**能源統計年報（平衡表）編製說明**

一、本年報編印目的，在提供我國能源基本統計資料。

二、本年報歷年統計資料如有修正，以最新出版年報所載數字為準。

三、因四捨五入關係，細項和與總項不盡相等。

四、資料欄位中，「-」表該數值為零或無法取得，「0.0」表該數值過小無法顯示。

五、能源平衡表之縱行(Column)為各項初、次級能源，包括煤及煤產品、原油及石油產品、天然氣、生質能及廢棄物、電力、太陽熱能及熱能七大部分，以及合計項，理論上各行應維持供需平衡。

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| **1. 煤及煤產品**  Column 1（煤及煤產品） |
| ＝Col.2（煙煤-煉焦煤）＋Col.3（煙煤-燃料煤）＋Col.4（無煙煤）＋Col.5（亞煙煤）＋Col.6（褐煤）＋Col.7（泥煤）＋Col.8（焦炭）＋Col.9（煤球）＋ Col.10（焦爐氣）＋Col.11（高爐氣）＋Col.12（轉爐氣） |
| (1) 舊格式能源平衡表中，煤炭分自產煤、進口原料煤及進口燃料煤 3種。  自產煤自民國43至58年有出口資料，但自90年起因省煤停產已無生產量資料。  55年起有外煤進口做燃料用，62年起有外煤進口做煉焦用，但合稱進口煤至69年，自70年起始區分為進口原料煤及進口燃料煤。  煤球則自64年起無生產、使用。  新格式能源平衡表中，煤炭改依品級分成煙煤-煉焦煤、煙煤-燃料煤、無煙煤、亞煙煤、褐煤、泥煤六種。  煤產品中，除焦炭、煤球、高爐氣不變外，原煤氣更名焦爐氣，另新增轉爐氣一種。褐煤及泥煤則係預留欄位備用。  (2) 舊格式能源平衡表中，自產煤其用途有做煉焦原料用及做燃料用，故按兩者使用比例，將自產煤之生產量細分為新格式中「煙煤-煉焦煤」，及「煙煤-燃料煤」兩者之自產量。  (3) 中鋼公司進口煤炭種類複雜，以前僅按用途粗分為進口原料煤與進口燃料煤，後中鋼自89年起進口無煙煤及亞煙煤。現配合新格式，將強冶金煤歸入「煙煤-煉焦煤」，無煙煤係與焦炭屑相互替代用於燒結場、亞煙煤用於動力場發電等，即各歸入無煙煤及亞煙煤，其餘弱冶金煤、高低揮發噴煤皆歸入「煙煤-燃料煤」。  另由於資料無法追溯，早期中鋼焦爐氣、高爐氣及轉爐氣做為汽電共生燃料之數量，係估計值。  (4) 台電公司原僅進口「煙煤-燃料煤」，後因環保考量，自84年開始進口亞煙煤。兩者在進口時可區分，但運送至儲煤場儲存及發煤至燃煤火力發電廠燃燒時，早期並無法區分，故依兩者進口比例推估各自之使用量及存量，自105年6月起已依實績值計量。  (5) 其餘煤炭大用戶基本上僅進口及使用「煙煤-燃料煤」。  (6) 「煙煤-煉焦煤\轉變投入\_煉焦工場/煤製品業」，自43起為焦炭業者之生產投入〈僅至80年〉，自66年起並含中鋼之煉焦工場投入；「煙煤-燃料煤\轉變投入\_煉焦工場/煤製品業」，自43至63年為煤球業之生產投入。  (7) 自93年起，中鋼焦炭投入高爐數量資料為實際數字，92年〈含〉以前係以焦炭使用量之0.8673做為投入高爐數量之估計值而歸入能源轉變投入，以0.0007為損耗估計值，其餘為焦炭屑供燒結場使用而歸入鋼鐵業能源消費。  (8) 煤氣原為焦炭業者之副產品〈僅至80年〉，但自66年起亦含中鋼焦爐氣資料；高爐氣資料可溯至72年；轉爐氣資料可溯至74年。  (9) 中鋼發電用焦爐氣、高爐氣及轉爐氣之消費量，自81年起係實績值，80年〈含〉以前係估計值。 |
| **2. 原油及石油產品**  Column 13（原油及石油產品） |
| ＝Col.14（原油）＋Col.15（煉油廠進料）＋Col.16（添加劑/含氧化合物）＋Col.17（煉油氣）＋Col.18（液化石油氣）＋Col.20（天然汽油）＋Col.21（石油腦）＋Col.22（車用汽油）＋Col. 24（航空汽油）＋Col.25（航空燃油-汽油型）＋Col.26（航空燃油-煤油型）＋Col.27（煤油）＋Col.28（柴油）＋Col.29（燃料油）＋Col.30（白精油）＋Col. 31（潤滑油）＋Col.32（柏油）＋Col.33（溶劑油）＋Col.34（石蠟）＋Col.35（石油焦）＋Col.36（其他石油產品） |
