Asian Energy Outlook

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1. Increasing Energy Demand

Projection: Final energy demand increase at 2.1% /yr

- 2010: 3,238.5 Mtoe;
- 2035: 5,400.9 Mtoe;

![Bar chart showing energy demand by sector from 2010 to 2035. The chart includes columns for Industry, Transport, Other, and Non-Energy. The 2010 and 2020 data points have bars for each sector, while the 2035 data point has a combined bar representing the growth across all sectors.]
2. Electricity: Doubled btw 2010 & 2035 (3.4%/yr)

- 2010: 7,010 TWh;
- 2035: 16,169 TWh;

<table>
<thead>
<tr>
<th>Region</th>
<th>2010 TWh</th>
<th>2035 TWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central and West Asia</td>
<td>234</td>
<td>491</td>
</tr>
<tr>
<td>East Asia</td>
<td>4,165</td>
<td>9,730</td>
</tr>
<tr>
<td>Pacific</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>South Asia</td>
<td>764</td>
<td>2,762</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>601</td>
<td>1,733</td>
</tr>
<tr>
<td>Developed Group</td>
<td>1,243</td>
<td>1,439</td>
</tr>
</tbody>
</table>
3. Fossil Fuels Still Dominates Electricity Mix

![Bar chart showing the electricity mix in 2010 and 2035. In 2010, the contribution from Coal, Oil, Natural Gas, Nuclear, Hydro, and NRE is compared. In 2035, the dominant contribution comes from Coal, followed by Oil, Natural Gas, Nuclear, Hydro, and NRE. The total energy in TWh is broken down by these sources.]
4. CO₂ Emission (2010-2035)

- 2010: 13,404.0 million tons
- 2020: 16,184.8 million tons
- 2035: 22,112.6 million tons

Average growth rate = 2.0%

Central and West Asia
East Asia
South Asia
Pacific
Southeast Asia
Developed Group
5. Projected Investment in Energy Sector by 2035

- **Cumulative investments by 2035**: $11.7 trillion
- More investment in developing members

<table>
<thead>
<tr>
<th>Region</th>
<th>Investment (billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed</td>
<td>$1,709.2 billion</td>
</tr>
<tr>
<td>Southeast Asia</td>
<td>$1,343.6 billion</td>
</tr>
<tr>
<td>East Asia</td>
<td>$2,416.1 billion</td>
</tr>
<tr>
<td>Pacific</td>
<td>$38.4 billion</td>
</tr>
<tr>
<td>Central and West Asia</td>
<td>$502.8 billion</td>
</tr>
</tbody>
</table>

- **Oil**
- **Natural Gas**
- **Coal**
- **Electricity/Heat**

**Note:** All investments are in constant, 2006 prices.
6. Energy Saving and CO₂ Mitigation Potential

By 2035, BAU vs Alternative

- Primary energy savings: 1,295.2 Mtoe
- CO₂ emissions reduction: 6104.3 Mt

Primary Energy Savings

- BAU: 8,358.3 Mtoe
- Potential Savings: 1,295.2 Mtoe
- Alternative Case: 7,063.1 Mtoe
Investment requirements for BAU and Alternative Cases

Cumulative Investment ($, trillion, constant 2006 prices)

- **BAU**
  - Total investment: $11.7 trillion
  - Supply side investment: $12.6 trillion

- **ALT**
  - Total investment: $19.9 trillion
  - Supply side additional investment: $7.3 trillion

Legend:
- Industry
- Commercial
- Residential
- Transport
- Distribution
- Energy Transportation
- Transformation
- Extraction/Production
Policy Implications

1. Energy Security: continue rely upon imported fossil fuel, such as oil and gas

2. Demand for coal will grow by 50% for economic and technical needs but at slower pace due to EE and RE development in PRC

3. Demand side energy-efficiency is very important

4. Rehabilitate and/or phase out aging, unreliable, and low efficiency power plants

5. Regional cooperation is needed

6. Large amounts of investments is required
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