

108 年能源供需概況

I. 綜合能源部分

- 1.本(108)年能源總供給量為148,400.8千公秉油當量，較上年(148,629.3千公秉油當量)減少0.15%；其中自產能源為3,110.1千公秉油當量，占總供給量2.10%，較上年增加7.51%；而進口能源為145,290.7千公秉油當量，占總供給量97.90%，較上年減少0.31%。若按能源種類區分，則煤及煤產品占29.85%，較上年增加1.25%；原油及石油產品占46.92%，較上年減少2.77%；天然氣占14.97%，較上年減少1.70%；生質能及廢棄物占1.14%，較上年增加0.27%；核能占6.31%，較上年增加16.77%；水力占0.36%，較上年增加23.72%；地熱、太陽光電及風力占0.38%，較上年增加33.84%；太陽熱能占0.07%，較上年減少3.47%。
- 2.本(108)年國內能源消費量為84,909.6千公秉油當量，較上年(87,569.1千公秉油當量)減少3.04%；其中能源消費(燃料用)為53,324.1千公秉油當量，占國內能源消費62.8%，較上年減少0.91%；若按能源種類區分，則煤及煤產品占8.52%，較上年減少0.12%；石油產品占52.42%，較上年減少5.26%；天然氣占5.68%，較上年增加2.59%；生質能及廢棄物占0.51%，較上年減少1.84%；電力占29.89%，較上年減少0.37%；太陽熱能占0.12%，較上年減少3.47%；熱能占2.87%，較上年減少7.47%。若按各經濟部門能源消費量區分，則能源部門自用占8.80%，較上年增加1.31%；工業部門占31.47%，較上年減少2.13%；運輸部門占15.78%，較上年增加0.65%；農業部門占0.98%，較上年增加1.05%；服務業部門占6.83%，較上年減少0.41%；住宅部門占7.74%，較上年增加0.32%；非能源消費占28.40%，較上年減少8.60%。
- 3.本(108)年能源出口量為21,799.2千公秉油當量，較上年(20,523.6千公秉油當量)增加6.22%。
- 4.本(108)年每人平均能源消費量為3,598.5公升油當量，較上年(3,713.7公升油當量)減少3.10%。

II. 個別能源部分

1.煤及煤產品

- (1)本(108)年煤及煤產品總供給量為52,753.0千公秉油當量，44,303.8千公秉油當量為進口，8,449.3千公秉油當量為轉變產出，較上年(52,357.3千公秉油當量)增加0.76%。
- (2)本(108)年國內煤及煤產品總需要量為50,605.4千公秉油當量，較上年(52,617.8

千公秉油當量)減少3.82%，其中能源轉變(即發電、煉焦等)為43,357.8千公秉油當量，較上年(45,357.6千公秉油當量)減少4.41%，而最終消費為5,919.9千公秉油當量，較上年(5,963.7千公秉油當量)減少0.74%。

2.石油

- (1) 本(108)年石油供給量為69,623.0千公秉油當量，較上年(71,605.0千公秉油當量)減少2.77%。其中自產原油3.9千公秉油當量，占總供給量0.01%，較上年(4.7千公秉油當量)減少17.67%；煉油廠進料72.6千公秉油當量，占總供給量0.10%，較上年(74.3千公秉油當量)減少2.25%；而進口原油為51,570.4千公秉油當量，占總供給量74.07%，較上年(51,075.1千公秉油當量)增加0.97%；進口燃料油、柴油、液化石油氣等石油產品為17,976.2千公秉油當量，占總供給量25.82%，較上年(20,451.0千公秉油當量)減少12.10%。
- (2) 本(108)年原油煉量為51,674.7千公秉，較上年(51,616.6千公秉)增加0.11%。
- (3) 本(108)年石油產品之總供給量為71,927.4千公秉油當量，較上年(74,616.8千公秉油當量)減少3.60%。其中自產之石油產品為57,331.2千公秉油當量，占總供給量79.71%，較上年(57,910.4千公秉油當量)減少1.00%；進口石油產品為17,976.2千公秉油當量，占總供給量24.99%，較上年(20,451.0千公秉油當量)減少12.10%。
- (4) 本(108)年石油產品之總需要量為72,946.3千公秉油當量，較上年(74,688.1千公秉油當量)減少2.33%。其中國內消費量46,375.9千公秉油當量，占總需要量63.58%，較上年(49,643.4千公秉油當量)減少6.58%；而出口量為21,783.1千公秉油當量，占總需要量29.86%，較上年(20,503.8千公秉油當量)增加6.24%；國際海運為1,444.4千公秉油當量，占總需要量1.98%，較上年(1,306.9千公秉油當量)增加10.52%；國際航空為3,342.8千公秉油當量，占總需要量4.58%，較上年(3,233.9千公秉油當量)增加3.37%。
- (5) 本(108)年石油產品國內消費量，若按能源轉變與最終消費予以區分，則石油產品轉變為發電及汽電共生之消費量為1,665.7千公秉油當量，占國內消費量3.59%，較上年(2,310.4千公秉油當量)減少27.90%；又石油產品轉變為其他石化產品為200.9千公秉油當量，占國內消費量0.43%，較上年(353.1千公秉油當量)減少43.11%；能源部門自用為3,339.8千公秉油當量，占國內消費量7.20%，較上年(3,296.5千公秉油當量)增加1.31%；而最終消費量為41,169.6千公秉油當量，占國內消費量88.77%，較上年(43,683.4千公秉油當量)減少5.75%。
- (6) 本(108)年石油產品最終消費量中，若按使用部門予以區分，各部門所占的百分率如下：工業部門占3.79%，運輸部門占32.21%，農業部門占1.31%，服務

