Oil & Development: The role of OPEC: A historical perspective and outlook to the future

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Dr Adnan Shihab-Eldin
Director, Research Division
Acting Secretary General

Organization of the Petroleum Exporting Countries
Vienna, Austria
Crude oil prices in historical perspective

"Standard Oil" Period

"Majors" Period

"Seven sisters"

Achacarry Agreement

Birth of OPEC

Creation of more than 40 NOCs

OPEC Period

Market Period

MOD

$ 2000

$ / bbl

British Government entry in Anglo-Persian

YPF

PEMEX

ENI

CVP

Sonatrach

UNGOC

LNGC

Russian Chesh

1861
1870
1880
1890
1900
1910
1920
1930
1940
1950
1960
1970
1980
1990
2000
<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Islamic Republic of Iran</td>
<td>1960</td>
</tr>
<tr>
<td>Iraq</td>
<td>1960</td>
</tr>
<tr>
<td>Kuwait</td>
<td>1960</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>1960</td>
</tr>
<tr>
<td>Venezuela</td>
<td>1960</td>
</tr>
<tr>
<td>Qatar</td>
<td>1961</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1962</td>
</tr>
<tr>
<td>Socialist People’s Libyan Arab Jamahiriya</td>
<td>1962</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>1967</td>
</tr>
<tr>
<td>Algeria</td>
<td>1969</td>
</tr>
<tr>
<td>Nigeria</td>
<td>1971</td>
</tr>
<tr>
<td>Country</td>
<td>GDP/Capita (US$)</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Algeria</td>
<td>1,766</td>
</tr>
<tr>
<td>Indonesia</td>
<td>960</td>
</tr>
<tr>
<td>Iran, I.R.</td>
<td>2,010</td>
</tr>
<tr>
<td>Iraq</td>
<td>789</td>
</tr>
<tr>
<td>Kuwait</td>
<td>17,942</td>
</tr>
<tr>
<td>Libya, S.P.A.J.</td>
<td>4,064</td>
</tr>
<tr>
<td>Nigeria</td>
<td>448</td>
</tr>
<tr>
<td>Qatar</td>
<td>32,945</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>9,327</td>
</tr>
<tr>
<td>United Arab</td>
<td>24,244</td>
</tr>
<tr>
<td>Venezuela</td>
<td>3,463</td>
</tr>
<tr>
<td><strong>Total OPEC</strong></td>
<td><strong>1,785</strong></td>
</tr>
</tbody>
</table>

“The Organization shall devise ways and means of ensuring the stabilisation of (oil) prices in international markets, with a view to eliminating harmful and unnecessary fluctuations.

“Due regard shall be given at all times to the interests of the producing nations and to the necessity of securing: a steady income to the producing countries; an efficient, economic and regular supply of petroleum to consuming nations; and a fair return on their capital to those investing in the petroleum industry.”
OPEC’s development

**1960**

Five Founder Members
OPEC formed to safeguard legitimate national interests, when petroleum industry dominated by established industrial powers

**Intervening years**

New Members
OPEC faced formidable challenges, impacting across spread of pricing spectrum and compounded by factors far removed from simple market economics

**Today**

Vast experience of petroleum issues
Acute awareness of realities and sensitivities of performing on world stage
Production agreements make major contribution to market stability
OPEC Reference Basket Price
(US$ / b)
Main reasons behind the rise in prices in 1Q 2005:

- **Continued strength in oil demand** led by the respectable performance of the world economy.
- **Late & lasting cold spell** in the Northern Hemisphere.
- **Increasing market anxiety** over forward capacity tightness coupled with geopolitical tensions.
- **Expectation of strong demand** outstripping growth in non-OPEC supply over the medium-term, leading to increasing production requirements from OPEC.
- All these act as a driving force behind rising activity of non-commercials (pension & index funds in particular), exacerbating the current ‘bullish bias’ with further pressure on prices & volatility.
OPEC R. Basket price in nominal & in real terms
(Base: 2004=100, US$ / b)

Oil Price
Real *

*/ inflation and exchange rate adjusted.
OPEC Reference Basket ($US/b)

Stability within the band

Unusual price surge signaling new episode?
Who gets what in a liter of oil in G-7?
2004, US $ / litre