| (1) Column 19（丙烷混合氣）：消費量已含於Col.18（液化石油氣）中，本行數量僅供參考。  (2) Column 23（無鉛汽油）：相關供給、消費量已含於Col.22（車用汽油）中，本行數量僅供參考，且自89年起所有車用汽油皆為無鉛。  (3) 新格式中航空燃油細分為汽油型及煤油型兩種。因早年原始資料僅有航空燃油一項，自94年2月起始有汽油型及煤油型資料，故此前除進出口外，其餘細項數字係推估值。  (4) 中油公司潤滑油部分由中油提供燃料油予中殼公司煉製潤滑油及基礎油後回售中油，其副產品亦大部分送回中油。由於中殼資料僅能追溯至83年且副產品未能細分，加以雙方相關名詞定義範圍前後不一，故潤滑油及其他石油產品部分資料係推估而得。  (5) 石油產品中，煉油廠進料、添加劑、白精油、石蠟四種係新增項目，僅白精油〈相當於乾洗油及環保乾洗油〉自94年起有資料，其餘供需數據尚不完整。  (6) 石油腦性質屬中間產品，其用途主要是做輕油裂解工場進料以生產乙烯等烯烴類，及做重組汽油。  由於能源供應業對石油腦定義前後有異，故民國87年〈含〉以前石油腦轉變產出數字偏低。  (7) 石油產品之產品間轉換，係表達各該油品之重製或加工再處理之量，其中石油腦是指轉變為重組汽油之量；柴油是指轉變為液化石油氣、其他柴油，及其他石油產品（FCC製程）；燃料油是轉變為液化石油氣、車用汽油、柴油、其他石油產品（ROC、RFCC製程）；添加劑為全加入車用汽油。  (8) 輕油裂解工場進料除石油腦外，尚有液化石油氣及製氣油（gas oil，屬柴油）等，且煉油及石化製程複雜有回流情況，故石化原料用之石油腦及液化石油氣數量主要係估計值，不確定性較大。  (9) 化學材料製造業各石油產品消費量不確定性較小，但其下之小分類及細分類行業之石油產品消費量不確定性較大。 |
| **3. 天然氣**  Column 37（天然氣）  ＝Col.38（自產天然氣）＋Col.39（進口液化天然氣） |
| (1) 就來源區分，天然氣有自產天然氣及進口液化天然氣兩種，液化天然氣自民國79年起進口；在銷售端則有天然氣(1)與天然氣(2)，其單位毛熱值(gross heating value)各為8,900千卡/立方公尺及9,900千卡/立方公尺。  由於自產天然氣礦脈枯竭，故天然氣(1)有一大部分係由進口液化天然氣在還原氣化時，將其與部分熱值較低之自產天然氣掺配混合，以符天然氣(1)熱值標準，其數量顯示於「自產天然氣\產品間轉換(轉入)」。  (2) 由於進口液化天然氣數量漸較自產天然氣為多，且液化天然氣在未還原氣化前之數量多以重量單位公噸表示，故依兩者單位熱值，將自產天然氣換算為進口液化天然氣數量再加總，求得以公噸表示之天然氣合計數量。  (3) 進口液化天然氣以公噸表示之數量，自95年起為中油實際進口公噸數量，此前則為由公秉換算之公噸數。  (4) 由於OECD/IEA平衡表是以各能源產品淨熱值(net heating value)換算為公噸油當量，爰自99年出版平衡表依中油公司實測數據，將自產天然氣及進口液化天然氣熱值，分別改為8,000千卡/立方公尺及9,000千卡/立方公尺〈皆為淨熱值〉，並以此做為換算基礎。 |
| **4. 生質能及廢棄物**  Column 40（生質能及廢棄物）  ＝Col.41（生質能）＋Col.45（廢棄物）  Column 41（生質能）  ＝Col.42（固態生質能）＋Col.43（液態生質能）＋Col.44（氣態生質能） |
| (1) 固態生質能包含用於汽電共生之蔗渣、黑液、稻殼、污泥及濾餅。  (2) 液態生質能包含生質柴油、生質酒精及生質燃料油。  (3) 氣態生質能為垃圾掩埋場及畜牧場所產生之沼氣，主要用於汽電共生。  (4) 廢棄物包含用於汽電共生之城鎮廢棄物及工業廢棄物。 |
| **5. 電力** |
| (1) 107年能源平衡表改版，將Col.46（核能）、Col.47（水力）、Col.48（地熱）、Col.49（太陽光電）、Col.50（風力）等初級能源獨立列示，Col.51（電力）僅記錄各類發電型態轉變產出（毛發電量）與消費量；其單位熱值由「邊際替代法（依單位發電能源投入推算）」，調整為「物理熱值法（依電力物理熱值860千卡/度估算）」  (2) 由於台電公司售電資料僅提供至小分類行業，故基本化學材料製造業下無基本化學工業、石油化工原料製造業及肥料製造業等3項細分類行業用電資料。  (3) 因台電行業別售電量資料，自87年起分類較細，故86年（含）以前服務業部門中批發及零售業、住宿及餐飲業、金融保險及不動產業、工商服務業、社會服務及個人服務業5行業之電力消費量，係按87、88、89年3年各月平均各業占比推估後，加總得全年資料。  (4) 由於台電營業用表燈售電量係售予小型營業場所之電量，無法區分其所屬行業，暫全歸入「服務業部門\其他」。 |