業部門占2.09%，住宅部門占2.89%，非能源消費占57.72%。如與上年之消費比較，則其增減情形如下：工業部門減少20.52%，運輸部門增加0.64%，農業部門增加0.15%，服務業部門增加0.72%，住宅部門增加0.11%，非能源消費減少8.49%。

3.液化天然氣

- (1) 本（108）年液化天然氣供給量為22,073.4百萬立方公尺，較上年（22,430.8百萬立方公尺）減少1.59%。
- (2) 本（108）年液化天然氣國內消費量為20,442.5百萬立方公尺，其中石油煉製、發電及汽電共生占84.44%，能源及工業用占14.62%，服務業用占0.62%，住宅用占0.30%，農業0.02%。

4.天然氣

- (1) 本（108）年自產天然氣產量為167.2百萬立方公尺，較上年（197.6百萬立方公尺）減少15.37%。
- (2) 本（108）年自產天然氣國內消費量為1,854.1百萬立方公尺，其中發電及汽電共生占0.15%，能源及工業用占35.82%，服務業用占20.74%，住宅用占43.29%。

5.電力

- (1) 本（108）年總毛發電量為274,058.7百萬度，較上年（275,548.9百萬度）減少0.54%；其中抽蓄水力占1.17%，火力占81.47%，核能占11.79%，慣常水力、地熱、太陽光電、風力、生質能及廢棄物占5.56%。
- (2) 本（108）年台電公司火力發電廠燃料耗用量為31,110.2千公秉油當量，較上年（33,282.6千公秉油當量）減少6.53%；其中煤及煤產品占53.01%，柴油占0.23%，燃料油占3.78%，液化天然氣占42.98%。
- (3) 本（108）年電力各部門消費量之百分率如下：能源部門自用占7.14%，工業部門占53.84%，運輸部門占0.54%，農業部門占1.11%，服務業部門占17.06%，住宅部門占17.22%；而與上年消費量比較，則其增減情形如下：能源部門自用增加2.06%，工業部門減少0.95%，運輸部門增加1.65%，農業部門增加2.85%，服務業部門減少0.80%，住宅部門增加0.66%。
- (4) 本（108）年平均每人用電量為11,255.5度，較上年（11,304.8度）約減少0.44%。

