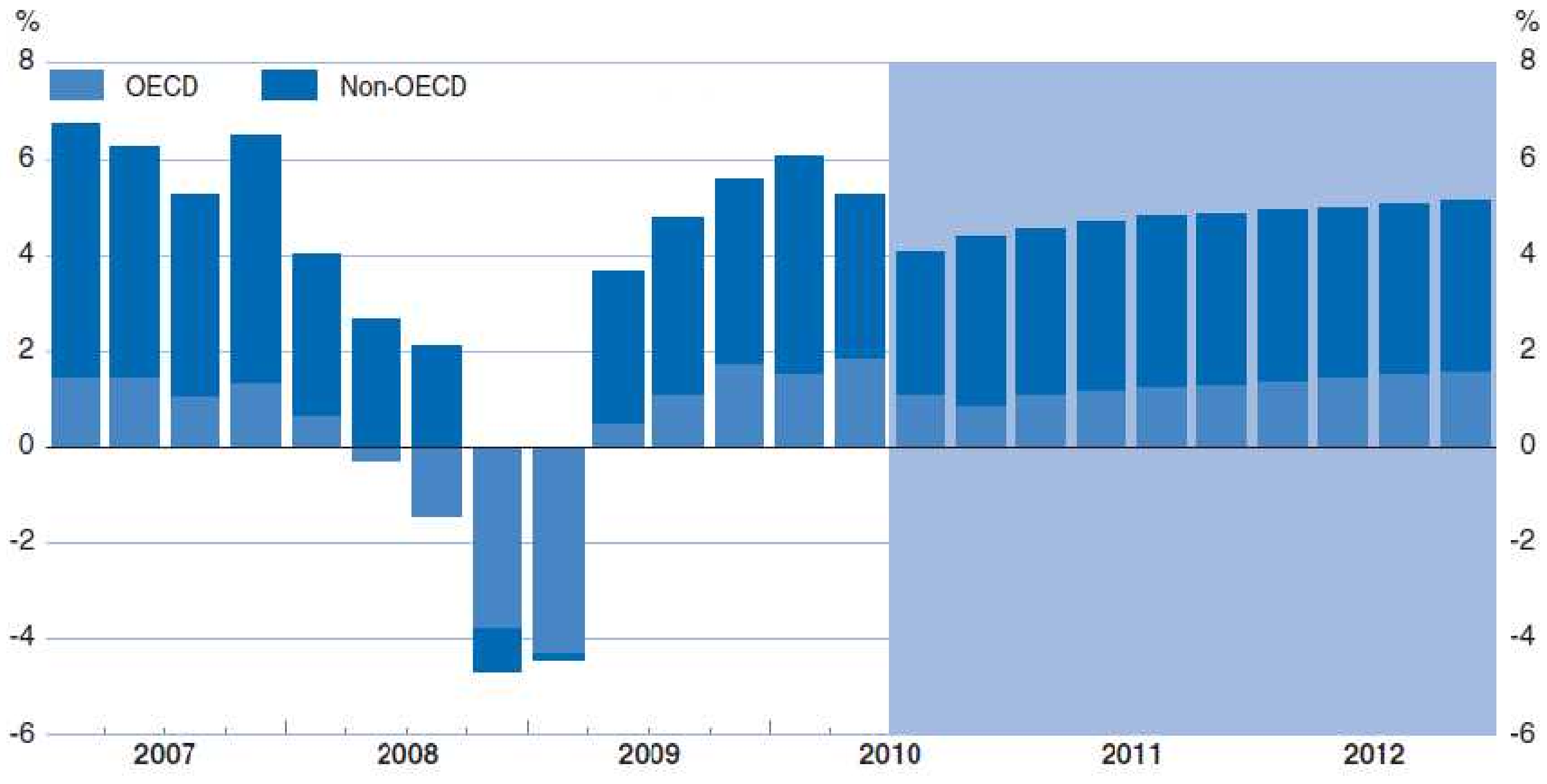
Source: Shell

World GDP Growth (2005 – 2050)



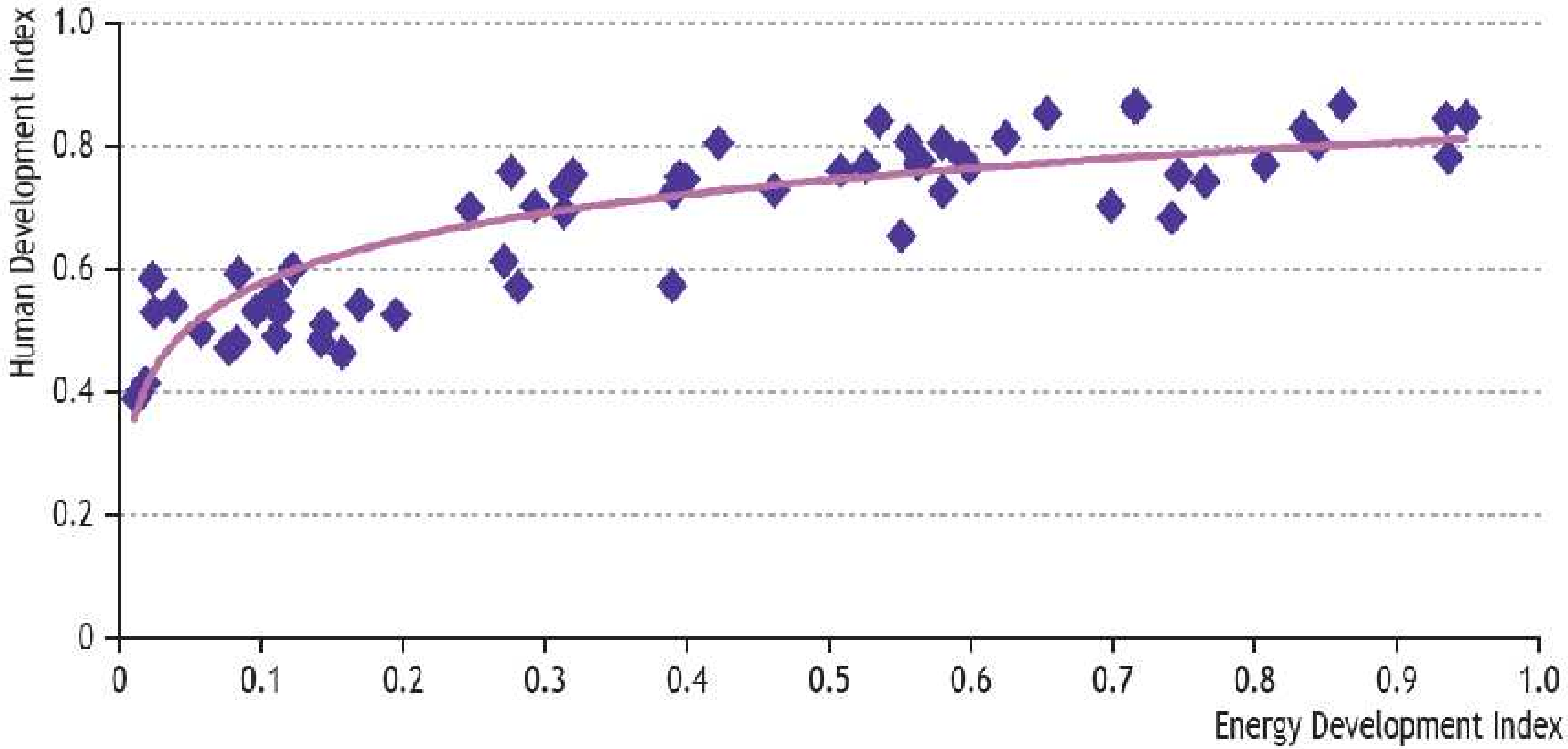
Source: IEA

Contribution to World Real GDP Growth (2007 – 2012)