- Austria
- USA
- Canada
- Japan
- France
- Germany
- Italy
- United Kingdom

USD/litre

Crude FOB Price
Industry Margin
Tax

US$ 28.3/bbl

€ 14.4/bbl
Composite barrel analysis: Austria vs. EU

- **Austria**: 2002 - Crude CIF Price: 18%, Tax: 55%, Industry Margin: 27%
  - 2004 - Crude CIF Price: 12%, Tax: 55%, Industry Margin: 33%

- **EC**: 2002 - Crude CIF Price: 15%, Tax: 60%, Industry Margin: 25%
  - 2004 - Crude CIF Price: 12%, Tax: 60%, Industry Margin: 28%
OPEC crude oil production, 2002-2005
(based on secondary sources, mb/d)
OPEC’s objectives are today as valid as they were in 60’s

Stable markets
Reasonable prices
Steady revenues
Secure supply
Fair returns to investors

Short, medium and long terms
OPEC R. Basket price in nominal & in real terms

<table>
<thead>
<tr>
<th>Year</th>
<th>Average since 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>27.4</td>
</tr>
<tr>
<td>2001</td>
<td>23.1</td>
</tr>
<tr>
<td>2002</td>
<td>24.4</td>
</tr>
<tr>
<td>2003</td>
<td>28.1</td>
</tr>
<tr>
<td>2004</td>
<td>36.0</td>
</tr>
<tr>
<td>2005*</td>
<td>43.0</td>
</tr>
</tbody>
</table>

*/ year to date.
Proven reserves 891 billion barrels
78.3% of world figure
Production > 30 million barrels a day
~ 40% of world figure

Cheaper to exploit than non-OPEC oil
Increasing call on OPEC oil in coming years
51% world oil market projected for 2025
### Oil Demand Outlook, mb/d

<table>
<thead>
<tr>
<th>Reference</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD</td>
<td>50.7</td>
<td>52.0</td>
<td>53.0</td>
<td>53.9</td>
</tr>
<tr>
<td>DCs</td>
<td>33.8</td>
<td>39.2</td>
<td>45.1</td>
<td>51.3</td>
</tr>
<tr>
<td>Transition economies</td>
<td>5.3</td>
<td>5.6</td>
<td>5.9</td>
<td>6.1</td>
</tr>
<tr>
<td>Total World</td>
<td>89.9</td>
<td>96.8</td>
<td>104.0</td>
<td>111.3</td>
</tr>
</tbody>
</table>

“Four-fifths of the increase in demand of 28 mb/d over the period 2005–2025 comes from developing countries

Transportation continues to be the dominant source of growth (~60 %)

Many uncertainties: GDP, technology, policy – substantial downside risks
Annual growth in oil demand, 2004-2025, Reference, mb/d pa

<table>
<thead>
<tr>
<th>Region</th>
<th>GDP Growth (%)</th>
<th>Oil Demand Growth (%)</th>
<th>Oil Demand Growth (mb/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>3.5</td>
<td>1.6</td>
<td>1.5</td>
</tr>
<tr>
<td>Asia</td>
<td>4.7</td>
<td>2.7</td>
<td>0.76</td>
</tr>
<tr>
<td>China</td>
<td>6.2</td>
<td>4.1</td>
<td>0.35</td>
</tr>
</tbody>
</table>

Asia: 66% of DCs increase, especially China & India
- huge potential (e.g. low vehicle ownership)
- But possible constraints: infrastructure, policies

China
### Oil Production Outlook, mb/d

<table>
<thead>
<tr>
<th>Reference (DAU)</th>
<th>2005</th>
<th>2010</th>
<th>2020</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD</td>
<td>21.5</td>
<td>21.7</td>
<td>20.6</td>
<td>19.9</td>
</tr>
<tr>
<td>DCs excl. OPEC</td>
<td>15.9</td>
<td>17.6</td>
<td>18.8</td>
<td>18.3</td>
</tr>
<tr>
<td>Russia &amp; Caspian</td>
<td>11.8</td>
<td>13.3</td>
<td>15.2</td>
<td>15.6</td>
</tr>
<tr>
<td>Non-OPEC</td>
<td>51.2</td>
<td>54.8</td>
<td>57.2</td>
<td>56.7</td>
</tr>
<tr>
<td>OPEC (incl. NGLs)</td>
<td>32.1</td>
<td>35.0</td>
<td>46.8</td>
<td>54.5</td>
</tr>
<tr>
<td>World</td>
<td>83.2</td>
<td>89.9</td>
<td>104.0</td>
<td>111.3</td>
</tr>
</tbody>
</table>

