



“Turkish E&P Sector in Light of Global Energy Trends”

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Chairman of the Board

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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:

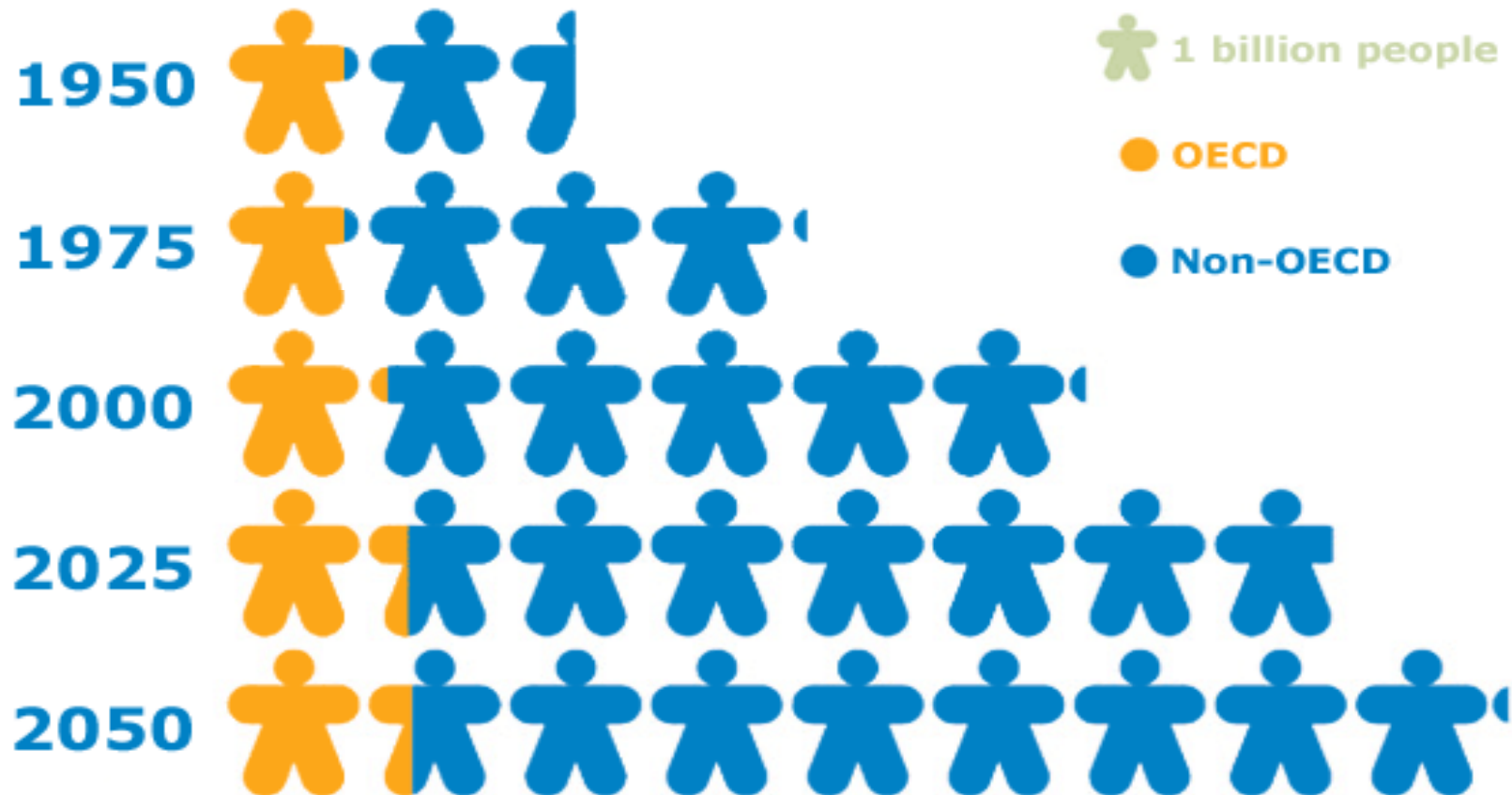
- **Exploration & Production Sector**
- **Natural Gas Market**

PETFORM Member 42 Energy Companies

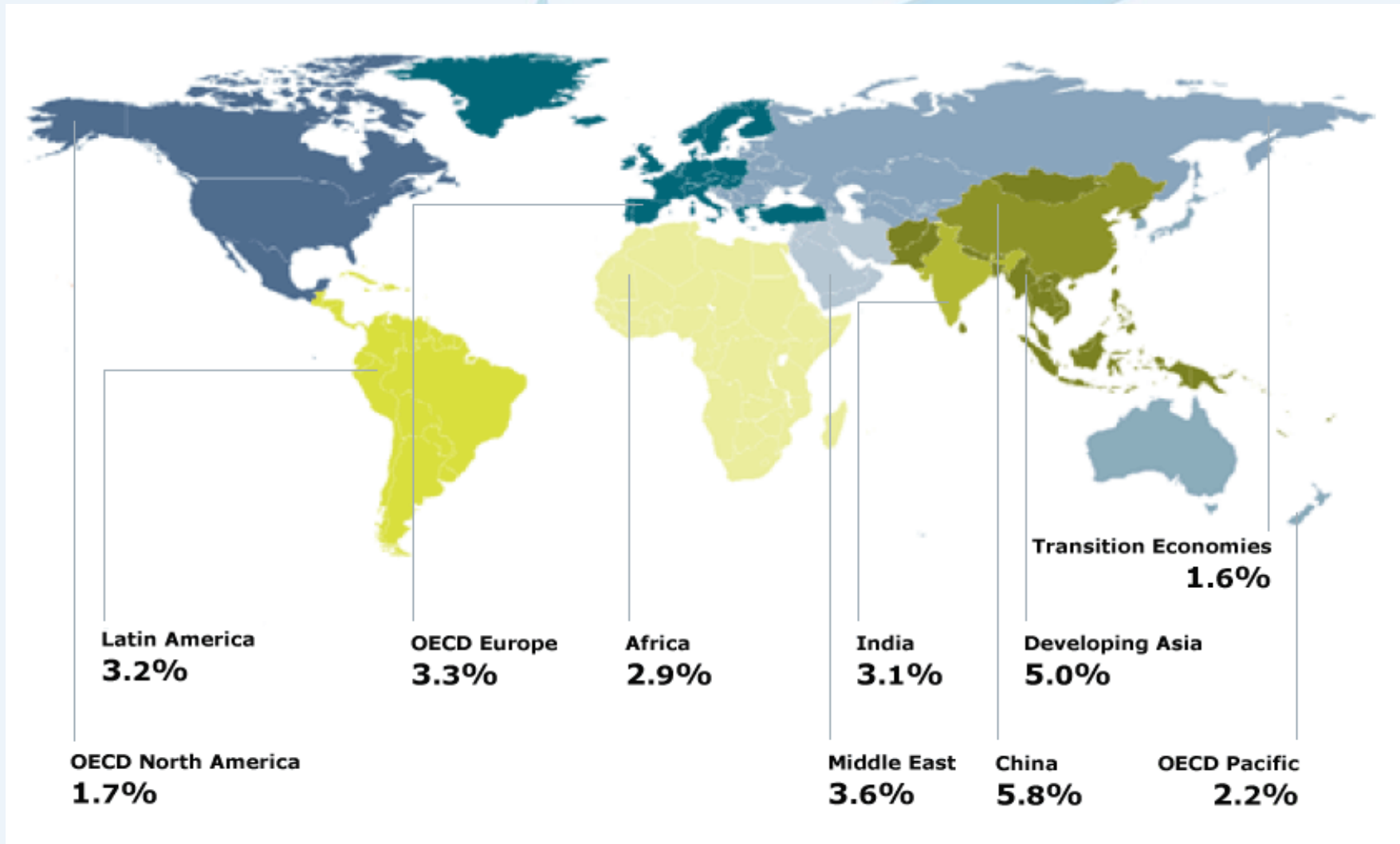


- AKENERJİ
- AKSA
- ALADDIN MIDDLE EAST
- ARGM
- ATTİLA DOĞAN İNŞAAT
- AVRASYA GAZ
- AYGAZ DOĞALGAZ
- BOSPHORUSGAZ
- BP
- ÇALIK ENERJİ
- DOĞAL ENERJİ
- EDISON
- EGE GAZ
- ENEL
- ENERCO ENERJİ
- ENERJİSA
- ENI
- E.ON RUHRGAS
- EWE ENERJİ
- GENEL ENERJİ
- GÜNEY YILDIZI PETROL
- IBS RESEARCH
- NATURGAZ
- 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

