節約能源	Energy Conservation
6.1 一般名詞	6.1 General Terms
6.1.1 能源節約 以具體的行為，確保有限能源資源最有效之利用。如能源節省，合理使用能源，以他種能源代替；例如以太陽能、風力及地熱等能源，代替化石燃料。	6.1.1 Energy Conservation Term that defines a policy embodying the actions to be taken to ensure the most efficacious use of finite energy resources. Examples of such actions are energy savings, rational use of energy, substitution of one form of energy by another, e.g. fossil fuels by solar, wind, geothermal, etc., energy.
6.1.1.1 能源節省 由能源之供應者和使用者採取措施來限制能源損耗。包括間接的如絕熱，直接的如廢熱之使用或氣體燃燒，或是組織的如改變輸送方式等之措施。	6.1.1.1 Energy saving Measures or the effect of measures taken by suppliers and users of energy to limit wastage of energy. Such measures may be passive (e.g. insulation); active (e.g. utilisation of waste heat or gas the would otherwise be flared) ;or organisational (e.g. change in modes of transport).
6.1.1.2 合理使用能源 消費者以最適合實現經濟目標的方法來利用能源，並考慮社會、政治、財政、環境等之限制。	6.1.1.2 Rational use of energy Utilisation of energy by consumers in a manner best suited to the realization of economic objectives, taking into account social, political, financial, environmental, etc., constraints.
6.1.2 能源含量 於生產點測量產品之製造或於提供服務據點測量準備之服務所消耗能源（直接間接）量。 （註）當提供能源內容之資料，必需聲明是否包括機器，物料等（直接或間接）之能源內容，是否包括製造和運送之能源消耗，是否包括勞動，和能源是否做成產品，例如石油化學等。	6.1.2 Energy content The quantity of energy (direct and /or indirect) that has been consumed in the manufacture of a product measured at the production point or in the provision of a service measured at the point at which the service is provided. Note When providing information on energy content, it should be stated whether the energy content of machines, materials, etc. (indirect energy), is included, whether the energy used to produce and deliver each unit of energy consumed is included, whether the energy associated with labour is included and whether the energy actually physically embodied in the product, e.g. in a petrochemical, is included.

6.1.3 能源鏈合 能源的流程，從原始的生產到最終的使用。轉換某種能源型式至他種型式，皆構成為能源鏈之一部份。	6.1.3 Energy chain The flow of energy from primary production to end use of the energy; one or more links of the energy chain involve conversion of one form of the energy into another.
6.1.4 能源串級 串聯之一個或多個生產程序，於完成一個程序後留下之可用能源供應次一個程序使用，其目標乃是達到能源使用之最佳效率。 （註）於每一程序之熱力平衡，從原有能源中所增加之熵等於製程中所減少之焓。	6.1.4 Energy cascade A flow or quantity of energy utilised in two or more processes stepwise in series in such manner that energy remaining available after completion of one process is supplied for use to the following process, the objective being to achieve optimum overall efficiency in the use of energy. Note Where thermal energy is involved, at each process stage the increase in entropy of the original energy corresponds to a decrease in enthalpy due to the thermodynamic process at that stage.
6.1.5 省能比值 每年期間，有關之元件於輸出（出力）不變情況下，於節省單位數量能源的測量中所需之費用。 （註）省能比值用在計算投資報酬方面。	6.1.5 Specific cost of energy saving The expenditure required in energy-saving measures to save unit quantity of energy per year per relevant unit output without quantitative or qualitative change in the output. Note The specific cost of energy saving is employed, for example, in calculating the return on investment.

6.1.6 每日度差 以攝氏（或華氏）表示之實驗單位，為 24 小時之室外溫度平均，當低於一基準溫度時，兩者之溫度差。每日度差記錄可以估計建築物之所需暖房需求熱量。 （註 1）實驗值隨著各國不同。基準溫度既是實驗之室外溫度低於建築物加熱系統操作使用之溫度，也是室內溫度。基準溫度之值固定，但各國有所不同。 （註 2）每日度差的原理可以應用於類推空氣調節系統。 （註 3）統計整月或整個取暖季節之每日度差，可以於當月或取暖季之室外溫度水準或數年為一週期測量之。並且作一比較，依此基準之比較「溫度調節」而搜集並統計整月，取暖季或整年之燃料消耗。至於區域性之氣候溫度也會影響該時期之能源消耗應分別予以估計。	6.1.6 Degree day An empirical unit expressing the daily difference in degrees Celsius (or Fahrenheit) between a base temperature and the 24-hour mean outdoor temperature when this falls below the base temperature. Degree day records are used to estimate the heating requirements of buildings. Note1 Depending on the practices prevailing in different countries, the base temperature is defined either as the outdoor temperature empirically decided as that below which the heating systems of buildings are put into operation, or as the indoor temperature, i.e. the temperature at which the interior of the premises requires to be maintained. The base temperature has a fixed value nationally; it may, however, vary between countries. Note 2 The principle of the degree day may be applied analogously to air conditioning systems. Note 3 By totalling the degree days over a month or over a heating season, a comparison may be made between the level of the outdoor temperature in that month or heating season and a norm measured over a number of years for the period; on the basis of such comparison “temperature adjusted” fuel consumption statistics may be compiled for the month, heating season or year which enable factors other than climatic temperature that have influenced energy consumption in that period to be independently assessed.

