



Asia-Pacific  
Economic Cooperation

*EWG Expert Group on Energy Efficiency & Conservation (EGEE&C)*

## **Application of Energy Indicators in APEC Economies**

### **Final Report to APEC Expert Group on Energy Efficiency & Conservation (EGEE&C 32)**

Hong Kong  
30 July 2007

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#### **Background**

At Auckland in March 2006, EGEE&C28 supported a proposal for developing APEC economies' ability to develop their own energy indicators with the objective of reporting on energy efficiency indicators for the APEC region. The project proposal built on previous EGEE&C led conferences (Manila 2003 and Moscow 2006) where the need to progress APEC economies' ability to understand the characteristics of their energy use and energy efficiency were emphasised.

The key features of the project are:

- It acknowledges the need for cooperation with the IEA, APERC and APEC economies to advance this area,
- It proposes a capacity building workshop as a key tool to advancing APEC economies' ability to undertake energy indicators data management and analysis,
- It targets to publication of a report<sup>1</sup> on energy indicators.

The project responds strongly to APEC EMM8 declaration, EWG objectives, and the G8's objectives on energy efficiency, and has been approved by EWG.

#### **Project Activities**

Two self-funded meetings were held: Tokyo (27-28 October 2006 sponsored by APERC), assessed the data and technical support needs for APEC economies in developing this work; and Canberra (EGEE&C 29 sponsored by IEEJ) assessed the policy needs from the indicators project. These were reported to EGEE&C 30 Beijing 2007.

#### **Training Workshop Singapore September 2007**

Singapore from 18-21 September 2007: It was jointly organised by the Asia-Pacific Economic Cooperation - Energy Working Group (APEC EWG) and the Institute of Energy Economics of Japan (IEEJ) with assistance from the International Energy Agency (IEA) and New Zealand as the overseer for this project.

The Workshop focused on identifying, conceptualizing and, finally, putting into operation "lead indicators" that will highlight problems, and identify options to improve the situation. The mechanics of developing detailed end-use data and closer collaboration among APEC economies was also discussed.

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The workshop focused on the approaches, methodologies, the "how to" develop the tools and applications of energy indicators. Its format was a more formal training approach. It provided participating economies with steps to define an approach to organize the efforts to address the data challenges to support the development of energy indicators.

Data being the essential foundation to indicator development and analysis, attendees were guided through the issues around data gathering and survey activities, the benefits of using a solid and detailed energy balance as a starting point toward energy indicators, drilling down into the details of managing and the information.

Participants were also guided through different conceptual and methodological issues/approaches to defining energy efficiency, setting targets and measuring them through a suite of energy indicators including Divisia decomposition. The workshop incorporated a significant portion of hands-on training at producing examples of indicators for setting and measuring energy efficiency progress. A list of 12 basic indicators suitable for developing economies with only basic energy and population data has been developed.

Workshop proceedings are at: [http://www.iea.org/textbase/work/workshopdetail.asp?WS\\_ID=340](http://www.iea.org/textbase/work/workshopdetail.asp?WS_ID=340)

### **Presentation of Indicators Project Report to EWG 35**

Following the workshop, data provided during the project was collated by IEEJ, and working with Staff from EECA New Zealand, a report outlining the results of the Singapore workshop and key energy indicators was prepared.

The executive summary of this report - which presents the key findings from the Singapore workshop and an overview of energy indicators of APEC economies - is appended, along with the key recommendations from the workshop. EWG accepted the report and discussed the need for ongoing work to monitor progress to Energy Ministers objectives for reducing energy intensity. The full report is available on the EGEE&C website.

**Economies are encouraged to review the report and apply the recommendations and techniques.**

### **Future work**

There was a real willingness for experienced APEC economies to support developing economies with data gathering, database establishment and indicator analysis. Developing economies are encouraged to ask EWG secretariat for assistance using the IFAT process.

### **Some Concluding Remarks on Cooperation.**

The cooperation evolving around this project is particularly important. In particular, EGEDA applied its expertise and support to the project; the IEA made significant resource available to developing and supporting the workshops; APERC sponsored the Tokyo workshop; and the Institute of Energy Economics Japan (IEEJ) sponsored and assisted with the development the Canberra workshop. The support from EWG for the project and the cooperative approach between agencies has been critical to enabling this useful early work on the project and is very much appreciated.