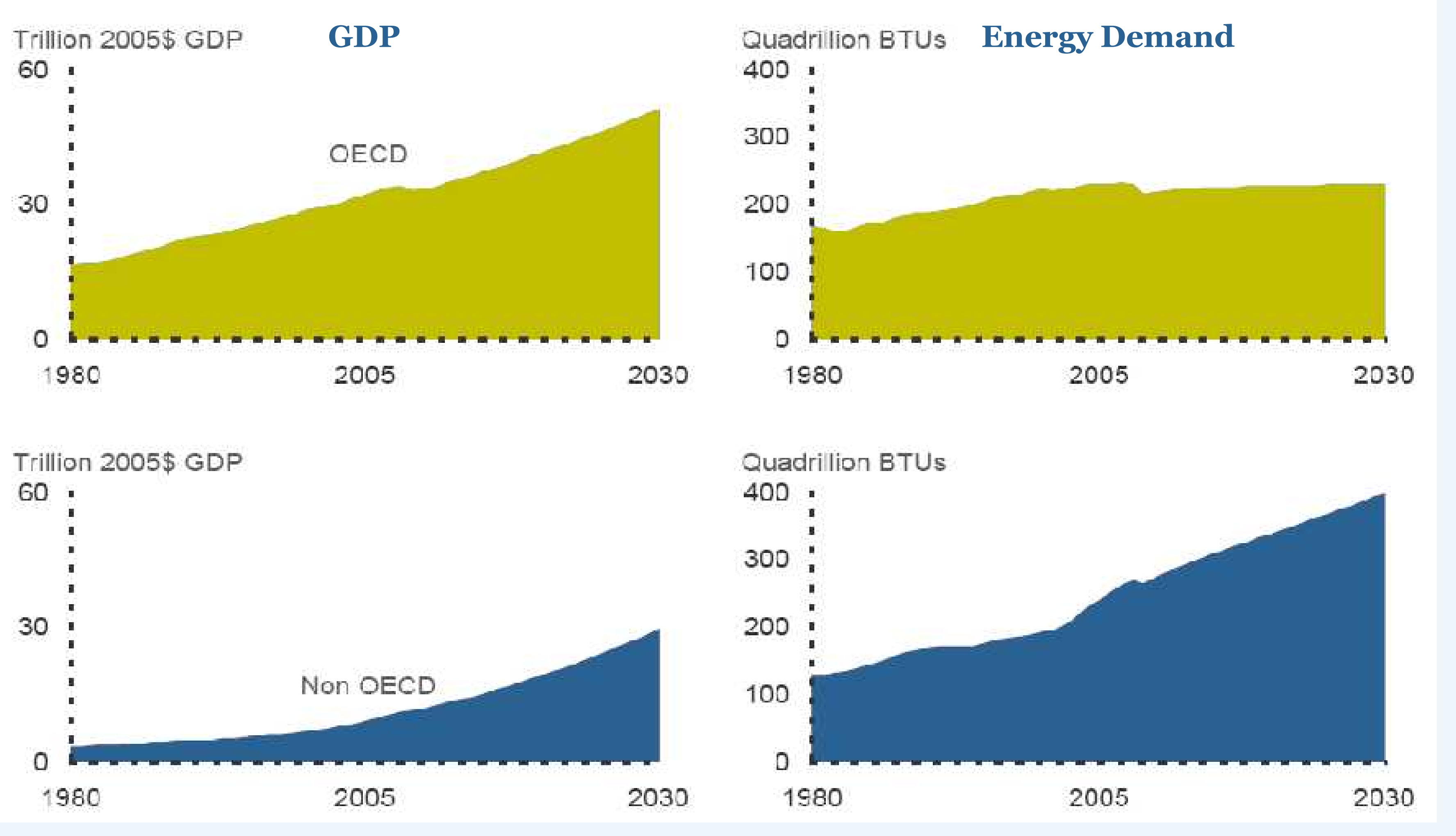
Source: OECD

Human vs. Energy Development



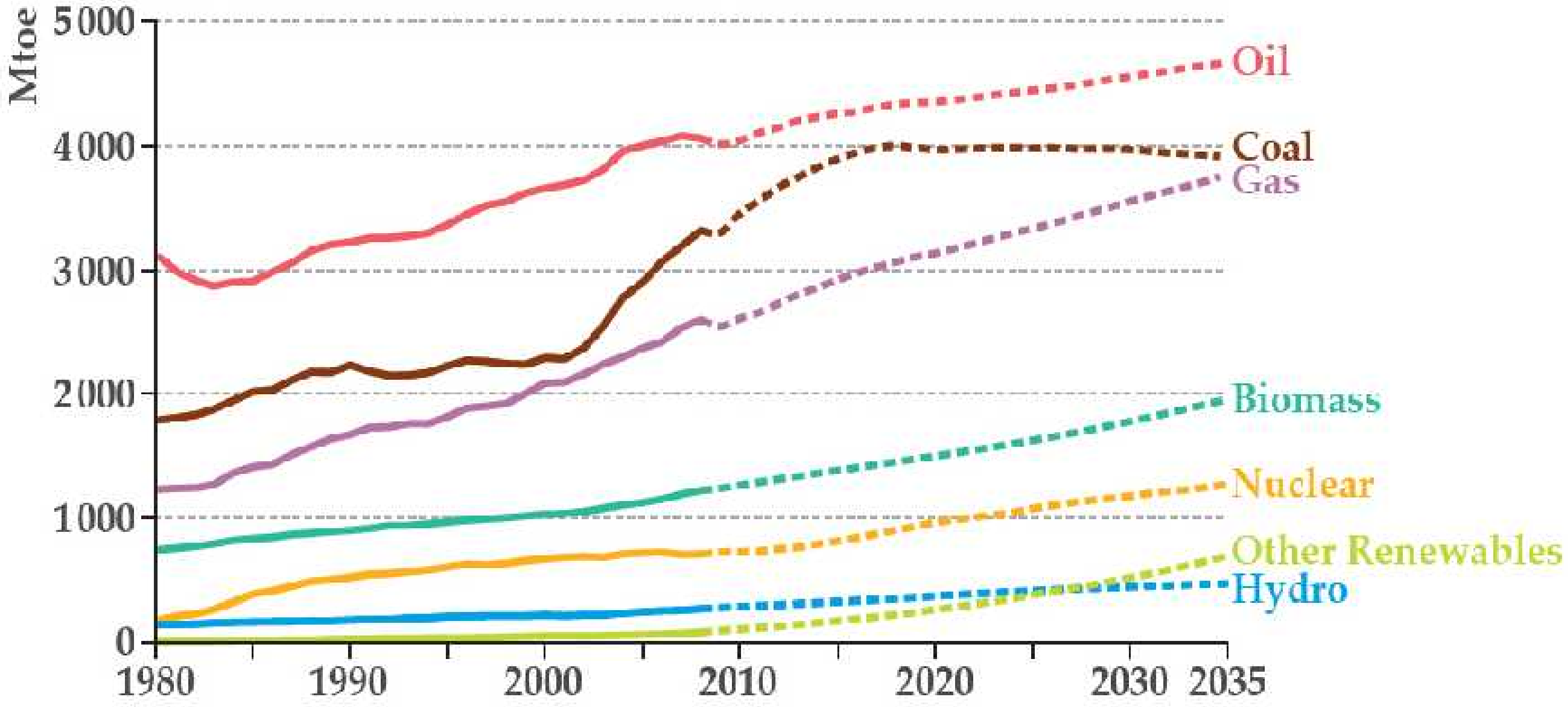
Source: IEA

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



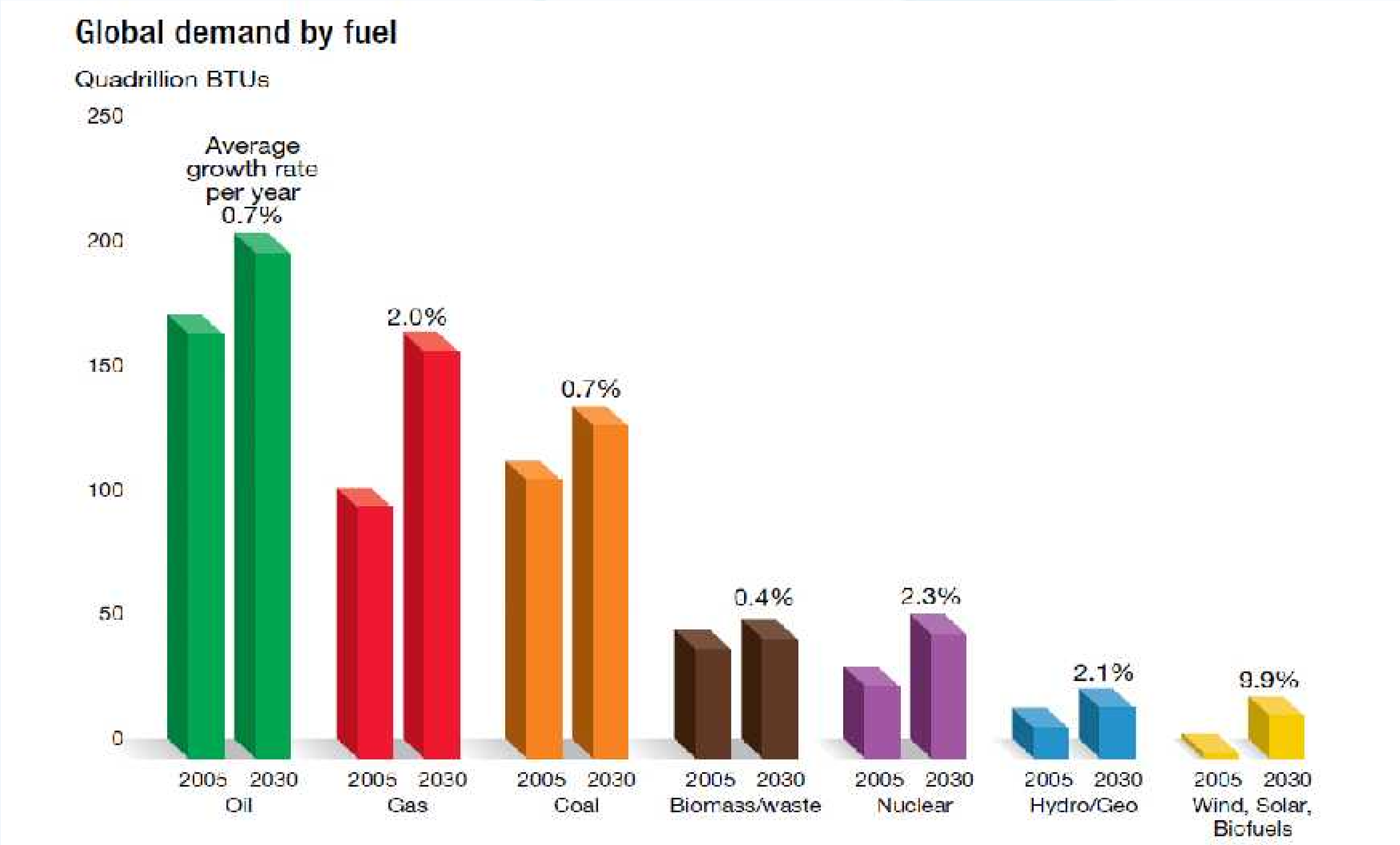
Source: ExxonMobil

World Primary Energy Demand by Fuel (1980 – 2035)