6.2 有關間接性能源節省名詞	6.2 Terms Relating to Passive Energy Saving
6.2.1 絕熱 使用低熱傳之物質於建築物、窯爐、鍋爐、蒸汽和熱水管路和熱水槽。來防止熱量散失和廢棄。 （註）絕熱同樣也可應用於冷凍系統防止冷氣之損失。	6.2.1 Thermal insulation The application of materials of very low thermal conductivity to the walls, roofs and floors, and windows of buildings, to furnaces, boilers, steam and hot water piping, hot water tanks, etc., to prevent the escape and hence waste of heat. Note Thermal insulation may similarly be applied to preventing the loss of cold in refrigeration processes.
6.2.2 K 值：熱傳導度 測量絕熱物質傳送熱量之能力（防止熱傳送）；以單位面積單位厚度之材料板，於單位時間板之兩側溫度差板之熱傳導量：k=W/mK。 （註）k 值是絕熱技術名詞，熱傳導是相同的科學名詞並不限於絕熱的情況。	6.2.2 k-Value: thermal conductivity A measure of an insulating material's capacity to transmit (and hence to resist the transmission of) heat; it is expressed as the quantity of heat that will be conducted through unit area of a slab of material of unit thickness with unit differences of temperature between the faces in unit time: k=W/mK. Note k-value is the term used in insulation technology; thermal conductivity is the corresponding scientific term and not limited to the context of insulation.
6.2.3 U 值；熱傳送；傳送係數 測量建築物的結構元件（由磚組立牆、絕熱物、空室、屋頂之瓦、木頭）來傳送（或者隔絕）之熱量，是從建築物之一側空氣流過結構元件並從他側流出之熱量，以每單位面積單位時間兩側溫差之傳熱量 U=W/m²K （註 1）屋頂，牆等之 U 值，為度量某獨立建築物之熱特性。 （註 2）某些國家之 R 因數或 R 值（熱阻），於數學上是 U 值的倒數。但是在決定材料之內側和外側之表面溫度，最好以測量絕熱的單位來計量：R=m²K/W。	6.2.3 U-Value; thermal transmittance; transmittance coefficient A measure of the capacity of a composite structural element of a building (e.g. a wall consisting of bricks, thermal insulation material, cavities, etc.; a roof of tiles, wood, insulation material, etc.) to transmit (and hence to resist the transmission of) heat; it is the quantity of heat which will flow from air on one side of the structure to air on the other side per unit area for unit air temperature difference in unit time: U=W/m²K. Note 1 U-values of roof, walls, etc., give a measure of the thermal properties of an individual building. Note 2 In some countries the R-factor or R-value (thermal resistance), which is mathematically the reciprocal of the U-value but in the determination of which the inside and outside surface temperatures of the materials are measured and not the respective air temperatures as for the U-value, is preferred as a unit of measurement of thermal insulation: R=m²K/W.

6.2.4 入射熱增益 建築物從太陽輻射和其他之內在或外在的熱源所得之總熱量和（如燈光，居住者），非由建築物安裝之加熱系統而來，入射熱增益有時稱為「自由熱」。註：如果建築物之溫度控制系統於設計時，考慮到此附屬熱增益，則有助於燃料之節省。	6.2.4 Incidental heat gain The total heat acquired by a building from solar radiation and any other external or internal source of heat (e.g. lighting, occupants), that does not form part of the installed heating system of the building. Incidental heat gain is sometimes termed “free heat”. Note Incidental heat gain can contribute to fuel savings only if the temperature-control system of the building is designed to take account of such heat gain.
6.2.5 省能建築 一棟建築物於設計時，能以最少購買商用能源，並能滿足其加熱和空調之需求。 （註）以經濟上實際燃料節約名詞而言，此建築物應以最小的全部壽命週期成本來建造和使用。	6.2.5 Low-energy building A building so designed that it can meet its heating and air-conditioning requirements with the minimum use of purchased commercial energy. Note In terms of economically realistic fuel conservation, such a building would be one with a minimum overall life cycle cost to build and operate.
6.3 有關應用於現有工廠之直接性能源節省名詞	6.3 Terms Relating to Active Energy Saving Applied to Existing Plant
6.3.1 程式控制的暖房與空調 建築物中之暖房與空調系統，依據預先安排之程式設計而做自動控制，使得建築物內有人使用時，能享受所需的舒適狀況；反之，在其他無人使用的時間，暖房與空調之負載則會降低。	6.3.1 Programme controlled heating and air-conditioning The automatic control of the heating and air-conditioning system of a building according to a prearranged programme designed so that the occupants of a building enjoy the required conditions of comfort while they are in occupancy of the building, while at other times the heating and air-conditioning load is reduced.
6.3.2 負載控制 利用特別的計量或其他的配置，例如熱計量，配合以特殊電價比率之最大需求計量，容許停供電力之合約，離峯期間熱儲存之準備等任何可調整尖峯期間用戶需求之方法。	6.3.2 Load control Any method of adjusting consumer demand, notably at periods of peak demand, by the use of special metering or other arrangements, e.g. heat metering, maximum demand metering associated with special tariffs/rates, contracts allowing interruptions of supply, provision for heat storage during off-peak periods, etc.

6.3.3 功率因數修正 為改進電力設備之功率因數由系統與裝置所影響之修正。 （註）對於「功率因數」參見第二部份之分別記載。	6.3.3 Power factor correction Correction effected by systems and devices for improving the power factor of electrical equipment. Note For “power factor” see separate entry in Section2.
6.4 有關附加元件於現有工廠、再循環及廢物利用之直接性能源節約名詞	6.4 Terms Relating to Active Energy Saving by Addition of Elements to Existing Plant, Recycling, Utilisation of Waste
6.4.1 機械式通風 自然循環通風不足時，利用風扇或其他機械裝置以使空氣在房間內或建築物之其他部份循環。	6.4.1 Mechanical ventilation The use of fans or other mechanical devices to ensure that the air is circulated in rooms and other parts of buildings when natural circulation is inadequate.
6.4.2 冷凝水回收 利用於發電、程序加熱、空間加熱等之蒸汽所凝結成水的祛水技 術，並且為了節省水的顯熱及備用飼水之某些成本，將之以飼水之方式送回鍋爐。	6.4.2 Condensate return The technique of trapping the water formed from the condensation of steam used for power generation, process heating, space heating, etc., and returning it to the boiler as feed water, in order to save the sensible heat of the water and some of the costs of feed water preparation.
6.4.3 能源回收 完成一個特定的程序之後所留下仍然可資利用的能源之回收，可應用於同一程序或其他程序。	6.4.3 Energy recovery The recovery of energy remaining available after completion of a particular process, either for use in the same process or for use in another process.
6.4.3.1 廢熱回收 在某一特定程序而未消耗於此程序中，且仍可開發利用之熱源的收集與利用。 （註）兩種廢熱回收之特例為排放水之熱回收（通常由鍋爐之最低部份釋放以清除鍋爐淤渣之水顯熱回收）以及閃蒸回收（當保持熱製程水溫於373°K（100°C）以上之壓力突然降低時，由熱製程水所產生蒸汽的回收）。	6.4.3.1 Waste-heat recovery The capture and utilisation of that part of the heat generated for a particular process that is not consumed in that process, but remains an exploitable heat source. Note Two special cases of waste-heat recovery are blowdown heat recovery (recovery of the sensible heat in the water that is regularly released from the lowest part of a boiler to free the boiler of sludge) and flash steam recovery (recovery of the steam generated from hot process water, when the pressure required to maintain the hot process water at temperatures in excess of 373 K(100ºC) is suddenly reduced).