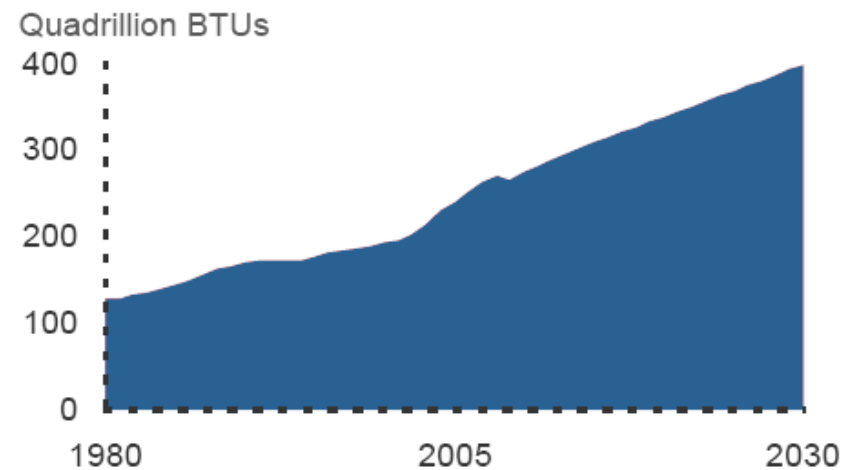
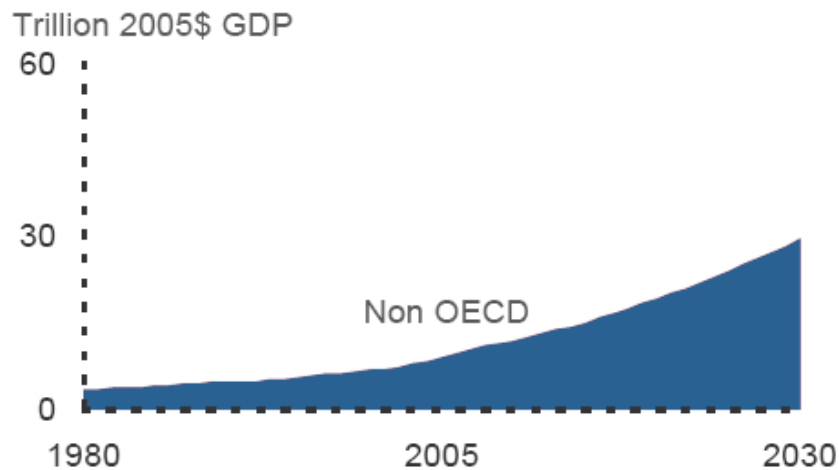
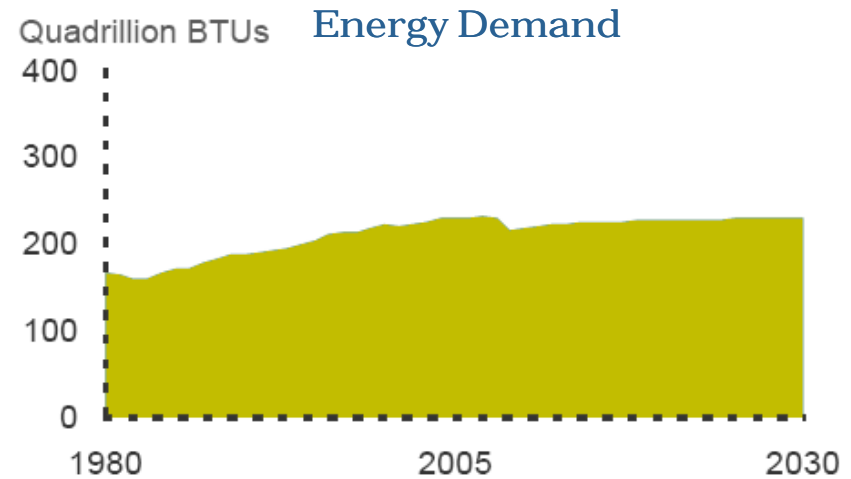
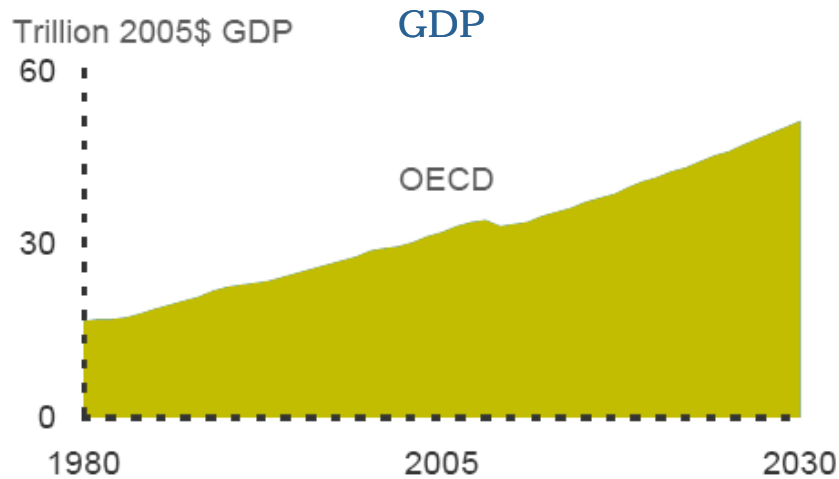
World Population Growth (1950 – 2050)



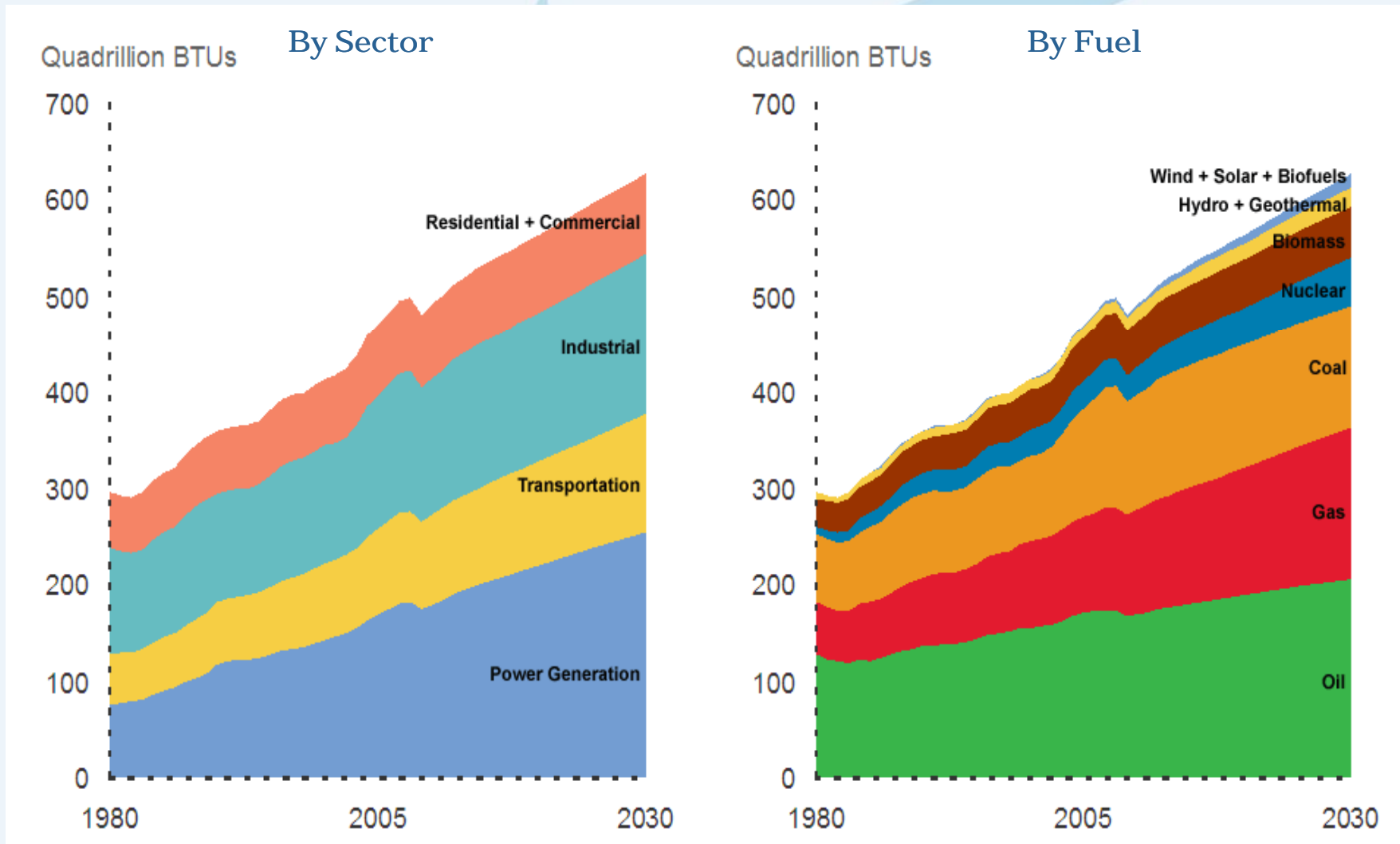
World GDP Growth (2005 – 2050)



