6. ACHIEVING OIL SECURITY, WITH EMPHASIS ON THE TRANSPORT ENERGY SECTOR

PROCEDURE

Ministers will receive a presentation from the President of the Asia Pacific Energy Research Centre (APERC) on the topic *Achieving Oil Security, with Emphasis on the Transport Energy Sector* (14:00 – 14:15).

The Chair to open the floor for discussion (14:15 – 15:15).

OBJECTIVE

- To allow Ministers to discuss:

  a) enhancing security of oil supply;

  b) the transportation sector as a key driver of oil demand in the APEC region and its implications for energy security and sustainable development;

  c) the achievement of oil security and greater efficiency and diversity in the transport energy sector; and

  d) addressing impediments to investment and promoting the development of policies and technologies to promote fuel efficient transport as well as the uptake of biofuels and other alternative transport fuels.

- To allow Minsters to advance cooperative policy responses towards achieving energy security and environmental sustainability through consideration of:

  a) *facilitating investment and trade in downstream and upstream oil markets* – to ensure sufficient investment in refining capacity to meet growing demand, including for cleaner fuels; to recognise that transparent, credible, equitable and effective legal and regulatory frameworks, including the ability to enforce contracts, are essential to generate sufficient and sustainable international upstream investment; and to respond to the growing importance of state-owned oil/gas companies;

b) *enhancing emergency preparedness* – in recognition that oil supply disruptions can affect all member economies;

c) *improving oil data sharing* – by reaffirming support for the Joint Oil Data Initiative in recognition that a lack of transparent and reliable oil market data aggravates price volatility; and

d) *promoting energy efficient transport and alternative transport fuels* – by welcoming the report of the APEC Biofuels Task Force and by recognising that transportation is the leading sector for oil demand growth in the APEC region and that high oil prices are driving cost-effective improvements in vehicle fuel efficiency and the development and uptake of alternative transport fuels.

RECOMMENDATIONS

- That Ministers be guided by the report from the President of APERC.

- That Ministers:

  - emphasise the need to strengthen APEC's emergency preparedness and participate in measures to manage the risks and consequences of short-term energy supply disruptions;

  - determine that addressing the challenges of energy security and sustainable development should be based on well-functioning markets that are progressively characterised by free and open trade, secure and transparent frameworks for investment, market-based price signals, market transparency, good governance and effective competition;

  - discuss actions to achieve greater efficiency and diversity in the transport energy sector, which is the key driver of oil demand; and

  - encourage the development of policies and technologies to promote fuel efficient transport as well as the uptake of biofuels and other alternative transport fuels in a sustainable manner.

- That Ministers direct the APEC Energy Working Group (EWG) to:

  a) facilitate investment and trade in downstream and upstream oil markets, through encouraging APEC economies to

     - provide a transparent and streamlined regulatory framework for such investment;

     - facilitate freer trade of oil products;

- create a positive environment for technology development to help refiners to produce cleaner oil products more efficiently;

- support ongoing dialogue between consumers and producers to facilitate an enabling investment climate in oil and natural gas resources and reserves;

- recognise the importance of facilitating upstream investments; and

- examine the trade and investment ramifications of the role of state-owned oil/gas companies in APEC economies and to examine how partnerships and cooperation could improve the value chain.

b) enhance emergency preparedness by

- participating in the Real-time Emergency Information Sharing System (RTEIS) and developing and communicating emergency mechanisms and contingency plans, including through the APEC Taskforce for Emergency Preparedness;

- enhancing the RTEIS to facilitate the establishment of an APEC Rapid Response Points of Contact Network for the Protection of Critical Energy Infrastructure to help minimise the potential for supply disruptions and to better protect critical energy infrastructure, including for maritime transportation;

- strengthening cooperation with other relevant international fora, such as the IEA, for coordinating efforts at the time of energy supply disruption;

- developing linkages with organisations responsible for regional maritime security with a view to identifying and reporting any cross-cutting issues to Ministers at their next meeting; and

- encouraging interested economies to continue to report on implementing best practices for the establishment, financing and management of strategic oil stocks.

c) improve oil data sharing by

- reporting timely, accurate and complete data on oil reserves, supply and demand, stocks and production under the Joint Oil Data Initiative (JODI); and

- continuing to provide training through JODI for economies to undertake the above task and to contribute towards the JODI World Database.

d) promote energy efficient transport and alternative transport fuels by

- noting the key findings of the APEC Biofuels Task Force and encouraging intensified efforts to develop and deploy techniques for the cost-effective use of non-food feedstocks, such as farm and forest residues and grasses, which hold the greatest potential for expanded biofuel production and greenhouse gas reductions;

- collaborating on alternative fuels with other international bodies, such as the IEA and the Global Bioenergy Partnership (GBeP);

- encouraging APEC economies to manage their growing dependence on oil for transportation through policies and measures to promote energy efficiency in transportation and to diversify the fuel mix using cleaner fuel sources; and

- developing best practice principles for energy efficient transport.