6.4.3.2 機械能回收 在其他情況將被浪費掉之有用機械能的回收，例如，應用再生煞車，在氣體傳送與分配系統中應用膨脹輪機以取代減壓閥。	6.4.3.2 Mechanical energy recovery The recovery in useful mechanical form of energy that would otherwise be wasted, e.g. by regenerative braking (q.v.), use of expansion turbine in place of reducing valve in a gas transmission and distribution system.
6.4.4 熱交換器 一種設備，用來將一流動流體之熱量傳遞至另一流體，在兩物質之間不容許任何有直接的接觸。熱交換器可能預備做為連續的熱傳遞（復熱式熱交換器）；或者可能預備做為間歇的熱傳遞（再生式熱交換器）。 （註）熱交換器之特例有熱管（利用冷媒循環以傳遞熱量的一種熱交換器，由含有燈芯與冷煤之一系列管子所組合而成，並將之置於一組合殼內）與熱輪（一種熱交換器包含有柱形母體置於組合殼之中，並且透過兩空氣流束做緩慢之轉動，如此由一流束傳遞熱量至另一流束）。	6.4.4 Heat exchanger Equipment for transferring heat from one fluid in motion to another without allowing any direct contact between the two substances. The heat exchanger may provide for continuous heat transfer (recuperative heat exchanger): or it may provide for intermittent heat transfer (regenerative heat exchanger). Note Particular cases of heat exchanger are the heat pipe (a heat exchanger that transfers heat by the refrigerant cycle, comprising a series of pipes each containing a wick and refrigerant, and housed in a split casing) and the thermal wheel (a heat exchanger that comprises a cylindrical matrix within a split housing which rotates slowly through two air streams thus transferring heat from one to the other).
6.4.5 物料再循環 由廢料與由工業、商業及家庭所產生廢物之殘料回收，這些廢物是經一個或多個製程而產生之結果，並將其回收至一個製程中，如此節省了原料、能源與成本，這些在由原料產生廢物時都是必需的。	6.4.5 Materials recycling The salvage from the waste matter and refuse occurring in industry, commerce and households of the material that has been the result of one or more process steps and the return of that material to a process, thus saving the raw material, energy and costs that would otherwise have been required or incurred to produce it from the raw materials.
6.4.6 廢物；廢料 物料因無立即價值而丟棄或因製程或者操作時所留下之殘留物。這些可能是農業（即有機廢料）、工業（即含鐵的與非含鐵的金屬、玻璃、塑膠等）、商業與家庭的（即都市或市區的廢料）廢物。	6.4.6 Refuse; waste Material rejected as of no immediate worth or left as residue of processes or operations. Such refuse may be agricultural (i.e. organic waste), industrial (i.e. containing ferrous and non-ferrous metals, glass, plastics, etc.), commercial and household (i.e. urban or municipal waste).

6.4.7 廢物衍生燃料；廢料衍生燃料 一種在某些情況被視為無價值的材料所產生的燃料，例如，由農業廢料而產生的甲烷氣，由廢橡膠產生之油，由有機廢物產生之固體燃料。	6.4.7 Refuse-derived fuel; waste-derived fuel A fuel that is produced from material that would otherwise be regarded as worthless, e.g. methane gas from agricultural waste, oil from scrap rubber, solid fuel from organic refuse.
6.4.8 焚化（廢物或廢料） 固體、半固體、液體或氣體可燃廢料在燃燒設備（特別是為此目的而設計者）中之點火燃燒。 （註）焚化之主要目的在於處置殘留灰分之前減少廢料容積並使毒性物質變成無害；更進一步可能是利用燃燒之熱來產生蒸汽以電力；焚化之產品也可能用來做肥料之備料及造路及建築材料。	6.4.8 Incineration (of refuse or waste) The ignition and burning of solid, semi-solid, liquid or gaseous combustible waste matter in combustion equipment specially designed for this purpose. Note The main purpose of incineration is to reduce the bulk of the waste materials prior to disposal of the ash residue and to render toxic materials harmless; a further possibility is to utilise the heat of the combustion for steam generation and electricity production; the products of incineration may also be utilised in the preparation of fertilisers and as road-making and construction materials.
6.4.9 輔助點火 為了保持燃燒，將足夠熱值之商業性燃料（油、氣、煤）加入低熱值之燃燒材料中。名詞「補助燃料」也可用於上述之解釋其義較廣。	6.4.9 Auxiliary firing The addition of a commercial fuel (oil, gas , coal) of adequate calorific value to combustible materials of low calorific value in order to maintain combustion. Hence Auxiliary fuel. The term Supplemental fuel may also be used in the above sense but it has a wider general meaning.
6.4.10 機械式蒸氣再壓縮 再度利用潛熱的一種方法，例如在蒸發器中利用輪機壓縮機壓縮，使得低壓蒸氣或排放蒸氣上升至較高壓力。低壓蒸氣或排放蒸氣在噴射器內利用與高壓蒸氣混合，以增壓到較高壓力的類似程序被稱為熱壓縮。	6.4.10 Mechanical vapour re-compression A method of re-using latent heat, e.g. in evaporators, whereby low-pressure vapour or exhaust steam is raised to a higher pressure by compression in a turbo-compressor.

