Brief Introduction

Energy Balance Sheet is prepared on the basis of the OECD Energy Statistical Tabular Form and in coordination with the needs of our country. The columns of the Energy Balance Sheet show various kinds of energy at the primary and secondary levels. The rows show the energy supply, the energy transformation, and the final consumption of the individual sector of economic activities. The whole image of energy flow can be described by each matrix item of inputs and outputs, thereby leading to the balance of supply and demand in each row and column.

Ⅰ. The rows of the Energy Balance Sheet consist of three main parts--energy requirement, energy transformation and final energy consumption.

ROW 1, Indigenous Production: This only refers to the domestic production of the primary energy. Overseas production of primary energy by domestic energy business should not be included in "Indigenous Production"。

ROW 2, Imports: This indicates the primary and secondary energy imported from abroad. While IEA/OECD considered it indigenous, nuclear power was classified into Imports in this Energy Balance Sheet.

ROW 3, Exports: This indicates the primary and secondary energy exported to abroad.

ROW 4, International Marine Bunkers: Quantities of fuel supplied to sea-going ships whatever their flags and category (this row included since the 1994 edition of Energy Balances).

ROW 5, Change in Stocks: This indicates the fluctuation in stocks of the primary and secondary energy. Theoretically stock changes reflect the difference between the opening stock levels on the first day of the year and closing levels on the last day of the same year，they are in practice the balances to make equality between supply and demand for each column.

Thus, Row 6, Total Energy Requirement is the total sum of indigenous production, plus imports, minus exports, international marine bunkers, and change in stocks i.e., ROW 6=ROW 1+ROW 2−ROW 3−ROW 4−ROW 5.

Energy Transformation shows the inputs and outputs in the process of energy transformation of various energy commodities.

ROW 7, Transformation Input: This represents the primary and secondary energy transformed into other types of the secondary energy, such as coals transformed into cokes, coal and fuel oil transformed into electricity etc.

ROW 14, Transformation Output: This indicates the domestic production of the

secondary energy.

ROW 15, Loss & Not Accounted: This refers to the loss in the process of transformation and distribution and the statistical differences in the process of calculation.

ROW 16, Final Energy Consumption: This represents the final consumption of each economic activity sector.

ROW 16, equals to total energy requirement minus energy transformation input, plus energy transformation output, and minus the loss and the unaccounted i.e., ROW 16=ROW 6−ROW 7+Row 14−ROW 15. Moreover, final energy consumption can be divided into energy use (that is, energy for the fuel use in each economic activity sector and for petrochemical feedstocks of chemical materials industry) and non-energy use, i.e., ROW 16=ROW 17+ROW 80.

ROW 17, Energy Use: This consists of seven main sectors, i.e., energy sector, transportation sector, industrial sector, agricultural sector, residential sector, commercial sector and other sectors, i.e., ROW 17=ROW 18+ROW 25+ROW 30+ROW 66 +ROW 69+ROW 70+ROW 71.

The scope of each sector is shown as follows:

ROW 18, Energy Sector: This indicates the quantity of own-use in each energy industry; for example, the own-use or station service of coal mining, oil & gas mining, coal products, oil refineries, power supply and gas supply. The own use of energy sector, however, was excluded from final consumption in IEA/OECD energy statistics.

ROW 25, Transportation Sector: This includes all the energy consumption in aviation, road, railway, and internal navigation (excluding international marine bunkers). Aviation includes domestic air and international civil aviation。

ROW 30, Industrial Sector: This includes mining (except coal mining，oil and gas mining) and manufacturing industries (except coal products, oil refineries)。

ROW 66, Agricultural Sector: This includes agriculture, forestry, fishery and livestock.

ROW 69, Residential Sector: This indicates the energy consumption of households (of non-commercials).

ROW 70, Commercial Sector: This includes the energy consumption of the wholesale and retail trade of all commodities, foreign trade, eating and drinking places.

ROW 71, Other Sectors: This includes water supply, construction, transportation, services, storage, communication, finance and insurance, public service and others.

