

Philippine Energy Balance Table: Update and Standards

The Philippine Energy Balance Table (EBT) is an energy accounting table prepared by the Department of Energy (DOE). In the preparation of the EBT, the DOE uses barrels of fuel oil equivalent (BFOE) as unit-of-equivalence. The BFOE was adopted in the early 70s when the primary fuel for electricity generation was fuel oil¹. This enabled local energy policy analysts to quantify the country's energy requirements in terms of fuel oil. However, significant developments have evolved in the energy sector that the use of BFOE in energy accounting is now rendered impractical. To date, many economies and energy policy analysts adopt TOE as energy accounting unit considering that oil² has become their primary fuel. Thus, for ease of analysis and in consonance with existing international standards, the use of ton-of-oil-equivalent (TOE) as energy accounting unit is introduced in this 2006 PEP Update.

Relative to the change in accounting unit is the adoption of statistical standards in energy accounting particularly for geothermal energy. The standards that the DOE applied in the Philippine EBT is generally in accord with the statistical standards on energy accounting recommended by the Statistical Office of the International Economic and Social Affairs of the United Nations which was published in 1982 in "*Concepts and Methods in Energy Statistics, with Special Reference to Energy Accounts and Balances: A Technical Report*". The only difference is the thermal efficiency used in accounting for primary electricity by geothermal.

The International Energy Agency (IEA) indicated that "unless the actual efficiency of the geothermal process is known, the quantity of geothermal energy entering electricity generation is inferred from the electricity production at geothermal plants assuming an average thermal efficiency of 10 percent"³. This method is consistent with the UN recommendation in the abovementioned technical report.

Likewise, the data on biomass consumption of the residential sector was updated using the results of 2004 Household Energy Consumption Survey (HECS). The HECS was conducted in October 2004 in order to validate trends and patterns of energy consumption of the residential sector. Prior to this, a similar survey was conducted in 1995 which served as basis for projecting future energy consumption of the residential sector particularly for biomass.

In coming-up with the final energy demand forecasts, the EPPB applied the bottom-up approach. The bottom-up approach is a significant development in the demand forecasting exercise where demand for each fuel of an energy end-use sector was estimated initially at the regional level using econometric models and planning tools such as Simple-E from the International Energy Economics Japan (IEEJ) and Long-range Energy Alternatives Planning System (LEAP) by the Stockholm Environment Institute, Boston. The estimated demand figures were summed up to get the projections for the country's ten-year energy consumption. Energy end-use sectors cover the transport, residential, industrial, commercial and agricultural sectors.

¹ a secondary form of crude oil (obtained through distillation and refining) used mostly for power generation

² a mixture of hydrocarbons usually existing in the liquid state in natural underground pools or reservoir

³ www.iea.org