

**ENERGY FOR SUSTAINABLE DEVELOPMENT: THE CONTRIBUTION AND ROLE  
OF THE APEC ENERGY WORKING GROUP**

# **Energy for Sustainable Development**

## **The Contribution and Role of the APEC Energy Working Group**

**- A Case Study -**

# **APEC Energy Working Group**

March 2002

# 1. BACKGROUND

## (a) Introduction

At the 23<sup>rd</sup> meeting of the APEC Energy Working Group (EWG) in September 2001, members agreed that highlighting the EWG's collective contribution to energy for sustainable development could result in greater levels of international cooperation to achieve this important goal.

The EWG recognise that, to a greater or lesser degree, most issues raised by the United Nations Commission for Sustainable Development on the role of energy for sustainable development have been addressed to some degree by the EWG and are embodied within the EWG's Future Directions Strategic Plan. As such, an elaboration of the contribution and role of the EWG towards energy for sustainable development will provide a useful contribution to any considerations of multilateral cooperation taking place in the energy field in this context.

It is in the above context that this document has been prepared by the EWG.

## (b) What is Sustainable Development?

A technical definition of sustainable development found in the 1987 World Commission on Environment and Development (the Brundtland Commission) report is:

*"...development that meets the needs of the present without compromising the ability of future generations to meet their own needs."*

There are other definitions of sustainable development. However, it is understanding the essential features of sustainable development that ultimately matters. These are that the term 'development' embodies the notion of a clean, healthy environment and preferences in terms of social development, as well as the satisfaction of economic needs; and that the present generation must not, through the destruction of ecological processes essential to life, jeopardise the ability of future generations to be at least as well off as the current generation. As such, there is widespread agreement that sustainable development has three pillars – economic, social and environmental – and that policies must consider all three if economic development is to be environmentally sustainable over the long term.

## (c) The Importance of Energy for Sustainable Development

Sustainable development is a global issue and energy has been recognised as central to achieving the goals of sustainable development. Its importance is highlighted through the statistic that nearly 2 billion people, mostly living in the rural areas of developing countries, still do not have access to modern energy services.

If the goal of poverty eradication is to be achieved, the energy needs of a significant proportion of the world's population have to be urgently addressed.

However, the UN Economic and Social Council<sup>1</sup> (UN ESC) notes that: *"current patterns of fossil-energy consumption in industrialized countries together with the anticipated rapid growth in demand for energy services in developing countries may be unsustainable in the long term."*

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<sup>1</sup> Through its Ad Hoc Open-ended Intergovernmental Group of Experts on Energy and Sustainable Development.

#### **(d) The Importance of International & Regional Dialogue**

The issue of sustainable development has been on the international agenda for more than three decades. However, it is only recently that sustainable development and energy has assumed greater prominence in the international debate.

Sustainable development and energy were the subject of the 9th session of the UN Commission on Sustainable Development (April 2001). The energy issue has also been raised as part of the International Energy Agency Ministerial (IEA), the OECD Ministerial and through APEC Leaders. There is now discussion as to whether to include energy issues in the World Summit on Sustainable Development, to be held in September 2002.

The UN ESC states that: *“there remains considerable scope for achieving more effective coordination and harmonization of activities within the United Nations system.”*

The importance of tapping into current regional initiatives and dialogues to address the role of energy in sustainable development is recognised by the UN ESC through a call to bring together key leaders - including APEC, IEA, World Bank, ASEAN, OPEC and industry, etc. - to intensify international cooperation towards mobilising investments in energy for sustainable development.

Clearly there is a need and a place for APEC’s contribution to energy for sustainable development to be promoted and injected into the developing global dialogue.

#### **(e) Key Challenges**

In its presentation of the main policy challenges facing a move to a sustainable energy path, the UN ESC notes that the responsibility for such actions rests with Governments. This is principally because Governments are best placed to address policy tensions. These tensions exist where a careful balance must be sought to achieve an optimal outcome in terms of economic and social development in the face of potential negative externalities, such as the environmental consequences arising from energy production and use.

Government action is required to orient market forces towards environmentally sound solutions. However, while accepting that the basic responsibility for sustainable energy policy rests with Governments, a participatory approach involving all stakeholders is needed to facilitate progress.