BACKGROUND

Oil Security

Growth in oil product demand and a decline in spare supply capacity have contributed to a tightening of the oil supply-demand balance with the result that the world oil market has become vulnerable to sudden fluctuations in oil supply-demand, as well as to external shocks (e.g. supply disruption). As a result of the combination of these factors, world oil prices remain historically high, despite the absence of any sustained serious disruption of supply.

The refining capacity of the APEC region must increase significantly to meet rising demand. For many economies, opposition to new refineries requires expansion of existing facilities and it is often more economic to import additional product. Moreover, the refining industry will become more complicated due to the need to process heavier oil and to respond to stricter environmental regulations and fuel standards. Uncertainty remains as to whether sufficient investment in refining capacity will be undertaken to meet growing demand. This reflects low return on investments, refinery siting and permitting problems, stringent environmental standards and changing fuel specifications and geopolitical factors.

APEC has been active in responding to the impacts of high oil prices, oil dependency and achieving oil security. Market impediments to oil exploration and production have been addressed, including though a study into bottlenecks in the downstream oil industry, through efforts to improve the quality of data submitted to the Joint Oil Data Initiative, through development of the Real-time Emergency Information Sharing System and through the development of best practice principles for strategic oil stockpiling.

There is scope for additional work in APEC to further reduce market impediments to oil exploration and development; facilitate investment in new and more effective utilisation of existing, downstream oil infrastructure; and to remove barriers to oil trade through greater regional harmonisation to higher quality standards.

Real-time Emergency Information Sharing System (RTEIS)

The RTEIS, developed by Japan, is a secure web-based tool to share information in the event of energy emergencies and disruptions that may have a flow-on effect to other APEC Economies. The site provides real-time communication via a chat-room, communication via a bulletin board, data sharing and up-to-date information on daily crude oil spot prices and the Joint Oil Data Initiative.

RTEIS forms part of an emergency management framework and is designed to provide APEC member economies with the tools to manage and coordinate their responses to oil supply disruptions. The purpose of the Framework is to provide a common response capability that enables all affected member economies to

minimise the impact of energy supply incidents by acting in a coordinated and united manner and to provide protection to energy infrastructure.

An Operational Manual for RTEIS, funded by Australia, was released in July 2005. The Manual acts as both a guide to using RTEIS and as an emergency management framework by listing the policies and definitions for emergency notification and escalations. Since 2005, modifications, such as improved data and communication facilities, have been made to the Manual to improve its effectiveness.

Joint Oil Data Initiative (JODI)

The JODI, launched in 2001, collects monthly oil data from over 90 participating countries through six international organisations (APEC, EUROSTAT, IEA, OLADE, OPEC, and the United Nations Statistics Division). JODI aims to assess the quantity, quality and timeliness of basic monthly oil data. The International Energy Forum Secretariat is the coordinator of this activity.

APEC's contribution to JODI is managed by the EWG's Expert Group on Energy Data and Analysis (EGEDA). The Energy Data and Modelling Center in Japan is the Coordinating Agency for EGEDA. Currently 18 APEC member economies submit monthly data.

JODI addresses data transparency, assisting in the implementation of more efficient investment decisions in the oil market and enhancing energy security. The release of the first JODI World Database occurred in late 2005. This release was a significant development for JODI as it facilitated dialogue between oil producers and consumers. JODI has played an important role in raising awareness of the difficulties in improving data reliability and timeliness. Networks have been established and data collection systems have been improved and in 2006 the JODI Manual was released to provide information on definitions of products and flows.

Transport Energy Sector

Transport energy consumption in most APEC economies has grown robustly over the last two decades. Between 1980 and 2002, APEC's transport energy consumption grew at an annual rate of nearly three per cent, which is faster than that of final energy consumption at two per cent per year. During the same period, APEC accounted for as much as 70 per cent of the world's incremental growth in transport energy consumption, driven mainly by income growth and improvement in living standards, mostly from developing economies.

CO_2 emissions from the transport energy sector have grown by three per cent per year from 1972 to 2002 to reach three billion tonnes of CO_2 in 2002, mainly due to increased vehicle ownership, air transport utilisation and increased freight transport.

Energy consumption in APEC's transport sector is dominated by road transport. In 2002 roads accounted for about 82 per cent of total transport energy consumption,

followed by air transport at 12 per cent, rail at three per cent and marine transport at two per cent.

Due to a heavy reliance on road transport and the current limited use of alternative fuels, oil products account for the largest share of total transport energy consumption – 98 per cent in 2002. By product, gasoline for passenger vehicles accounts for the highest share at 58 per cent, diesel for freight trucks at 23 percent and jet kerosene for air transport at 12 per cent.

