The challenge of sustaining economic growth and the expanding energy needs of Asia: the role of OPEC

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Vienna, Austria
Reflecting an equilibrium price range that satisfied producing countries and consuming nations.

Unstable period

Stability within the band

Unusual price hike signaling new episode?
Surprisingly stronger growth in world economy

World growth estimates have been revised up to 5% for 2004, the highest since 1976.

Contributing to the upward revision are:
- China: 23%
- OECD: 34%
- FSU: 14%
- Developing Countries: 29%

December 2003 Forecast for 2004: 4.1%

Latest Estimate of World Growth in 2004: 5.0%
Overall growth in developing countries (excl. China) was 5.8% in 2004, the highest rate since 1976.
Weighted share of increase in DCs’ GDP 2004 (1995 prices, PPP basis)

- FSU: 19%
- Latin America: 19%
- Africa: 11%
- India: 20%
- Asia: 31%

* excluding China
China has become the second largest oil consumer
Other factors putting pressure on prices

refining & distribution industry bottlenecks

natural & man-made temporary supply disruptions

geopolitical tensions

Compounding the situation was heavy speculation in futures markets.
OECD commercial oil stocks
closing levels, mb

Min-Max range: 1994-2003
Change in fundamentals?
OPEC crude oil production & spare capacity
Recent rise in prices in January & February 2005:
- Expectation of continued strength in oil demand
- Geopolitical concerns
- Seasonal market characteristics (cold weather)
- Sensitivities to stock levels in heating oil & n.gas
- Supply glitches, ongoing supply disruptions in Iraq
Are high oil prices here to stay?

Economic growth patterns in 2005
Continued growth in Asia
Stricter product specifications
Asia following Europe and USA
Continuation of destabilising factors from 2004?

…but let’s look at REAL prices!
Change in fundamentals?

Strong growth in Chinese oil requirements:

- GDP growth rate (%): 8.3, 9.3, 9.3, 7.8
- Oil demand growth rate (%): 7.4, 10.5, 17.2, 7.7
- Oil demand growth (mb/d): 0.3, 0.5, 1.0, 0.5
OPEC R. Basket price in nominal & in real terms (Base: 2004=100, US$ / b)

Graph showing the nominal and real price of OPEC R. Basket from 1970 to 2005. The graph indicates periods of high inflation and exchange rate adjustments affecting the price.
OPEC R. Basket price in nominal & in real terms
2000 - Jan 2005, (Base: June 2000=100, US$ / b)
How will high oil prices affect world economic growth?

Real oil prices much lower than in the past

2004 – high nominal oil prices, YET strong economic growth

World now half as dependant on oil per unit of economic growth

Analysts say 2004 oil price rise (since second quarter) might reduce world economic growth by just 0.2-0.3 per cent in 2005
### 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>
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<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.
Oil Demand Outlook, mb/d

“Dynamics-as-usual”: observed patterns, no new strong policy drives

Oil demand increases by an average of 1.5 mb/d annually

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

Issue of security of demand

<table>
<thead>
<tr>
<th>Reference</th>
<th>2010</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
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<tbody>
<tr>
<td>OECD</td>
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<td>53.0</td>
<td>53.9</td>
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<tr>
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<td>39.2</td>
<td>45.1</td>
<td>51.3</td>
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<td>Transition economies</td>
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<td>5.6</td>
<td>5.9</td>
<td>6.1</td>
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<tr>
<td>Total World</td>
<td>89.9</td>
<td>96.8</td>
<td>104.0</td>
<td>111.3</td>
</tr>
</tbody>
</table>
Annual growth in oil demand, 2004-2025, Reference, mb/d pa

<table>
<thead>
<tr>
<th>2004-2025</th>
<th>World</th>
<th>Asia</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Growth (%)</td>
<td>3.5</td>
<td>4.7</td>
<td>6.2</td>
</tr>
<tr>
<td>Oil Demand Growth (%)</td>
<td>1.6</td>
<td>2.7</td>
<td>4.1</td>
</tr>
<tr>
<td>Oil Demand Growth (mb/d)</td>
<td>1.5</td>
<td>0.76</td>
<td>0.35</td>
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</tbody>
</table>

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

OECD Pac.
W. Europe
N. America
OPEC & other exp.
Latin America.
Africa & M.E.
other FSU

China
Asia
Transition economies
Vehicle intensities 1970-2025

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

GDP per capita ($95) vs. vehicles per 1,000

- China: Increasing trend
- S. Asia: Increasing trend with fluctuations
- Other DCs: Lower vehicles intensity
- Transition economies: Lower vehicles intensity
- OECD: Highest vehicles intensity
Oil Production Outlook, mb/d

<table>
<thead>
<tr>
<th>Reference (DAU)</th>
<th>2005</th>
<th>2010</th>
<th>2020</th>
<th>2025</th>
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</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>
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<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.
- OPEC increasingly supplies incremental barrel.
- Low economic growth scenario would lead to significant drop in OPEC production required.
- Also: significant medium term uncertainties.
# 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>
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<tr>
<td><strong>Oil demand</strong></td>
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<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>
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<td>South Asia</td>
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<td>6.4</td>
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<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>
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<tr>
<td>China</td>
<td>6.7</td>
<td>8.3</td>
<td>11.6</td>
<td>3.7</td>
<td>0.33</td>
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<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>
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<tr>
<td><strong>Asian share in total World</strong></td>
<td>27%</td>
<td>29%</td>
<td>33%</td>
<td></td>
<td></td>
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<tr>
<td><strong>Oil supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<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>
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<tr>
<td>China</td>
<td>3.5</td>
<td>3.6</td>
<td>3.6</td>
<td>0.2</td>
<td>0.01</td>
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<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>
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<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>
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<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>
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<td><strong>OPEC supply</strong></td>
<td>32.1</td>
<td>35.0</td>
<td>46.8</td>
<td></td>
<td></td>
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<tr>
<td><strong>OPEC share in total World</strong></td>
<td>39%</td>
<td>39%</td>
<td>45%</td>
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</tr>
</tbody>
</table>
Asian net oil import requirements (mb/d)

2005 16.1
2010 19.2
2020 26.7
Oil demand for power generation (mboe/d)

Oil share in power generation (%)

<table>
<thead>
<tr>
<th>Region</th>
<th>2002</th>
<th>2010</th>
<th>2020</th>
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<tbody>
<tr>
<td>World</td>
<td>8</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>DCs</td>
<td>13</td>
<td>10</td>
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<tr>
<td>Asia</td>
<td>9</td>
<td>7</td>
<td>6</td>
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<td>Middle East</td>
<td>39</td>
<td>31</td>
<td>30</td>
</tr>
<tr>
<td>Africa</td>
<td>13</td>
<td>12</td>
<td>11</td>
</tr>
<tr>
<td>Latin America</td>
<td>19</td>
<td>13</td>
<td>9</td>
</tr>
</tbody>
</table>
Apparent demand for Diesel oil in China (tb/d)
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 natural declines in production
- To cope with unexpected shortages (adequate spare capacity)

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

Drivers of uncertainties over future supply and demand growth and 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.
Dialogue and cooperation

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
Asian economy closely tied to global economy

Cooperation between Asian producers and consumers crucial

Cooperation must include moderation, dialogue, understanding, respect, security, equilibrium, reciprocity

Asian dialogue welcome and indispensable
Thank you