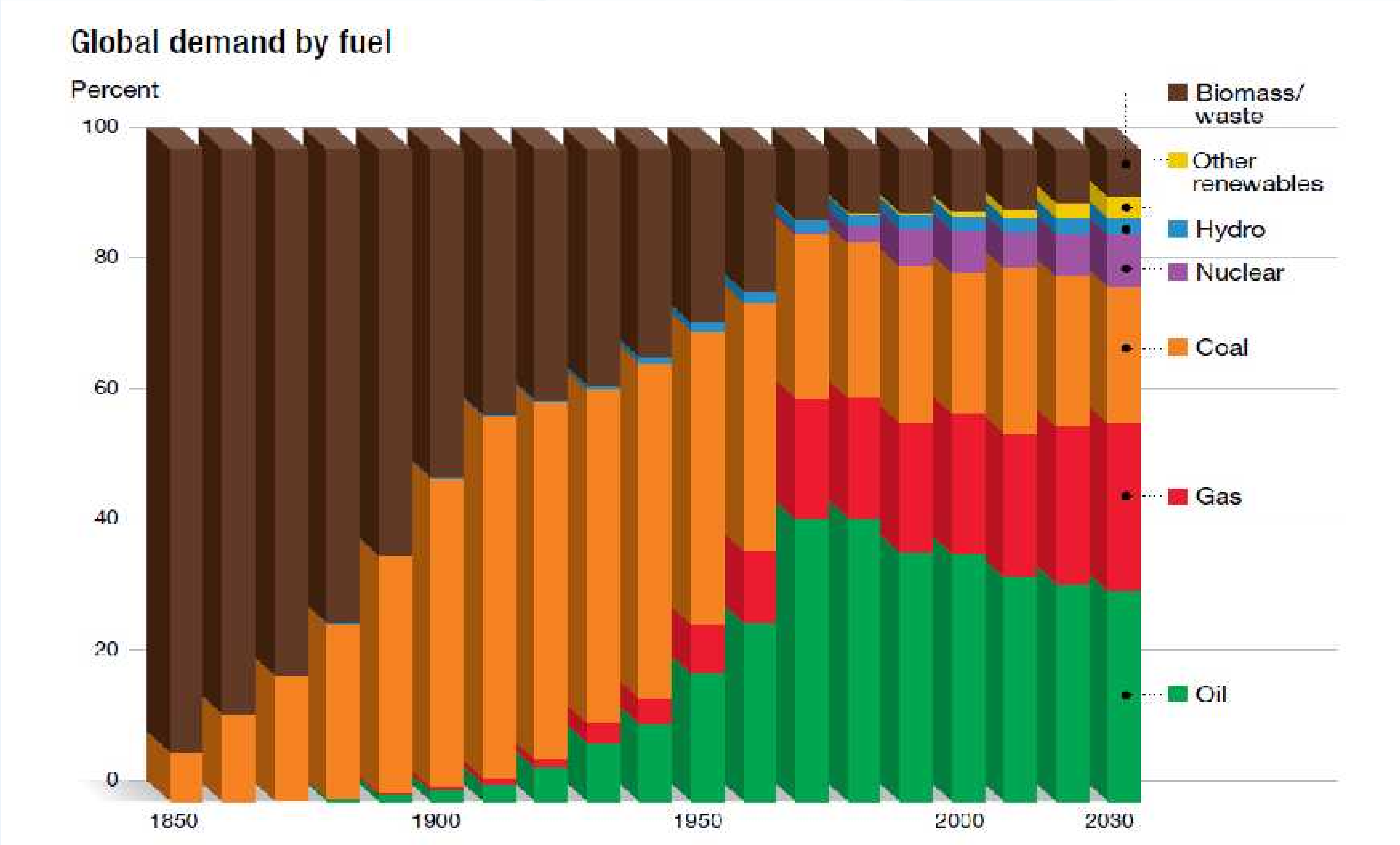
Source: IEA

Global Energy Demand by Fuel (2005 – 2030)



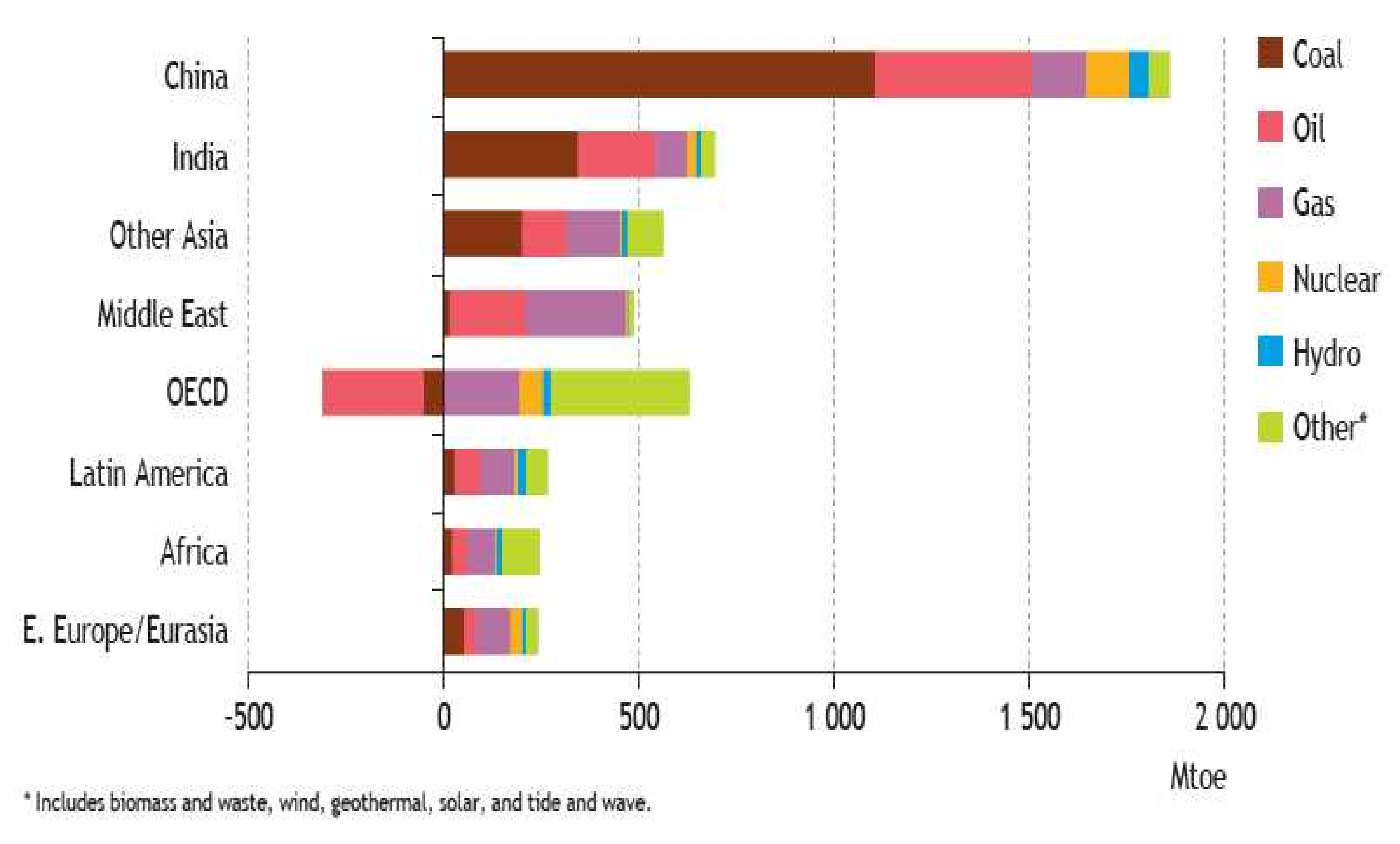
Source: ExxonMobil

Global Energy Demand by Fuel (1850 – 2030)