6.5 有關以改組及新系統達成能源節約之名詞	6.5 Terms Relating to Energy Savings Achieved by Organizational Changes and New Systems
6.5.1 替換 （1）一個廠，程序、產品或服務之應用，對其操作或準備較現存之情況只需較少的能源或較少的某一型態的能源，但並未降低產品或服務之品質要求。 （2）對一種特殊程序或服務使用除了通常所用以外的某一型式之能源，在這種情況下使得替代在技術上、經濟或供給之考慮上是較有利或必要的。 （註）上述兩種情況在必要時可能包括一種型式的能源以他種型式的大量能源（較便宜、更多量或較低度精煉）來替代。	6.5.1 Substitution (1) The use of a plant, process, product or service, requiring less energy, or less of a certain type of energy, for its operation or provision than is required under the existing practice, without reducing the quality required of the product or service. (2) The use of a form of energy other than that conventionally used for a particular process or service, in cases where technical, economic or supply considerations make such substitution advantageous or essential. Note Both the above cases may on occasion involve substitution of one form of energy by relatively greater quantities of other (cheaper, more abundant or less refined) forms of energy.
6.5.2 總體能源系統 對於單一建築物、建築物或工廠之集合體的動力，熱量與冷凍需求，在基於單一燃料輸入的前提下，設計來供應與分配的一個系統。 （註）這種技術目前主限於由氣體燃料或石油所構成之單一燃料輸入系統。	6.5.2 Total energy system A system designed to supply and distribute on a premises the power, heat and refrigeration requirements of a single building, a complex of buildings or a factory, based on the input of a single fuel. Note The technology is limited, at present, mainly to systems in which gas or oil constitute the single fuel input.

6.5.3 熱電複合廠；熱電共生廠 一種發電廠，其中所有蒸汽產生於鍋爐並經由渦輪發電機以產生電力，但係設計成蒸汽可由輪機之某一具抽取，且（或）由輪機之排氣當做背壓蒸汽並且用來對工業製程，區域加熱等供應熱量。 （註 1）電力與熱之供給是兩個主要的產品且其供應量是互補的；產量可依據主要之輸出是用來供應蒸汽或電力之需求而做調整。 （註 2）熱與電力之組合也可經由氣渦輸機或內燃機驅動發電機廠，在其循環中回收排氣或其他點之廢熱並利用之，而獲 得。在這種情況，熱供應是一種副產品。	6.5.3 Combined heat and power station; cogeneration plant A thermal power station in which all the steam generated in the boilers passes to turbogenerators for electricity generation, but designed so that steam may be extracted at points on the turbine and/or from the turbine exhaust as back-pressure steam and used to supply heat for industrial processes, for district heating, etc. Note 1 The electricity and heat supplied are both main products and the quantities supplied are complementary; production may be so regulated that the major output is supplied as process steam or as electricity, as required. Note 2 Combined heat and power may also be obtained from a gas-turbine or internal-combustion-engine driven electricity generation plant by recovering waste heat at the exhaust or elsewhere in the cycle and utilising it. In this case the heat supplied is a by-product.
6.5.4 複合循環廠 含有氣渦輪發電機且其排氣供給到可能有或無輔助加熱器之廢氣爐的發電廠，並且由鍋爐所產生的蒸汽被用來推動蒸汽渦輪發電機。 （註）基本循環可能有各種不同的型式並且用於氣渦輪機燃燒室之燃料氣也可能在煤氣化廠內產生。電力產生循環的其他共生組合也可以如下分類：柴油—蒸汽；水銀—蒸汽；液態金屬—蒸汽；磁流—蒸汽；氣體燃料—有機流體；蒸汽—有機流體。	6.5.4 Combined cycle plant Electricity generating plant comprising a gas-turbine generator unit whose exhaust gases are fed to a waste-heat boiler, which may or may not have a supplementary burner, and the steam raised by the boiler is used to drive a steam-turbine generator. Note There may be variants of the basic cycle and the fuel gas for the gas-turbine combustion chamber may be produced in a coal gasification plant. Other synergistic combinations of power generating cycles may also be so classified, e.g. diesel-steam; mercury-steam; liquid metal-steam; MHD-steam; gas-organic fluid; steam-organic fluid.

6.6 有關運輸方面節約能源的名詞	6.6 Terms Relating to Energy Conservation in Transport
6.6.1 內燃循環 一種熱機之熱力循環，燃料在汽缸內燃燒，燃燒產物形成工作介質並產生或推動動力衝程，例如汽油、柴油及煤氣機。發展中之分層進料，預燃以及乏燃等技術，皆以改善內燃機之效率為目標。 （註）通常使用上項名詞時環限於奧圖及迪塞爾循環之動力機，但內燃式燃氣輪機亦可包含在內。	6.6.1 Internal combustion cycle A thermodynamic cycle in which, in the heat engine, combustion of a fuel takes place within the cylinder and the products of combustion form the working medium effecting the power stroke or drive. Examples are the petrol, diesel and gas engine. Stratified charging, pre-chamber injection and lean-burn techniques are among developments aimed at improving the efficiency of the internal combustion engine. Note In normal usage the term is confined to engines approximating to the Otto and diesel cycles of operation, but the internally fired gas-turbine may also be classed within this category.
6.6.2 外燃循環 一種熱力循環，由燃燒燃料所產生之熱產物經由鍋爐或其他熱交換的 方式傳至工作介質（通常為蒸汽或空氣）產生或推動動力衝程，例如蒸汽輸機工 廠、往復式蒸汽機、外燃式燃氣輪機、史提林動力機等。	6.6.2 External combustion cycle A thermodynamic cycle in which the hot products of combustion arising from the burning of the fuel pass through a boiler or are otherwise separated from, but in heat exchange contact with, the working medium (generally steam or air) that effects the power stroke or drive in the heat engine. Examples are steam turbine plant, reciprocating steam engines, externally fired gas-turbines, Stirling engines.
6.6.3 開放式循環動力機 動力機之工作流體 循環經由熱機過程之各步驟，於最後一個步驟後將使用過之工作流體釋放於周遭。	6.6.3 Open-cycle engine A engine in which the working fluid is cycled through the stages of the heat engine process. followed by the release of the spent working fluid to the surroundings after passing through the last stage of the process.
6.6.4 閉路式循環動力機 動力機之工作流體循環經由熱機過程之各步驟，於最後一個步驟後將原工作流體再循環於熱機過程的第一個步驟。	6.6.4 Closed cycle engine An engine in which the same working fluid is cycled through the stages of the heat engine process and after passing through the final stage is recycled to the first stage.