- Short- to medium term, non-OPEC production continues to rise, plateaus at 55-57 mb/d
- Key sources of increase: Latin America, Africa, Russia and Caspian
- Russian exceptional growth not sustainable (infrastructure constraints): eventually plateaus at 11 mb/d
- OECD production expected to decline
- Rate of increase in non-OPEC supply subject to considerable uncertainty after 2010.
- OPEC increasingly supplies incremental barrel
- Also: significant medium term uncertainties.
OPEC response
Accelerated expansion of OPEC production capacity

Announced OPEC capacity plans

Base

High

Range of required OPEC production

Low

mb/d

2004 2005 2006 2007 2008 2009 2010
The bulk of incremental supply to meet demand growths will come from OPEC, in particular the ME:
- To meet increase in overall demand
- To replace exhausted reserves
- To cope with unexpected shortages (adequate spare capacity)

⇒ Oil must & can be cleaner, safer and more efficient
What about medium- to long-term outlook?

Drivers of uncertainties over future supply & demand growth & future scale of investment that will be required:

- The world economy
- Energy policies impacting supply/demand
- Technology developments
- Oil price path
Cumulative OPEC investment requirements: 
Huge uncertainties in future oil demand translate into huge uncertainties and risks for future OPEC investment.

- If OPEC balances the market, the uncertain volume requirements translate into huge ranges of anticipated capital outlay needs.
- Already by 2010 an estimated uncertainty of $25 billion exists between the reference case and the low economic growth case.
- This a central concern: where lies the onus of maintaining sufficient spare capacity?

Impact of lower economic growth
Change in fundamentals?
Increasing tightness in world refinery capacity

<table>
<thead>
<tr>
<th></th>
<th>Avg. 2003</th>
<th>Avg. 2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>93.3</td>
<td>93.7</td>
</tr>
<tr>
<td>EU-16</td>
<td>89.0</td>
<td>90.0</td>
</tr>
<tr>
<td>Singapore</td>
<td>71.7</td>
<td>84.4</td>
</tr>
</tbody>
</table>

Refinery utilization rates (% of capacity)

World refinery capacity (mb/d)
World oil demand (mb/d)
Renewal of oil resources

Cumulated production: 125 Gtoe
Proved reserves: 145 Gtoe
New discoveries and extensions: > 100 Gtoe

Non-recovered oil: 385 Gtoe

Improved recuperation: 110%

Non-conventional resources:
Highly heavy oils and asphaltic sands: 685 Gtoe (in place)

Recuperation yield (%):
* Present average yield
** Forecast average yield (towards 2020)

Source: IFP/Direction des Etudes Economiques
Increases in oil use are expected to be accompanied by technological advances that will improve their environmental credentials.

Making fuller use of many technologies will point towards more sustainable energy patterns, as well as alleviating some of the downside risks to oil demand and the resulting uncertainties in the magnitude and timing of future investment requirements.

The identification of opportunities for cooperation on technological issues is therefore considered an important objective.

**Examples:**

1. Reductions in gas flaring
2. CO2 capture, use and storage
3. Oil gasification
CO₂ Emissions Reduction

- Energy efficiency increase
- Fuels with lower CO₂ emissions
- CO₂ capture and sequestration
Industry much better-off with underlying consensus on handling major issues of mutual concern

Big advances in recent years, especially in Asia

1st Round Table of Asian Oil and Gas Ministers, New Delhi
International Energy Forum Secretariat, Riyadh
Annual dialogue with China, Japan, South Korea
Joint OPEC/non-OPEC meeting in Oman in October
Thank you
OPEC’s landmark declarations

Declaratory Statement of Petroleum Policy in Member Countries
Vienna, 1968
Inalienable right, as expressed by the UN, of all countries to exercise permanent sovereignty over their natural resources in the interests of their national development

Conference of Sovereigns and Heads of State of OPEC Member Countries
(First Summit) Algiers, 1975
First “Solemn Declaration”. Led to establishment of:

OPEC Fund for International Development
US $7.0 billion committed*
US $4.7 billion disbursed*
*Since 1976

Second Summit of Heads of State and Government of OPEC Member Countries
Caracas, 2000
Second “Solemn Declaration”
Average annual real GDP growth rates (PPP), % pa