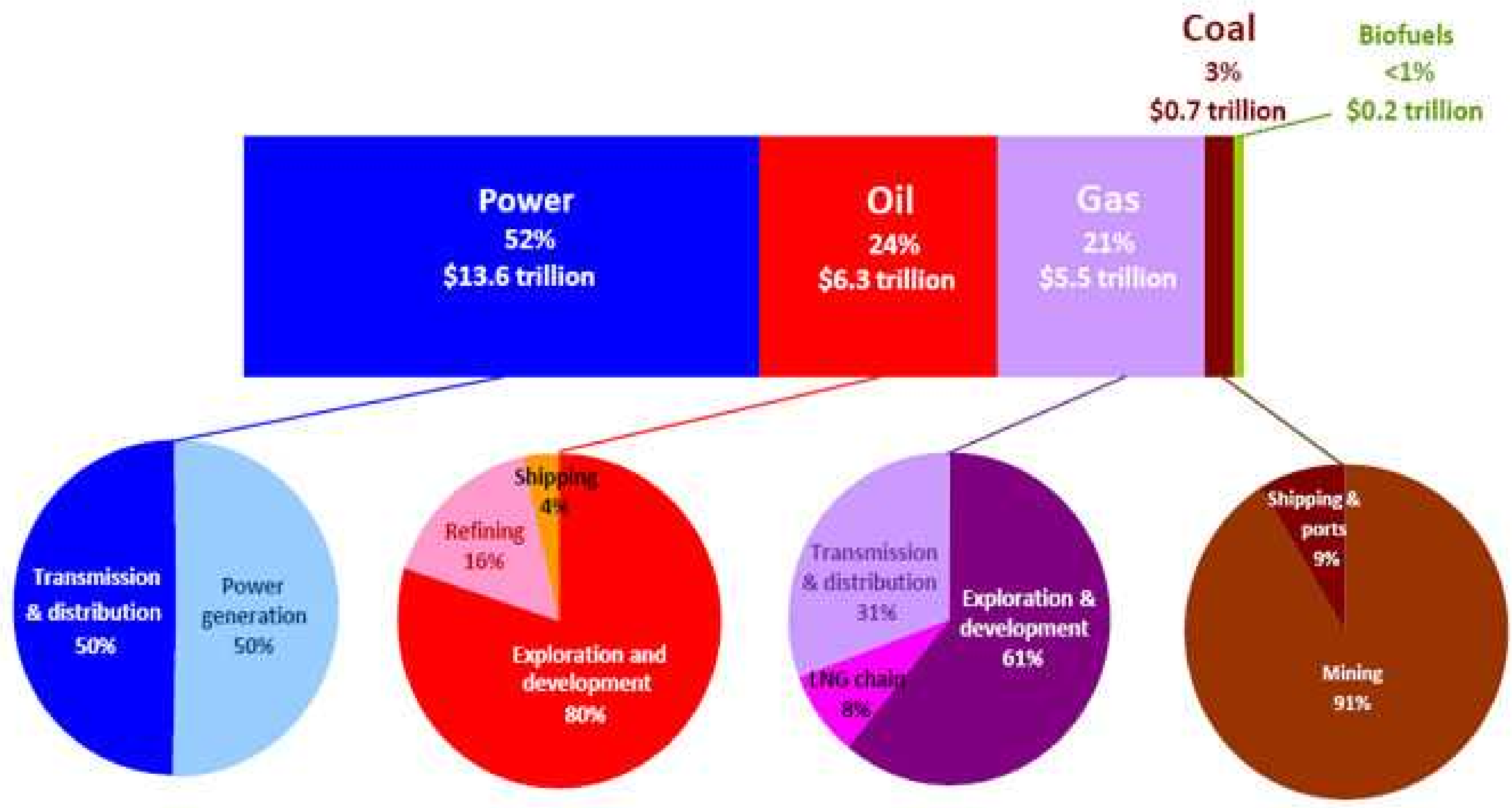
Source: ExxonMobil

World Primary Energy Demand (2007 – 2030)



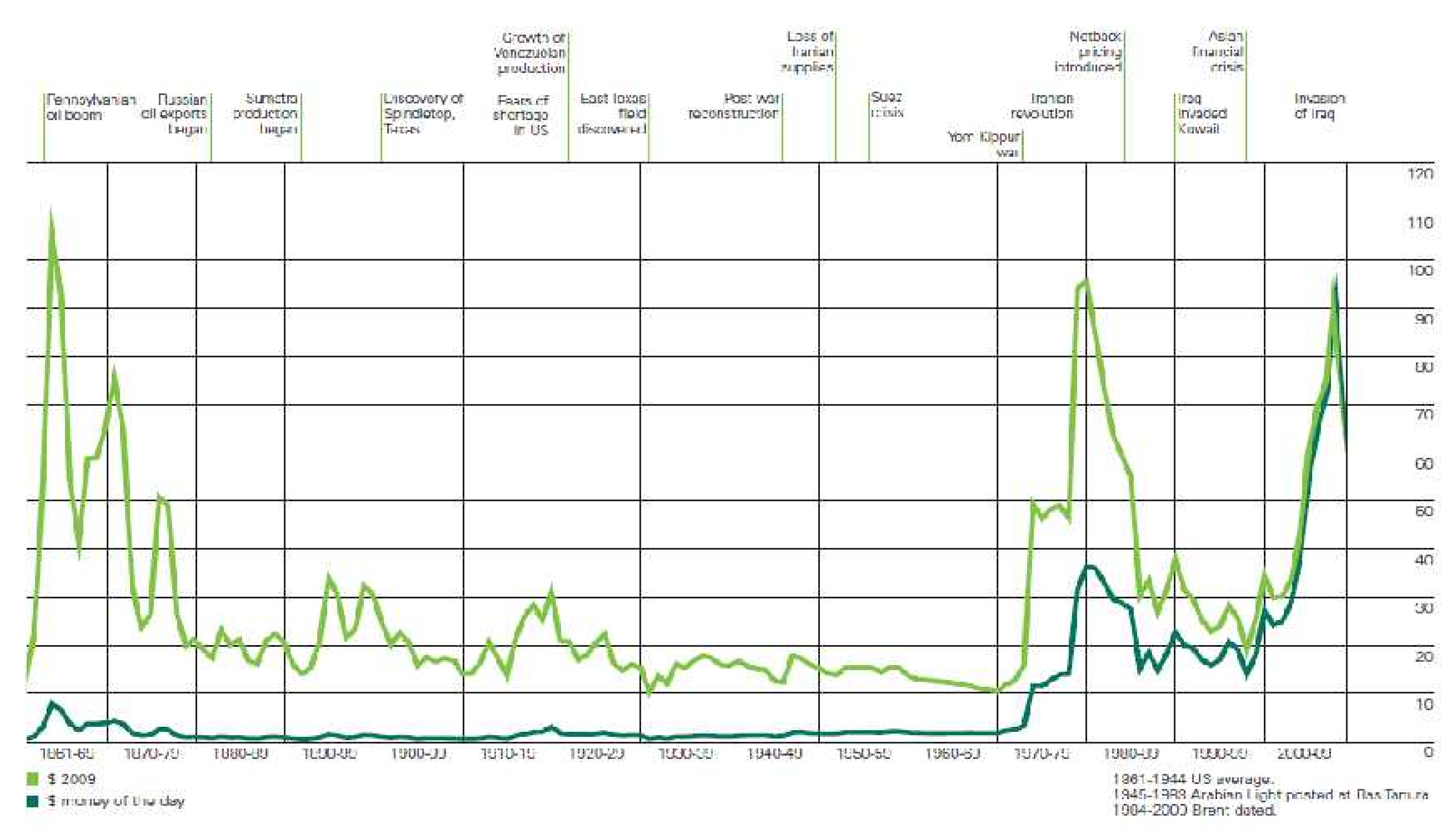
Source: IEA

Primary Energy Investment Requirement (2007 – 2030)



