

# 氣候智慧醫院推動指引

## Guidelines for the implementation of climate smart hospitals

(草案)

**(Draft)**



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## 一、前言

### 一、Preface

依聯合國氣候變遷政府間專家委員會(IPCC)第 5 次評估報告認為，以燃燒化石燃料為主的人類活動「極可能」是 1950 年以來全球氣候暖化的主要成因，全球平均氣溫屢創新高，對人類生存及生態環境造成重大衝擊。未來高溫天數、極端強降雨之發生頻率可能會明顯增加，以及豐枯水期降雨可能愈趨極端化，都將加劇健康風險，改變慢性與傳染性疾病的型態，同時嚴重影響水資源、國土安全、海岸及海洋資源、糧食安全、健康醫療及生物多樣性等面向。

According to the IPCC'S Fifth Assessment Report, anthropogenic activities of fossil fuel combustion are extremely likely to have been the dominant cause of the observed warming since 1950 with successive increase in global average surface temperature, causing severe impacts to human life and the ecological environment. The number of days with high temperature and the frequency of heavy precipitation to occur are projected to rise significantly, as well as the changes in precipitation could follow the trend of extreme weather during flood and drought season. All of the above will increase the risk of health, change the type of chronic and contagious diseases, while severely affect our water resources, homeland security, coastal and ocean resources, food security, healthcare and biodiversity.

面對氣候變遷健康衝擊，醫療院所應進行溫室氣體排放之盤查與管理，盤點減量潛力，並搭配能源管理系統及減緩措施，以減少溫室氣體排放。此外，透過落實氣候變遷災害風險評估、降低脆弱度並強化韌性，建立應對的調適管理策略，提升醫院軟、硬體之因應能力，將能降低氣候變遷所帶來的衝擊。

Facing the climate impact to health, medical institutions should proceed to conduct greenhouse gas emissions inventory and management to find potential for reduction in coordination with energy management system and mitigation measures to reduce greenhouse gas emissions. Additionally, medical institutions can lower the impact of climate change through the implementation of climate risk assessment to reduce

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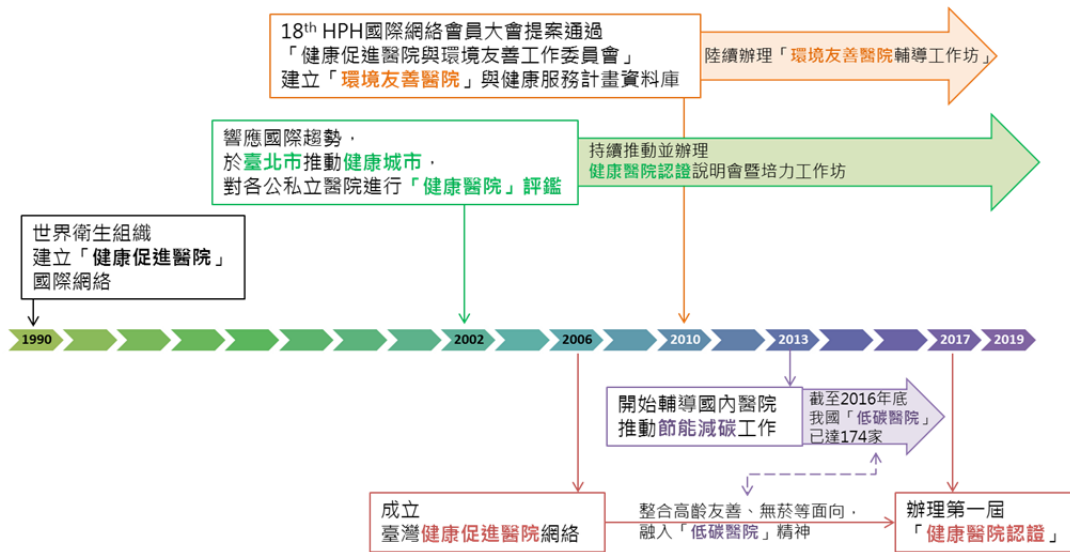
vulnerability and increase resilience, to build adaptation management strategies and to enhance the strength in the softwares and hardwares medical institutions in response to situation.

世界銀行和國際醫療無害組織(Health Care Without Harm)在 2015 年共同推動氣候智慧醫療照護(Climate Smart Healthcare)的概念，以整合並達成溫室氣體減量、加強氣候韌性及永續發展的目標。

World Bank and Health Care Without Harm together in 2015 promoted the concept of Climate Smart Healthcare to integrate and to achieve the goal of greenhouse gas reduction to strengthen resilience and sustainable development.