<table>
<thead>
<tr>
<th>Reference (DAU)</th>
<th>2004-05</th>
<th>2006-10</th>
<th>2004-25</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD</td>
<td>3.3</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>DCs</td>
<td>6.4</td>
<td>5.0</td>
<td>4.8</td>
</tr>
<tr>
<td>China</td>
<td>8.5</td>
<td>6.5</td>
<td>6.2</td>
</tr>
<tr>
<td>FSU</td>
<td>7.2</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>World</td>
<td>4.6</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

- **Average growth in the OECD** economies of 2.4% pa over the period 2004–2025
- **For developing countries**, considerable technological catch-up potential
- **China** is a significant uncertainty but expected to remain fastest growing region
- Economic growth in the reference case is relatively optimistic regarding the long-term health of the world economy
# World energy demand by fuel type (mtoe)

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Growth (% pa)</th>
<th>Fuel Shares (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil</td>
<td>1.6</td>
<td>1.8</td>
</tr>
<tr>
<td>Solids</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Gas</td>
<td>2.9</td>
<td>3.1</td>
</tr>
<tr>
<td>Hydro/Nucl./Ren.</td>
<td>1.1</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.9</strong></td>
<td><strong>2.1</strong></td>
</tr>
</tbody>
</table>

![Graph showing world energy demand by fuel type from 1960 to 2025.](image)
## Oil Demand & Net Oil Requirements in Asia 2005-2020, (mb/d)

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2010</th>
<th>2020</th>
<th>% pa</th>
<th>mb/d</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Oil demand</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OECD Pacific</td>
<td>8.5</td>
<td>8.7</td>
<td>8.9</td>
<td>0.3</td>
<td>0.03</td>
</tr>
<tr>
<td>South Asia</td>
<td>3.1</td>
<td>4.0</td>
<td>6.4</td>
<td>5.0</td>
<td>0.22</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>4.3</td>
<td>5.1</td>
<td>6.9</td>
<td>3.2</td>
<td>0.17</td>
</tr>
<tr>
<td>China</td>
<td>6.7</td>
<td>8.3</td>
<td>11.6</td>
<td>3.7</td>
<td>0.33</td>
</tr>
<tr>
<td><strong>Total Asia</strong></td>
<td>22.6</td>
<td>26.1</td>
<td>33.8</td>
<td>2.7</td>
<td>0.75</td>
</tr>
<tr>
<td><strong>Asian share in total World</strong></td>
<td>27%</td>
<td>29%</td>
<td>33%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oil supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OECD Pacific</td>
<td>0.5</td>
<td>0.7</td>
<td>1.0</td>
<td>4.7</td>
<td>0.03</td>
</tr>
<tr>
<td>China</td>
<td>3.5</td>
<td>3.6</td>
<td>3.6</td>
<td>0.2</td>
<td>0.01</td>
</tr>
<tr>
<td>Other Asia</td>
<td>2.5</td>
<td>2.6</td>
<td>2.5</td>
<td>0.0</td>
<td>0.00</td>
</tr>
<tr>
<td><strong>Total Asia</strong></td>
<td>6.5</td>
<td>6.9</td>
<td>7.1</td>
<td>0.6</td>
<td>0.04</td>
</tr>
<tr>
<td><strong>Total Asia Net oil import req.</strong></td>
<td>16.1</td>
<td>19.2</td>
<td>26.7</td>
<td>3.4</td>
<td>0.71</td>
</tr>
<tr>
<td><strong>OPEC supply</strong></td>
<td>32.1</td>
<td>35.0</td>
<td>46.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>OPEC share in total World</strong></td>
<td>39%</td>
<td>39%</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The bulk of incremental supply to meet demand growths will come from OPEC, in particular the ME:
- To meet increase in overall demand
- To replace exhausted reserves
- To cope with unexpected shortages (adequate spare capacity)
$/Euro Exchange Rate (January, '99 – March, '05)
Refining Spare Capacity in Key Refinery Regions (mb/d)
World oil demand growth: Increasing share of lighter products

- Light Products *
- Oil Demand Growth

*: Gasoline, Jet Kerosene and Distillate
Estimated average G-7 tax earnings vs OPEC oil export values (1999 – 2003), billion US$
Index of Austrian retail diesel price vs. crude price composite barrel analysis: Austria vs. EU (2003-2005)