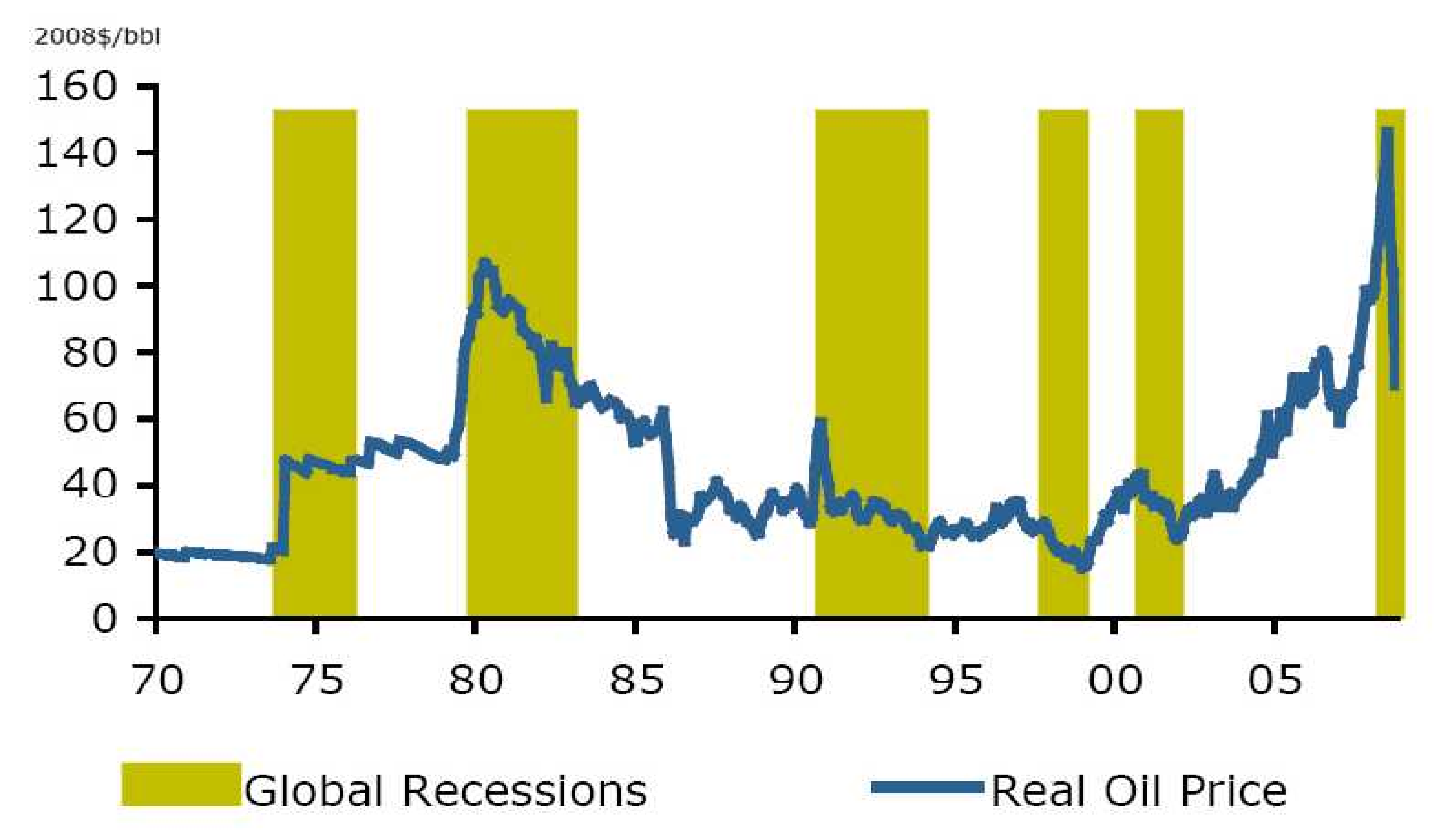
Source: IEA

Crude Oil Prices (1861 – 2009)



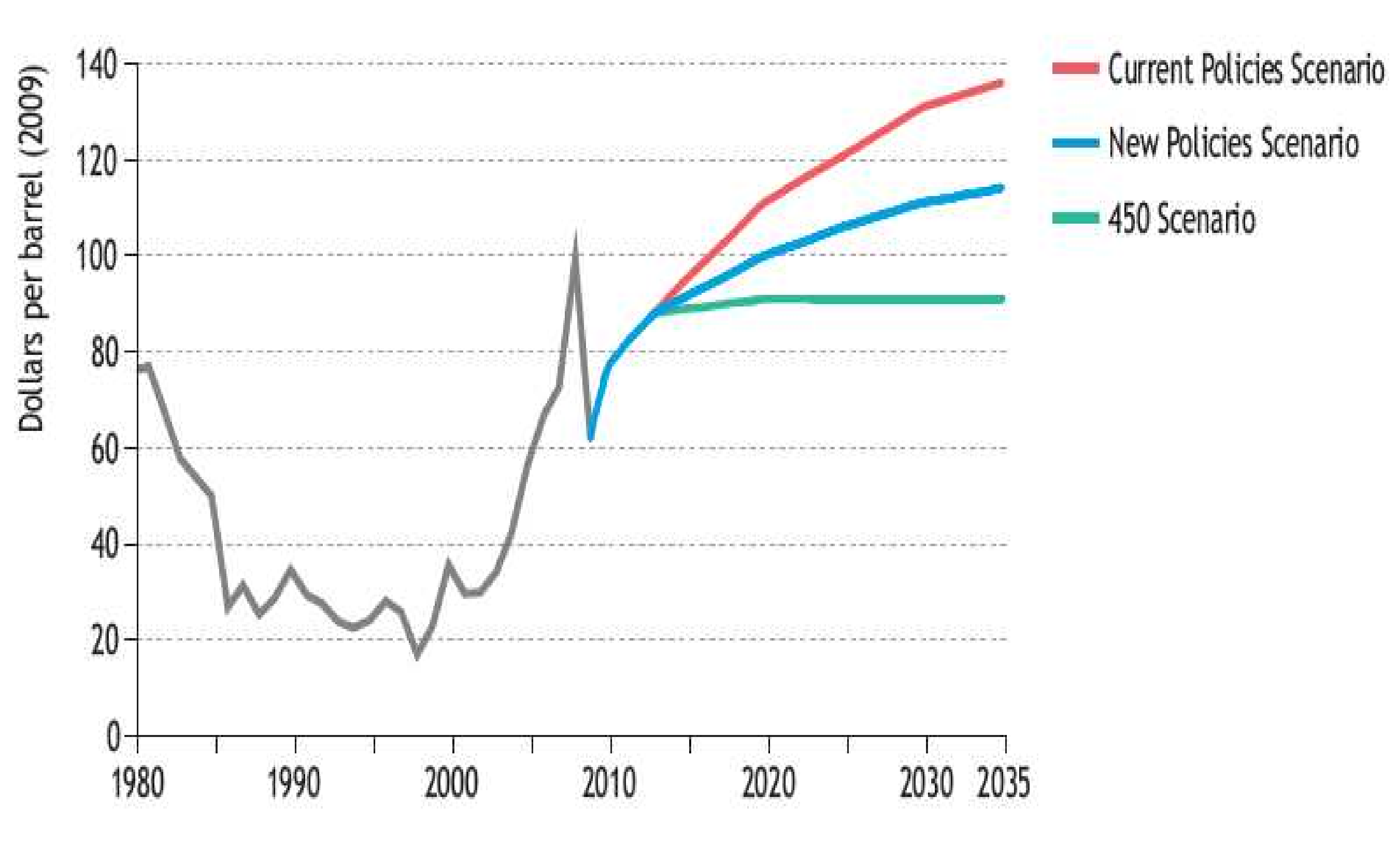
Source: BP

Oil Prices vs. Global Recessions



Source: CIBC

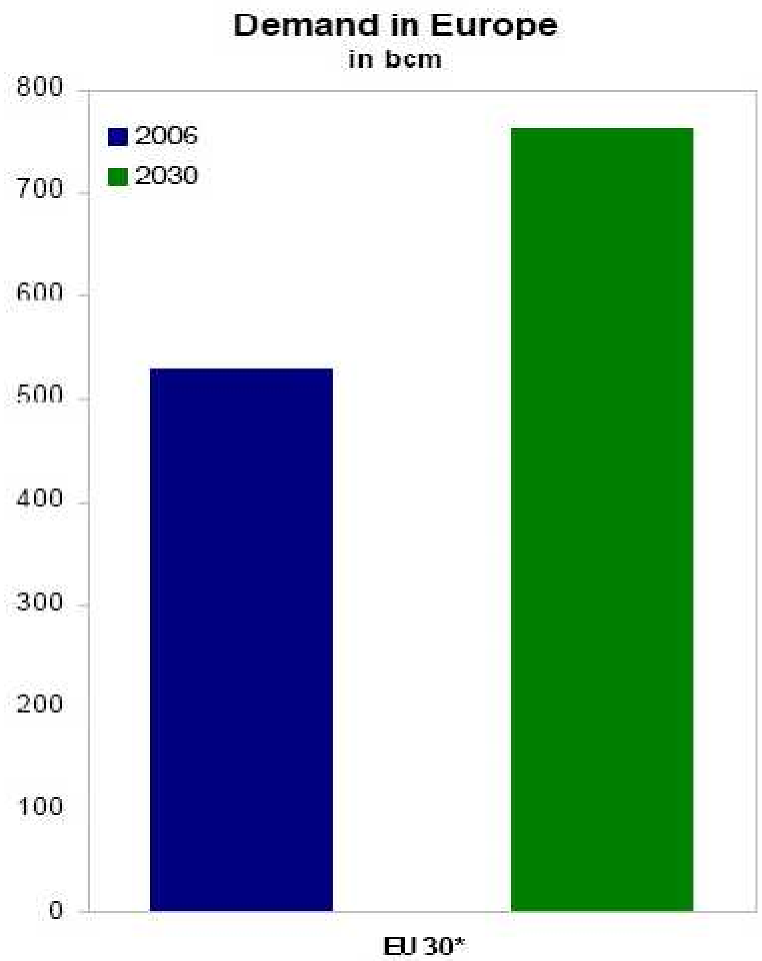
IEA's Oil Price Scenarios (2010 – 2035)