6.6.5（動力機）推進效率 可用動力或淨動力與總動力之比值，或淨推力與總推力之比值。以上之比值依動力機之型式而定。	6.6.5 (Engine) Propulsive efficiency The ratio of the available or net power to the gross power or the ratio of the net thrust to the gross thrust, depending on the type of engine under consideration.
6.6.6（動力機）指示效率 動力機之效率。其動力係由示功圖計算得之，不包括泵唧及磨擦之損失。 （註）於往復式動力機，指示效率與施於活塞上之力有關，而非與曲軸上之力有關。	6.6.6 (Engine) Indicated efficiency The efficiency of the engine based on the power calculated from an indicator diagram ignoring pumping or frictional losses. Note In the case of a reciprocating engine the indicated efficiency refers to the force acting on the piston and not that acting on the shaft.
6.6.7（動力機）制動力 為制動主動軸而由原動機或電動機發出計量的有效或有用動力。	6.6.7 (Engine) Brake power The effective or useful power developed by a prime mover or electric motor as measured by a brake applied to the driving shaft.
6.6.8（動力機）毛動力 減除操作時必需之輔機動力後的驅動軸動力。但不包括風扇、通風罩與散熱器的動力以及製造廠所公布之進氣減壓與排氣背壓。	6.6.8 (Engine) Gross power The power measured on the drive shaft after deduction of the power consumption of the auxiliaries necessary for its operation but not allowing for that consumed by the fan, cowl and radiator and with the manufacturer’s declared maximum inlet depression and exhaust back pressure.
6.6.9（動力機）淨動力 減除操作時所有輔機所耗用動力後的驅動軸動力。	6.6.9 (Engine) Net power The power measured on the drive shaft after deduction of the power consumption of all the auxiliaries required for its operation.
6.6.10 可用動力 動力機連續操作時，減除特別用途之風扇及輔機所耗用動力後的驅動軸動力。	6.6.10 Available power The power measured on the drive shaft after deduction of the power consumed by the fan and the auxiliaries required for a particular application, and with the engine in continuous operation.
6.6.11 制動熱效率 動力機的制動力效率。係制動動力輸出之能量當量與供給動力機能量的比值。	6.6.11 Brake thermal efficiency The efficiency of an engine reckoned in terms of brake power. It is given by the ratio of the energy equivalent of the brake power output to the energy supplied to the engine.

6.6.12 連續性變速傳動 不斷修正控制傳動之傳動比率，俾使動力機操作時經常能保持高的制動熱效率。	6.6.12 Continuously variable transmission Transmission so controlled that the transmission ratio is continuously varied so as to keep the engine always working in a region of high brake thermal efficiency.
6.6.13 連續性隨機傳動 傳動之傳動比率採隨機控制，俾能有效操件動力機。	6.6.13 Continuously random transmission Transmission whose ratio is arbitrarily controlled insofar as the efficient operation of the engine is concerned.
6.6.14 制動平均有效壓力 在動力機之動力衝程時，活塞上的平均壓力，可從量測制動力或由每次工作循環（與制動動力有關）所作的功與動力機掃過容積之比值計算 得之。制動力與制動平均有效壓力之間的關係可以下式表之： P=p.L.A.S.， P 為制動力（KW）， p 為制動力平均有效壓力（KN/m²）， L 為衝程之長度（m）， A 為汽缸內徑面積（m²） S 為每秒循環數。	6.6.14 Brake mean effective pressure The average pressure on the piston during the power stroke of the engine as calculated from the measurement of brake power or the ratio of the work done per working cycle (corresponding to the brake power) to the engine swept volume. The relationship between brake power and b.m.e.p. may be defined as follows: P=p.L.A.S., in which : P is brake power in kW, p is b.m.e.p in kN/m², L is length of stroke in m, A is area of cylinder bore in m², S is cycles per second.
6.6.15 制動器單位燃料耗用量 在單位時間中單位制動力所耗用燃料之度量。	6.6.15 Brake specific fuel consumption A measure of the quantity of fuel consumed per unit time per unit brake power.
6.6.16 動力機性能圖 以圖表表示動力機之性能，其中考慮許多影響動力機效率的因素。通常本圖為制動平均有效壓力與動力機速度的圖表，並附對應之制動器單位燃料耗用量曲線。	6.6.16 Engine performance map A diagrammatic representation of engine performance taking account of the numerous factors that affect engine efficiency. Usually the map is a plot of brake mean effective pressure against engine speed, superimposed with contours of equal brake specific fuel consumption.

6.6.17 再生制動 一種制動車輛的方法。在減低車輛動量時所釋放之能量轉換儲存起來，俾便回饋原供應系統；例如電氣火車與無軌電車，再生制動所生之電流可回收至供應系統，無需中間儲存。	6.6.17 Regenerative braking A method of braking a vehicle whereby the energy released in reducing the momentum of the vehicle is converted into stored energy so that it can be fed back to the supply system; in the case of electric trains and trolley buses the current produced by regenerative braking may be returned to the supply system without intermediate storage.
6.6.18 阻力係數 車輛向前移動時之空氣動力阻力計量值。通常為車輛正面面積與行駛速率之函數。	6.6.18 Drag coefficient A measure of a vehicle’s aerodynamic resistance to forward motion expressed as a function of its frontal area and speed of travel.
6.6.19 滾動阻力 忽略空氣動力阻力之情況 下，使車輛在水平路面保持一定速率所需之力。通常為輪胎設計、車輛重量及速率之函數。亦即車輛的輪胎與路面所耗用的動力。	6.6.19 Rolling resistance The force required to maintain a vehicle at a constant speed on level ground neglecting the aerodynamic resistance, expressed as a function of the tyre/tire design, vehicle weight and speed, i.e. the power consumed due to deformation of the tyres of the vehicle and of the road surface.
6.6.20 複合車 車輛裝有兩套單獨之動力設 備，並能使用不同形式的能源。亦即在近乎等速及高效率運轉時，內燃機除提供汽車的動力外並供作電池之充電器。電池則供給電動馬達所需電力。這些動力設備串聯或並聯方式運轉俾獲得所需的動力。複合車可連結內燃機與飛輪或內燃機與電動馬達混合使用。	6.6.20 Hybrid vehicles Vehicles which incorporate two power units operating on different forms of energy, e.g. an internal combustion (i.c.) engine running at near constant speed and high efficiency, that serves both as automotive power and as a battery charger, and an electric motor that runs off the battery. Such automotive power units may be operated in series or in parallel to obtain a desired performance. Hybrid vehicles may also combine i.c. engines and flywheels or i.c. engines and electric motors fed from electric power lines.
6.6.21 有用負載效率 飛機、船隻及車輛之操作效率，與其負載容量有關。	6.6.21 Payload efficiency The operating efficiency of an aircraft, vessel or vehicle, referred to its revenue load capacity.