The UN ESC summarises that the underlying principles guiding the approach to energy for sustainable development *“are embodied in an approach that seeks to promote the efficient production and use of energy, wider-scale use of renewable sources, and transition to the next generation of fossil fuel and nuclear energy technologies. The international community can facilitate the movement from the present energy system to a more sustainable development one by supporting capacity building, technology transfer and investments in developing countries.”*

The seven challenges identified are to:

1. Improve the accessibility of energy;
2. Improve energy efficiency;
3. Increase the use of renewable energy;
4. Introduce advanced fossil-fuel technologies;
5. Improve nuclear energy technologies;
6. Improve the rural energy situation; and
7. Improve energy efficiency and minimise emissions in transportation.

There is a high degree of communality between these challenges (and the strategies required to address them) and the work that has already been undertaken, and the Future Directions Strategic Plan of, the APEC Energy Working Group.

## **2. APEC INVOLVEMENT IN ENERGY FOR SUSTAINABLE DEVELOPMENT**

### **(f) What is APEC Doing?**

#### **(i) APEC Leadership**

The APEC Leaders' Economic Vision Statement at Blake Island, Seattle, USA in 1993 stated, "*Our environment is improved as we protect the quality of our air, water and green spaces and manage our energy resources and renewable resources to ensure sustainable growth and provide a more secure future for our people*". This statement provides the mandate for APEC's work on sustainable development.

The APEC Economic Leaders' Declaration for Action issued during the Leaders' Meeting in Osaka, Japan in 1995 reaffirmed the integration of environment and sustainable development into APEC activities. Further, the APEC Economic Leaders' Declaration in Vancouver, Canada in 1997 stated that "*Achieving sustainable development is at the heart of APEC's mandate*", and reiterated their commitment: "*... to advance sustainable development across the entire spectrum of our workplan...*" at their 1998 meeting in Kuala Lumpur, Malaysia.

#### **(ii) Encouraging Non-Government Participation**

Many APEC projects related to sustainable development demonstrate strong participation from the business/private sector, which is often involved in the preparation of proposals.

Such strategic input from business is considered crucial to ensure that project objectives are well defined and strategies appropriate to facilitate private sector investment in energy and technology transfer. For example, to facilitate business involvement, the APEC Energy Working Group has established a Business Network to provide a business perspective on energy-related issues that can be considered through the APEC process.

In addition, NGOs have been involved in the activities of the EWG. The participation of the business/private sector and the contribution of NGOs in APEC projects/activities serves to ensure that a broad range of issues are considered, and to increase awareness of opportunities to advance sustainable development.

#### **(iii) Projects/Activities**

On the instruction of APEC Ministers (1996), the APEC Secretariat annually reviews sustainable development projects/activities in APEC to monitor their development and implementation, as well as to coordinate and provide guidance to APEC fora.

These reviews show that the number, scope and significance of APEC projects/activities in sustainable development being undertaken is considerable, indicating that the issue is being addressed fairly broadly across APEC. Almost all the APEC fora have demonstrated responsiveness to sustainable development concerns, and in several cases, fora are working together to jointly implement sustainable development activities.

As sustainable development is a cross-cutting issue, implementation of initiatives are being carried out by the relevant APEC sectoral fora, including the APEC Energy Working Group.

APEC recognises that its work on sustainable development takes place against the background of developments in the global environment agenda. Developments in global fora can inform and assist APEC in its regional work on sustainable development, and vice-versa.

**(g) The APEC Energy Working Group (EWG)**

The EWG was launched in 1990. It seeks to maximise the energy sector’s contribution to the region’s economic and social well being, while mitigating the environmental effects of energy supply and use.

The efficient and reliable supply of energy and energy services to meet the needs of APEC member economies provides the focus for the EWG’s activities. The EWG contributes to decision-making through: frank and open discussion of members’ energy policies and planning priorities; sharing basic resource demand and supply outlook data and considering the regional energy policy implications, and responding to wide-reaching energy-related issues.

The business/private sector is involved in the work of the EWG through the EWG’s five Expert Groups and participates in EWG events, such as seminars, training programs and technology demonstrations. A business/private sector Ministerial dialogue has been held in conjunction with the four Energy Ministers’ Meetings held to date.

