

# Chapter 2

## Data and Methodology

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## **2. DATA AND METHODOLOGY**

### **2.1. Cases Examined**

The study examined two cases, a Business-As-Usual (BAU) case reflecting each country's current goals and action plans, and an Alternative Policy Scenario (APS), including additional goals and action plans currently under consideration. One might be tempted to call the APS a 'maximum effort' case, however, that would not be accurate. One reason is that goals and action plans for reducing energy consumption are still relatively new in most countries. There are still many potential EEC policies that have not been examined.

While all of the EAS countries are actively developing and implementing EEC goals and action plans, progress so far varies widely. Some countries are quite advanced in their efforts, while others are just getting started. Some countries are currently unable to quantify their goals. But even in the countries that do have quantifiable goals and action plans, they may be limited only to the sectors or types of initiatives that the country has been able to address so far. On the other hand, a few countries already have significant energy savings goals and action plans built into the BAU case.

In every country, there is still a great deal to be learned from experience about what works and does not work. It will probably be worthwhile to repeat this study periodically, as the quality and scope of the national goals and action plans is likely to improve considerably over time.

## **2.2. The Definition of Energy Savings Potential and Its Limitations**

There are many definitions of energy saving potential, including ‘technical potential’ (what might be possible with current technology) and ‘economic potential’ (what might be economic with current technology). However, the outputs of this study do not match any standard definition.

Perhaps the best way around the difficulties in defining ‘energy saving potential’ is to recognise that a definition is not really necessary. Despite the name given to the Working Group, this study is not really focused on measuring ‘energy saving potential’ in the abstract. Instead, the focus is on analysing additional energy savings that might be achieved through the goals and action plans of individual countries, above and beyond BAU. The additional savings may be measured as the difference between the BAU and APS cases.

## **2.3. Data**

For consistency, the historical energy data used in the analysis came from the International Energy Agency’s (IEA) energy balances for OECD and non-OECD countries<sup>8</sup> except those of the Lao PDR which came from its Department of Energy and Mines. (The 2007 edition of the IEA energy balances does not include Lao PDR.) The socio-economic data were obtained from the World Development Indicator CD-ROM 2007 published by the World Bank<sup>9</sup>. Other data such as those on transportation,

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<sup>8</sup> IEA (2007) *Energy Balances of OECD Countries 2007 and Energy Balances of Non-OECD Countries 2007*. Paris.

<sup>9</sup> World Bank (2007) *World Development Indicator CD-ROM 2007*. Washington DC.

buildings, and industrial production indices were provided by the WG members from each EAS country, where these data are available. Where official data were not available, estimates were obtained from other sources or developed by IEEJ.

## **2.4. Methodology**

An econometric approach was used in forecasting, which means that future demand and supply will be heavily influenced by historical trends. The IEEJ model used for this analysis has a macro-economic module that calculates values for various explanatory variables based on exogenously specified GDP growth rates. The macro-economic module also projects prices for natural gas and coal based on exogenously specified oil price assumptions.

Demand equations are econometrically calculated in another module using the historical data while future values are projected using the explanatory variables from the macro-economic module. However, the supply of energy and new technologies is treated exogenously. For electricity generation, the WG members were asked to specify assumptions about the future electricity generation mix in their respective countries by energy source. These assumptions were used to determine the future electricity generation mix.