Energy Saving Potential in the Asia-Pacific Region

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Energy efficiency is of the few energy policy approaches that is a winner in every respect:

- **Energy Security**: Reduced dependence on imported fuels, especially oil
- **Environmental**: Reduced greenhouse gas emissions, reduced air and water pollution
- **Health**: Warmer, healthier homes
- **Economics**: Reduces costs, improves competitiveness, promotes economic development
If Energy Efficiency Is That Great, Why Doesn’t the Market Do It?

There are several ‘market failures’ that reduce incentives to invest in energy efficiency:

• Lack of information for consumers
• Energy is often under-priced
• Access to capital
• Split incentives
How Big Is the Potential for Energy Efficiency Improvements in the Asia Pacific Region?

• Best source of information on this is the ERIA Analysis on Energy Saving Potential in East Asia, 2008

• Requested by East Asia Summit leaders in Cebu Declaration on East Asia Energy Security, January 2007

• 16 countries in Asia and the South Pacific participated in the Working Group
How Did the Analysis Work?

• Analysis compared “Business As Usual” (BAU) to an “Alternative Policy Scenario” (APS) reflecting energy efficiency improvements

• The APS was based on each country’s existing or proposed energy saving goals or action plans

• Modelling was performed by the Institute for Energy Economics, Japan (IEEJ) based on data submitted by each country
Projected Impacts on Final Energy Demand

- **BAU**: 4,555 Mtoe, -17%
- **APS**: 3,776 Mtoe

<table>
<thead>
<tr>
<th>Year</th>
<th>BAU</th>
<th>APS</th>
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<tbody>
<tr>
<td>1980</td>
<td>744</td>
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<tr>
<td>1990</td>
<td>1,109</td>
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<tr>
<td>2005</td>
<td>1,915</td>
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<tr>
<td>2030</td>
<td>4,555</td>
<td>3,776</td>
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</tbody>
</table>

New Zealand Government
Projected Impacts by Sector

<table>
<thead>
<tr>
<th>Year</th>
<th>Sector</th>
<th>BAU</th>
<th>APS</th>
<th>Change</th>
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<tbody>
<tr>
<td>'05</td>
<td>Industry</td>
<td>1,874</td>
<td>1,600</td>
<td>-11%</td>
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<tr>
<td>'30</td>
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<tr>
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<td>'30</td>
<td>Transport</td>
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<td>-21%</td>
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<tr>
<td>'05</td>
<td>Others</td>
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<td>498</td>
<td>-20%</td>
</tr>
<tr>
<td>'30</td>
<td>Others</td>
<td>925</td>
<td>498</td>
<td>-20%</td>
</tr>
<tr>
<td>'05</td>
<td>Non-Energy</td>
<td>400</td>
<td>165</td>
<td>-82%</td>
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<tr>
<td>'30</td>
<td>Non-Energy</td>
<td>400</td>
<td>165</td>
<td>-82%</td>
</tr>
</tbody>
</table>
Projected Impacts by Fuel

- **Coal**
  - BAU 2005: 474 Mtoe
  - APS 2005: 559 Mtoe
  - BAU 2030: 717 Mtoe
  - APS 2030: 559 Mtoe
  - Change: -158 Mtoe, -22%

- **Oil**
  - BAU 2005: 474 Mtoe
  - APS 2005: 559 Mtoe
  - BAU 2030: 2,119 Mtoe
  - APS 2030: 1,666 Mtoe
  - Change: -453 Mtoe, -21%

- **Gas**
  - BAU 2005: 125 Mtoe
  - APS 2005: 125 Mtoe
  - BAU 2030: 451 Mtoe
  - APS 2030: 417 Mtoe
  - Change: -34 Mtoe, -8%

- **Electricity**
  - BAU 2005: 387 Mtoe
  - APS 2005: 387 Mtoe
  - BAU 2030: 1,113 Mtoe
  - APS 2030: 937 Mtoe
  - Change: -176 Mtoe, -16%
Projected Impacts on Greenhouse Gas Emissions

CO₂ Emission (Mt-C)

- 1980: 913 Mt-C
- 1990: 1,387 Mt-C
- 2005: 2,652 Mt-C
- BAU: 5,765 Mt-C
- APS: 4,082 Mt-C

-1,683 Mt-C, -29%
What Else Did We Learn?

- Countries vary widely in the analytical and policy capabilities for improving energy efficiency
- Energy efficiency is hard to define and measure consistently
- ERIA analysis probably significantly understates actual potential
- More urgently needs to be done
- But actually achieving that potential—converting goals into results—is hard
In Summary

- Energy efficiency offers lots of potential and is urgently needed
- But every Asia-Pacific economy still has much to learn if the region is to achieve success
  -> Great need for cooperative learning efforts like PREE!