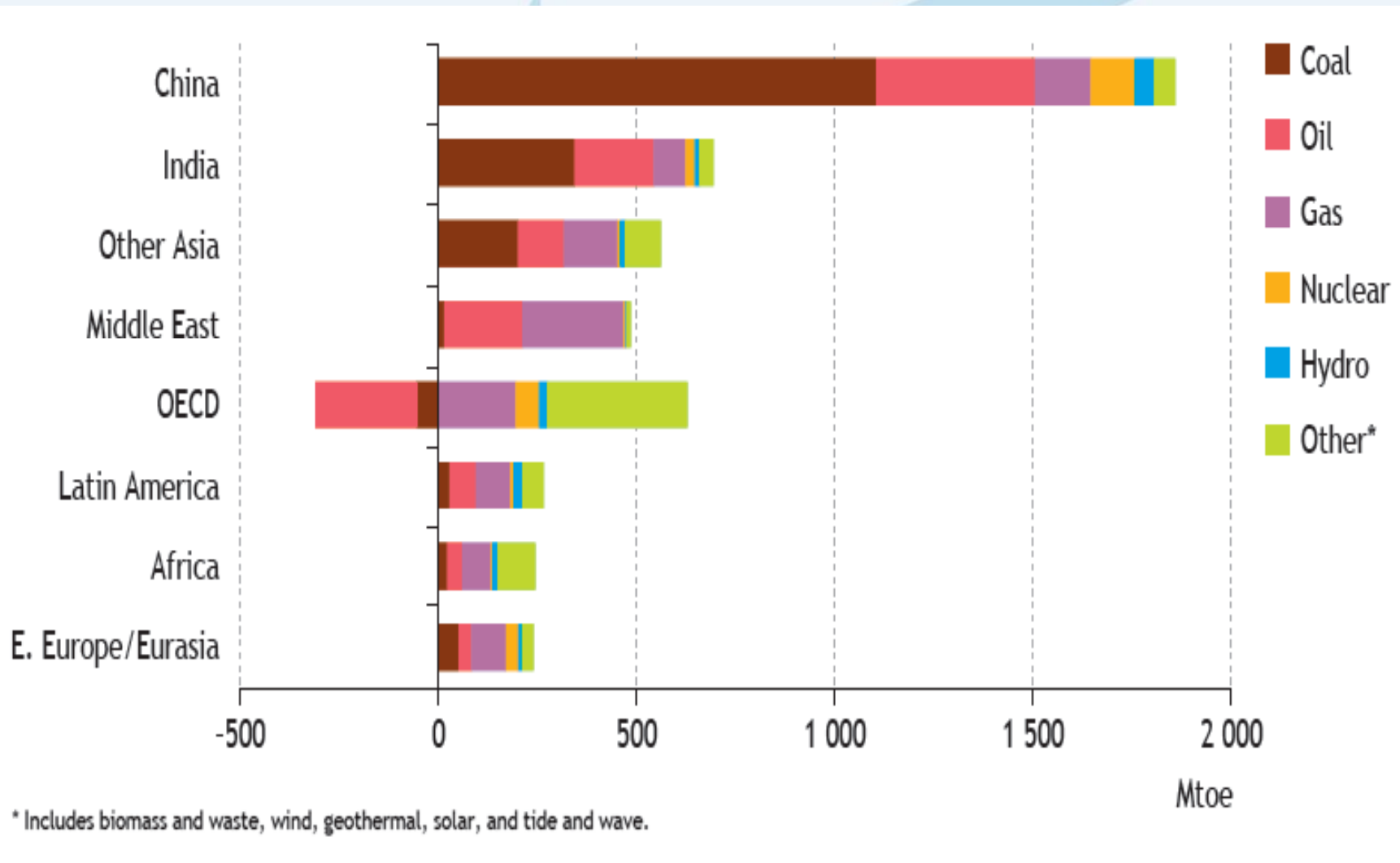
GDP & Energy Demand Growth (1980 – 2005 – 2030)



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



World Primary Energy Demand (2007 – 2030)



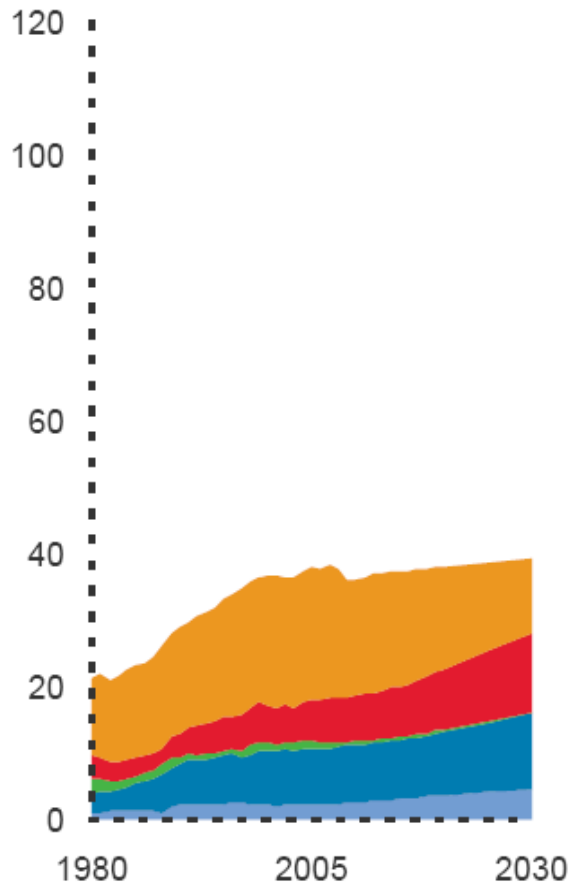
* Includes biomass and waste, wind, geothermal, solar, and tide and wave.

Power Generation Fuel Demand (1980 – 2005 – 2030)