我國為響應國際趨勢，臺北市早在 2002 年即開始推動健康城市，並且對各公私立醫院進行「健康醫院」評鑑，而後於 2006 年正式成立臺灣健康促進醫院網絡，成為 WHO 健康促進國際網絡在亞洲的第一個網絡會員，持續推動及辦理健康醫院認證說明會暨培力工作坊迄今，推廣健康醫院之理念與策略，我國推動醫療院所因應氣候變遷歷程如下圖所示。

Our nation in response to international trend, Taipei City has already started to promote healthy city as early as in 2002, including assessment of “Healthy Hospitals” for public and private hospitals. It later established the Taiwan Health Promotion Hospitals Network to become the first network member of the WHO International Network for Health Promotion in Asia. Until now, the network has continued its promotion and implementation of healthy hospital accreditation and training workshops to promote the concept and strategy of healthy hospitals. The events of our nation in promoting medical institutions response to climate change are shown in the figure below.



衛生福利部國民健康署為支持醫療院所更有效因應氣候變遷，進而逐步達成低碳醫院、氣候智慧醫院、甚至是永續健康醫院之願景，特撰擬本「氣候智慧醫院推動指引」。本指引共分五部分，分別為前言、氣候智慧醫院進階指標、案例介紹、結語及附錄，架構下圖所示。

Health Promotion Administration of the Ministry of Health and Welfare has specially edited this “Climate Smart Hospital Promotion Guideline” in order to support medical institutions for more effective response to climate change so as to achieve low carbon hospitals, climate smart hospitals and even the vision to become sustainable healthy hospitals. The guideline contains 5 parts, as Introduction, Advanced Indexes for Climate Smart Hospitals, Introduction of Cases, Conclusions and Appendix, as shown in the graph below.

前言係介紹醫療院所因應氣候變遷議題；氣候智慧醫院進階指標說明推動氣候智慧醫院之可行方案；案例介紹則囊括各領域之優良案例。期以本指引作為使用者於推動氣候智慧醫院之細部執行參考。

The Introduction section explains climate change response related to medical institutions; the Advanced Indexes for Climate Smart Hospitals section introduces feasible alternatives to promote climate smart hospitals; while the Introduction of Cases section provides excellent examples from

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different regions. We wish this guideline can provide users detailed implementation references in promoting climate smart hospitals.

一、前言	<ul style="list-style-type: none"><li>• 醫療院所因應氣候變遷之國際趨勢</li><li>• 臺灣推動醫療院所因應氣候變遷因應作為</li><li>• 氣候智慧醫院推動指引之應用</li></ul>
二、氣候智慧醫院進階指標	<ul style="list-style-type: none"><li>• 領導與治理</li><li>• 溫室氣體減緩落實</li><li>• 氣候變遷風險調適</li></ul>
三、案例介紹	<ul style="list-style-type: none"><li>• 領導與治理領域實務案例</li><li>• 溫室氣體減緩落實領域實務案例</li><li>• 氣候變遷風險調適領域實務案例</li></ul>
四、結語	
五、附錄	

本指引建議措施以結果導向，鼓勵醫療院所評估自身條件後，以最合適的「操作措施」之策略或模式達成預期結果，並能述明或記錄推動過程，透過紀錄以做為醫療院所自我盤點之基礎，了解醫療院所目前所在的位置，另可提供下階段精進方向之參考。

The guideline provides results oriented suggestions of measures to encourage medical institutions to select the most suitable operation measure strategy or model to achieve their expected results. Each medical institution should be able to illustrate and make records along the

promotional processes to serve as the basis for self-checking so as to understand its position for further advance to the next level.

### **(一) 醫療院所因應氣候變遷之國際趨勢**

#### **(一) International trend of medical institutions in response to climate change**

世界銀行和國際醫療無害組織在 2015 年共同發表醫療院所氣候智慧醫療照護(Climate smart healthcare)概念，將溫室氣體減量加上氣候變遷調適策略，在危害到人們生命安全的多種極端氣候事件發生時，讓醫療院所能有效因應氣候變遷所導致之災害。

World Bank and Health Care Without Harm together in 2015 delivered the concept of Climate Smart Healthcare to integrate greenhouse gas reduction with climate adaptation strategy so as to facilitate medical institutions capability in responding to hazards caused by climate change when people's life are endangered by the occurrence of different extreme weather events.

