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**BACKGROUND NOTE PREPARED FOR THE
MEETING OF APEC FINANCE MINISTERS**

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Energy security and climate change

Introduction

Demand for energy is increasing due to solid global economic growth and continuing industrialisation and urbanisation, including in many APEC economies. While the increase in energy demand has been strong, the supply response has been slow, causing an increase in energy prices and volatility, and raising longer-term concerns around energy security.

At the same time, governments are considering how to respond to the potential long-term economic consequences of global warming from greenhouse gases. The Asia-Pacific region shares the dual objectives of sustaining economic growth and development while addressing the challenge of climate change in a comprehensive and time-consistent manner.

Securing reliable access to energy and addressing climate change are economic issues that require market-based solutions.

Energy outlook

Energy demand in the APEC region is anticipated to increase at the rate of 2 per cent a year to 2030, faster than the expected 1.6 per cent annual rise in world energy demand. Primary energy production in the APEC region will increase by around 1.5 per cent. For some forms of energy, such as natural gas and coal, the APEC region will move from net exporter to net importer by 2030. The APEC region is already a net importer of oil.

Physical stocks of energy are available to meet the expected increases in demand over the next 30 years but these stocks need to be developed and brought to market. The anticipated investment required within the APEC region in energy infrastructure to meet demand over the next three decades is around US\$7 trillion.

If this investment does not occur, the resulting imbalance between energy demand and supply is likely to result in higher and more volatile energy prices. To date, rising energy prices have not significantly affected the region's economic performance, which can be largely attributed to the sound medium-term macroeconomic frameworks in place in most APEC economies. Looking forward, high and volatile energy prices remain a key risk to the region.

Well-functioning markets for energy security

Securing adequate and reliable energy supplies is a key concern for all APEC economies. Well-functioning energy markets can contribute to increased energy security by providing clear incentives for investment in new supply, adopting new technologies to improve efficiency, and provide a basis for the development of energy alternatives.

To improve the operation of energy markets, governments can review regulatory frameworks to further expand competition in markets and remove barriers to investment. Improving access for domestic and foreign investors and permitting joint ventures can encourage greater investment in new supply and also promote technology transfer and improvements in efficiency.

Sound domestic legal frameworks and secure property rights promote certainty for investors and encourage investment. Currently there is a high degree of uncertainty about future government responses to climate change that may also be holding back investment in certain energy sectors.

Reductions in energy subsidies can help reduce energy consumption and improve overall energy efficiency, but need to be accompanied by well targeted support for the poor. If governments are heavily involved in energy markets, fluctuations in energy prices can also present challenges for fiscal management, both on the revenue and expenditure side.

It is also important that state-owned energy firms are managed in a way that ensures they have sufficient capital for re-investment to maintain supply in the long run, and that they operate in a manner which supports markets, for example by separating regulatory and commercial functions in SOEs and ensuring that firms have ready and equal access to finance and resources.

Deep, liquid and integrated capital markets improve access to the funds required to undertake energy investment. Strengthening spot, contract, and derivatives markets in energy also ensures that a complementary set of short-, medium- and long-term markets are available to effectively price energy products, provide predictable supply and demand, and assist in managing risk.

Policy approaches to reduce emissions

Reducing carbon emissions, while maintaining economic growth and development, is a key challenge for APEC economies. The APEC region has a combination of developing and developed economies, many of which are large energy producers and consumers. It is important that new policies are assessed comprehensively to ensure they provide a reduction in energy emissions at least cost, support economic growth and development over time, and do not have unintended adverse consequences.

Reducing carbon emissions can be achieved through subsidies, regulation or market-based mechanisms which encourage the adoption of new technology and increased energy efficiency. Most economies employ a suite of these policies.

Market-based mechanisms have the potential to deliver least-cost emissions reductions by providing incentives for firms to reduce emissions in areas where there is a minimal impact on their ongoing operations. Market-based approaches to reducing carbon emissions include carbon taxes and emissions trading schemes. In the long term, market-based mechanisms for addressing climate change will be most effective when they have broad application across multiple sectors and apply on a non-distortionary basis.

To complement market-based mechanisms, there is also a role for regulation and direct government intervention to assist in the development of low-emission technologies. In particular, regulation can

be effective where technologies are relatively standard and their environmental impacts well known. Recognising the difficulty in predicting the long-term benefits of new technologies, it is also important that government policies do not rule out any particular approaches and that the fiscal costs are carefully assessed against the likely benefits.

The role for APEC

Practical cooperation between APEC economies can assist the region to meet its dual objective of sustaining economic growth and development and addressing energy and climate change challenges. APEC could play a role in supporting the expanded use and transfer of new, more efficient energy technology. APEC could also facilitate the sharing of experience and analysis on the various approaches to clean development.