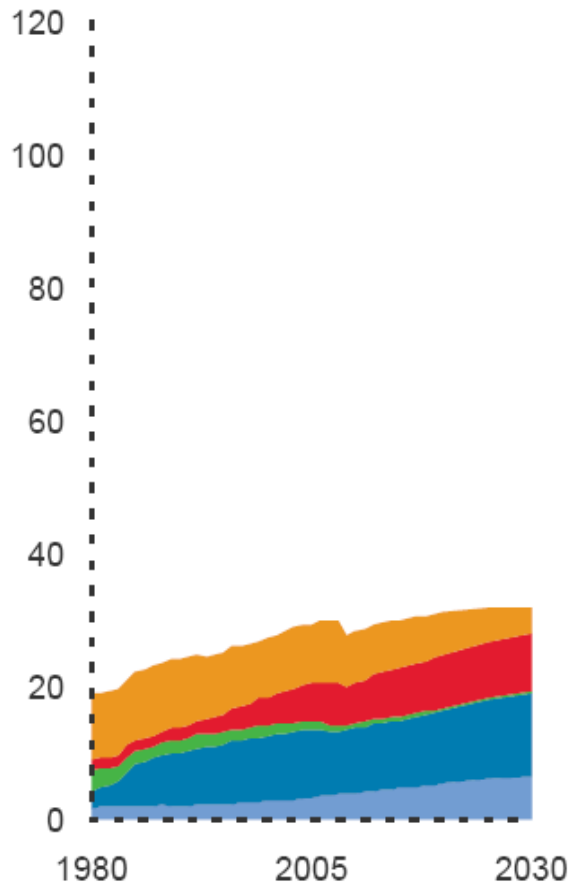
United States

Quadrillion BTUs



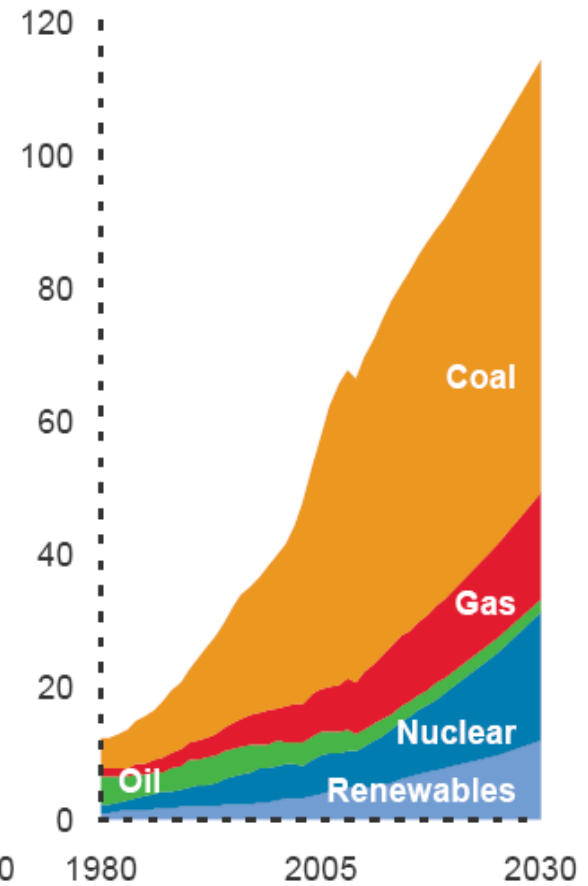
Europe OECD

Quadrillion BTUs

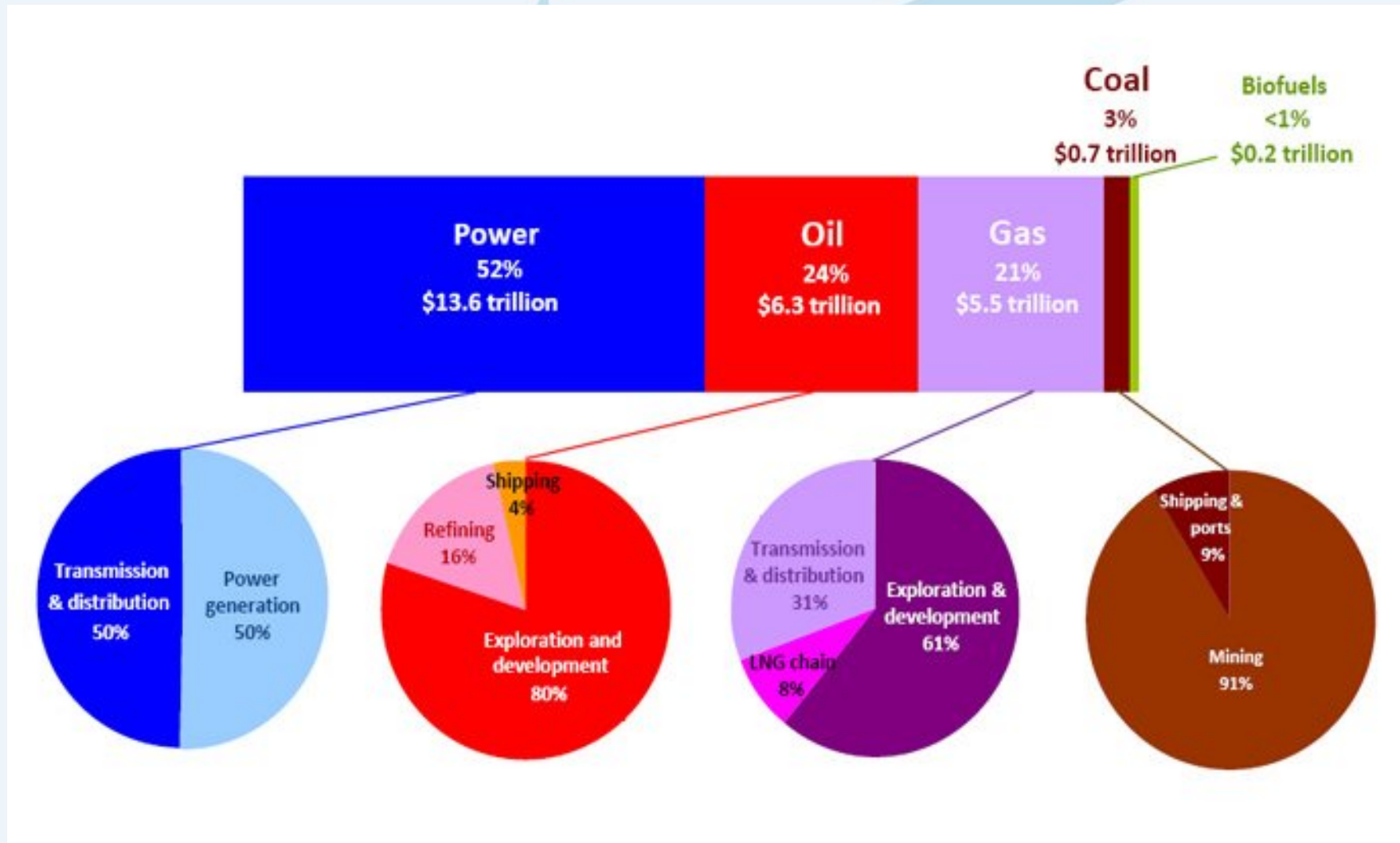


Asia Pacific

Quadrillion BTUs



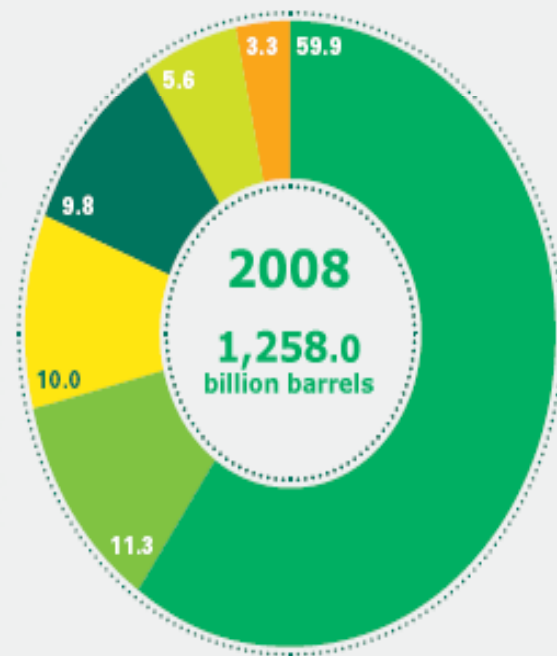
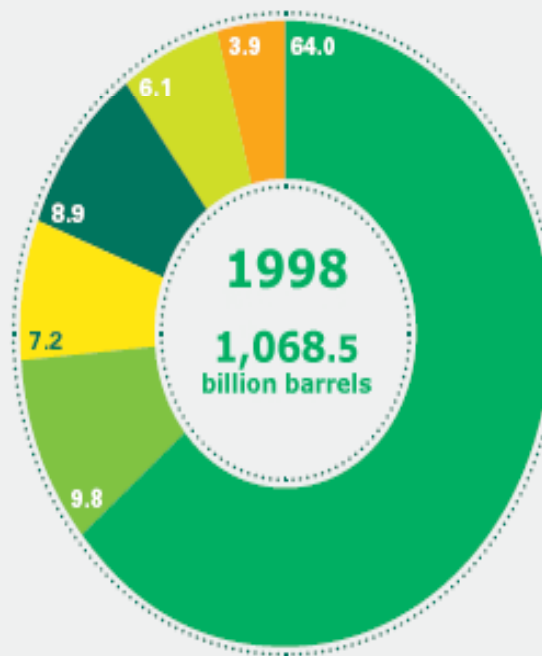
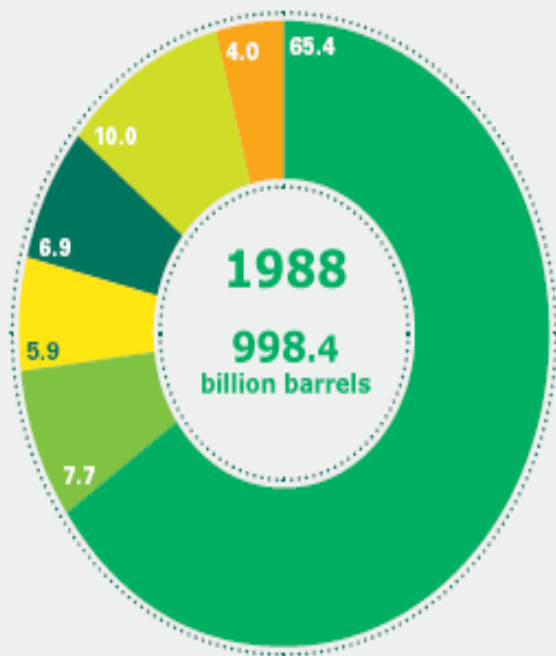
Primary Energy Investment Requirement (2007 – 2030)