Energy consumption in the transport sector is driven mainly by two factors. First, income growth has increased the number of vehicles and passenger travel, leading to growth in energy consumption from road and air transport. Second, economic growth has translated into increased freight transport requirements for goods and services, thereby increasing energy consumption by road, marine, rail and air.

A number of other factors also affect energy consumption in the transport sector. These include growth in the number of passenger vehicles; population growth, particularly in urban areas; regulations to promote fuel efficiency; government policies on the automobile industry; and technological developments. The energy consumption of freight transport is affected by economic growth, industry structure and regulations on the operation of the freight transport industry.

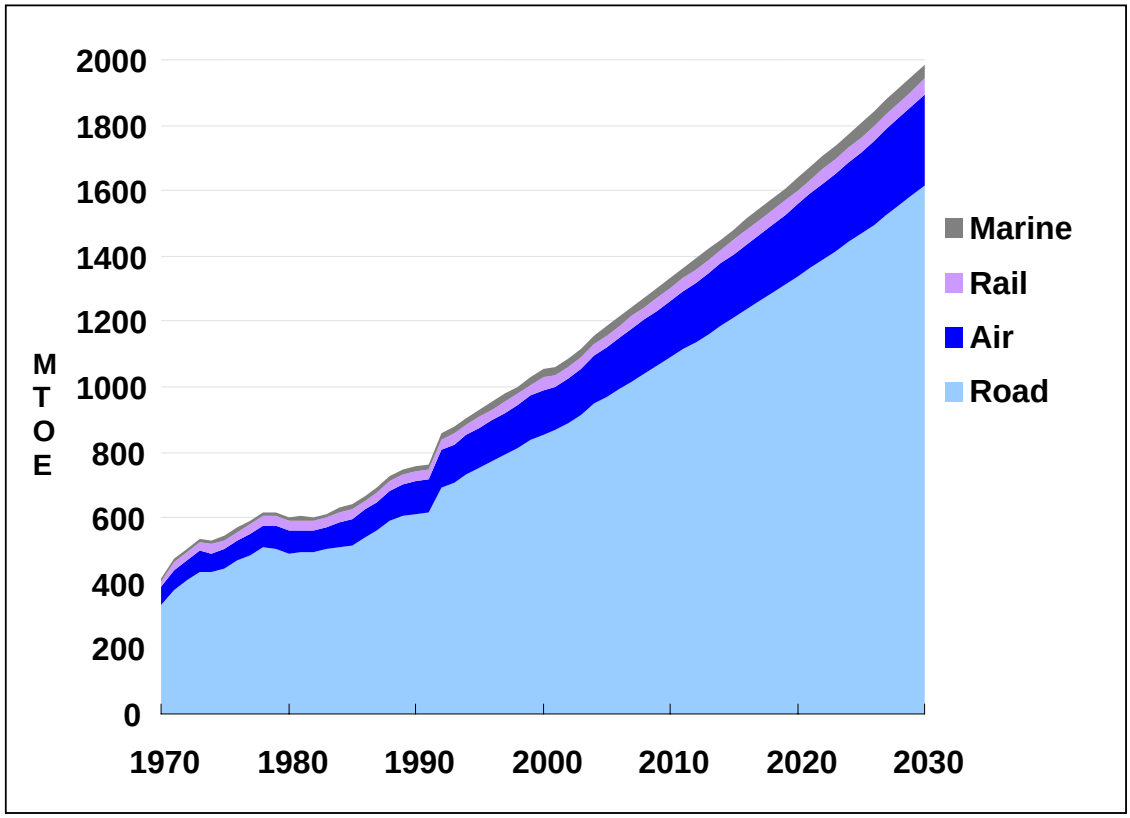
The rise in road transport energy consumption in APEC has been supported by substantial growth in passenger vehicle numbers. Between 1990 and 2002, road transport energy consumption in APEC increased 1.8 times, while the number of passenger vehicles doubled. The increase in vehicle numbers is also affected by factors such as income growth, availability of public transport, price of oil products and the cost of passenger vehicle ownership. Income growth is the key factor affecting passenger vehicle ownership, although the growth trend varies across the APEC region.