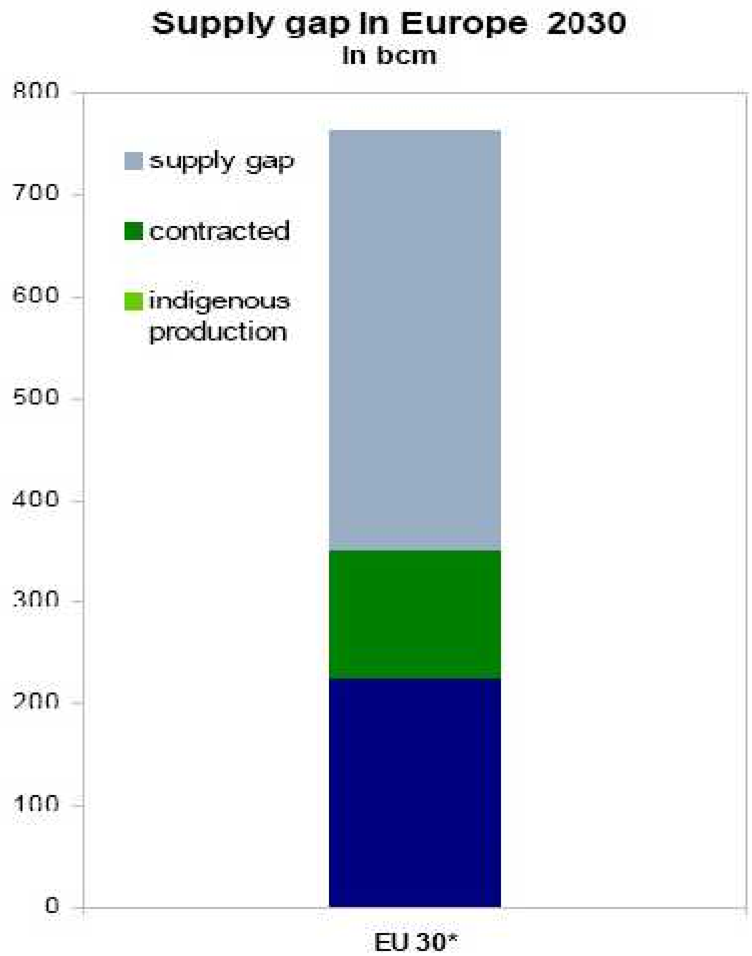
Source: IEA

European Gas Market

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

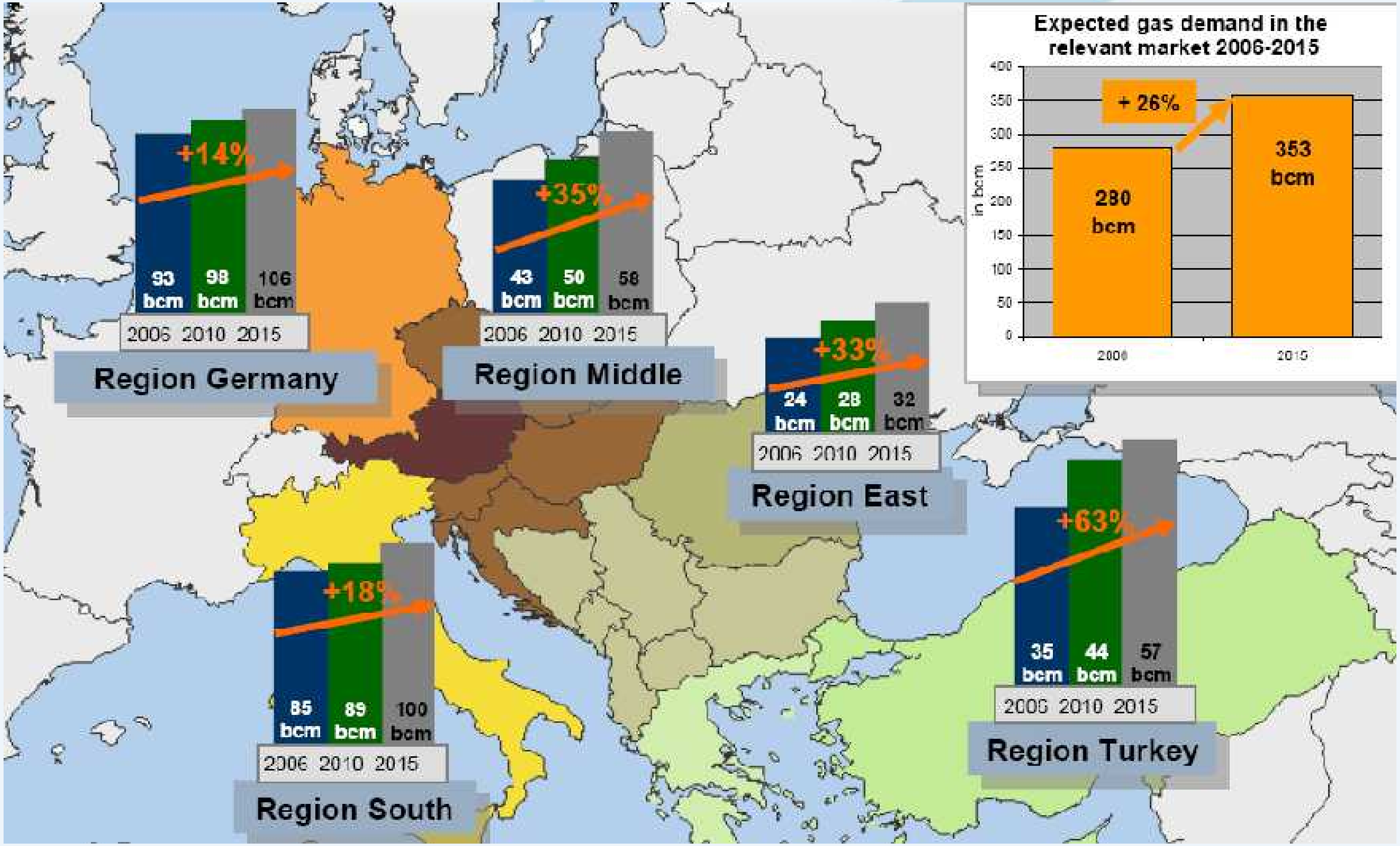


* Europe 30 (EU 25 + Rumania, Bulgaria, Croatia, Turkey, Norway



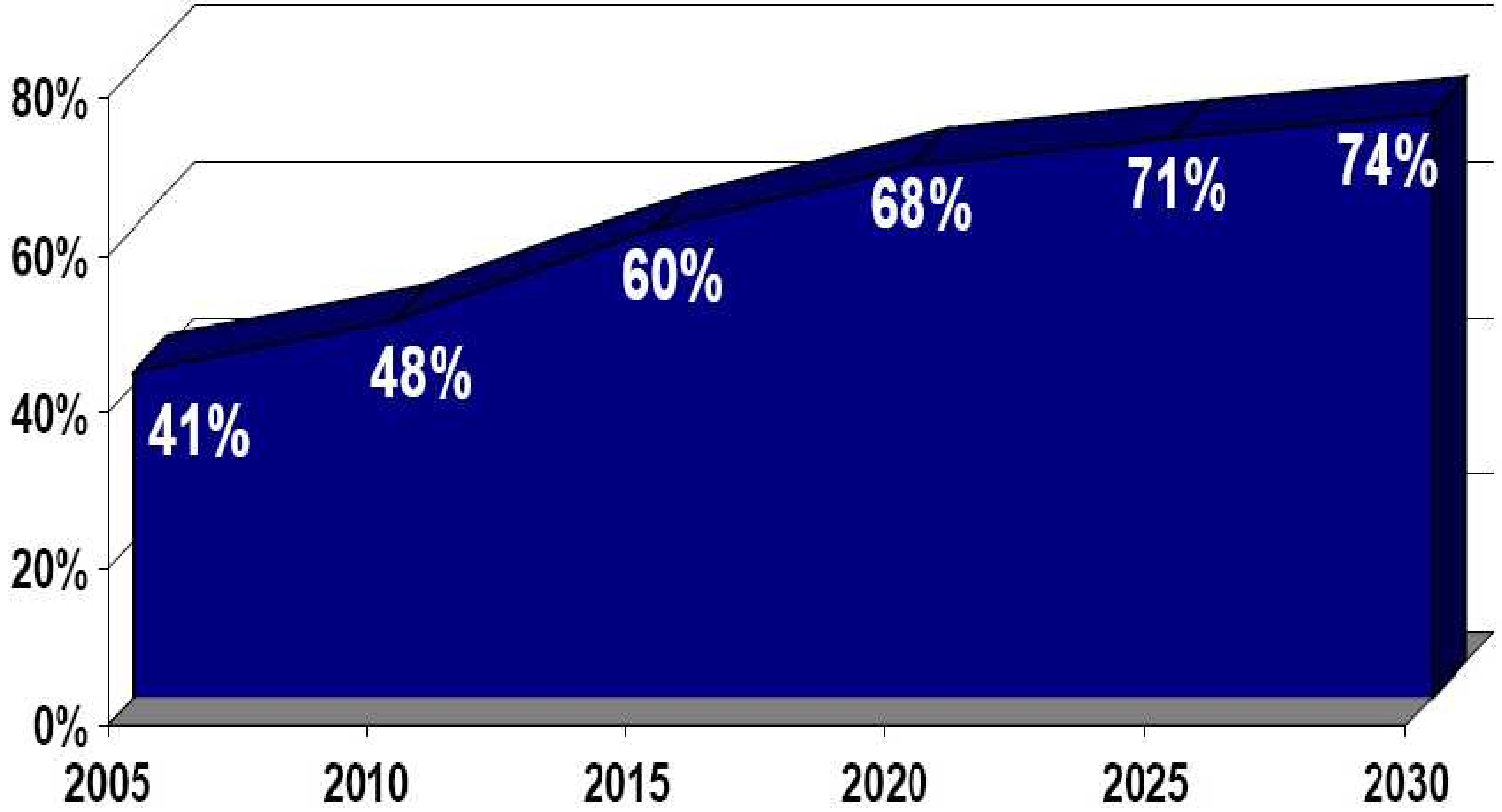
Source: OMV

Europe's Gas Demand Forecast (2006 – 2015)