6.6.22 延人公里；延噸公里 運送一個人或一噸物品至一公里之距離。	6.6.22 Passenger-kilometre; tonne-kilometre The transport of one passenger or one tonne over a distance of one kilometre.
6.6.23 客運裝載率；貨運裝載率 實際延人公里數與最大乘位公里數之比值；實際延噸公里數至最大裝載延噸公里數之比值。以上皆以百分比表示。	6.6.23 Passenger load factor; tonnage load factor The ratio of the number of revenue passenger-kilometres to the number of available seak-kilometres; the ratio of the number of revenue tonne-kilometres to the number of tonne-kilometres of available capacity. The ratio is expressed as a percentage.
6.6.24 每延人公里之能源耗用量；每延噸公里之能源耗用量 運送一個人或一噸物品至一公里距離所耗用之能源。其值係運送方式之不同而有所差異；通常與旅客之人數或貨物之數量，通行的距離以及客、貨運裝載率等有關。此外亦可以成本代替能源來比較其他運送方式之能源耗用量，即用管線、槽櫃車、鐵路、空運、路運等方式運送旅客及貨物。 （註）上項單位以百萬焦耳／延一人公里（MJ/pkm）或百萬焦耳／延一噸公里（MJ/tkm）表示。	6.6.24 Energy consumption per passenger-kilometre; energy consumption per tonne-kilometre The energy required to convey one passenger or one tone over one kilometer. The value varies for each mode of transport in dependence on the numbers of passengers or quantities of commodities conveyed, the distance covered and the passenger or tonnage load factor; it enables the cost in terms of energy to be compared as between one mode of transport and another, e.g. pipeline, tanker, rail, air, road for the conveyance of (MJ/pkm) or megajoules per tonne-kilometre (MJ/tkm).
6.6.25 客車燃料耗用測試 在標準狀況下，將新車種以模擬市區駕駛情況及定速行駛等方式量測其燃料耗用量。通常皆以公升/100 公里表示。	6.6.25 Passenger car fuel consumption test A test (which may be mandatory) made under standard conditions on new passenger car models to determine their fuel consumption under simulated urban driving conditions and at specified constant speeds (e.g. 90 and 120 km/h). Fuel consumption is expressed in a standard unit specified in the testing procedure (e.g. litres/100 km). Results of the tests are published to enable comparisons of fuel consumption to be made.
6.7 熱泵／熱泵加熱系統 （註）下列名詞係限於暖房加熱的電力熱泵工廠。	6.7 Heat Pumps/Heat Pump Heating Systems Note The terms listed below are limited to those applying to electric heat pump plants used for space heating.

6.7.1 熱泵 自低度熱源（冷側），如地下水，地面水、土壤、室外空氣、通風空氣，傳熱至工作流體，再應用高級能，如機械 能，昇高溫度或增加工作流體之含熱量，再釋放熱能以供利用（熱側）之裝置。 （註）蒸汽壓縮熱泵的組件為：壓縮循環，工作流體循環，包括熱交換器和膨脹閥，輔助器等。	6.7.1 Heat pump A device that transfers heat from a low-grade heat source (cold side).e.g. ground water, surface water, soil, outdoor air, vented air, to a working fluid and, by the application of a higher grade form of energy, e.g. mechanical energy, raises the temperature or increases the heat content of the working fluid before releasing its heat for utilization (hot side). Note the components of a vapour compression cycle heat pump are: compressor, compressor drive, working fluid cycle, including heat exchangers and expansion valve, auxiliaries, e.g. crank-case heating, control equipment.
6.7.2 熱泵廠 包含熱泵、熱源設施及有關輔助設備（見 6.7.1）之工廠。	6.7.2 Heat pump plant A plant comprising a heat pump, the heat source installation and associated auxiliaries (see 6.7.1)
6.7.3 熱泵加熱系統 一種加熱系統，其基本構件，除熱能分配設施本身外，係一熱泵。額外設備可能包含熱能儲存設備及或一補充加熱系統。 （註 1）以熱傳媒體為主之工廠分類。工廠與熱泵加熱系統可以分類如下： —空氣／空氣， —空氣／水， —水／空氣， —水／水， —土壤／空氣， —土壤／水。 （註 2）以操作方法為主之工廠分類。單級熱泵加熱系統：不具補充加熱之熱泵加熱系統，只以熱泵於加熱期間供應熱能之系統。	6.7.3 Heat pump heating system A heating system whose essential component, apart from the heat distribution installation itself, is a heat ump. Additional equipment could comprise heat-storage facilities and/or a supplemental heating system. Note 1 Classification of plant by thermal media According to the different media employed as heat sources and in heat distribution installations, heat pump plants and heat pump heating systems may be classed as follows: - air/air - air/water, - water/air, - water/water, - soil/air, - soil/water. Note 2 Classification of plant by methods of operation. Monovalent heat pump heating system; heat pump heating system without supplemental heating A system in which the heat pump alone supplies heat during the heating season.