Outlook

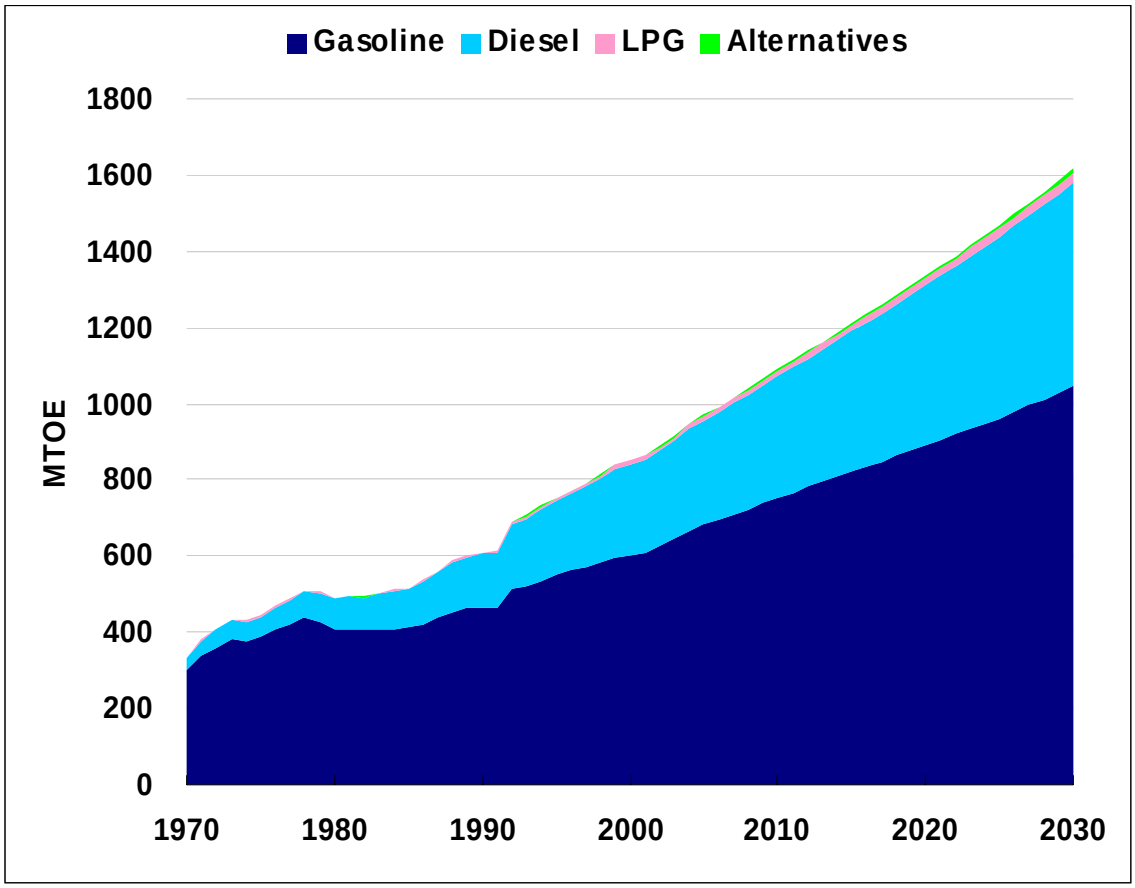
During the next three decades, APEC's transport energy demand is expected to almost double, at an annual growth rate of over two per cent. Oil products are expected to maintain the dominant share in total transport energy demand. In fact, the transport sector is expected to account for nearly 70 per cent of the incremental growth of APEC's oil demand through to 2030.

By 2030, energy demand from road transport is expected to account for around 81 per cent of total demand. Energy demand from air transportation is projected to grow at nearly three per cent – the fastest rate among all transport sub-sectors. Due to such fast growth, air transport will increase its share in the total transport energy demand from 12 per cent in 2002 to 14 per cent by 2030. Demand for marine transport energy will grow at two per cent per year, though its share in the total transport energy demand is expected to remain small at around two per cent. Rail energy demand is projected to grow at a relatively slow rate of just under one percent per year.

Transport Energy Demand in APEC (1970-2030)



Energy Demand in Road Transport by Source (1970-2030)



Source for both charts: APERC Analysis (2006)

APEC Biofuels Task Force

Biofuels could have large advantages for APEC economies in terms of both energy security and the environment, since they have the potential to diversify fuel demand away from oil and since their life-cycle of production and use can emit much less carbon than oil.

The APEC Biofuels Task Force was established under the direction of the Seventh Meeting of APEC Energy Ministers (Gyeongju, 2005) when Ministers "agreed that effective responses to high and increasingly volatile oil prices require a broad range of supply and demand-side measures including vehicle fuel efficiency and alternative transport fuels". Accordingly, Ministers directed the EWG "to develop practical measures to enhance cooperation supporting the development of alternative transport fuels, including the establishment of a Biofuels Task Force".

The main objective of the APEC Biofuels Task Force is to help APEC member economies better understand the potential for biofuels to displace oil in transport. The report and recommendations of the Task Force will be presented to Ministers in Darwin.

MEETING PAPERS

- Presentation by the President of APERC, *Achieving Oil Security, with Emphasis on the Transport Energy Sector*.
- *APEC Transport Energy: History and Outlook* – a background paper prepared by APERC.
- Report of the APEC Biofuels Task Force.