Ⅱ. The columns of Energy Balance Sheet indicate the primary and secondary energy of various energy commodities, including four main parts, i.e. coal, petroleum, natural gas and electricity.

1. Coal (from Column 1 to Column 10)
   Column 1 (Coal & Coal Products)
   =Col.2(Coal)+Col.7(Coke)+Col.8(Coke Oven Gas)+Col.9(Patent Fuel)+ Col.10(Blast Furnace Gas)
   Column 2(Coal)=Col.3(Indigenous Coal)+Col.4(Imported Coal)
   Column 4 (Imported Coal)
   =Col.5(Imported Coking Coal)+Col.6(Imported Steam Coal)

Imported anthracite included in Coking Coal. It is assumed that for anthracite the consumption equaled to the import and was shown as the " non-energy use " in the column of "Imported Coking Coal ".

2. Petroleum (from Column 11 to Column 31)
   Column 11 (Crude Oil & Petroleum Products)
   =Col.12(Crude Oil)+Col.13(Liquid Oil)+Col.14(Refinery Gas)+ Col.15(LPG)+ Col.17(Natural Gasoline)+Col.18(Aviation Gasoline)+ Col.19(Motor Gasoline) +Col.21(Jet Fuel)+Col.22(Kerosene)+Col.23 (Diesel Oil)+Col.24(Fuel Oil) +Col.25(Lubricants)+Col.26(Asphalts)+Col.27(Solvents)+Col.28(Naphtha) +Col.29(Petroleum Coke)+Col.30 (Olefins)+Col.31(Aromatics)+Col.32(Other Petroleum Products).
   Column 16 (Propane Air, PA): Consumption of PA is included in Col.15(LPG), this column is for reference only.
   Column 20 (Unleaded Gasoline): Consumption of Unleaded Gasoline is included in Col.19 (Motor Gasoline), this column is for reference only.
   Column 29 (Petroleum Coke): Please refer to Explanation under the Balance Sheet.
3. Liquefied Natural Gas (LNG) (Column 33) and Natural Gas (Column34)
4. Electricity (from Column 35 to Column 40)
   Column 38 (Total Electricity by Power Company)=Col.35(Hydro Power)+ Col.36(Nuclear Power)+Col.37(Thermal Power). Hydro Power consists both conventional generation and production from pumped storage plants. Thermal power includes Taipower and IPPs.
   Column 40 (Total Electricity)=Col.38 (Total Electricity by Power Company)+ Col.39 (Cogeneration)

簡 要 說 明

能源平衡表，係參照 OECD 能源統計表格式，並配合我國之需要而編製。表格之縱行（Column）爲初級與次級的各項能源，橫列（Row）放置能源供應、轉變及最終消費之各經濟活動部門。能源整體之流程可於各行列間之投入與產出量中顯示，從而獲得各行列之供給與需要的平衡。

I. 能源平衡表之橫列（Row）包括三個主要部分——能源總需要、能源轉變及最終能源消費。

Row 1，自產：僅指初級能源之國內生產量。能源供應事業在國外所生產之能源，如石油公司於國外礦區油井所生產之原油，雖屬該事業所生產而爲其所有，但因產地非在國境內，故不計入「自產」。

Row 2，進口：自國外進口的初、次級能源。核能發電於本平衡表中列入進口能源，但 OECD 統計將核能發電列入自產能源。

Row 3，出口：輸往國外的初、次級能源。

Row 4，國際航運：指售予國際線輪船及漁船之燃料，不論其船籍爲何（本橫列自 83 年能源平衡表增列）。

Row 5，存貨變動：初、次級能源理論上之存貨增減量。於本平衡表中，存貨變動並非該項能源產品於各該期間之實際存貨變動量，亦即非由該項能源產品期末存貨減期初存貨所得，而係爲維持各縱行能源產品供需平衡所需之差額調整項。