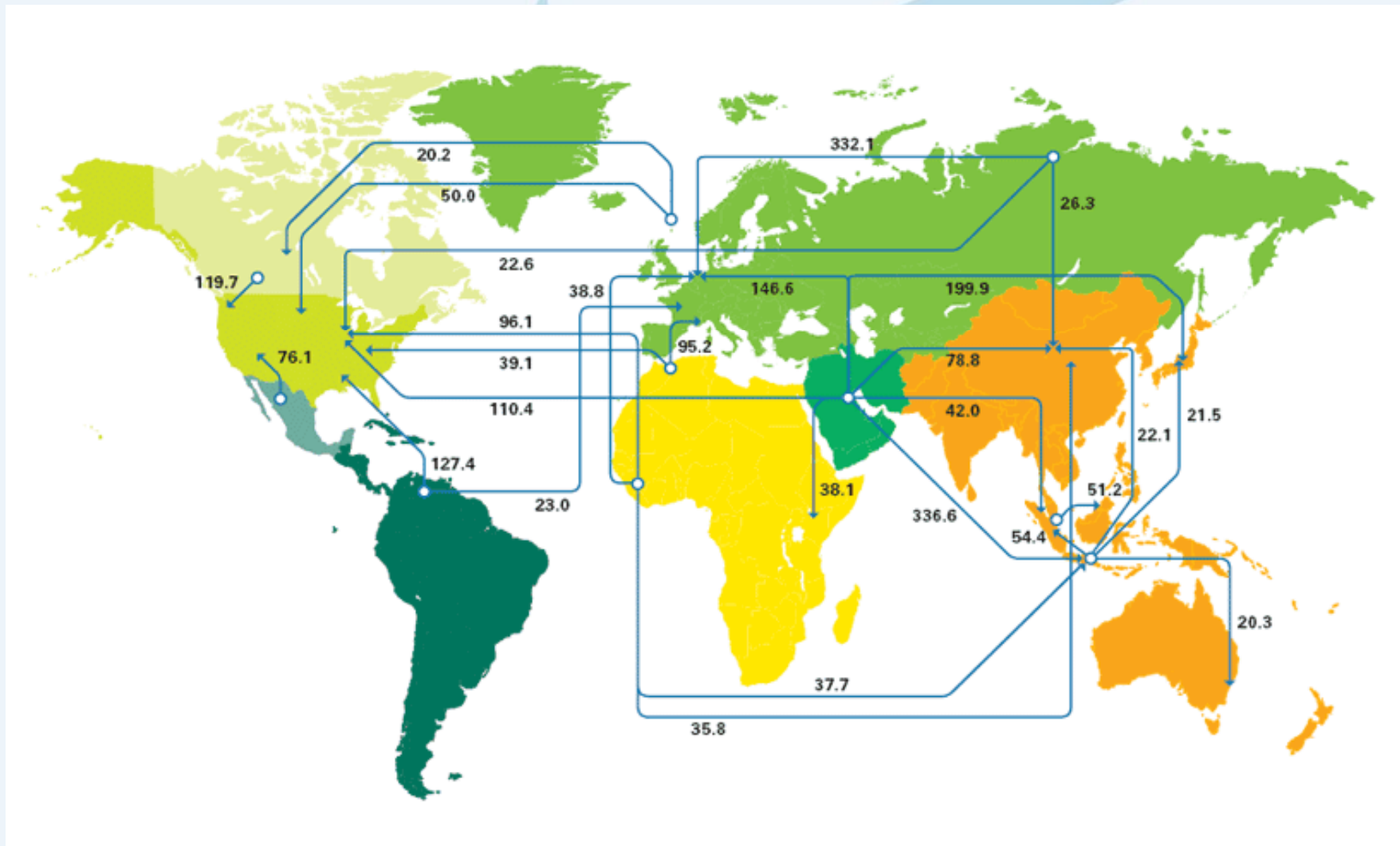
Distribution of World Oil Reserves (1988 – 1998 – 2008)



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



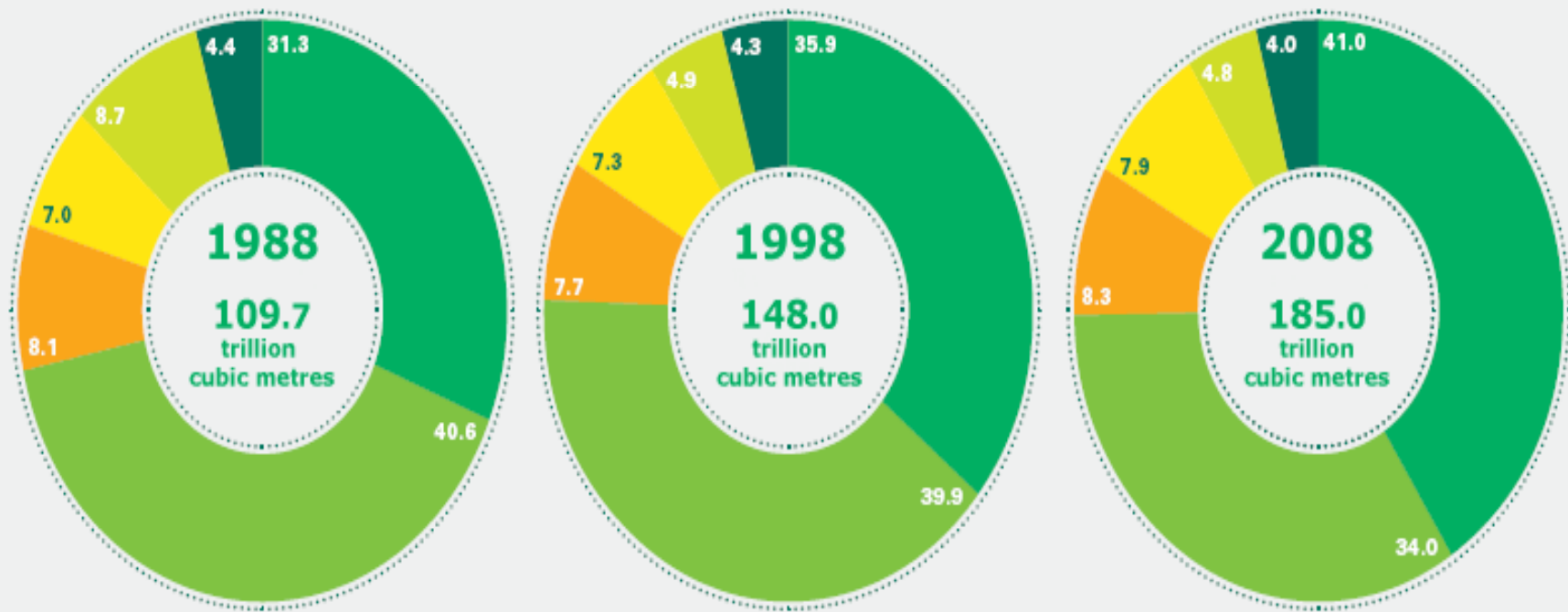
Global Oil Trade Routes



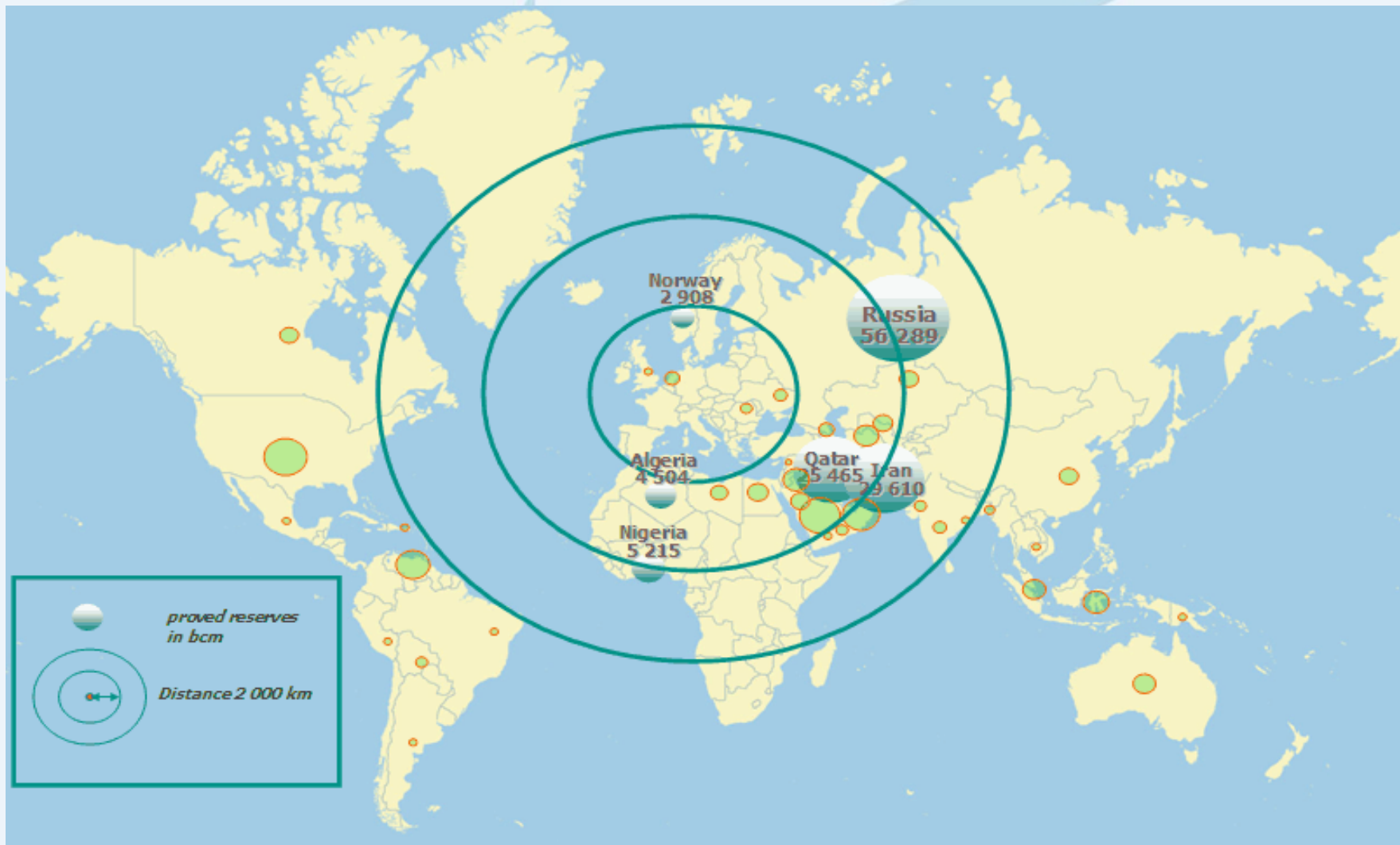
Distribution of World Gas Reserves (1988 – 1998 – 2008)