| **6. 太陽熱能**  (1) Col.52（太陽熱能）為依太陽能熱水器裝置面積大小推估之發熱量，數據可追溯至76年。  (2) 因「再生能源熱利用獎勵補助辦法」於107年停止本島太陽能熱水系統產品設置補助，108年起改依調查資料進行推估，惟考量太陽熱能已不符統計重要性原則，自111年起停編。 |
| **7. 熱能**  Col.53（熱能）係公用汽電共生廠所生產、銷售，及自用汽電共生廠所銷售之蒸汽量，數據可追溯至90年。 |

六、能源平衡表之橫列(Row)包括三個主要流向\_供給面、轉變面與消費面（含能源部門自用及最終消費）。

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| **1. 供給面**  Row1（自產） |
| (1) 僅指初級能源之國內生產量，所謂初級能源是指未經轉化或轉變處理之能源，如煤炭、原油、天然氣、生質能及廢棄物、慣常水力、地熱、太陽光電及風力等。  (2) 能源供應事業在國外所生產之能源，如石油公司投資於國外礦區油井所生產並按比例分享之原油，雖屬該事業所有，但因產地非在國境內，故不計入自產。  Row2（進口）  (1) 指自國外進口的初級、次級能源。  (2) OECD/IEA統計將核能發電視為準自產能源(quasi indigenous production)而列入「自產」。我國則因核能發電所需核燃料全自國外進口，與進口原油、煤炭等相同，故仍將核能發電列入進口能源，此為跨國比較各國進口或海外能源依存度時須特別注意之處。  (3) 潤滑油、柏油、溶劑油、石油焦等非屬石油管理法規範之油品，自78年起為海關進口資料，此前則為石油公司資料。至於石油管理法規範之原油及七種油品，則為確保一致性，皆為石油公司進口資料。  Row3（出口）  (1) 指輸往國外的初、次級能源。  (2) 潤滑油、柏油、溶劑油、石油焦等非屬石油管理法規範之油品，自78年起為海關出口資料，此前則為石油公司出口資料。至於石油管理法規範之原油及七種油品，則為確保一致性，皆為石油公司出口資料。  Row4（國際海運）  (1) 指在本國港口售予駛往境外船舶之燃料，而不論其船籍為何國（本橫列數字自83年表增列）。  (2) 國際海運(bunker)與出口(cargo)不同。  Row5（國際航空）  飛往境外機場之民航機在本國機場所添加之燃料。  Row6（存貨變動）  (1) 為初、次級能源於每年底之存貨增減量，等於（期末存量－期初存量）。  (2) 煙煤-煉焦煤、煙煤-燃料煤、無煙煤、亞煙煤、焦炭、原油、煉油廠進料、液化石油氣、石油腦、車用汽油、航空燃油、煤油、柴油、燃料油及液化天然氣等之存貨變動，基本上是實際之存貨變動量；其餘能源之存貨變動並非該項能源產品於各該年底之實際存貨變動量，而係為維持各縱行能源產品供需平衡所需之差額調整項。  (3) 早期台電煤炭在使用及儲存時不易區分煙煤與亞煙煤，需依兩者進口比例，分別推估台電煙煤與亞煙煤之使用量及存量，因此煙煤-燃料煤與亞煙煤兩項能源產品個別之存貨變動與統計差異，不確定性較大；但如將兩者合併，其統計差異即可縮小；自105年6月起已依實績值計量。  Row7（初級能源總供給）  (1) Row7＝Row1＋Row2－Row3－Row4－Row5－Row6。  (2) 本列舊稱能源總需要(Total Energy Requirement)，現參照OECD/IEA改稱初級能源總供給(TPES, Total Primary Energy Supply)，日本能源統計則稱其為國內初級能源供給(DPES, Domestic Primary Energy Supply)。 |