在 2015 年於巴黎召開的 UNFCCC 第 21 屆締約方大會(COP21)中，國際醫療無害組織倡議 2020 Healthcare Climate Challenge，從領導(Leadership)、減量(Mitigation)和韌性(Resilience)等三大面向，鼓吹全球醫院承諾並落實氣候行動。

During the UNFCCC COP 21 in 2015, Health Care Without Harm initiated 2020 Healthcare Climate Challenge to promote medical institutions in the whole world to commit and implement climate actions from three aspects as Leadership, Mitigation, and Resilience.

### **(二) 臺灣推動醫療院所因應氣候變遷因應作為**

#### **(二) The promotion of climate change response by medical institutions in Taiwan**

我國為因應全球氣候變遷，善盡共同保護地球環境之責任，並確保國家永續發展，由環保署擬定「溫室氣體減量及管理法（以下簡稱溫管法）」，之後於 2015 年立法通過後由總統公布施行。

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Taiwan Environmental Protection Administration (TEPA) has led the passage of the Greenhouse Gas Reduction and Management Act (the Act) by the Legislative Yuan and promulgated by Presidential Order in 2015, that shares the responsibility of global environmental protection and assures national sustainability development under our national concerns of global climate change.

環保署依溫管法第9條第1項規定所擬訂的「國家因應氣候變遷行動綱領」，於106年2月23日奉行政院核定，明確擘劃我國推動溫室氣體減緩及氣候變遷調適政策總方針。內容明列我國因應氣候變遷的10大基本原則，政策內涵包括「溫室氣體減量」6大部門、「氣候變遷調適」8大領域及「政策配套」。

Pursuant to Article 9, Paragraph 1 of the Act, TEPA has formulated the National Climate Change Action Guidelines (Action Guidelines) and it was approved by the Executive Yuan on February 23, 2017, as clear guidance for the task of greenhouse gas mitigation and climate change adaptation strategy. The Action Guidelines call for all government bodies to observe 10 principles in climate change response. The adopted policies in the Action Guidelines include “greenhouse gas mitigation” for 6 sectors and “climate change adaptation” in 8 fields, and complementary policies.

其中，醫療體系屬於8大調適領域之一：「強化醫療衛生及防疫系統、提升健康風險管理」，衛生福利部為提升民眾對於氣候變遷造成健康危害之知能，已於2014年及2018年5月發表「因應氣候變遷之健康衝擊政策白皮書<sup>1</sup>」，內容包括氣候變遷與健康衝擊、極端氣候之因應對策、氣候變遷與傳染病、天然災害因應策略、氣候變遷造成的食品安全與營養問題、減緩氣候變遷之措施/政策、氣候變遷對健康衝擊之科技研究，以強化醫療照護及社會福利機構防災整備與應變量能，並在因應天然災害時提供完善醫療服務。

“Reinforce the public health and epidemic prevention system and improve health risk management” is one of the 8 fields for adaptation in the medical system. The Ministry of Health and Welfare has publicized the

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<sup>1</sup> 因應氣候變遷之健康衝擊政策白皮書，<https://www.mohw.gov.tw/cp-26-36887-1.html>



“White Paper for Health Impact Policy in Response to Climate Change” in 2014 and May 2018, it include the contents of climate change and health impact, countermeasures for extreme weather, climate change and contagious diseases, response strategy for natural disaster, food safety and nutrition problems caused by climate change, climate mitigation measures/policies, science and technology research for health impact from climate change, to strengthen medical care and the capability of social welfare institution to prevent and to respond to disaster, to be able to provide complete medical services when natural disaster occurs.

我國早在 2002 年於臺北市開始推動健康城市，並且對各公立醫院進行健康醫院評鑑，以推廣健康醫院之理念與策略。而「健康醫院認證」係以健康促進醫院認證(Health Promoting Hospitals, HPH)為基礎，並融入高齡友善健康照護機構認證(Age-friendly Hospitals, AFH)、無菸醫院認證(Tobacco-free Hospitals)及低碳醫院(Environment-friendly Hospitals)等面向建構而成。其中，「健康醫院認證」自評表之標準七為節能減碳項目，評分項目包含年度能源、水、廢棄物管理和綠色採購的揭露，本指引將其定義為初階指標；並建構「領導與治理」、「溫室氣體減緩落實」及「氣候變遷風險調適」三大領域為國內氣候智慧醫院之進階指標，呈現該領域應注重的項目，加強因應氣候變遷衝擊的規劃及行動，以利醫療院所應對越發劇烈的氣候變化及其產生的影響。