Energy Supply and Demand

Situation of Taiwan in 2019

I. General Situation

1. In 2019 the total supply of primary energy amounted to 148,400.8 10^3 KLOEs, marking a decrease of 0.15% over 148,629.3 10^3 KLOEs in 2018. Of this total, indigenous energy contributed 3,110.1 10^3 KLOEs or 2.10%, representing an increase of 7.51% over the previous year, and the imported energy occupied 97.90%, or 145,290.7 10^3 KLOEs, representing a 0.31% decrease over 2018. Classified by form of energy, coal contributed 29.85%, an increase of 1.25% over 2018; crude oil & petroleum products contributed 46.92% which was a 2.77% decrease; natural gas shared 14.97%, marking a 1.70% decrease; Biomass and Waste constituted 1.14% an increase of 0.27% over 2018; Nuclear constituted 6.31%, an 16.77% increase over 2018; hydro provided 0.36%, an increase of 23.72% over the previous year; Solar PV and Wind constituted 0.38%, an increase of 33.84% over the previous year; Solar Thermal constituted 0.07%, a decrease of 3.47% over the previous year.
2. The total domestic final consumption of energy in 2019 was 84,909.6 10^3 KLOEs, marking a decrease of 3.04% over the 87,569.1 10^3 KLOEs of 2018. Of this total, combustible fuels consumed 53,324.1 10^3 KLOEs, or 62.8%, which was a 0.91% decrease over 2018. Classified by forms of energy, coal and coal products contributed 8.52%, which was a 0.12% decrease over 2018; petroleum products constituted 52.42%, which was a 5.26% decrease; natural gas constituted 5.68%, which was an 2.59% increase; biomass and waste constituted 0.51%, which was a 1.84% decrease; electricity constituted 29.89%, marking an decrease of 0.37%; solar thermal constituted 0.12%, a decrease of 3.47%; heat constituted 2.87%, a decrease of 7.47%. When classified by sector, the final consumption of energy for each sector in 2019 and its comparison with that of 2018 were as follows: the energy sector own use consumed 8.80%, an increase of 1.31%; the industrial sector, 31.47%, a decrease of 2.13%; the transportation sector, 15.78%, an increase of 0.65%; the agriculture, forestry, and fishery sectors, 0.98%, an increase of 1.05%; the service sector, 6.83%, a decrease of 0.41%; the residential sector 7.74%, an increase of 0.32%. Non-energy uses consumed 28.40% of the total domestic final consumption, which was a 8.60% decrease over the

previous year.

3. Exported energy totaled 21,799.2 10^3 KLOEs in 2019, which was an increase of 6.22% compared with 20,523.6 10^3 KLOEs in 2018.

4. In 2019, the per capita energy requirement was 3,598.5 liters of oil equivalent, representing a decrease of 3.10% over 3,713.7 liters of oil equivalent in 2018.

II. Energy Supply and Consumption

(by Form of Energy)

1. Coal

(1) The total supply of coal and coal products in 2019 was 52,753.0 10^3 KLOEs marking an increase of 0.76% over 52,357.3 10^3 KLOEs of 2018. 44,303.8 10^3 KLOEs was imported and 8,449.3 10^3 KLOEs was indigenous.

(2) The domestic coal and coal products demand in 2019 totaled 50,605.4 10^3 KLOEs, marking a decrease of 3.82% compared with the 52,617.8 10^3 KLOEs of 2018. Of this demand, 43,357.8 10^3 KLOEs were consumed for energy conversion uses such as power generation and coke processing, which was 4.41% less than the 45,357.6 10^3 KLOEs of 2018. The domestic final consumption totaled 5,919.9 KLOEs in 2019, a 0.74% decrease compared with 5,963.7 10^3 KLOEs in 2018.

2. Petroleum

(1) In 2019 the total petroleum supply was 69,623.0 10^3 KLOEs, which was a 2.77% decrease compared with 71,605.0 10^3 KLOEs in 2018. Of this total, indigenous crude oil contributed only 3.9 10^3 KLOEs or 0.01%, which was a 17.67% decrease over 4.7 10^3 KLOEs in 2018, refinery feedstock contributed 72.6 10^3 KLOEs or 0.10%, representing a 2.25% decrease over the previous year (74.3 10^3 KLOEs), and imported crude oil provided 51,570.4 10^3 KLOEs or 74.07%, which was an 0.97% increase compared with 51,075.1 10^3 KLOEs in 2018, while imported fuel oil, diesel oil, L.P.G. and other petroleum products reached 17,976.2 10^3 KLOEs, or 25.82%, representing a 12.10% decrease over the previous year (20,451.0 10^3 KLOEs).

(2) Refined crude oil totaled 51,674.7 10^3 KLOEs in 2019, which was an 0.11% increase compared with 51,616.6 10^3 KLOEs in 2018.

(3) The total supply of petroleum products (secondary forms of energy) was 71,927.4

10³ KLOE, a 3.60% decrease over 74,616.8 10³ KLOEs in 2018. Of this total, indigenous petroleum products occupied 57,331.2 10³ KLOEs or 79.71%, which was 1.00% less than the 57,910.4 10³ KLOEs of the previous year and imported petroleum products reached 17,976.2 10³ KLOEs, or 24.99%, representing a decrease of 12.10% over the 20,451.0 10³ KLOEs of 2018.