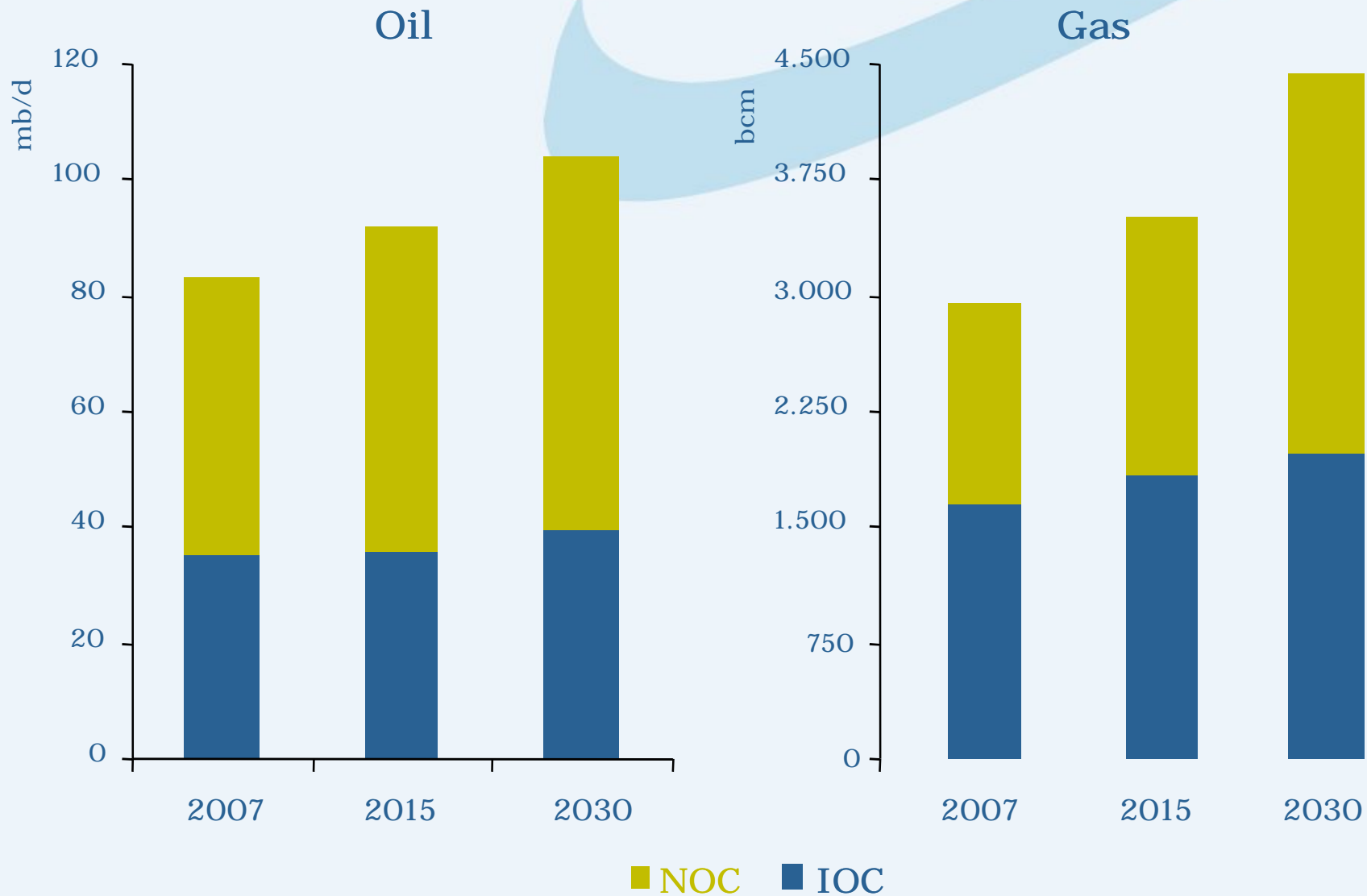
- Middle East
- Europe & Eurasia
- Asia Pacific
- Africa
- North America
- S. & Cent. America