| **2. 轉變面**  Row8（產品間轉換(轉出)）  (1) 此列陳示油品間相互轉換之關係，為該油品轉出為其他油品之量。液化天然氣則指投入氣化產生天然氣(2)，以及氣化後用於摻配為天然氣(1)之數量。  (2) 理論上油品合計之產品間轉換(轉出)應等於第21列之產品間轉換(轉入)，惟因油品之轉出與轉入量部分為推估值，故其和不為0。  Row10（轉變投入）  (1) 為投入初、次級能源以轉變為其他型態次級能源之數量，例如煉焦煤轉變為焦炭之投入量，原油轉變為石油產品之投入量，燃料煤及燃料油轉變為火力發電之投入量等。  (2) 舊格式能源平衡表中之「煉焦煤氣」及「煤球」，經參考OECD/IEA分類，改為煉焦工場及高爐工場。  (3) 發電廠及汽電共生廠細分為公用及自用，公用是以售電為主要業務，自用是以自產自用為主，售電為輔。  (4) 鋼鐵業高爐所用之高爐噴煤(PCI Coal)，原認定為高爐燃料而列入能源部門自用，99年出版平衡表參照OECD/IEA分類，歸入「轉變投入\高爐工場」並追溯調整。  (5) 自用汽電共生廠之燃料投入，是依先熱後電法推估，由各該自用汽電共生廠燃料總投入量扣減有效熱能產出反推所需燃料投入，再攤入不同燃料，經各廠加總後置於該燃料「轉變投入」下，並自各該自用汽電共生廠所屬行業之能源消費中扣減，故不確定性較大。  (6) 抽水用電歸入能源部門自用。  Row20（轉變產出）  (1) 為由初、次級能源轉變來之次級能源量，例如由煉焦煤投入煉焦爐而轉變成之焦炭，原油經煉製產生之石油產品，與由煤炭、石油、天然氣等化石燃料(fossil fuel)產生之火力發電，或汽電共生。  (2) 對我國煉油廠整體效率之推估，如參考亞太經濟合作(APEC)共同石油倡議(Joint Oil Data Initiative, JODI)計算方式，可先由Col.13「原油及石油產品合計」之「轉變產出」加上「產品間轉換」，再除以Col.14「原油」之「轉變投入\煉油廠」而得，理論上愈接近100％表示效率愈高、損耗愈少。但因煉油製程複雜，且煉油廠係以容量（公秉）而非重量（公噸）提供資料，故有時誤差較大。  (3) 「水力\轉變產出」，為台電抽蓄水力毛發電量。  (4) 「電力\轉變產出」為各能源別毛發電量之總和。  Row21（產品間轉換(轉入)）  (1) 此列陳示油品間相互轉換之關係，為其他油品轉換為該油品之量。  (2) 自產天然氣係指以進口液化天然氣摻配而成之天然氣(1)數量，液化天然氣則指氣化後完成摻配之天然氣(2)數量。 |
| **3. 消費面**  【配合能源平衡表行業別修訂，自107年起適用。】  Row22（能源部門自用）  (1) 是指各能源供應業如煤礦業、煉焦工場、高爐工場、油氣礦業、煉油廠、電力供應業、抽水用電、汽電共生廠及氣體燃料供應業之自用或廠用量。  (2) 由於國內煉油廠（即石油製品製造業）亦延伸經營石化基本原料業且廠區交錯，故能源部門自用中煉油廠相關數據，亦包含部分原應歸屬工業部門中基本化學材料製造業者。  Row33（最終消費）= Row34（能源消費）+ Row102（非能源消費）  (1) 最終消費，指能源部門以外之最終消費者(end users)所使用之能源，包括工業部門、運輸部門、農業部門、服務業部門及住宅部門五部門之能源使用，以及非能源使用。  (2) 工業部門能源消費中包含石油腦及液化石油氣做石化原料用之估計量，但OECD/IEA自2007年起出版之能源平衡表，將石化原料用之石油產品納入非能源使用(Non-Energy Use)。  (3) 由於資料特性、編製目的與使用需求不同，在將能源統計與國民所得統計或工業生產等資料配合使用時，須注意其部門與行業分類及意涵之異同。  Row34（能源消費）  包括工業部門、運輸部門、農業部門、服務業部門及住宅部門之能源使用，即Row 34＝Row 35＋Row 73＋Row 80＋Row 83＋Row 101。  Row35（工業部門）  (1) 包括礦業（煤礦業、油氣礦業除外）、製造業（煉焦工場、高爐工場、煉油廠除外）、用水供應業及污染整治業、營造業。  (2) 由於廠商轉型、跨行業多角化經營、集團採購等因素，工業大用戶所屬行業歸類不確定性較大，對工業部門下之行業別能源消費需謹慎使用。  (3) 由於缺乏完整之細項油品資料，化學材料製造業下小分類及細分類行業之能源消費資料不完整，細項資料僅供參考。  Row73（運輸部門）  (1) 包括國內航空、公路、鐵路、管線運輸及國內水運（不含國際海運）之能源消費量，其分類較舊格式為細。OECD/IEA於2009年出版之「Energy Balances」中，已將國際航空移置於「國際海運」與「存貨變動」間，視為「初級能源供給」之減項，而不再屬於最終源消費中之「運輸部門」。  (2) 基本上各種運輸之能源消費，係使用於運輸工具之能源，如鐵路運輸之電力消費量，僅為軌道用電，至航空、公路、鐵路及水運之場站用電，歸入服務業部門之運輸服務業。  (3) 公路運輸之能源消費，為自用與營業用汽、機車於公民營加油站所添加之油料。  Row80（農業部門）  包括農牧林業及漁業，其分類與舊格式相同。  Row83（服務業部門）  包括批發零售、運輸倉儲、住宿餐飲、出版影音及資通訊、金融保險、不動產、專業科學及技術服務、支援服務、公共行政及國防、教育、醫療保健及社會工作服務、藝術娛樂及休閒業等。  Row101（住宅部門）  指家庭（非營業性質）能源消費，其分類與舊格式無異。  Row102（非能源消費）  (1) 指作為原材料使用而非以產生熱能或動能或為目的之能源產品。例如，無煙煤可做電石粉成為工業觸媒；焦炭可供鑄造業用；潤滑油可供車輛、機器潤滑用等；柏油可供鋪路及防水用；溶劑油可供去漬、乾洗、染整用；石油焦可提高鋼液碳含量、做二氧化鈦原料及乾電池碳精棒等用；其他石油產品包含正烷烴進料油、硫磺、氫、碳煙進料油等，多非供燃燒用，故亦歸入非能源消費。OECD/IEA則於2009年出版之統計中，將「石化原料用」自「工業部門」移置「非能源消費」。  (2) 由於海關進出口資料與本局直接蒐集廠商進出口資料，在產品歸類與記錄時間等存有差異，非能源消費數量之不確定性較大。又因細項資料缺乏，目前暫將所有非能源消費資料歸入「工業、轉變及能源部門」。  (3) 石油化工原料製造業下之「石化原料用」，係指生產石化基本原料如烯烴類及芳香烴類所投入之石油腦、液化石油氣(LPG)等，屬輕油裂解場等之原料投入而非燃料。 |
| **4.獨立項**  Row9（統計差異）  (1) 當存貨變動為實際數量時，統計差異公式為: R9=R7-R8-R10+R19-R22-R32-R33；當存貨變動為調整項時，本項為0而不予顯示。換言之，如煤炭、石油產品有統計差異數值，則可判定該項能源產品之存貨變動係實際變動量，而非使該項能源產品供需平衡之誤差調整量。  (2) 由統計差異數值為正負號及相對大小，可大致衡量平衡表對該能源產品供需資料掌握之完整性與精確度。  Row32（損耗）  (1) 在焦炭，為鋼鐵業儲存損失。  (2) 在焦爐氣、高爐氣及轉爐氣，為鋼鐵業排放量。  (3) 在「電力」為電力供應業線路損失量；43至89年是由電力公司年線路損失率推算，自90年起為實際線路損失量。 |
| **5.備註項**  Row1（發電量）  (1) 陳示所有發電廠（含台電公司及民營電廠）與汽電共生廠各種燃料別之毛發電量。  (2) 由於部分汽電共生廠非單一燃料，其毛發電量按投入燃料熱值比，推估細分為相關燃料別之發電量。  Row6（熱能）  陳示所有公用汽電共生廠蒸汽毛生產量及自用、銷售量，以及自用汽電共生廠蒸汽銷售量。 |

**Introductory Notes**

1. The purpose of the Taiwan Energy Statistics Year Book is to provide the basic energy statistical data of Taiwan, R.O.C.
2. Users are advised to refer to the latest edition of this Year Book owing to the probable revisions on historical figures.
3. The totals might not be equal to the summations of separate items due to rounding.
4. In the Table, “-” stands for the figure being zero or not available, and “0.0” indicates the figure is too tiny to be addressed.
5. The columns of Energy Balances indicate the primary and secondary energy of various energy commodities, including 7 main categories, i.e. Coal and Coal Products, Crude Oil and Petroleum Products, Natural Gas, Biomass and Waste, Electricity, Solar Thermal, and Heat.