Our nation in response to international trend, Taipei City has already started to promote healthy city as early as in 2002, including assessment of “Healthy Hospitals” for public and private hospitals, to promote the concept and strategy for healthy hospitals. The “healthy hospital accreditation” is based on the accreditation for Health Promoting Hospitals (HPH) to combine with the accreditation for Age-friendly Hospitals (AFH), Tobacco-free Hospitals and Environment-friendly Hospitals. Energy saving and carbon reduction is the 7th category listed under the self-evaluation sheet for “healthy hospital accreditation”. The items for evaluation in category 7 include the disclosure of annual energy, water, waste management and green procurement, which are defined in this guideline as

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**preliminary indexes**. This guideline also builds 3 major fields as “leadership and management”, “greenhouse gas mitigation” and “climate change adaptation” as **advanced indexes** for domestic climate smart hospitals, and presents items to be aware of in each field to enhance climate change impact response planning and action, so as to facilitate medical institutions to respond to extreme weather changes and effects.

### (三) 氣候智慧醫院推動指引之應用

#### (三) Application of Climate Smart Hospital Guideline

氣候智慧醫院推動指引及三大領域進階指標，係參考國內外文獻，包含 2020 Healthcare Climate Challenge、國際醫療無害組織綠色與健康醫院(Global Green and Health Hospital)報告書(中文版)、醫策會醫院評鑑基準、政府機關及學校節約能源行動計畫、經濟部能源局醫院節約能源應用手冊、建築節能應用技術手冊、現行永續報告(如：CDP 和 GRI 系統)等資料，彙整分析各項方針執行策略及參採國內外專家建議後完成本指引。

The Climate Smart Hospital Guideline with its advanced indexes in three areas took references from foreign and domestic literatures including: 2020 Healthcare Climate Challenge, Global Green and Health Hospital Reports (Chinese Version), Taiwan Joint Commission on Hospital Accreditation (TJCHA), Governments and Schools Energy Saving Action Plan, Handbook for hospital energy saving by Bureau of Energy, Handbook for building energy saving technology, currentl sustainability reports (such as: CDP and GRI series), to compile implementation strategy of different items into this guideline with comments from professionals to complete this guideline.

期許國內醫療院所邁向氣候智慧化管理，將氣候變遷設為優先議題，透過系統性的盤查溫室氣體排放及有效系統管理以減緩環境污染。並常態性的評估氣候風險並持續提升氣候調適與防災能力，在守護民眾和同仁的健康的同时，致力於減緩地球暖化以因應氣候變遷。

It is our wish for domestic medical institutions to move forward to climate smart management by setting priority for climate issues and applying systematic accounting of greenhouse gas emissions to effectively manage the mitigation of environmental pollution. Additionally, routine evaluation of climate risk and continued increase in climate adaptation and disaster prevention capability, to safeguard the health of the public and coworkers while endeavouring in global warming mitigation in response to climate change.

本指引藉由醫療院所進行自我評估，協助其進行盤查以掌握醫院在溫室氣體減緩及因應氣候變遷調適的推動現況，進而了解未來進一步推動氣候變遷因應之可精進的空間及作為。

The guideline can help medical institutions to grasp the status of greenhouse gas mitigation and climate change adaptation through systematic accounting and self-evaluation to understand future potential for further advanced climate change actions.

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## 二、氣候智慧醫院進階指標

## 二、Advanced Indexes for Climate Smart Hospital

臺灣健康照護機構因應氣候變遷的「氣候智慧醫院進階指標」制定原則，係基於決策制定與落實公開透明，並考量各種環境議題的共同效益，在最低成本精神下，推動我國醫療院所達到溫室氣體減量及氣候變遷調適因應。

Taiwan health care institutions in response to climate change has established the “Advanced Indexes for Climate Smart Hospital” based on the decision to implement such policy openly and transparently, and in consideration of putting the effectiveness of various environmental issues together to achieve greenhouse gas mitigation and climate change adaptation target at the lowest cost for our medical institutions nationwide.

### (一) 指標領域

(一) The “Advanced Indexes for Climate Smart Hospital” are categorized into three areas, with each index’s policy direction and expected goal as follows.

「氣候智慧醫院進階指標」共分為三個領域，其政策方向及預期目標如下。

#### 1. 領導與治理(Leadership & Governance)

##### 1. Leadership & Governance

(1)政策方向：醫院管理層的規劃與執行責任，以科學證據為基礎，營造推動氣候變遷減緩與調適的組織及規範，確保醫療院所的發展策略與組織運作中，能考量氣候變遷所帶來的潛在危機，並擬定因應作為。

(1)Policy Direction: The hospital management level shall take the responsibility to facilitate the establishment of climate change mitigation and adaptation organization and regulation based on scientific evidence to assure medical institutions to include potential climate change risk into their future development strategies and institutional operation with proper response measures.