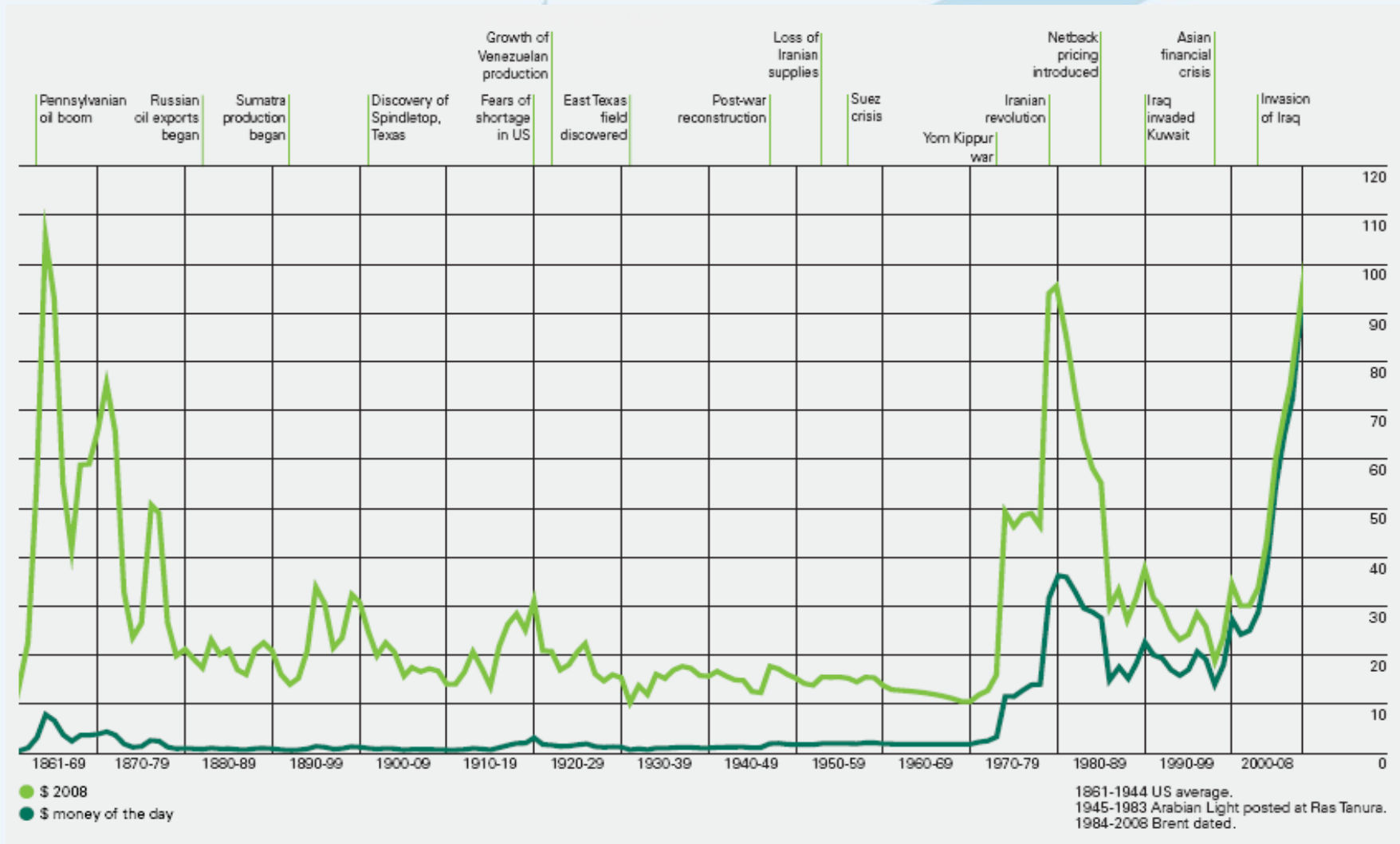
Distribution of World Gas Reserves



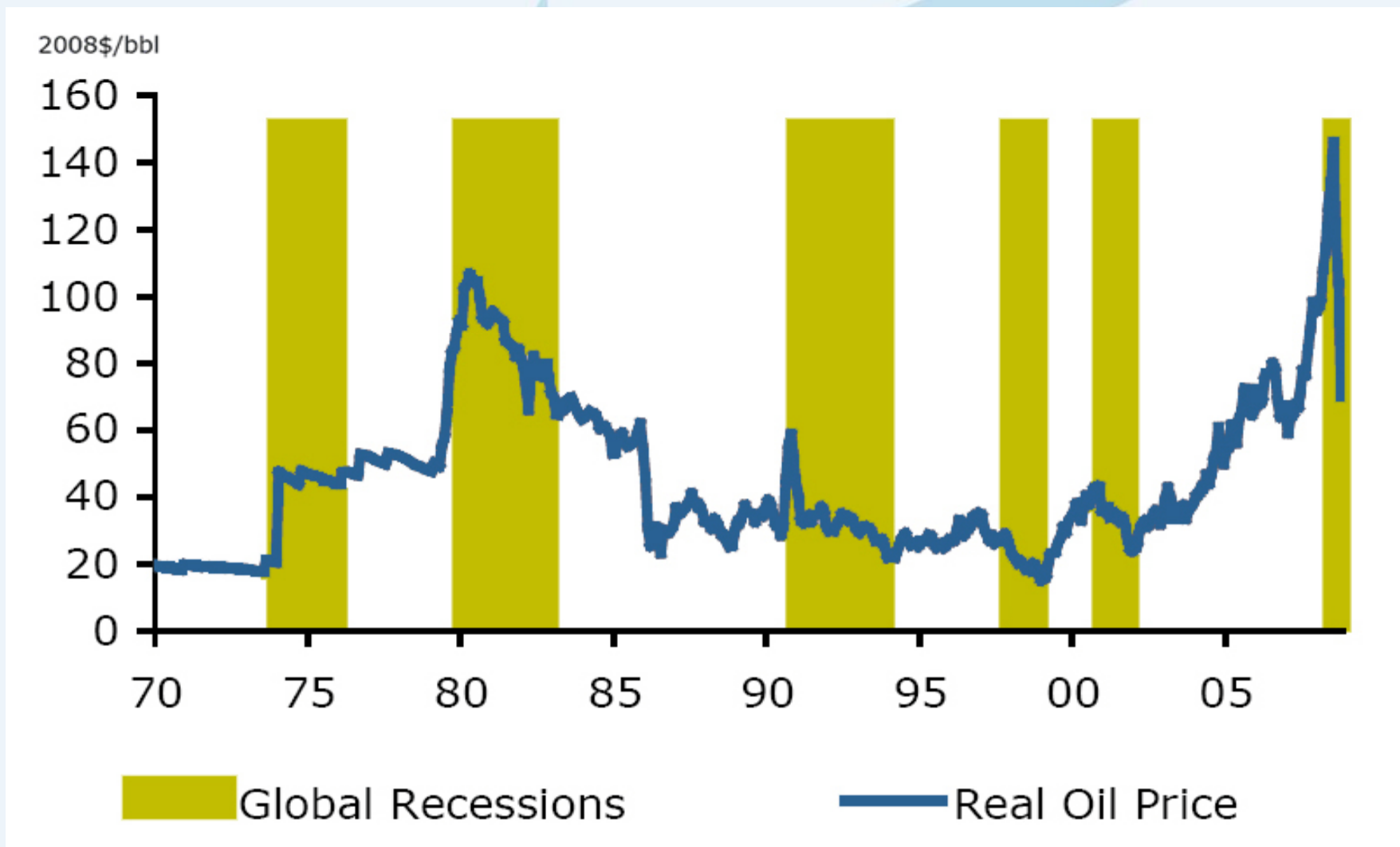
NOC & IOC Production Trends (2007 – 2015 – 2030)



Crude Oil Prices (1861 – 2008)



Oil Prices & Global Recessions



Energy Demand – Local Production Balance (1990–2008)



Source: MENR

	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

Primary Energy Production – Consumption Balance (2007)



Source: MENR

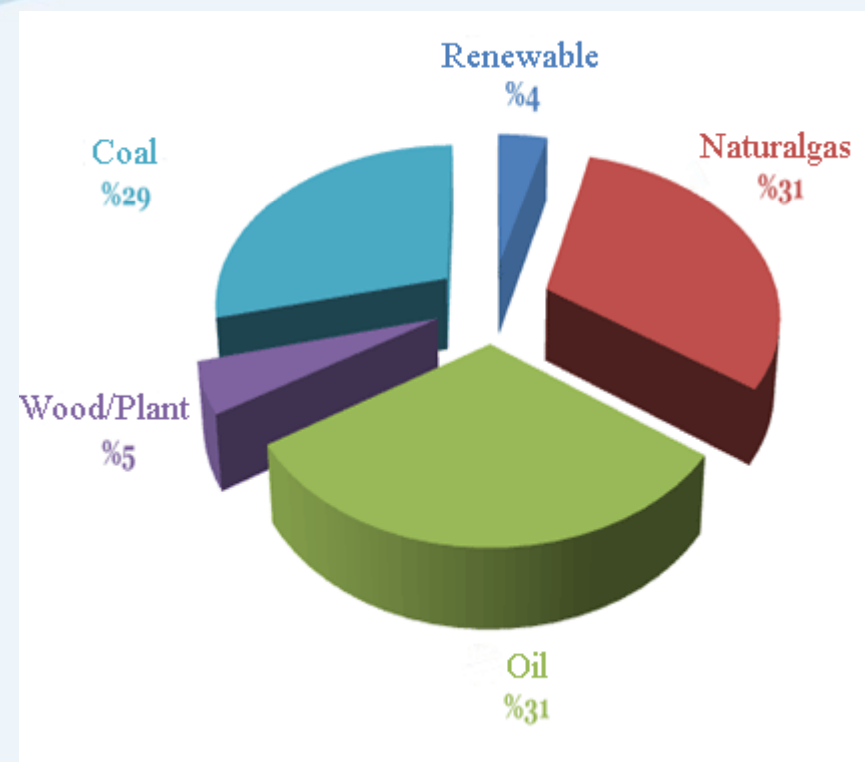
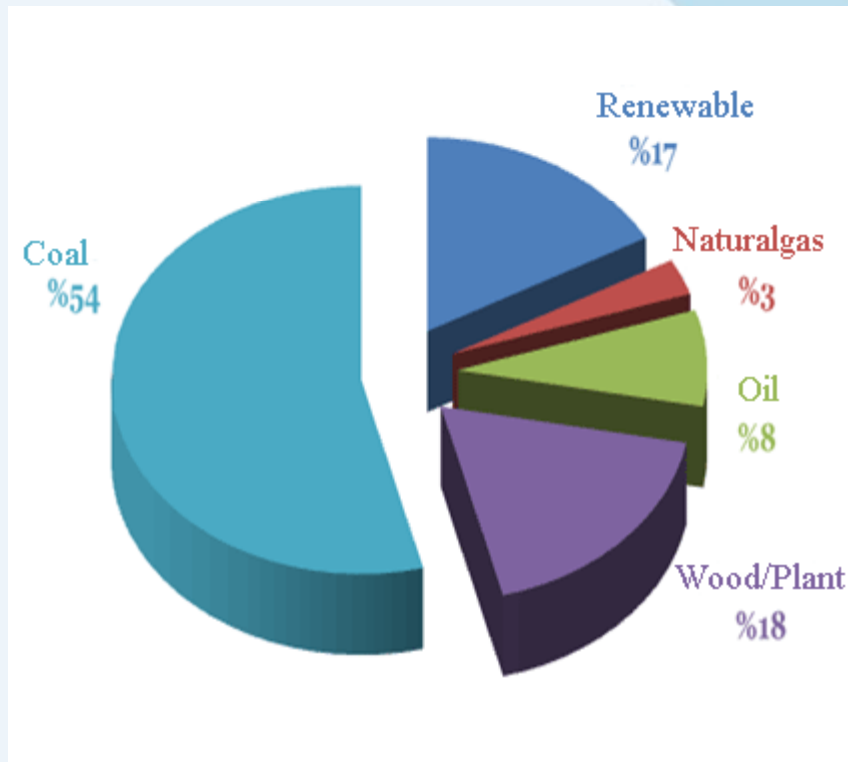
Resources	Coal	Wood & Plant	Oil	Natural Gas	Renewables	Total
Primary Energy Production (million toe)	14.7	4.9	2.2	0.8	4.5	27.4
Share in Primary Energy Production (%)	53.9	18.2	8.2	3.0	16.7	100.0
Primary Energy Consumption (million toe)	30.9	4.9	33.3	33.9	4.5	107.6
Share in Primary Energy Consumption (%)	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

Primary Energy Production – Consumption Balance (2007)



Distribution of Production
(27.4 million toe)

Distribution of Consumption
(107.6 million toe)