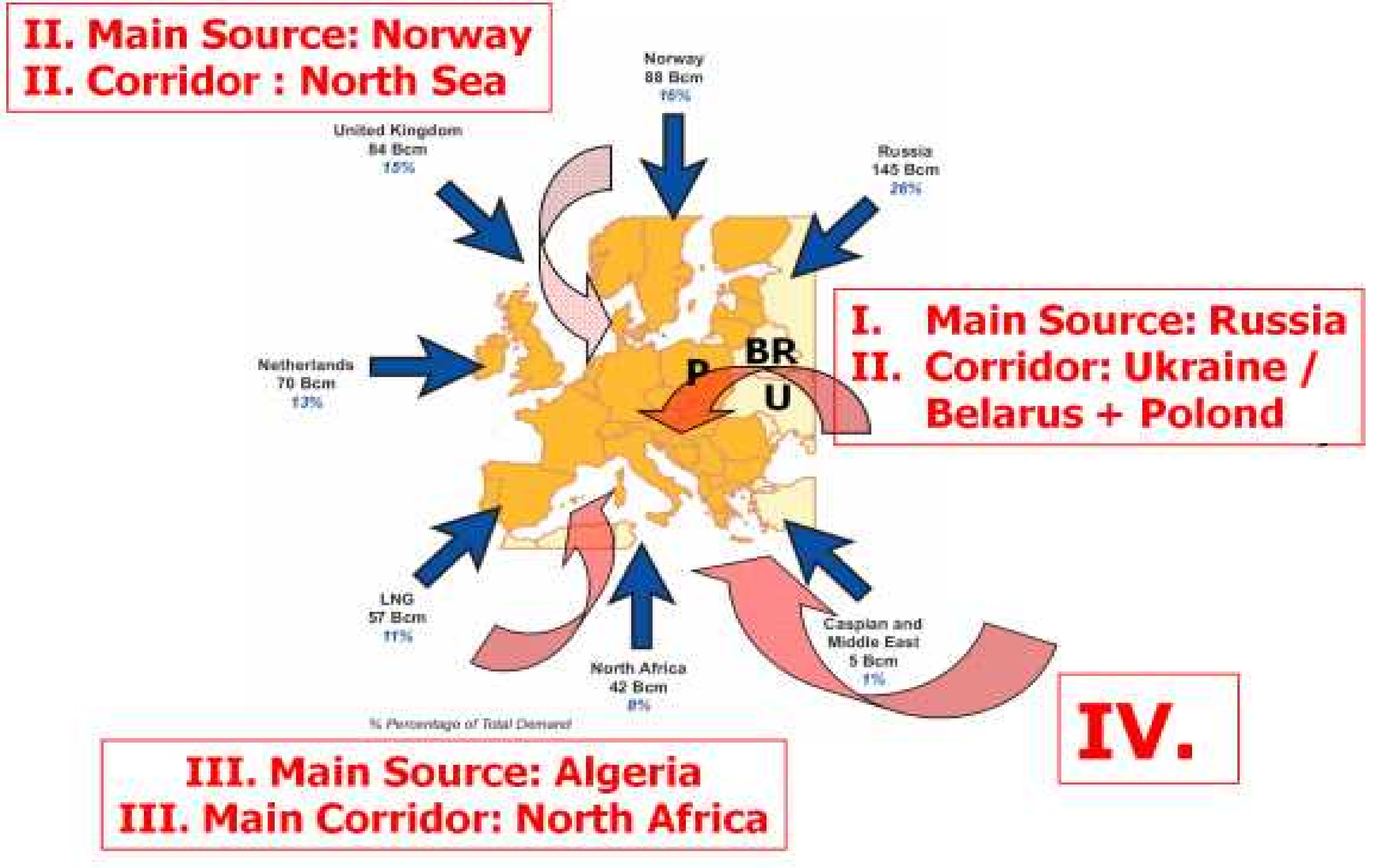
Source: OMV

Europe’s Gas Import Dependency (2005 – 2030)