(2)預期目標：建構醫療院所之災害預警能力，減緩溫室氣體排放並調適氣候變遷所帶來的負面衝擊。

(2)Expected Goal: To establish the capability of medical institutions in prevention of hazards, mitigation of greenhouse gas emission and adaptation to negative impacts from climate change.

## **2. 溫室氣體減緩落實 (Greenhouse Gases Mitigation and Management)**

### **2. Greenhouse Gases Mitigation and Management**

(1)政策方向：進行組織溫室氣體盤查，以掌握醫療院所之減量空間，透過策略管理，以執行溫室氣體減緩措施。

(1)Policy Direction: To implement organization greenhouse gas accounting so as to grasp the medical institution's potential for reduction to implement greenhouse gas mitigation measures through strategic management.

(2)預期目標：掌握溫室氣體排放數據，評估及規劃可行有效之減量政策，以落實溫室氣體排放減量。

(2)Expected Goal: To hold greenhouse gas emission data for evaluation and planning of feasible and effective reduction policy so as to implement greenhouse gas emission reduction.

## **3. 氣候變遷風險調適 (Climate Risk and Adaptation)**

### **3. Climate Risk and Adaptation**

(1)政策方向：執行因地制宜的氣候風險與脆弱性評估與管理，落實醫療衛生及防疫系統之預防、減災、應變及復原能力。

(1)Policy Direction: To implement proper climate risk and vulnerability assessment and management, to facilitate the system of medical hygiene and epidemic prevention, as well as the capability of hazard reduction, response and recovery.

(2)預期目標：讓醫療院所瞭解氣候變遷所帶來的健康危害並進行調適，透過降低氣候變遷影響與效應下的脆弱度(vulnerability)，以減少在極端天氣事件與暖化效應下的負面衝擊，進而及時應變並能迅速復原。

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(2)Expected Goal: To facilitate medical institutions in understanding health hazards from climate change to implement adaptation through lowering the vulnerability caused by climate change effect so as to reduce negative impacts under extreme weather and warming effects, further more to be able to make timely response and quick recovery.

前述三個領域分別展開多項指標，其中「領導與治理」係包含目標、組織及公共參與；「溫室氣體減緩落實」係依行政院於 2018 年 3 月核定之「溫室氣體減量推動方案」，將減緩指標依照能源（再生能源使用與節約能源）、製造（綠色產業）、運輸（綠色運輸）、住商（節能建築）、農業（低碳及健康飲食）及環境（能資源減量及永續採購）面向進行分類；而「氣候變遷風險調適」係包含氣候危害與脆弱度評估、緊急應變管理及氣候風險溝通。而各項「指標」分別對應單個或多個「預期結果」及其「操作措施」，且每項「操作措施」將依「預期結果」達成狀況予以評分，醫療院所提出的做法，毋須侷限於操作建議，可依據醫療院所現況調整推動作法。

Several indexes were developed for each of the above three areas respectively, among them “Leadership & Governance” consists of target, organization and public participation; “Greenhouse Gases Mitigation and Management” in accordance with the “Greenhouse Gas Reduction Action Plan” approved by The Executive Yuan in March 2018, divides mitigation indexes according to energy (renewable energy use and energy saving), manufacturing (green production), transportation (green transportation), residential & commercial (energy saving building), agriculture (low carbon and healthy foods) and environment (energy and resources conservation and sustainable procurement); while “Climate Risk and Adaptation” includes climate hazards and vulnerability assessment, emergency response management and climate risk communication. Each “index” corresponds to one or more “Expected Result” and the “Operation Measure” for that particular result. Score for each index will be judged according the result achieved in comparison to the “expected result” for each

“operation measure” . Medical institutions do not necessarily have to confine themselves to the suggested operations but they can make adjustments of their plans according to their on-site situation.