Share of Imported Energy Resources: 75%

Gas Production in Turkey



- **First Gas Discovery** : Kırklareli (1970)
- **Recoverable Reserves** : 17.4 bcm
- **Cumulative Production** : 11.3 bcm
- **Remaining Recoverable Res.:** 6.1 bcm
- **Annual Production** : 0.7 bcm
- **Annual Consumption** : 35.7 bcm
- **Production / Consumption** : 2%
- **Distribution of Production** : 43% Private Sector
38% Private + TPAO Partnerships
19% TPAO



Oil Production in Turkey



- **First Oil Drilling** : İskenderun (1890)
- **Recoverable Reserves** : 172.5 million tonnes
- **Cumulative Production** : 133.1 million tonnes
- **Remaining Recoverable Res.** : 39.4 million tonnes
- **Annual Production** : 2.4 million tonnes
- **Annual Consumption** : 32.3 million tonnes
- **Production / Consumpition** : %7.4
- **Wells Drilled (1934 – 2009)** : 3,727 (average per year: 50)
- **Distribution of Production** : 69% TPAO
18% Private Companies
13% Private + TPAO Partnership



Petroleum Law No. 6326 (1954)



- **Separation of the public company (*TPAO*) and the decision-making mechanism (*GDPA*)**
- **Equal approach to TPAO and local/foreign private companies**
- **Fixed Royalty rate (12.5%)**
- **Drilling obligations envisaged by the Law**
- **Based on Tax & Royalty model**

Milestones in Oil Production



1954 – 73 : Increase in E&P investments following the enactment of the Petroleum Law

(1969 → 3.6 million tonnes)

1974 – 83 : Loss of competitive strength due to limitation of oil prices and the privileges granted to TPAO

(1983 → 2.2 million tonnes)

Milestones in Oil Production



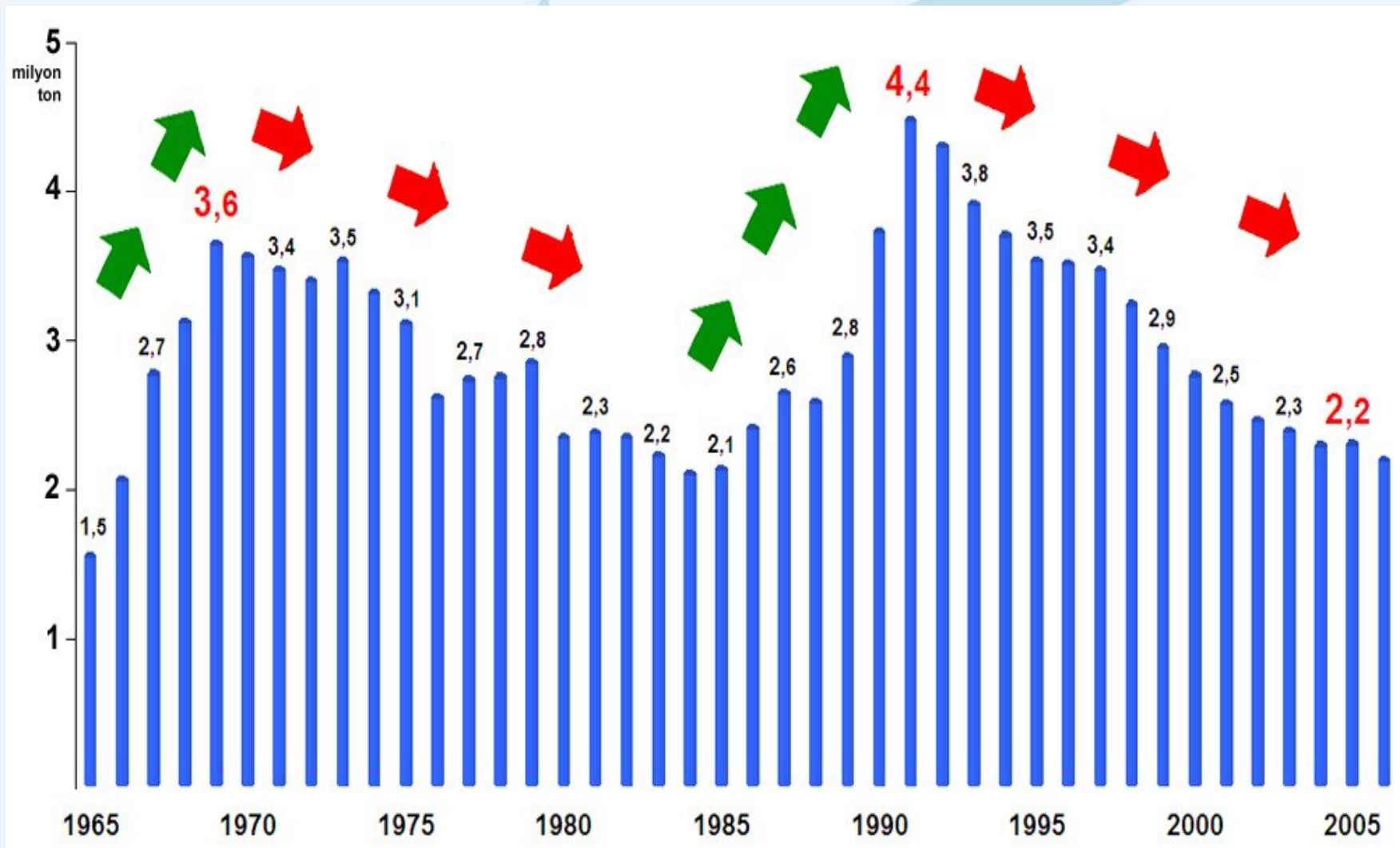
1984 – 91 : Exploration of large oil fields by courtesy of new investment flow following liberal amendments in legislation

(1991 → 4.4 million tonnes)

1992 – 2009: Decline in production by 50% and in exploration activities by 75%

(2007 → 2.1 million tonnes)

Oil Production Trend



Reasons for Decrease in Exploration Investments



1. Legal Problems

Due to the ambiguities in the provisions of the Petroleum Law numbered 6326, some time in the past 56 years the Law has interpreted against the private sector and implementation of legal provisions could be stopped by administrative decisions. These experiences hindered potential investors.

Reasons for Decrease in Exploration Investments



2. Opening of New Oil Fields to Investments Around the World

After the collapse of the Eastern Bloc, in the major E&P companies directed their investments to new oil fields in the Central Asia and Caspian Region.

Reasons for Decrease in Exploration Investments



3. Delay in the New Legislation

The new Petroleum Law numbered 5574 is waiting on the Parliament's agenda since January 2007. This legal uncertainty affects Turkey's competitiveness in upstream sector in a negative way.

Results of Decrease in Exploration Investments



- Total number of wells drilled in the whole history of Turkey is equal to the number of wells drilled in Texas only in one year.
- Exploration activities have only been conducted in 20% of potential onshore and only 1% of potential offshore areas.
- Our import dependency is reached to 93% for oil and 98% for natural gas.
- Only 1\$ rise in oil prices per barrel causes rise of 400 million dollars in foreign trade deficit.
- The bill of import of petroleum products has exceeded 80 billion dollars in last 5 years.

Turkish Petroleum Law No. 5574



- **2000** : Start-up of the draft text in the General Directorate of Petroleum Affairs (GDPA)
- **Nov 2005 Commission** : Finalization in the TGNA Energy
- **Jan 2007 Assembly** : Ratification in the TGNA General
- **Feb 2007** : Sending back four articles of the Law to the Parliament by 10th President
- **2007 – 2010** : The Law is still waiting on the Parliament's agenda.

PETFORM's Suggestions



- 1.** Adaptation of a 'state policy' encouraging E&P activities, and creation of know-how and capital accumulation
- 2.** Formation of a 'Petroleum Law Working Group' chaired by the Ministry of Energy and coordinated by the GDPA, revision of the law in order to solve structural problems of the sector and enactment in the Parliament immediately
- 3.** Prevention of 'closure' of all licences through drilling obligations based on abstract criteria, creation a new business model encouraging companies to compete with each other through 'Business and Investment Programmes'
- 4.** Strengthening the structure of the GDPA administratively and financially for a more efficient management and supervision mechanism sector need

PETFORM's Suggestions



- 5. Utilization of drilling equipments imported in accordance with the Law in geothermal drilling activities too**
- 6. Transfer of GDPA archives, currently located in TPAO due to various problems, to new modern and digital based facilities**
- 7. Tax holiday until the refund of the investment**
- 8. Implementation of regional incentives in order to encouraging E&P activities**
- 9. Maintain of the Tax & Royalty model**
- 10. Termination of the implementation of the 'Fund numbered 20' as well as import/export and VAT/SCTs exemptions**

PETFORM's Suggestions



Enactment of the new Petroleum Law numbered 5574 as soon as possible following a small or large scale revisions in order to clarify conditions investors will consider feasibility of E&P projects in Turkey



THANK YOU...