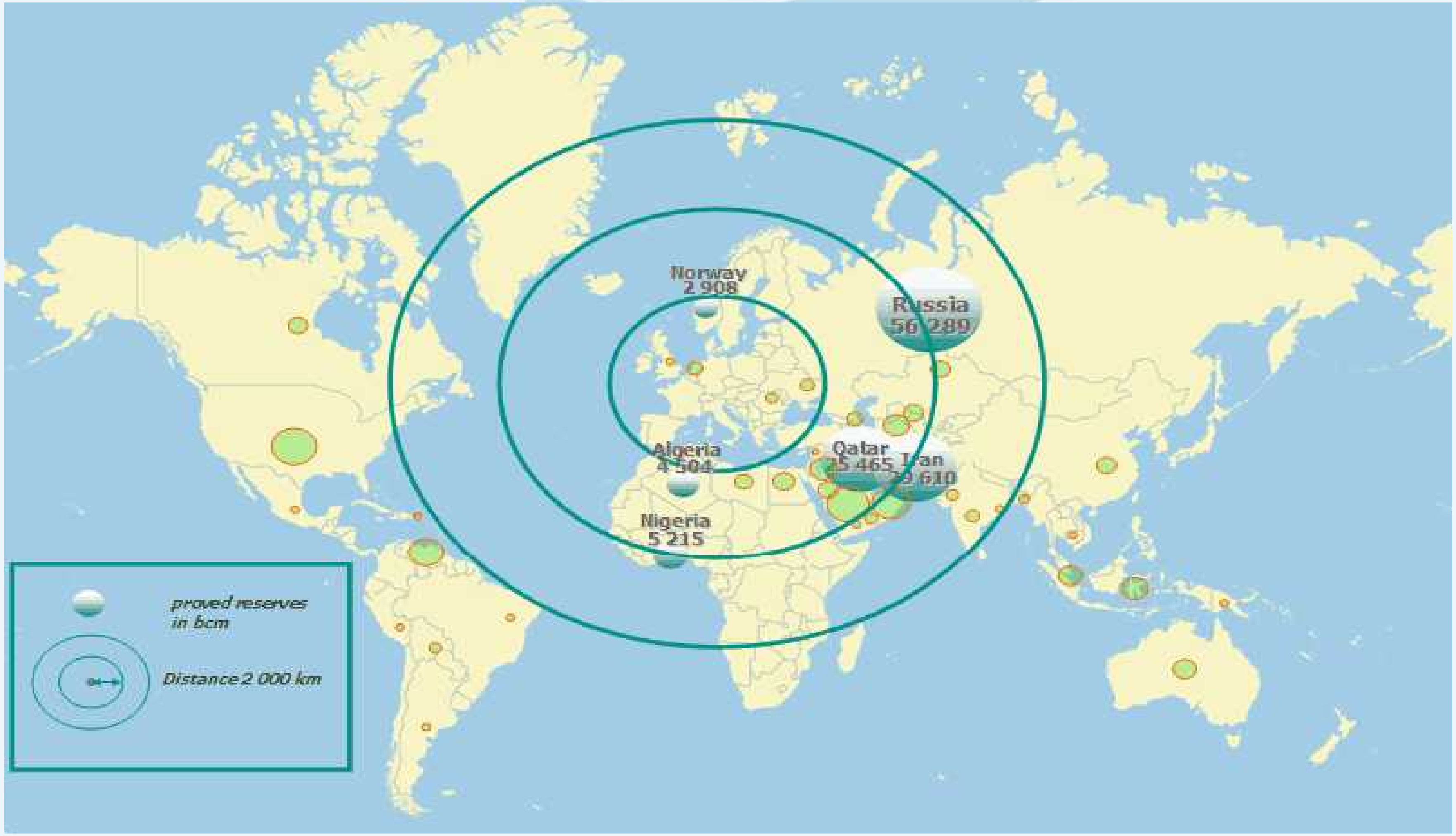
Source: OMV

Corridors to the European Gas Market



Source: CERA

Distribution of World Gas Reserves



Source: GDF SUEZ

Gas Pipelines via Turkey

Source: BOTAS

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

Main Principles for Transit Regulations

PETFORM

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

Turkish Natural Gas Market

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

Development of the Turkish Natural Gas Market

PETFORM

- 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	2011

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

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

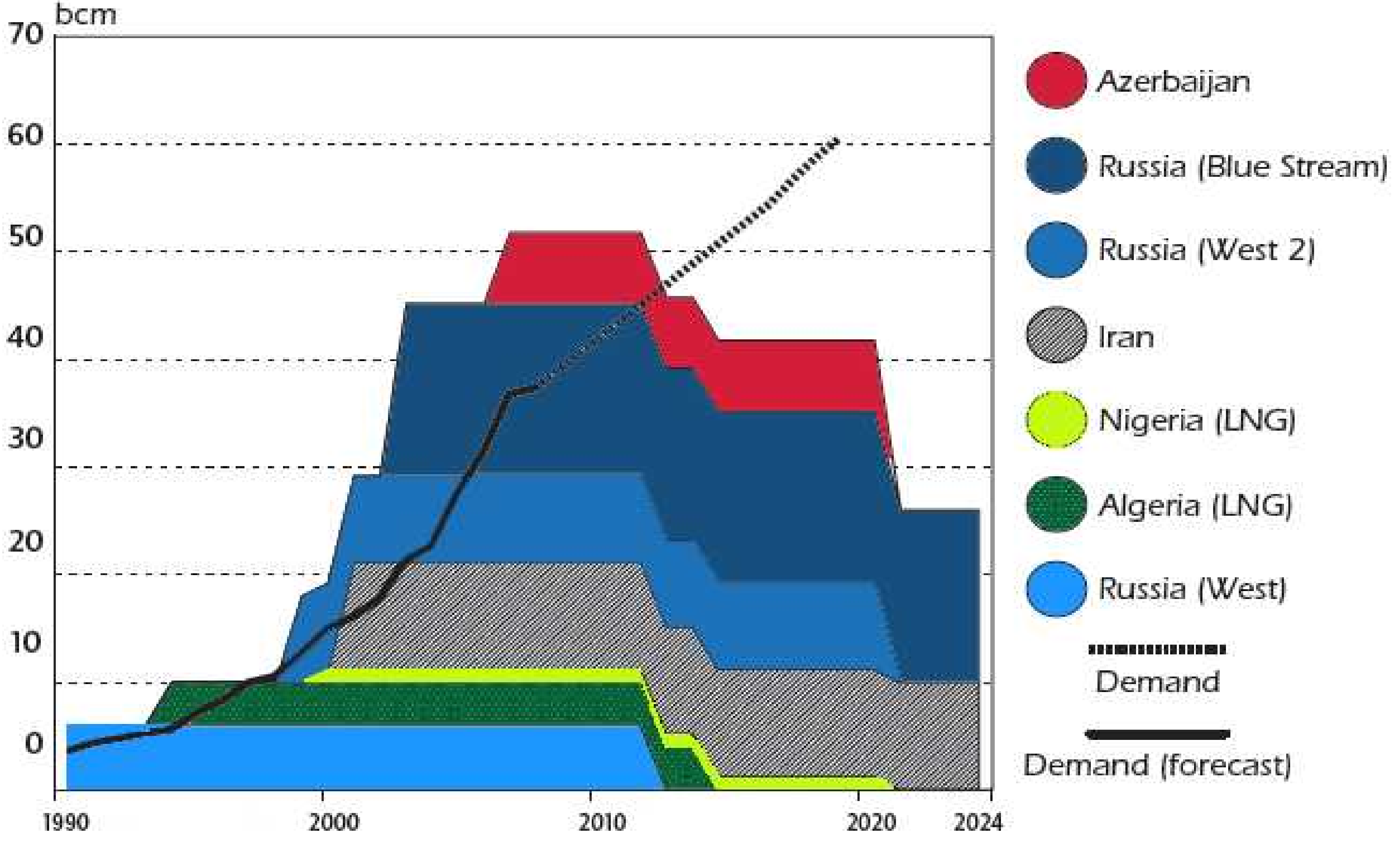
	2009		2010
Russia	19.894 (55.6%)	→	17.576 (46.9%)
Iran	5.253 (14.8%)	→	7.766 (20.7%)
Azerbaijan	4.960 (13,8%)	→	4.521 (12.1%)
Others *(Algeria + Nigeria + Ege Gaz)*	5.648 (15.8%)	→	7.593 (20.3%)
	35.755 bcm	→	37.456 bcm

(↑ %4.7 ↑)

Distribution of Gas Imports Bewteen State and Private Sector

	2009		2010
BOTAS	33.068 (92.5%)	→	31.730 (84.7%)
Private Co's	2.687 (7.5%)	→	5.726 (15.3%)
	35.755	→	37.456

Gas Supply – Demand Balance (1990 – 2024)



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

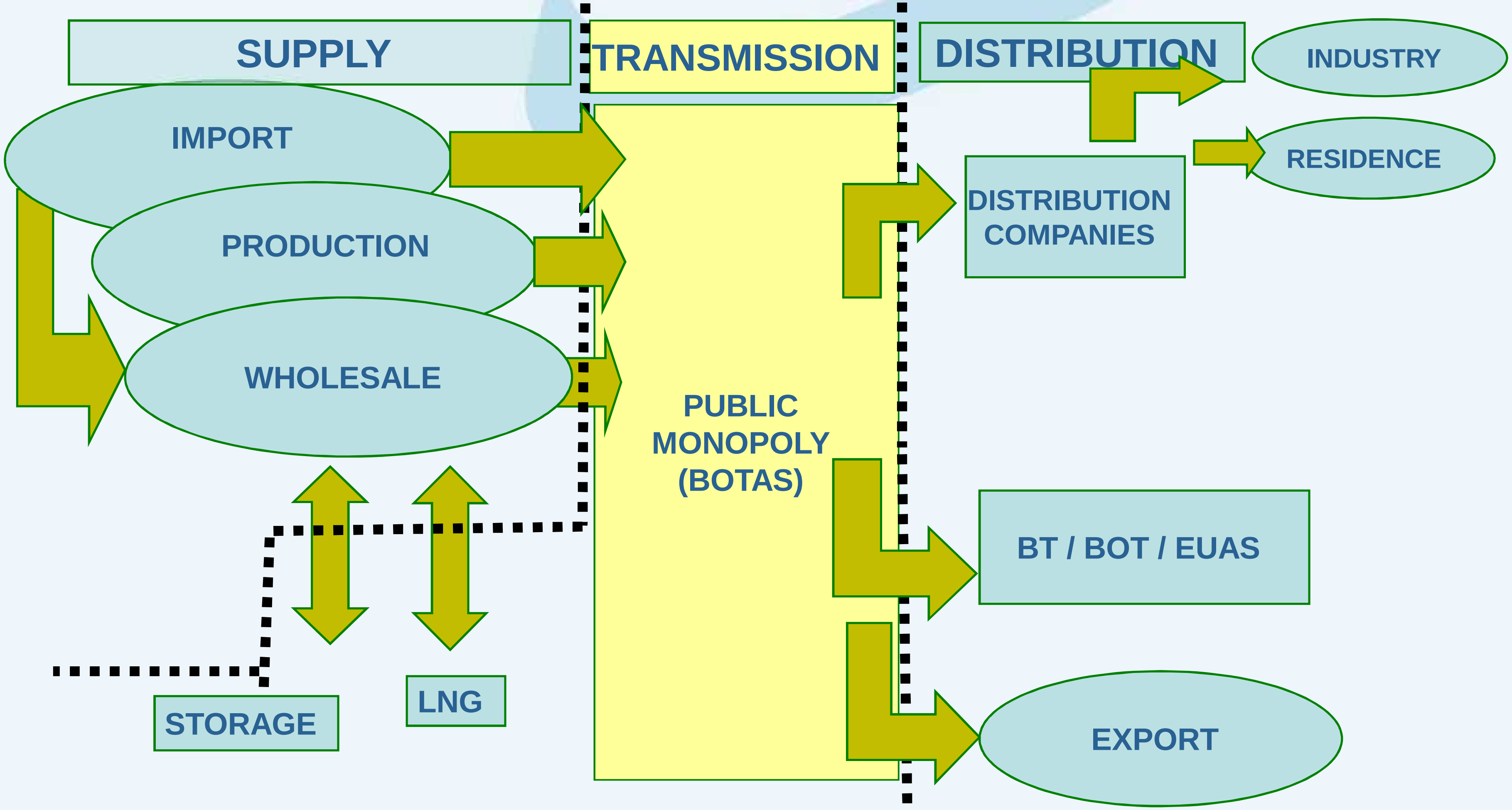
2. Volumes released by BOTAS at each calendar year may not be less than 10% of total gas volume undertaken to be purchased on the effective date of the law

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 70 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 85% in spite of 20% envisaged by the law.

2. BOTAS did not continue to the contract and/or volume 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 and/or volume releases as indicated in the law.

4. As of 2011, BOTAS has still not legally unbundled to Transmission, Storage and Trading entities in spite of 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…