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| **1. Coal and Coal Products** |
| Col.1 (Coal & Coal Products)  ＝Col.2 (Bituminous Coal-Coking Coal)＋Col.3 (Bituminous Coal-Steam Coal)+ Col.4 (Anthracite)＋Col.5 (Sub-bituminous Coal)＋Col.6 (Lignite)＋Col.7 (Peat)＋Col.8 (Coke Oven Coke)＋Col.9 (Patent Fuel)＋Col.10 (Coke Oven Gas)＋Col.11 (Blast Furnace Gas)＋Col.12 (Oxygen Steel Furnace Gas) |
| (1) In previous format, coal was divided into indigenous coal, imported coking coal, and imported steam coal. The new format displays 6 categories of coal as illustrated, though some data are not available yet. Oxygen steel furnace gas is a new energy in new format.  (2) The production of indigenous coal in previous Energy Balances is split into production of bituminous coal-coking coal and bituminous coal-steam coal, respectively, according to the ratio of coking and fuel use.  (3) The coal imports of steel industry, which was classified into imported coking coal and imported steam coal in previous format, is re-categorized into coking coal, steam coal, anthracite, and sub-bituminous coal according to the quality of coal.  (4) Volumes of coke oven gas, blast furnace gas, and oxygen steel furnace gas for cogeneration in the steel industry are estimates for early years due to lack of reliable data. |
| **2. Crude Oil and Petroleum Products**  Col.13 (Crude Oil & Petroleum Products) |
| ＝Col.14 (Crude Oil)＋Col.15 (Refinery Feedstocks)＋Col.16 (Additives/Oxygenates)＋Col.17 (Refinery Gas)＋Col.18 (LPG)＋Col.20 (Natural Gasoline)＋Col.21 (Naphtha)＋Col.22 (Motor Gasoline)＋Col.24 (Aviation Gasoline)＋Col.25 (Jet Fuel-Gasoline Type)＋Col.26 (Jet Fuel-Kerosene Type)＋Col.27 (Kerosene)＋Col.28 (Diesel Oil)＋Col.29 (Fuel Oil)＋Col.30 (White Spirits)＋Col.31 (Lubricants)＋Col.32 (Asphalts)＋Col.33 (Solvents)＋Col.34 (Paraffin Waxes)＋Col.35 (Petroleum Coke)＋Col.36 (Other Petroleum Products) |
| (1) Col.19 (Propane Air, PA): Consumption of PA is included in Col.18 (LPG). This column is for reference only.  (2) Col.23 (Unleaded Gasoline): Consumption of unleaded gasoline is included in Col.22 (Motor Gasoline) and is intended for reference only.  (3) Columns of refinery feedstocks, additives/oxygenates, white spirits, and paraffin waxes, are new columns in new format and need to be improved in terms of completeness and accuracy.  (4) The definition of naphtha varied in previous years. It might mean intermediate products or final products. It indicates final products in recent years.  (5) The jet fuel is split into gasoline type and kerosene type; columns of olefins and aromatics, which are the basic petrochemical materials rather than energy products, are removed and are not shown in the new format anymore.  (6) Some of the figures of the lubricants and other petroleum products are estimates due to different definitions by different companies.  (7) Inter-product transfer of oil products is the quantity for reprocessing or transfer. Hence, that of naphtha is the amount for reformate gasoline: that of diesel oil is the amount transferred to LPG, and other gas oil (FCC); that of fuel oil is for LPG, gasoline, diesel oil, and others (ROC, RFCC). |
| **3. Natural Gas**  Col.37 (Natural Gas Total)  = Col.38 (Indigenous Natural Gas) + Col.39 (Imported LNG) |
| (1) Natural gas has two origins: Indigenous natural gas and imported LNG with heating values 8,000 Kcal/cubic meter and 9,000 kcal/cubic meters (net heating value), respectively; they are dubbed NG (1) and NG (2) at retail side. A significant portion of NG (1) is the re-gasified part of the LNG with the heating value reduced to 8,000 kcal/cubic meter as the indigenous natural gas, and is shown as the transfers (output) of (indigenous) natural gas.  (2) Since LNG outnumbers the indigenous natural gas year by year, the summation of indigenous natural gas and imported LNG is measured in metric ton with indigenous natural gas converted from volume to weight by its heat content equivalent to the imported LNG. |
| **4. Biomass and Waste**  Col.40 (Biomass and Waste)  ＝Col.41 (Biomass)＋Col.45 (Waste)  Col.41 (Biomass)  ＝Col.42 (Solid Biomass)＋Col.43 (Liquid Biomass)＋Col.44 (Biogas) |
| (1) Solid biomass includes bagasse, black liquor, and rice husks, which are used as fuel in CHP plants.  (2) Liquid biomass includes biodiesel, bioethanol, and bio-fuel oil.  (3) Biogas is formed by the digestion of landfilled and sewage waste, and used as fuel in CHP plants.  (4) Waste includes municipal solid waste and industrial waste, which are used as fuel in CHP plants. |
| **5. Electricity** |
| (1) In the latest revision, the calorific value of electricity adopted the physical energy content method (860 kcal/kWh) instead of partial substitution method.  (2) The primary electricity, including nuclear, hydro, geothermal, solar PV and wind, are presented independently. The column of electricity only records transformation output of electricity generation and its consumption. |
| **6. Solar Thermal**  (1) Col.52 (Solar Thermal) is the estimated energy from the installed capacity of solar heat collectors for domestic hot water or swimming pools.  (2) The solar water heater survey has been conducted to estimate solar heat generation since 2018 due to the phase out of subsidy for solar water heating systems, however, considering that solar heat no longer meets the principle of statistical significance, its compilation has been discontinued since 2022. |
| **7. Heat**  Col.53 (Heat) shows the flow of heat produced by public cogeneration plants and that produced and sold by auto-producer cogeneration plants. |

1. The rows of the Energy Balances are composed of three major parts, i.e. Supply side, Transformation side and Consumption side (including energy sector own use and total final consumption).