- (4) In 2019, the total demand for petroleum products was 72,946.3 10³ KLOEs, 2.33% less than the 74,688.1 10³ KLOEs of 2018. Of this total, domestic consumption constituted 63.58%, or 46,375.9 10³ KLOEs, which was 6.58% less than the 49,643.4 10³ KLOEs of 2018, exported petroleum products totaled 21,783.1 10³ KLOEs and sharing 29.86%, which was an 6.24% increase compared with 20,503.8 10³ KLOEs of the previous year, international marine bunker was 1,444.4 10³ KLOEs, constituting 1.98%, which was 10.52% more than the 1,306.9 10³ KLOEs of 2018, international aviation was 3,342.8 10³ KLOEs, constituting 4.58%, which was 3.37% more than the 3,233.9 10³ KLOEs of 2018.
- (5) When classified by energy conversion and final consumption, the domestic consumption of petroleum products in 2019 was as follows : 1,665.7 10³ KLOEs or 3.59% were consumed for conversion into electricity and cogeneration, which was 27.90% less than the 2,310.4 10³ KLOEs of 2018; 200.9 10³ KLOEs, or 0.43%, were consumed for conversion into other petroleum products, which was a 43.11% decrease compared with 353.1 10³ KLOEs of 2018; 3,339.8 10³ KLOEs, or 7.20%, were consumed for conversion into energy sector own use, which was an 1.31% increase compared with 3,296.5 10³ KLOEs of 2018; 41,169.6 10³ KLOEs or 88.77% went to final consumption, which was 5.75% less than the 43,683.4 10³ KLOEs of 2018.
- (6) The domestic final consumption structure of petroleum products in 2019, if classified by sector, was as follows: 3.79% by industry; 32.21% by transportation; 1.31% by agriculture, forestry and fishery; 2.09% by service; 2.89% by residences; 57.72% by non-energy uses. When compared with the previous year (2018), industry decreased by 20.52%; transportation increased by 0.64%; agriculture, forestry and fishery increased by 0.15%; service increased by 0.72%; residences increased by 0.11% and non-energy uses decreased by 8.49%.

3.L.N.G.

- (1) In 2019, the total L.N.G. supply was 22,073.4 million m³ which was a 1.59%

decrease compared with 22,430.8 million m³ in 2018.

- (2) Of the total L.N.G. domestic consumption of 20,442.5 million m³, oil refining, power generation and cogeneration shared 84.44%, energy and industry 14.62%, service 0.62%, residences 0.30%, and agriculture 0.02%.

4.Natural Gas

- (1) Natural gas production in 2019 reached 167.2 million m³, which was 15.37% less than 197.6 million m³ in 2018.
- (2) Of the total natural gas domestic consumption of 1,854.1 million m³, power generation and cogeneration 0.15%, energy and industry 35.82%, service 20.74%, and residences 43.29%.

5.Electricity

- (1) In 2019, gross power generation reached 274,058.7 GWh, which was a decrease of 0.54% over 275,548.9 GWh in 2018. Of this total, pumped-storage hydro contributed 1.17%, thermal 81.47%, nuclear 11.79%, and conventional hydro, Geothermal, solar PV and wind, biomass and waste constitute 5.56%.
- (2) The total fuel consumption of thermal power stations of Taiwan power company in 2019 was 31,110.2 10³ KLOEs, which was 6.53% less than 33,282.6 10³ KLOEs in 2018. Of this consumption, coal comprised 53.01%, diesel oil 0.23%, fuel oil 3.78%, and LNG 42.98%.
- (3) In 2019, the amount of electricity consumed by consumption was 7.14% by the energy sector own use; 53.84% by industry; 0.54% by transportation; 1.11% by agriculture, forestry and fishery; 17.06% by service; and 17.22% by residences. When compared with 2018, energy sector own use increased by 2.06%; industry decreased by 0.95%; transportation increased by 1.65%; agriculture, forestry and fishery increased by 2.85%; service decreased by 0.80% and residences increased by 0.66%.
- (4) In 2019, the per capita electricity consumption was 11,255.5 kWh, which was a decrease of 0.44% compared with 11,304.8 kWh in 2018.