## (二) 分級推動

### (二) Classification of Action

依衛福部規定，將醫療院所分為醫學中心、區域醫院、地區醫院及基層診所，各級醫院負有不同的照護任務與角色，且其規模及擁有的資源不甚相同，因此本指引依據分級醫療，將我國醫療院所推動因應氣候變遷分為四個層級，說明如下：

According to Ministry of Health and Welfare, medical institutions are divided into Academic Medical Centers, Metropolitan Hospitals, Local Community Hospitals and Physician Clinics & Dental Clinics, each level of medical institution has different duty and plays different role in health care. Therefore, the guideline classifies hospital actions towards climate change response into 4 levels as follows:

#### 1. 第一級：達到「健康醫院認證」標準七

#### 1. Level 1: To achieve Standard 7 of the “Healthy Hospital Certification”

「健康醫院認證」標準七係要求醫療院所揭露年度能源、水、廢棄物管理和綠色採購之資訊，並要求定期檢討改善，因此期待我國所有層級之醫療院所（包含基層診所）皆能朝向達成「2.1.2.推動醫院電力系統節約措施」、「2.6.1.廢棄物管理」、「2.6.2.永續採購」及「2.6.5.推動醫院水資源減量措施」等四項「健康醫院認證」標準七之指標。

Standard 7 of the “Healthy Hospital Certification” requires medical institutions to disclose annual energy and water consumption, waste management and green procurement information, with periodic evaluation for improvement. Therefore, the guideline expects all level of medical institutions (including physician clinics & dental clinics) can strive to achieve the 4 indicators listed for Standard 7 of the “Healthy Hospital Certification” as “2.1.2. promote hospital

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electric system energy saving measures” , “2.6.1. waste management” , “2.6.2. sustainable procurement” and “2.6.5. promote hospital water conservation measures” .

## 2. 第二級：成為「低碳醫院」

### 2. Level 2: To become “low carbon hospital”

須達成第一級之要求外，建議醫療院所內部能組成氣候變遷因應組織，以推動溫室氣體減緩落實領域達成一定程度之指標內容，因此期待地區醫院（含）以上層級之醫療院所皆能符合並達成低碳醫院，以顯示醫療院所在溫室氣體減量的管理及措施推動已達相當程度，以逐步降低醫院碳排放量。

In addition to achieve the requirements for level 2, it is suggested for medical institutions to establish their internal climate change response organizations to promote greenhouse gas mitigation and to fulfill certain extend of the indexes. Therefore, the guideline expects all medical institutions above and including the level of local community hospitals can comply with and become low carbon hospitals, to demonstrate that medical institutions have reached certain level in greenhouse gas reduction management and implementation measures to gradually lower hospital carbon emissions.

## 3. 第三級：達成「氣候智慧醫院」

### 3. Level 3: To achieve “Climate Smart Hospital”

須達成第二級之要求外，建議醫療院所內部能組成氣候變遷因應組織，以推動溫室氣體減緩及氣候變遷調適，應於氣候變遷風險調適領域達成一定程度之指標內容，因此期待區域醫院（含）以上層級之醫療院所皆能符合並達成氣候智慧醫院，顯示醫院在氣候變遷調適、溫室氣體減量、或緊急應變面向上，都具備完善的管理制度。

In addition to achieve the requirements for level 2, it is suggested for medical institutions to establish their internal climate change response organizations to promote greenhouse gas mitigation and



climate change adaptation to fulfill certain extend of the indexes. Therefore, the guideline expects all medical institutions above and including the level of metropolitan hospitals can comply with and become climate smart hospitals, to demonstrate that medical institutions maintain sound management systems in all aspects of climate change adaptation, greenhouse gas reduction, or emergency response.

#### 4. 第四級：邁向「永續健康醫院」

#### 4. Level 4: Towards “Sustainable Healthy Hospital”

須達成第三級之要求外，建議醫療院所內部能組成氣候變遷因應組織，以推動溫室氣體減緩及氣候變遷調適，並於領導與治理領域達成一定程度之指標內容，因此期待我國醫學中心或其他致力於因應氣候變遷之醫療院所皆能符合並達成永續健康醫院，同時亦可與國際醫療無害組織之全球綠色健康醫院(Global Green and Health Hospital)的十大指標相呼應，顯示醫院建立了完善的組織和管理機制，並訂有明確目標和策略推動各項減量行動，甚是將因應氣候變遷議題列入醫院的經營理念。未來將逐步朝向醫院永續發展的目標邁進，以涵蓋環境、社會、治理及永續發展目標等各項面向。

In addition to achieve the requirements for level 3, it is suggested for medical institutions to establish their internal climate change response organizations to promote greenhouse gas mitigation and climate change adaptation, and to fulfill certain extend of the indexes in leadership & governance. Therefore, the guideline expects all academic medical centers or medical institutions dedicated to climate change response can comply with and become sustainable healthy hospitals, that also corresponds to the 10 indicators for Global Green and Health Hospital established by Health Care Without Harm, to demonstrate that medical institutions have established sound organizations and management schemes, as well as clear goal and strategy to implement all kinds of reduction action even to include

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climate change issues into the concept of hospital operation to move further towards the target for hospital sustainable development, including all aspects in environment, society, governance and sustainable development goals.