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| **1. Supply side**  Row1 (Indigenous Production) |
| (1) This only refers to the domestic production of the primary energy.  (2) The primary energy refers to the energy that has not been put to any conversion or transformation process, e.g. crude oil, natural gas, biomass and waste, hydro, geothermal, solar and wind power.  (3) Overseas production of primary energy such as crude oil by domestic energy enterprises should not be included in Indigenous Production.  Row2 (Imports)  (1) This indicates the primary and secondary energy imported from abroad.  (2) Though the OECD/IEA considers nuclear power quasi-indigenous and therefore classifies it into indigenous production, nuclear power is deemed imports in this Balances.  (3) While the summation of indigenous production and imports is titled Total Energy Supply in other publications of this Bureau, it is dubbed Total Primary Energy Supply (TPES) in Japanese energy statistics. The OECD/IEA has not named the summation of indigenous production and imports.  Row3 (Exports)  This indicates the primary and secondary energy shipped to abroad.  Row4 (International Marine Bunkers)  This reflects quantities of fuel supplied to sea-going ships at the domestic harbors for destination port in foreign countries whatever their flags and category. The international marine bunkers are different from exports.  Row5 (International Civil Aviation)  This reflects quantities of fuel supplied for international civil aviation.  Row6 (Change in Stocks)  (1) This by definition indicates the fluctuation in stocks of the primary and secondary energy between ends of two consecutive years.  (2) The stock changes for bituminous coal-coking coal, bituminous coal-steam coal, anthracite, sub-bituminous coal, coke, crude oil, refinery feedstocks, liquefied petroleum gas (LPG), naphtha, motor gasoline, jet fuel, kerosene, diesel oil, and fuel oil, and liquefied natural gas (LNG) are basically the actual changes in stocks in recent years. For other energy products, the change in stocks is in fact the residual to balance supply and demand of that energy, as was in previous format.  (3) Since the bituminous coal and sub-bituminous coal could not be split at the stages of storage and combustion for power industry before June 2016, they are estimates according to the ratio of imports, but are reported number thereafter. Thus, uncertainty exists in change in stocks and statistical differences for these two coals. However, the statistical difference shrinks when these two coals combined.  Row7 (Total Primary Energy Supply, TPES)  As in OECD/IEA energy statistics and equivalent to Domestic Primary Energy Supply (DPES) in Japanese energy statistics, TPES is derived by the formula: Row7＝Row1＋Row2－Row3－Row4－Row5－Row6. |
| **2. Transformation side**  Row8 (Transfers(Input))  (1) This refers to the inter-product transfer among the petroleum products. The figures reflect quantities transferred to other oil products. As for LNG, the figure reflects the quantity of LNG re-gasified to produce NG (2), and the re-gasified LNG used to produce NG (1).  (2) Due to the complexity of the refining and petrochemical processes, and the lack of complete and accurate data as a result, some figures in this row are estimates.  Row10 (Transformation Input)  (1) This row represents the primary and secondary energy transformed into other types of the secondary energy, such as coals transformed into cokes, coal and fuel oil into thermal power etc.  (2) The row “Coke and Gas” in the previous format is divided into “Coke Ovens” and “Blast Furnaces”.  (3) Power generation and cogeneration are detailed into public and auto-producers. While public producers refer to the electricity plants and cogeneration plants generating for sale as main business, the auto-producers are plants generating basically for own use.  (4) The PCI coal used in the blast furnaces, which was considered as fuel and categorized into Energy Sector Own Use in 2006 to 2008 editions, is reclassified into Transformation Input starting 2009 edition.  (5) Fuels for auto-cogeneration producers are derived by subtracting the input equivalent of the useful heat from total fuel input.  (6) Electricity to pump up is classified into the “Energy Sector Own Use.”  Row20 (Transformation Output)  (1) This indicates the domestic production of the secondary energy, such as the coke transformed from coking coal in coke ovens.  (2) The efficiency of refinery is roughly obtained as the ratio of Transformation Output plus the Transfer of the Column “Crude Oil and Petroleum Products” to the Transformation Input of “Crude Oil”. Theoretically, the closer to 100% the ratio, the higher the refinery efficiency.  (3) The transformation output of the hydro power is the pumped storage power generation.  (4) The transformation output of the electricity is the gross power generation.  Row21 (Transfers(Output))  (1) This refers to the inter-product transfer among the petroleum products. The figures reflect quantities transferred into this oil product from other oil products.  (2) As for (domestic) natural gas, the figure reflects the quantity of NG (1) transferred from re-gasified LNG. As for imported LNG, the figure reflects the quantity NG (2) transferred from re-gasified LNG. |