雙級熱泵加熱系統：級熱泵加熱系統：具有補充加熱之熱泵加熱系統，熱泵可以由其他加熱設備（補充加熱）補充之系統，通常用於，譬如，當滿足或有助於滿足特別寒冷日子之加熱需求或當熱泵無法工作時。名詞「雙級」之使用，其理由為，通常補充加熱係基於不同之能源供應以用於操作熱泵。 熱泵操作可以區分為：並聯操作 在雙級熱泵工廠之並聯操作，在大多數加熱日子，只由熱泵可以滿足熱能需求。然而，在少數特別寒冷之加熱日子，為了滿足尖峯需求，補充加熱必須與熱泵並聯操作，前者係基於不同能源供應以用於操作熱泵。 交互操作 在雙級熱泵工廠之交互操作，低熱能需求之加熱日子期間，當室外溫度高於 3°C，只以熱泵即可滿足其熱能需求，然而在加熱日子一旦室外溫度降至低於 3°C，熱能需求由交互加熱設備來滿足，基於不同能源供應以用於操作熱泵。 （註 3）操作指南 在單級操作及雙級，並聯操作，熱泵工廠必須連接至一低熱能分配系統，譬如熱水，樓板下加熱，其最大入口溫度不超過 55°C；在雙級，交互操作的場合，熱泵工廠可以連接至任何熱水加熱系統（暖氣爐及對流暖爐）。新的熱水加熱系統可能的話，應當設計使最大入口溫度不超過 70°C	Bivalent heat pump heating system; hybrid heat pump heating system; heat pump heating system with supplemental heating A system in which the heat pump may be supplemented by other heating equipment (supplemental heating) which serves, for example, to meet or assist in meeting heating demand on unusually cold days or when the heat pump is out of commission. The term ‘bivalent’ is employed because as a rule the supplemental heating is based on a different supply of energy from that used to operate the heat pump. Heat pump operation may be divided into: Parallel operation. In parallel operation of a bivalent heat pump plant, heat demand is met on the majority of heating days by the heat pump alone. On the few exceptionally cold heating days, however, in order to meet peak demand, supplemental heating is operated in parallel with the heat pump, the former being based on a different supply of energy from that employed to operate the heat pump. Alternative operation In alternative operation of a bivalent heat pump plant, heat demand on heating days of low heat demand, when outdoor temperatures are, say, above 3ºC, is met by the heat pump alone, whereas on heating days when the outdoor temperature falls, say, below 3ºC, heat demand is met solely by the alternative heating equipment, based on a different supply of energy from that employed for operating the heat pump. Note 3 Operating guidelines In the case of monovalent operation and bivalent, parallel operation, the heat pump plant requires to be connected to a low-temperature heat-distribution system, e.g. hot water, underfloor heating, whose maximum inlet temperature does not exceed 55ºC. In the case of bivalent, alternative operation, the heat pump plant may be connected to any hot-water heating system (radiators and convectors). New hot-water heating systems should, where possible, be designed so that the maximum inlet temperature does not exceed 70ºC.

6.7.4 能源消耗及供應 （註）在分節 6.7.4 及 6.7.5 中之定義與符號係關於蒸氣壓縮式循環熱泵。 （註）見 6.7.5.6 名詞後之有關熱泵符號。	6.7.4 Energy consumption and supply Note The definitions and notation in the subsections 6.7.4 and 6.7.5 relate to the vapour compression cycle heat pump. Note See notation for heat pump after term 6.7.5.6.
6.7.4.1 壓縮機年能源消耗量 每年用於熱泵之壓縮機驅動所耗用之能源（能源供應見 1.1.6）總量，W_{cyr}（見 6.7.4 註）	6.7.4.1 compressor annual energy consumption The total quantity of energy (energy supplied, see 1.1.6) consumed by the compressor drive of the heat pump in one year, W_{cyr}(see notes to 6.7.4).
6.7.4.2 附屬設備年能源消耗量 每年用於熱泵之附設備（如用於加熱曲軸箱，用於操作控制設備）以及熱源設備（如用於泵送地下水，用於驅動抽氣風扇）所耗用之能源（能源供應見 1.1.6）總量，W_{auxyr}（見 6.7.4 註） 。	6.7.4.2 Auxiliaries annual energy consumption The total quantity of energy (energy supplied, see 1.1.6) consumed in one year by the auxiliaries of the heat pump (e.g. for heating the crankcase, for operating control equipment) and by the heat source equipment (e.g. for pumping up under-ground water, for driving an extractor fan), W_{ausyr} (see notes 6.7.4).
6.7.4.3 熱泵廠年能源消耗量 每年用於熱泵，附屬設備及熱源備所耗用之能源（能源供應見 1.1.6）共同組成熱泵工廠能源消耗總量，W_{yr} $W_{yr}=W_{cyr}+W_{auxyr}$ （見 6.7.4 註）。 （註）用於循環（水）泵浦或熱能分配系統附屬設備之能源消耗量可以不必包括。	6.7.4.3 Heat pump plant annual energy consumption The total quantity of energy (energy supplied, see 1.1.6) consumed in one year by the heat pump, auxiliaries and heat source equipment together comprising the heat pump plant, W_{yr}. $W_{yr}=W_{cyr}+W_{auxyr}$ (see notes to 6.7.4). Note The quantity of energy consumed by the circulating pumps or auxiliaries of the heat distribution system may not be included.
6.7.4.4 熱泵廠每年供應之有用熱能 每年由熱泵廠供應之有用熱能總量，Q_{yr}（見 9.7.4 之注意事項）。	6.7.4.4 Annual useful heat supplied by heat pump plant The quantity of useful heat supplied by the heat pump plant in one year, Q_{yr} (see notes to 6.7.4).

6.7.5 操作特性	6.7.5 Operating characteristics
6.7.5.1 熱泵廠性能係數 熱泵廠供應之有用熱能輸出率對熱泵工廠所需之總功率輸入之比值，Cp；參考條必須注明。 $C_p = \frac{9}{P}$ （見 6.7.4 註）。 （註）如果性能係數之計算只指熱泵，必須指明。	6.7.5.1 Coefficient of performance of heat pump plant The ratio of the rate of useful heat output supplied to the total power input required by the heat pump plant, Cp; reference conditions should be specified. $C_p = \frac{9}{P}$ (see Notes to 6.7.4). Note If coefficient of performance is calculated for the heat pump alone, this should be indicated.
6.7.5.2 壓縮機年使用期 一年期間，用於熱泵之壓縮機驅動所耗用之能源（能源供應見 1.1.6）總量對於其名義或額定容量操作功率消耗之比值，以每年小時數為單位計， T_{cyr} $T_{cyr} = \frac{W_{cyr}}{P_{cm}}$ （見 6.7.4 註）。	6.7.5.2 Annual compressor utilization period The ratio of the total quantity of energy (energy supplied, see 1.1.6) consumed by the compressor drive of the heat pump, to its power consumption when operating at its nominal or rated capacity, over a one year period, in terms of hours per year, T_{cyr} $T_{cyr} = \frac{W_{cyr}}{P_{cm}}$ (see bites to 6.7.4).
6.7.5.3 熱泵廠年使用期間 一年期間，用於熱泵工廠所耗用之能源（能源供應見 1.1.6）總量對熱泵工廠以最大容量操作功率消 耗之比值，以每年小時數為單位計， T_{maxyr}。 $T_{maxyr} = \frac{W_{yr}}{P_{max}}$ （見 6.7.4 註）	6.7.5.3 Annual heat pump plant utilisation period The ratio of the total quantity of energy (energy supplied, see 1.1.6) consumed by the heat pump plant to the power consumption when the heat pump plant is operation at maximum capacity, over a one-year period, in terms of hours per year, $T_{maxyr} = \frac{W_{yr}}{P_{max}}$ (see notes to 6.7.4).

