“Energy Security in an Interdependent World, OPEC’s Role and Objectives”

New Delhi
January 6, 2005

Presented by
Dr. Adnan Shihab-Eldin

Organization of the Petroleum Exporting Countries
Vienna, Austria
- Demand surge due to strong economic growth
- Tightness in the capacity of world’s refining system & resulting
- Widening sweet sour differentials
- Continued geopolitical concerns
- Concern about available access capacity
- Influence of the speculative drive in the Futures market

Unstable period, With unusual price sink

Stability within the band

Unusual price hike before moderating towards fundamentals following strong OPEC output levels
OPEC crude oil production, 2003-2004
(based on secondary sources, mb/d)

The World has benefited from OPEC spare capacity

Is there a structural change?
```
<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>51.2</td>
<td>52.9</td>
<td>54.5</td>
<td>55.8</td>
</tr>
<tr>
<td>DCs</td>
<td>32.3</td>
<td>38.5</td>
<td>45.3</td>
<td>52.5</td>
</tr>
<tr>
<td>Trans. Econ.</td>
<td>5.3</td>
<td>5.7</td>
<td>6.0</td>
<td>6.3</td>
</tr>
<tr>
<td><strong>Total World</strong></td>
<td><strong>88.7</strong></td>
<td><strong>97.1</strong></td>
<td><strong>105.8</strong></td>
<td><strong>114.6</strong></td>
</tr>
<tr>
<td>Low economic growth scenario</td>
<td>84.2</td>
<td>88.8</td>
<td>93.2</td>
<td>97.4</td>
</tr>
<tr>
<td>(diff. to DAU)</td>
<td><strong>-4.5</strong></td>
<td><strong>-8.2</strong></td>
<td><strong>-12.6</strong></td>
<td><strong>-17.3</strong></td>
</tr>
</tbody>
</table>
```

- **“Dynamics-as-usual”: observed patterns, no new strong policy drives**
- **Oil demand increases** by an average of **1.6 mb/d annually**
- Almost three-quarters of the increase in demand of **38 mb/d over the period 2002–2025** comes from developing countries
- **Transportation** continues to be the dominant source of growth (~60 %)
- **Many uncertainties**: GDP, technology, policy – **substantial downside risks**
- **Issue of security of demand**
Annual growth in oil demand, 2004-2025, Reference, mb/d pa

Asia: 65% of DCs increase, especially China & India
huge potential (e.g. low vehicle ownership)
But possible constraints: infrastructure, policies

<table>
<thead>
<tr>
<th>2004-2020</th>
<th>World</th>
<th>Asia</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Growth (%)</td>
<td>3.6</td>
<td>5.0</td>
<td>6.4</td>
</tr>
<tr>
<td>Oil Demand Growth (%)</td>
<td>1.5</td>
<td>2.7</td>
<td>3.7</td>
</tr>
<tr>
<td>Oil Demand Growth (mb/d)</td>
<td>1.5</td>
<td>0.75</td>
<td>0.33</td>
</tr>
</tbody>
</table>

OECD Pac. W. Europe

N. America

OPEC & other exp.

Latin America. Africa & M.E.

Other FSU
## 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>Asian share in total World</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</strong> Net oil import req.</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></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OPEC share in total World</td>
<td>39%</td>
<td>39%</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Annual growth in oil demand by sector
(mb/d)

Elec. Gen.  Industry  HH/Comm  Transport

DCs

Vehicle intensities 1970-2025

- OECD
- China
- S. Asia
- Other DCs
- Transition economies

GDP per capita ($95) vs. vehicles per 1,000
Today's figures (or points) could be added
Hamel, 12/29/2004
OPEC’s objectives

- Stable markets
- Reasonable prices
  - Steady revenues
  - Secure adequate and economically efficient supply
  - Fair returns to investors

⇒ Consistent with robust economic growth
Shares in Oil & Natural Gas %

- **Reserves**
  - OPEC-GULF: 63.6%
  - OPEC-REST: 12.3%
  - NON-OPEC: 24.1%

- **Production**
  - Oil: 29.0%
  - Gas: 39.4%

- **Reserves**
  - OPEC-GULF: 50.6%
  - OPEC-REST: 10.0%
  - NON-OPEC: 39.4%

- **Production**
  - OPEC-GULF: 84.0%
  - OPEC-REST: 7.7%
  - NON-OPEC: 8.3%
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

Partnership for

**Sustained Growth & Sustained Supply**
Big advances in recent years
The industry is much better off if there is an underlying consensus on such major issues as price stability, outlook for demand growth and investments to assume adequate supply, the environment and sustainable development. (2 sides of Energy Security)
But large uncertainties remain and require continuous review and adjustments
Downstream just as important
Thank you