In 1998, the EWG established the EWG Business Network (EBN) as an interface between the private/business sector and the EWG. Recommendations from the EBN focus on raising the awareness of the importance of the energy sector to growth in the Asia-Pacific region, particularly in relation to initiatives and activities that strengthen dialogue, build capacity and encourage market reforms to attract business/private sector investment in energy infrastructure development.

As part of its contribution to sustainable development within APEC, the EWG has identified group objectives<sup>2</sup> to:

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| <ol style="list-style-type: none"><li>1. Strengthen the security and reliability of affordable energy to all within the APEC community;</li><li>2. Promote clean and efficient technologies, and the efficient use of energy to achieve both economic gains and environmental enhancement;</li><li>3. Achieve environmental improvement of energy production, use and mineral extraction within the APEC community; and</li><li>4. Harness all expertise available to the EWG to give effect to its sustainable development objectives</li></ol> |
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<sup>2</sup> As articulated in the EWG’s Future Directions Strategic Plan, June 2001.

To this end, the EWG promotes policy approaches and initiatives and adopts work programs with the strategic themes of:

- Fostering a common understanding on regional energy issues;
- Improving the analytical, technical, operational and policy capacity within member economies;
- Facilitating energy and minerals resource and infrastructure development in an environmentally and socially responsible manner;
- Facilitating energy efficiency and conservation;
- Facilitating improved reliability and stability in the provision of energy supply to meet demand;
- Facilitating energy technology development, exchange, application and deployment; and
- Facilitating a diverse and efficient supply mix.

There has been and will continue to be occasions when government-to-government only dialogue is appropriate to facilitate frank and open exchanges. In other circumstances, where the EWG will derive benefit through being better informed, relevant experts are invited to participate in dialogue at Energy Ministers and EWG forums

### **3. REGIONAL COOPERATION: HOW THE ENERGY WORKING GROUP ADVANCES ENERGY FOR SUSTAINABLE DEVELOPMENT**

The UN ESC identifies that due to the strong interdependencies among countries, international agreement on energy for sustainable development is essential not only for reaching a consensus on shared goals of action but also on a framework for regional and international cooperation.

The EWG provides such a multilateral forum for member economies to cooperate. The participation of government policy makers, technical experts, business and energy regulators in project and information sharing activities encapsulates the group's objectives to work cooperatively and to promote its vision through voluntary agreements, which take into account the individual circumstances of member economies.

The EWG supports and disseminates information on a range of project activities that contribute to energy for sustainable development. It also regularly reviews its structure to ensure the most efficient and effective model for maximising the energy sector's contribution to the region's economic and social well-being.

The EWG is assisted by five Expert Groups, which are able to concentrate on particular issues of importance to the EWG and can provide a more focused contribution to energy for sustainable development.

**A list of EWG projects is included at Annex A.**

#### **(h) Examples of how the EWG Contributes to Energy for Sustainable Development**

##### **Objective 1: Strengthening the security and reliability of affordable energy to all within the APEC community**

The UN ESC identifies that: *“access to energy is crucial to economic and social development, and alleviation of poverty. Improving accessibility of energy implies finding ways and means by which energy services can be delivered reliably, affordably and in an environmentally sound and*

*socially acceptable manner... ...furthermore, accessibility of energy is conditioned by security of supply and demand as well as by market stability, all of which need to be addressed in terms of their regional and international dimensions...”*

One of the more important options/strategies to improve the accessibility of energy is to support the electrification of rural areas through power grid extensions and interconnections between economies.

This issue was considered by the EWG through an Asia-Pacific Energy Research Centre (APEREC) study on the current status and future potential of power interconnection in the APEC region. In its report, APEREC acknowledges that strategic cooperation among APEC member economies in the energy sector can provide a vast potential of common benefits for a secure and efficient electricity supply. Large, interconnected systems offer more opportunities for environmentally favourable energy resources for power generation to be developed and provide opportunities to support greater regional development.

This issue is being further progressed through an APEC funded study to identify and address the barriers to the interconnection of power grids in APEC member economies. Recognising that there are a large number of opportunities for the interconnection of grids, especially in Asia (of which some could utilise potentially considerable hydro resources) the study aims to tackle the reality that there are wide differences amongst member economies in their political systems, stages of economic development, industry structures and legal and regulatory frameworks.