| **3. Consumption side**  【In line with the 11th industrial classification of the Directorate General of Budget, Accounting and Statistics (DGBAS) of Executive Yuan, the classification applied in Energy Balance have been revised from 2018 to present.】  Row22 (Energy Sector Own Use)  (1) This indicates the quantity of own-use in each energy transformation unit or energy industry, for example, the own use or station service of coal mining, coke ovens, blast furnaces, oil & gas mining, oil refineries, electricity plants, electricity to pump up, and gas supply industry.  (2) Since refining companies in Taiwan also operate naphtha cracking plants, energy data of petroleum refineries contains data which should have been classified into petrochemical materials in the industrial sector.  Row33 (Total Final Consumption, TFC)  (1) This row is the sum of energy consumption and non-energy use, that is Row 33 = Row 34 + Row 102. The energy consumption is the summation of five final consuming sectors, namely industrial, transportation, agricultural, service, and residential sectors.  (2) The non-energy use is the quantity for use other than energy purpose.  (3) The estimated naphtha and LPG for petrochemical feedstocks are included in industrial sector. However, the petrochemical feed stocks are classified as non-energy use starting with 2007 edition of the OECD/IEA energy statistics.  Row34 (Energy Consumption)  Energy Consumption is classified by Industrial Sector, Transportation Sector, Agricultural Sector, Service Sector, and Residential Sector. Row 34＝Row 35＋Row 73＋Row 80＋Row 83＋Row 101.  Row35 (Industrial Sector)  (1) This includes mining (excluding coal mining, oil and gas mining), manufacturing industries (except for coal products, oil refineries), water supply, sewerage, waste management and remediation activities, and construction.  (2) Due to industrial transformation, business diversification and collective purchasing, the industrial classification of major energy users exists uncertainty. The industry level energy consumption data should be used with caution.  (3) Due to the lack of detailed petroleum product data, the data for the sub-industry under Chemical Materials is incomplete.  Row73 (Transportation Sector)  (1) This includes basically the energy consumption for transport in domestic air, road, railroad, pipeline, and internal navigation (excluding international marine bunkers and international civil aviation).  (2) Therefore, the electricity for tracks, for example, is shown in railroad while that for platform lighting and office use is included in “Services Sector\Transport Services”.  (3) The international civil aviation which appears between “International Marine Bunkers” and “Stocks Changes” starting with 2009 edition of OECD/IEA Energy Balances remains in Transportation Sector in these Balances.  Row80 (Agricultural Sector)  This includes agriculture, animal husbandry and forestry, fishing and aquaculture, as was in the old format.  Row83 (Service Sector)  This sector includes the energy consumption of the wholesale and retail, transport and storage, accommodation and food service, information and communication, finance and insurance, real estate, professional, scientific and technical, support service, public administration and defence, education, human health and social work, arts, entertainment and recreation, etc.  Row101 (Residential Sector)  This indicates the energy consumption of households (of non-commercials).  Row102 (Non-Energy Use)  (1) This includes the energy products for non-energy purpose such as lubricants, asphalts, and solvents, etc. Anthracites for industrial catalyst and filtering, cokes for enforcement of carbon content, are the examples of non-energy use of energy products.  (2) Due to lack of detailed data, feedstock of Chemical Materials is for reference only. |
| **4. Independent items**  Row9 (Statistical Differences)  This row is derived by the formula: R9=R7-R8-R10+R19-R22-R32-R33 for those columns with actual stock changes; it is zero for columns if the stock change is the residual to keep that column balanced.  Row32 (Loss)  (1) This represents the actual emission as waste of coke oven gas, blast furnace gas, and oxygen steel furnace gas in steel mill, and the line loss of the power transmission and distribution system.  (2) Figures starting 2001 of line losses are actual losses and were estimated from line loss rate before 2001. |
| **5.Memo**  Row1 (Electricity Generated)  This shows the gross electricity generation split into Electricity Plants and Cogeneration Plants, as well as generation of hydro (including pumped storage production), coal, oil, natural gas, nuclear, geothermal, solar photovoltaic, and wind.  Row6 (Heat Generated)  This shows the heat generated by public cogeneration plants and that sold by auto-producer cogeneration plants. |