Suggestion for the Future Studies

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The role of Outlook should be…

- For Romans, the God Janus is watching the past and looking at the future simultaneously.
- Statistics is not only a display of past, but also…
  - To verify the effectiveness of policy measures
  - To identify the major trend of development
  - To reveal the future
  - To provide an early warning
- APEC Energy Demand and Supply

Outlook

  - The prospect for the future (OED)
  - Based on the past statistics

Suggestion: Decomposition analysis of energy intensity data

- The APEC members have highly dynamical economic progress and also at diverse stages of economic development
- A simple prediction based on past statistics may be useful for near future but for longer-term outlook?
- For example, Chapter 5 of the Outlook for transportation does not distinguish the effects of car ownership, mode of transportation and vehicles fuel efficiency within an Economy.
- Is it possible to do decomposition analysis to investigate the contribution amongst activity, structure and intensity effects for better prediction?

Suggestion: Energy Efficiency Indicators

- Energy efficiency policy requires meaningful indicators to verify effectiveness and to guide future direction
- For sectorial comparison between member economies, the energy intensity may be misleading
  - *e.g.* in Table 6.1 of the 5th edn. of APEC Energy Demand and Supply Outlook, energy Intensity (kilogram oil equivalent/USD) was employed to compare energy efficiency of iron & steel prod. between China and US
  - Could it be more meaningful by using kilogram oil equivalent per tonne of iron/steel?

- The goal of energy efficiency policy decides which indicator to be employed
  - Better economic competiveness *v.s.* reducing absolute use of energy (for Climate Change *etc*)
- Three levels of efficiency indicators: aggregated, sectorial disaggregated, process/appliance
- IEA has already finalised Energy Efficiency Indicators Database in 2011 and developing an overdue manual
- Could APERC work with EGEE&C to develop an APEC Database of Energy Efficiency Indicators to be published in future editions?

Suggestion: Refine natural gas outlook

- Natural gas is a promising new fossil fuels. For the next 20 years, we are at the historical moment and witnessing the major shift from oil to natural gas.
- But, APEC as a whole may not reveal its importance. For example, 222 MTOE of net export in 2020 and 61 MTOE of net import in 2035 are only small portion, comparing to oil.
  - PRC alone increases 300 MTOE of net import by 2035
  - 3 times of current Japan's import
  - At 1×10^7 m^3/s; about the discharge rate of the Pearl River
- Great business potential intra-APEC natural gas trade

- Different predictions for different modes of transportation, i.e. pipeline and cargo (LNG), are advised.
  - Huge investment in new liquefaction and regasification terminals, LNG cargoes
  - Huge investment in new pipelines and creating geopolitical implication (Ukraine!)
- Shift to natural gas from coal is also expected in the power generation
  - Huge investment in new NGCC; GE, Siemens, Mitsubishi

- Further refinement of recommendation is advised
  - EGS is focussed on tariffs, a domestic issue
  - Fossil fuel subsidy encourages rather hinders more use
  - Mobilisation of international investments to upstream development and infrastructure could be the key
  - It is investment protection matters, no EGS or subsidy
  - Investment protection and trans-boundary transport are not under WTO regulation; ECT does but of limited effects
- Are we facing a new energy crisis in near future?
  - APEC Energy Security Initiative does not address NG
  - Could the Outlook provide an early warning for future energy crisis due to natural gas supply?

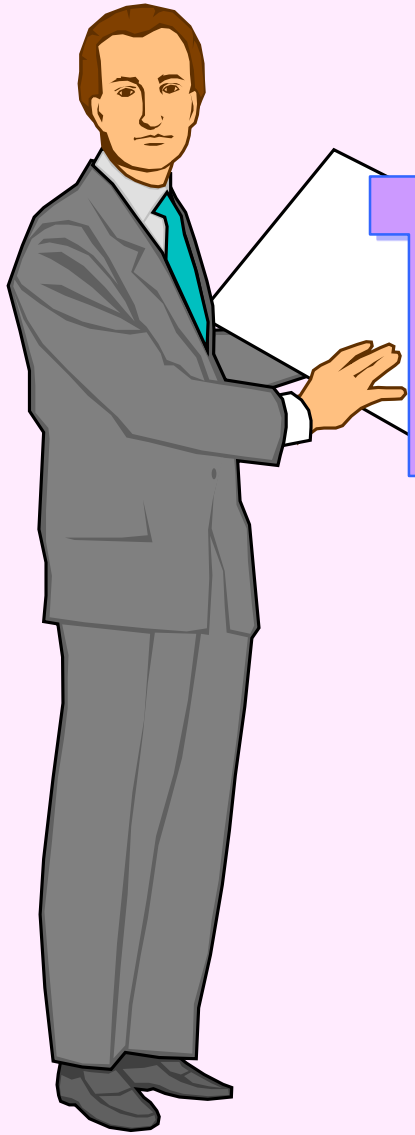
Suggestion: APEC-wide statistical norm on renewable energy

- In 2007 and 2011, APEC Leaders declared the APEC-wide collective goal on energy intensity as an answer for Climate Change and Sustainable development.
  - This may not be a right answer, but at least it helps.
- The APEC does not have a collective goal on renewable energy yet, but possibly soon will be. The Goal may be "by 20xx year, the renewable energy should be doubled".
- For any meaningful goal of renewable energy, a high quality of statistics is needed to provide a single numerical value of renewable energy for Leaders to think, if they do.

- Current difficulties for a single numerical value of renewable energy include
  - Diverse definitions of “renewable energy” amongst member economies, *e.g.* ground-source heat pump
  - Installed capacity or contribution to the TPES
  - Conversion between heat and electricity
  - Conversion between primary electricity to TPES, *e.g.* PV
  - Not every renewable energy is wanted, *e.g.* traditional use of biomass
- Could APERC work with EGNRET to develop an APEC statistic norm for renewable energy to be employed in future editions?

Conclusion

- APERC has achieved excellently with limited budget and personnel, but more resources are needed.
- Priority for the 6th edn. could be
  - Refine natural gas Outlook
  - APEC-wide statistic norm for renewable energy
- Issues to be considered
  - Decomposition analysis
  - Energy efficiency indicators
- Attention of EWG and EMM should be raised



Thank You