The study will identify the most commonly encountered barriers to interconnection in the broad categories of: political, policy and people issues; technical and economic issues; structural and regulatory issues; the absence of treaty safeguards; legal barriers, and financing issues. For each barrier, recommendations are to be provided for overcoming these barriers and accelerating the rate of investment in essential energy infrastructure, with a view to enhancing sustainable development, while maintaining power system integrity and preserving national sovereignty.

The study recognises the differing needs and circumstances of member economies and will disseminate its results through targeted workshops to facilitate discussion between EWG members.

## **Objective 2: Promoting clean and efficient technologies, and the efficient use of energy to achieve both economic gains and environmental enhancement**

Improving energy conversion and end-use efficiency can lead to a reduction of the energy consumption per unit product or activity and provides a compelling basis for policy initiatives and actions. Cleaner and efficient technologies also contribute to greater environmental and social well-being. However, one of the main challenges to the uptake of such technologies is that the current functioning of markets does not lead economic actors to choose energy efficient products and services and institutional barriers discourage energy institutions from promoting such technologies.

The EWG’s work on Environmentally Sound Energy Infrastructure in APEC has studied policies to facilitate the transfer and uptake of efficient and clean technologies.

The objective of this work is to identify and describe good policy practices that encourage the transfer and uptake of efficient and clean energy technologies. Emphasis is placed on identifying barriers in APEC member economies, and identifying good practices that facilitate technology transfer and uptake.

The study identifies and elaborates upon a series of policies that support the transfer and uptake of efficient and clean energy technologies, including:

1. Information and awareness policy - through improving technical and market information, building human capacity and enhancing public understanding of energy for sustainable development issues;
2. Research and development policy – by pursuing publicly funded R&D, considering R&D coordination, providing demonstration programs and recognising the importance of intellectual property rights;
3. Trade liberalisation and facilitation – through evaluating the effects of tariffs on technology transfer and the effects of non-tariff trade practices;
4. Energy sector policy – by evaluating the effects of energy sector subsidies on efficient and clean energy technologies, and the ability to access power markets;
5. Environmental policy – through establishing appropriate environmental laws and standards, environmental approvals processes, market-based instruments, and monitoring and enforcement activities in a manner that does not unduly burden business;
6. Tax policy – by considering how tax policy is applied to R&D, to technology investments, and to technology operation; and
7. Investment and revenue stimulation – through encouraging private sector financing, net metering, green marketing and procurement.

The study advances energy for sustainable development by recommending that APEC economies assess their national policies to consider whether they are enablers or barriers to the uptake of efficient and clean energy technologies against a checklist. It recommends that the EWG is well-placed to take a leading role in supporting the transfer and uptake of efficient and clean technologies.

The study on Environmentally Sound Energy Infrastructure in APEC further documents good policy practices in the energy sector, recognising that the projected growth in energy consumption in the APEC region represents a significant challenge to meeting environmental and investment goals.

It notes that achieving environmental and investment objectives will require ongoing efforts from government and business to implement good practices that are rooted in the principles of:

- Transparency – where environmental requirements are clearly defined;
- Predictability – to minimise risk associated with changing environmental standards;
- Consistency – standards, penalties and requirements must have a ‘level playing field’;
- Efficiency – where opportunities for improving energy efficiency must be fully exploited;
- Cost-effectiveness – arising from environmental requirements being as flexible as possible.

A range of sound policy principles and practices are identified. It is recognised that not all are appropriate for all APEC economies, but they provide options from which member economies can select, based on their particular circumstances. These are: environmental impact assessment; environmental and performance standards; market based instruments; monitoring and enforcement; financial and taxation policies and informative programs.

### **Objective 3: Achieving environmental improvement of energy production, use and mineral extraction within the APEC community**

The EWG's Expert Group on Minerals and Energy Exploration and Development runs a sub-group on Environmental Cooperation. The first Environmental Cooperation Workshop (ECOW) for Sustainable Development on Mining Activities was held in 1997.

The objective of this workshop was to develop and introduce environment policies, environmental standards and mine pollution prevention techniques in individual economies and to discuss the best methods for mutual cooperation between economies in this field.

This workshop confirmed that the sustainable development of mining activities is a principal concern in the APEC region and mature mining economies in the region should be encouraged to assist developing economies wishing to achieve best-practice mining sector development.