Row 6，能源總需要：Row 6＝Row 1＋Row 2－Row 3－Row 4－Row 5。

能源轉變表示各項能源在轉變過程中之投入與產出量，同時包括在轉變過程中之損耗量。

Row 7，轉變投入：初、次級能源轉變爲其他型態的次級能源，例如煤炭轉變爲焦炭，煤炭及燃料油轉變爲火力發電等等。

Row 14，轉變產出：係指次級能源的國內產量。

Row 15，損耗及誤差：在能源轉變、輸配及使用過程之損失量及統計上的差異量。

Row 16，最終消費，係指各經濟活動部門的能源消費。本（Row 16）欄是國內能源總需要減能源轉變投入量加上能源轉變產出量，再扣除其在轉變等過程中的損失量。即 Row 16＝Row 6－Row 7＋Row 14－Row 15。

在最終能源消費方面，可分爲能源消費（即各經濟活動部門將能源作爲燃料使用及化學材料業將能源作爲石化進料用）與非能源消費，即 Row 16＝Row 17＋Row 80。

Row 17，能源消費：包括能源部門、運輸部門、工業部門、農業部門、住宅部門、商業部門及其他部門等七大部門，即 Row 17＝Row 18＋Row 25＋Row 30＋Row 66＋Row 69＋Row 70＋Row 71。各部門所包括範圍如下：

Row 18，能源部門：是指各能源工業之自用量，如煤礦業、煤製品業、油氣礦業、油氣煉製業、電力供應業及氣體燃料供應業之自用或廠用量。惟 OECD 能源統計中能源部門自用不屬最終消費。

Row 25，運輸部門：包括航空、公路、鐵路及水運（不含國際航運）之能源消費量。航空運

輸包括國內航空及國際航空。

Row 30，工業部門：包括礦業（油氣礦、煤礦除外）及製造業（煤製品業、油氣煉製業除外）。

Row 66，農業部門：包括農、林、漁、牧業。

Row 69，住宅部門：指家庭（非營業性質）能源消費。

Row 70，商業部門：凡從事商品之批發、零售、國際貿易及飲食經營等行業之能源消費量。

Row 71，其他部門：包括自來水供應業、營造業、運輸服務業、倉儲業、通信業、金融保險業、公共行政業及其他行業。

II. 能源平衡表之縱行（Column）爲各項初、次級能源，包括煤、石油、天然氣及電力四大部份。

1.煤（Column 1－Column 10）

Column 1（煤及煤產品）＝Col.2（煤炭）＋Col.7（焦炭）＋Col.8（煤氣）＋ Col.9（煤球）＋Col.10（高爐氣）

Column 2（煤炭）＝Col.3（自產煤）＋Col.4（進口煤）

Column 4（進口煤）＝Col.5（進口原料煤）＋Col.6（進口燃料煤）

進口無煙煤包含於進口原料煤，其消費量假設等同其進口量而置於進口原料煤之「非能源消費」。

2.石油（Column 11－Column 31）

Column 11（原油及石油產品）＝Col.12（原油）＋Col.13（液化油）＋Col.14（煉油氣）＋Col.15（液化石油氣）＋Col.17（天然汽油）＋Col.18（航空汽油）＋Col.19(車用汽油)＋Col.21(航空燃油)＋Col.22（煤油）＋Col.23(柴油）＋Col.24(燃料油）＋Col.25(潤滑油）＋Col.26（柏油）＋Col.27（溶劑油）＋Col.28（石油腦）＋Col.29(石油焦）＋Col.30(烯烴類）＋Col.31(芳香烴類）＋Col.32（其他石油產品）

Column 16（丙烷混合氣）：消費量已含於 Col.15（液化石油氣）中，本行數量僅供參考。

Column 20（無鉛汽油）：消費量已含於 Col.19（車用汽油）中，本行數量僅供參考。

Column 29（石油焦）：請參見能源平衡表下說明。

3.液化天然氣（Column 33）及天然氣（Column 34）

4.電力（Column 35－Column 40）

Column 38（電力公司）＝Col.35（水力發電）＋Col.36（核能發電）＋Col.37（火力發電），水力發電包含慣常及抽蓄發電，火力發電包括台電及民營電廠。

Column 40（電力合計）＝Col.38（發電廠電力）＋Col.39（汽電共生廠電力）