## (三) 進階指標及操作指引

## (三) Advanced Index and Operation Guideline

以下依「領導與治理」、「溫室氣體減緩落實」及「氣候變遷風險調適」等三大領域，分別說明進階指標及操作措施建議，以提供我國醫療院所依序檢視其符合程度，透過配分欄進行自評，以做為醫療院所盤點之基礎，並可了解後續可精進之方向。

Details of advanced indexes and their suggested operation measures in the three areas as “Leadership & Governance”, “Greenhouse Gases Mitigation and Management”, and “Climate Risk and Adaptation” respectively are explained as follows, to help all medical institutions to evaluate their level of compliance accordingly through the score for self-assessment and as the basis for medical institutions to understand their directions for future improvements.

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
1. 領導與治理 1. Leadership & Governance					
1.1. 建立溫室氣體減量和氣候變遷調適目標及組織 1.1 The establishment of greenhouse gas reduction and climate change adaptation goal and organization					
1.1.1. 明訂醫院因應氣候變遷之目標與計畫 1.1.1. Set targets and plans for hospital climate	1. 由醫院高階管理者所宣告(承諾)關於「氣候變遷」與組織發展的關聯 1. The hospital's high level management leader shall declare (make commitment )	醫院將「永續發展」及「氣候變遷減緩和調適」列入經營理念中，或與既有的醫院願景、宗旨、目標、核心價值或經營理念相互結合 The hospital shall integrate “sustainable development” and “climate change mitigation and	下列項目每完成一項可得○分： Each of the following item can receive a core of ○ <input type="checkbox"/> 將「氣候變遷減緩和調適」列入或與既有之醫院願景、宗旨、目標、核心價值或經營理念結合 <input type="checkbox"/> To integrate “climate change	<input type="checkbox"/> 醫院因應氣候變遷目標或計畫相關文件 <input type="checkbox"/> Relevant documentation of the hospital in response to climate change	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
change response	<p>regarding the connection between “climate change” and the organization’s development.</p> <p>2. 學習對氣候風險的衝擊和提高執行永續策略共贏的意識</p> <p>2. Learning on climate risk impact to elevate the awareness and consensus on a win-win sustainable strategy.</p> <p>3. 落實溫室氣體減量及提升氣候調適能力</p> <p>3. Implement greenhouse gas reduction and upgrade climate adaptation capability.</p>	<p>adaptation” into its management concept, or to combine them with the hospital’s existing vision, purpose, target, core value or the management concept.</p> <p>醫院應依據溫室氣體減緩措施及氣候變遷調適規劃之推動狀況，制定符合自身狀況及能力所及之氣候變遷改善階段性推動目標，定期檢討推動進度，</p>	<p>mitigation and adaptation” into or combine it with the hospital’s existing vision, purpose, target, core value or the management concept.</p> <p><input type="checkbox"/> 將「永續發展」列入或與既有之醫院願景、宗旨、目標、核心價值或經營理念結合</p> <p><input type="checkbox"/> To integrate “sustainable development” into or combine it with the hospital’s existing vision, purpose, target, core value or the management concept.</p> <p>下列項目每完成一項可得○分： Each of the following item can receive a core of ○</p> <p><input type="checkbox"/> 建立新知管道</p> <p><input type="checkbox"/> Establish channel for new knowledge.</p>	<p>goal or plan.</p>	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
	<p>2. 針對氣候變遷，掌握醫院可能面臨的風險，並評估符合醫院成本效益的減量及調適措施</p> <p>2. Keep aware of the hospital's potential risk in climate change and make assessment to find cost effective measures for the hospital in reduction and adaptation.</p> <p>3. 滾動式檢討修正目標，並提出具體的改善作為</p> <p>3. Do rolling review and correction to the target and carry out specific improvement.</p>	<p>評估目標達成所需的時間、資源投入需求及推動進展，並訂定下一階段目標</p> <p>The hospital shall establish phased in climate change improvement implementation targets that are fit for its condition and capability with periodic assessment of the implementation process to evaluate the time and resources needed to reach the target, and set the target for the next phase.</p>	<p><input type="checkbox"/> 彙整醫院自身溫室氣體減量措施及氣候變遷調適因應做法，並提出改善作為</p> <p><input type="checkbox"/> Consolidation of the hospital's greenhouse gas reduction measures and climate change adaptation responses to bring forward improvement actions.</p> <p><input type="checkbox"/> 制定因應氣候變遷之階段性目標</p> <p><input type="checkbox"/> Establish phased in targets for climate change response.</p> <p><input type="checkbox"/> 定期辦理檢討會議，並訂定下一階段目標</p> <p><input type="checkbox"/> Conduct periodic review meetings to set the target for the next phase.</p>		