The ECOW has currently met four times. These workshops encourage APEC cooperation in the sustainable development of mining activities and it remains important that member economies exchange ideas and opinions through continued interactions.

Areas of focus for workshops have included: (a) the promotion of information exchanges on environmental problems relating to mining; and (b) further discussion on member economies' environmental guidelines and/or environmental action plans.

In order to prevent potential environmental problems from occurring due to the exploration and development of mineral resources, and to tackle existing mine pollution problems at mines and refineries in the APEC region, the ECOW Virtual Center has been established to provide effective institutional and technological information to promote the resolution of these and other environmental issues.

### **Objective 4: Harnessing all expertise available to the EWG to give effect to its sustainable development objectives**

The EWG and its Expert Groups are primarily a forum for information sharing. This is crucial to the agenda for energy for sustainable development, as countries cannot act in isolation. The EWG is conscious of the need to utilise its resident expertise cooperatively to this end.

#### **(i) EWG Expert Groups & APERC**

Technical cooperation, both of a technology and economic nature largely takes place through the Expert Groups established by the EWG, the Asia-Pacific Energy Research Centre (APERC)99 and ad-hoc task forces, which may be established by the EWG to deal with specific time-limited issues.

The five Expert Groups, including one sub-group, are all positioned to provide the relevant expertise that enables the EWG's considerations on energy for sustainable development to be targeted, researched and subject to expert scrutiny. The five Expert Groups are:

- Clean Fossil Energy;
- Energy Efficiency & Conservation;
- Energy Data & Analysis (including APERC);
- New & Renewable Energy Technologies

- Minerals and Energy Exploration & Development (with a sub-group on Environmental Cooperation).

Project proposals are developed by the Expert Groups and/or by member economy delegates of the EWG and are subject to agreement by the EWG. Both the EWG and the Expert Groups are better informed in the development and implementation of projects by the involvement of business and regulator representatives where appropriate. The results of projects are made available to the region (and outside) through maximising use of the Internet, through symposiums, workshops and presentations to EWG meetings and the EBN.

The primary objective of APERC is to foster member economies' understanding of future energy supply and demand trends and associated energy policy implications, which in turn improve the quality of available energy information and, therefore, the efficiency of the operation of regional energy markets. In addition APERC contributes to stronger energy research capabilities in the region and establishes a network among energy researchers and specialists in the APEC zone. APERC is guided by the EWG through the Expert Group on Energy Data and Analysis.

### **(ii) The Implementation Facilitation Assistance Team Program**

The Implementation Facilitation Assistance Team (IFAT) Program is a mechanism developed by the EWG to assist APEC member economies implement agreed energy initiatives, including power and gas sector reforms. At the invitation of a member economy government, the EWG harnesses a team of energy experts to visit the host economy, share their experiences, and provide advice on options and approaches to implementing energy market reform.

Member economies can draw on the know-how of the IFAT members to learn from their experiences, with advice provided in an open manner, which is non-prescriptive, but can quickly cut to the central issues that the host economy is trying to resolve.

Endorsed by Energy Ministers, the IFAT concept was championed by the EBN and was pioneered in 1999 when the Royal Thai Government invited a team to discuss natural gas reforms. Due to its success, a follow-up visit was held in 2000.

Through information sharing, it is expected that the IFAT process will provide the catalyst for genuine and sustainable market reforms in the power and natural gas sectors in Thailand.

In March 2002, the Philippines Government hosted an IFAT that focused on the topics of: gas industry structure; gas pricing; gas industry regulation; gas industry incentives, and cross-border issues associated with infrastructure development.

A Minister from one other APEC member economies has indicated that it will also invite an IFAT team to instruct them on energy market reforms.

### **(iii) EWG Policy Dialogues**

The EWG conducts policy dialogues at its meetings. Often these are held at a government-to-government level, with no record of the discussion, to facilitate frank and open exchanges. In other circumstances where the EWG will benefit through being better informed, business, regulator and other stakeholder representatives are invited to participate in dialogue in EWG forums.

#### **4. FURTHER INFORMATION**

Further information on APEC, the EWG, and the EWG's projects may be obtained from:

1. The APEC Secretariat Internet site: <http://www.apecsec.org.sg>
2. The APEC Energy Working Group Internet site: <http://www.apecenergy.org.au>