Robert Tromop, Project Overseer – Application of Energy Indicator Analysis in APEC Economies

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## Appendix 1

### Executive Summary from report to APEC Energy Working Group (EWG), summarising the work and findings of EWG Project; EWG 03/07 'Application of Energy Indicators in APEC Economies'

#### Energy in APEC at a glance

APEC economies have a vast range of development paths, energy intensities, resource endowments, structures, and efficiencies. In particular they:

- Grew energy demand faster: +34% APEC cf +25% non-APEC (1990 to 2005)
- Consumed 58% of the worlds energy, produced 60% of GDP and CO<sub>2</sub> emissions yet include only 41% of the worlds population
- 4 out of the 21 APEC economies are becoming more self-sufficient, 13 economies increased their reliance on imported energy over the past decade.
- APEC average Energy–GDP (PPP) intensity is about 0.2 toe/USD<sub>2000PPP</sub>. Intensities range from 0.1 to 0.5 toe/USD<sub>2000PPP</sub> highlighting variety of economic structure across APEC
- 14 APEC economies improved energy intensity. APEC's rate of improvement over the past 5 years is marginally better than the rest of the world's.
- Significant end-use data gaps limit efficiency indicator analysis across APEC.

#### Sound Information is Indispensable for Sound Policy Making

- Both basic and specific policy-relevant indicators are critical to planning and monitoring any energy saving policies or programmes. Robust indicators are essential tools to addressing the rapidly increasing challenges of economic and social development, energy security and the global impacts of climate change.

#### APEC EWG is asked to recommend that economies:

- develop processes to monitor and understand their energy use trends and the policy implications of their own development and global changes
- pay special attention to the development of energy data statisticians and analysts
- identify energy data gaps and invest in improved energy data gathering and analysis
- offer their experts to assist developing economies to establish indicators systems that meet their needs
- develop energy efficiency and conservation strategies and supporting energy end-use data collection and energy indicators systems
- continue to support the coordinating agency of the EGEDA to liaise with and assist APEC economies with energy data, maintain consistent datasets and liaise with other international energy statistics groups
- use the newly adopted APEC energy data template to ensure consistency

#### A vision for the next steps

APEC, G8 Members and OECD cooperatively develop both the annual reporting of data and the development of effective energy and energy efficiency indicators. Integrate APEC, Eurostat, and IEA initiatives into common global platforms. The Joint Oil Data Initiative, JODI, has already set an example - we are more resilient when we work together to address global challenges.

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## Appendix 2.

### **Recommendations from report to APEC Energy Working Group (EWG), summarising the work and findings of EWG Project; EWG 03/07 'Application of Energy Indicators in APEC Economies**

***Recommend that all economies develop processes to monitor and understand their energy use trends and the policy implications of their own development and global changes***

If energy policy is imperative to an economy, then the data and indicators to understand and develop sound policies and programmes are just as important.

***Recommend that economies pay special attention to the development of energy data statisticians and analysts***

All economies felt they need to build up data gathering and analytical expertise. There are big gaps globally in the pools of experts and analysts and some economies have very little expertise to undertake data gathering and energy analysis tasks. In other economies there is an over-reliance on senior experts without skilled successors. It is thus a priority to nurture junior analysts to achieve a high level of expertise in energy analysis over time. These problems are faced by developed as well as developing economies. Training for statisticians is important to ensuring data-gathering ability and data quality. Note that this project is the only current APEC-funded workshop and event internationally in this area of energy analysis.

***Recommend that economies identify energy data gaps and invest in improved energy data gathering and analysis***

Many economies face significant data gaps. It will take time and investment to fill these gaps. Improved management of data and analysis is required. The newly adopted APEC energy data template (based in IEA data questionnaire) is a critical tool for ensuring data quality and identifying data gaps.

***Encourage developed economies to offer their experts to assist developing economies to establish indicators systems that meet their needs***

A basic, agreed set of priority indicators for developing economies needs to be developed. EWG should prioritise assisting expert groups to assist those data-poor economies to complete their basic indicators. There is great potential to improve the current situation in developing economies. Additional, similar workshops will help but greater collaboration between economies is essential. Economies have a strong desire to improve through:

- Training workshops
- Closer guidance from APEC and other international experts
- Voluntary assistance with data analysis

***Recommend that economies develop energy efficiency and conservation strategies and supporting energy end-use data collection and energy indicators systems***

Energy efficiency and conservation are just as important as energy supply options, thus each economy should have an energy efficiency and conservation strategy with supporting demand side energy data and research plans.

Energy efficiency and conservation indicators are important tools for any economy to understand the opportunities, priorities and progress in energy policy.

***Recommend economies actively support and cooperate with the coordinating agency of the EGEDA***

Continue to support the coordinating agency of the EGEDA to liaise with and assist APEC economies with energy data, maintain consistent datasets and liaise with other international energy statistics groups.

***Endorse the use of the newly adopted APEC energy data template by APEC economies***

The energy data template has been accepted by workshop participants and expert groups as the standard for maintaining energy data consistency within economies and across APEC.

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