6.7.5.4 熱泵年性能係數 一年期間，熱泵供應之有用熱能對於熱泵之壓縮機驅動所消耗之能源（能源供應見 1.1.6）總量之比值，C_{phpyr}

$$C_{phpyr} = \frac{Q_{yhpyr}}{W_{cyr}}$$

（見 6.7.4 註）。

6.7.5.4 Annual heat pump coefficient of performance The ratio of the useful heat supplied by the heat pump to the total quantity of energy (energy supplied, see 1.1.6) consumed by the heat pump compressor drive, over a one-year period, C_{phpyr}

$$C_{phpyr} = \frac{Q_{yhpyr}}{W_{cyr}}$$

(see notes to 6.7.4).

6.7.5.5 熱泵廠年性能係數 一年期間，熱泵工廠供應之有用熱能對於熱泵工廠消耗之能源（能源供應見 1.1.6）總量之比值， C_{pyr}

$$C_{pyr} = \frac{Q_{yr}}{W_{yr}}$$

（見 6.7.4 註）

6.7.5.5 Annual heat pump plant coefficient of performance The ratio of the useful heat supplied by the heat pump plant to the total quantity of energy (energy supplied, see 1.1.6) consumed by the heat pump plant, over a one-year period, C_{pyr}

$$C_{pyr} = \frac{Q_{yr}}{W_{yr}}$$

(see notes to 6.7.4).

6.7.5.6 熱泵廠年性能係數（以初級能源輸入為參考） 一年期間，熱泵工廠供應之總有用熱能對於初級能源消耗總量之比值，在下列場合：

（1）不具補充加熱之熱泵工廠或單級熱泵工廠

$$C_{pyr} = \frac{Q_{yr}}{E_{yr}}$$

（2）具有補充加熱之熱泵工廠或雙級熱泵工廠

$$C_{pyr} = \frac{Q_{yr}}{E_{yr}} = \frac{W_{cyr} \cdot C_{phpyr} + Q_{Byr}}{(1/\eta)W_{yr} + CV_{net} \cdot V_{yr}}$$

（註）這種性能係數的變化在於能以初級能源需要做比較，且不能視為制定初級能源使用之經濟或政策評估，由於諸如進口、市場情勢、環境衝擊等皆未考慮；在不同熱泵加熱系統之比較評估時，這些因素必須列入考慮。

6.7.5.6 Annual heat pump plant coefficient of performance (referred to primary energy input) The ratio of the total useful heat supplied by the heat pump plant to the total quantity of primary energy consumed, over a one-year period, for the case of :

(1) a heat pump plant without supplemental heating or monovalent heat pump plant

$$C_{pyr} = \frac{Q_{yr}}{E_{yr}}$$

(2) a heat pump plant with supplemental heating or bivalent heat pump plant

$$C_{pyr} = \frac{Q_{yr}}{E_{yr}} = \frac{W_{cyr} \cdot C_{phpyr} + Q_{Byr}}{(1/\eta)W_{yr} + CV_{net} \cdot V_{yr}}$$

Note This variant of the coefficient of performance is to enable comparison to be made of primary energy requirements and cannot be regarded as constituting an economic or policy assessment of the primary energy utilised, inasmuch as factors such as import dependence, market (situation, environmental impact, etc., are not)considered

6.7.4 及 6.7.5 節之符號 aux=輔助設備 C=壓縮機 C_p=熱泵工廠之性能係數 C_{php}=熱泵本身之性能係數 CV_{net}=補充加熱燃料之淨熱值 E=熱泵工廠初級能源輸入 hp=不包括熱源設備之熱泵 max=最大值 n=名義或額定容量 p=熱泵工廠之功率輸入 Pc=壓縮機之功率輸入 Q=熱泵工廠供應之有用熱源 QB=補充加熱供應之有用熱能 Q_N=熱泵加上補充加熱供應之有用熱能 Q_{hp}=熱泵本身供應之有用熱能 q=熱泵工廠有用熱能之供應率 T=涉及熱泵工廠之週期，單位為小時 Tc=涉及壓縮機之週期，單位為小時 V=補充加熱燃料之體積或重量 W=熱泵工廠之能源消耗 W_c=壓縮機驅動之能源消耗 W_{aux}=輔助設備之能源消耗 yr=年 η=初級化石燃料轉換成電力之熱效率（電 熱泵之場合）	in the comparative evaluation of different heat pump heating systems such factors require to be taken into account. Notation for subsections 6.7.4 and 6.7.5 aux = auxiliaries C=compressor C_p =coefficient of performance of heat pump plant C_{php} =coefficient of performance of heat pump alone CV_{net} =net calorific value of supplemental heating fuel E=primary energy input to heat pump plant hp=heat pump excluding heat source equipment max=maximum n=nominal or rated capacity p=power input to heat pump plant P_c =power input to compressor Q=useful heat supplied by heat pump plant Q_B=useful heat supplied by supplemental heating Q_N=useful heat supplied by heat pump plus supplemental heating Q_{hp}=useful heat supplied by heat pump alone q=rate of supply of useful heat by heat pump plant T=period in hours referred to heat pump plant Tc=period in hours referred to compressor V=volume or weight of supplemental heating fuel W=energy consumed by heat pump plant W_c=energy consumed by compressor drive W_{aux}=energy consumed by auxiliaries yr=year η=Thermal efficiency of the conversion of primary fossile fuel in electricity (in the case of electric heat pumps)