Key Findings from the Outlook – Economy Review

EWG 32 Meeting, Yuzhno-Sakhalinsk, October 5th, 2006

James EASTCOTT
Overview

Key Findings – Economy Review
- North East Asia
- South East Asia
- North America
- Latin America
- Oceania

Major Issues
- Demand-Side and Others
- Supply-Side

Where to from here??
Key Findings - Economy Review
North East Asia

- **China – High Energy Demand Expected**
  - Power Sector Development – 626 GW addition
  - Energy Security – import dependency (18% in 2030)
    - Oil – Coal to liquids, overseas E & P
    - Natural Gas – LNG, expansion of domestic resources
  - Demand-side measures – strengthen energy efficiency

- **Japan – energy security**
  - Transportation (26% TFED) – oil supply source diversification
  - CO₂ emissions and meeting the Kyoto Protocol target

- **Korea – Industrial centered economy (50%)**
  - Energy/carbon intensity improvement
  - Electricity security – bigger role for nuclear
North East Asia cont...

- **Russia – Remain Major Energy Supplier**
  - Oil 294 Mtoe, natural gas 197 Mtoe Net Export Position in 2030
  - Refurbishment/reconstruction of old facilities
  - Investment of US$401 b for oil/gas – improvement of investment environment

- **Hong Kong, China – No domestic production**
  - Future gas supply – LNG imports
  - Integration with Chinese economy – increased trade (high transport energy intensity)

- **Chinese Taipei – Industry orientated**
  - 50% TFED industry – energy intensity improvement
  - Non-nuclear homeland policy – how to achieve source diversification – move to coal increasing carbon intensity
South East Asia

- **Indonesia – Energy Exporter to importer(?)**
  - Increasing oil import dependency (60% in 2030)
  - Demand side measures – rationalisation of energy pricing

- **Malaysia – Energy Exporter to importer**
  - Increasing oil import dependency (32% in 2030)
  - Natural gas dependence for electricity generation

- **Thailand – Major Energy Importer**
  - Increasing oil import dependency – search for alternatives – biofuels
  - Fuel diversification for electricity generation – natural gas to coal
South East Asia Cont...

- **Viet Nam – Transitional Economic Development**
  - Infrastructure development – US$172 b (or 5.2% of GDP)
  - 83% of investment for electricity
  - Oil import dependency – from net exporter to 57% net imports in 2030

- **Philippines – Import dependent**
  - Increasing oil import dependency – search for alternatives – biofuels
  - Promoting regional cooperation

- **Brunei Darussalam – Remain energy exporter**
  - Remain self-sufficient in oil and gas
  - To maintain export position – US$3.6 b in oil and gas (81%)
  - Diversification of export revenues from oil and gas industry

- **Singapore – Petroleum Product Market**
  - Continue refining activities – strengthen competitiveness vis-à-vis South and South-East Asian economies
  - Become a hub for natural gas supply and storage
North America

- **United States – Major Energy Consumer**
  - Enhancement of energy security – net import ratio of 35% in 2030 (emphasis on domestic coal)
  - Strengthening of transmission network (US$982 b)
  - Diversification of supply – LNG, coal

- **Canada – Oil supplier**
  - Oil sands expansion – energy intensive
  - Gas supply to US in jeopardy – future LNG imports
  - Environment – Kyoto Protocol and CO₂ Emissions
Latin America

- **Mexico – Energy Exporter to Importer**
  - Non-OPEC oil producer – need legislative changes to promote investment in upstream
  - LNG imports – currently imports from US (future exporter)

- **Chile – Diversification/regional integration**
  - Natural gas supply
  - Power sector reform/integration

- **Peru – Diversification/regional integration**
  - Natural gas supply and export
  - Power sector reform
Oceania

- **Australia – Important APEC Energy Producer**
  - Major Energy supplier –
    - LNG – 62 million tonnes in 2030
    - Coal – 450 million tonnes in 2030
  - Investment – meeting domestic needs while increasing exports
- **Papua New Guinea – Investment**
  - Development of domestic resources
  - Expansion of infrastructure
- **New Zealand – Security of Electricity Supply**
  - Electricity – high hydro dependence, falling gas production
  - CO$_2$ Emissions – coal for generation (higher emissions)
Major Issues
**Demand-Side**

- **Urbanisation and Energy Demand**
  - The challenge posed by rising transport energy demand needs to be overcome by bringing together the efforts of government – both local and central – and the private sector.

**Other Issues**

- **Environment**
  - Placing “costs/charges” on offsetting pollution from energy operations... carbon constrained future??

- **Investment**
  - Financing, siting and a lack of fiscal incentives are the main barriers holding back additional investment... inter-regional cooperation??
Supply-Side

- **Energy Resources Constraint**
  - Projected cumulative extraction of oil and natural gas will substantially exceed current proven reserves... are resources sufficient??

- **Energy Transportation**
  - Demand growth equals increased transportation requirements, leading to more ships and... infrastructure??

- **Water and Energy Demand**
  - The water/energy nexus could have profound implications for electricity supply security and cost... competition??

- **Human Resources Constraint**
  - Shortage of human resources poses a threat to future development and safety... skilled labour/engineering appeal??