<p>1.1.2. 明訂規劃、執行和督導之組織</p> <p>1.1.2. Establish the</p>	<p>1. 由相關跨單位的主管與同仁共同組成氣候變遷因應組織(小組或委員會)，管理溫室氣體減量及氣候變遷調適相關實務，並引領全</p>	<p>執行氣候變遷的減緩及調適需要全體共同參與才能達到成效，故針對實務管理要項如下：</p> <p>The implementation of climate change mitigation and adaptation needs all members of the hospital to participate to</p>	<p>下列項目每完成一項可得○分： Each of the following item can receive a core of ○</p> <p><input type="checkbox"/> 成立氣候變遷因應組織，或於既有組織納入相關議題討論</p>	<p><input type="checkbox"/> 組織架構及名單</p> <p><input type="checkbox"/> Name list of structure of the established unit.</p> <p><input type="checkbox"/> 會議記錄</p>	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
organization for planning, implementation and supervision	院共同參與 1. Establishment of a cross department unit for climate change response (in the form of a division or committee) to manage the implementation of greenhouse gas reduction and climate change adaptation and to lead the whole hospital to participate. 2. 氣候變遷因應組織應以風險管理、醫院永續發展、溫室氣體減緩、氣候變遷調適等面向，進一步劃分管理權責 2. The climate change response unit shall further divide the management responsibilities into aspects as climate risk management, hospital	come to effect, therefore the followings are the key issues for the management of the implementation: (1) 透過系統性需求評估與利害關係人分析委任或成立組織 (1) Participating members can be selected through systematic evaluation of demands and analysis of stakeholders to form the unit. (2) 責任區與負責部門人員、部門自主檢查作業、外部稽核作業 (2) Set responsible areas and responsible department persons, establish departmental self-checking process and external auditing process (3) 推動內、外部系統性的需求評估管理 (3) Implement internal and external systematic demands	<input type="checkbox"/> The establishment of climate change response unit, or to include existing organizations into discussion of related issues. <input type="checkbox"/> 建立溫室氣體減緩及氣候變遷調適之內部自主檢視作業，或外部稽核作業 <input type="checkbox"/> The establishment of internal self-checking process or external auditing process for greenhouse gas mitigation and climate change adaptation. <input type="checkbox"/> 推動溫室氣體減緩及氣候變遷調適之需求評估，並規劃溫室氣體減緩、氣候變遷調適、醫院永續發展、氣候風險管理及氣候風險溝通的推動措施及管理規範 <input type="checkbox"/> Implement the evaluation of demands for greenhouse gas mitigation and climate change adaptation for the planning of implementation measures and management rules for greenhouse gas	<input type="checkbox"/> Records of meetings. <input type="checkbox"/> 會議意見追蹤 <input type="checkbox"/> Follow-up of comments given in the meetings. <input type="checkbox"/> 預算表 <input type="checkbox"/> Spreadsheet of budget.	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
	<p>sustainable development, greenhouse gas mitigation and climate change adaptation.</p> <p>3. 揭露與醫院決策委員會及其成員之經濟、環境和社會目標相關的激勵策略，以及績效計算標準</p> <p>3. Disclosure of the hospital decision committee's strategies related to economy, environment and society and the standards applied for calculating the score of performance.</p>	<p>evaluation and management.</p> <p>(4) 節約能源、溫室氣體減量、永續發展、氣候風險管理、氣候風險溝通規劃和執行</p> <p>(4) Energy saving, greenhouse gas reduction, sustainable development, climate risk management, climate risk communication planning and implementation.</p> <p>(5) 氣候變遷因應組織應依不同面向分別訂定專責管理單位，定期內部檢討及訂定目標，於每季或每半年召開共同討論會議</p> <p>(5) The climate change response unit shall establish specific responsible management division to conduct periodic internal review and target setting and call for discussion meetings at every season and every half year.</p> <p>(6) 針對氣候變遷導致的經濟、環境及社會影響所訂定</p>	<p>mitigation, climate change adaptation, hospital sustainable development, climate risk management and climate risk communication.</p> <p>□ 針對氣候變遷影響的經濟、環境及社會等三面向，針對其訂定因應辦法、改善目標及推動策略</p> <p>□ Establish response measures, improvement targets and implementation strategies in respect to economy, environment and society affected by climate change.</p>		

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
		<p>的目標，皆應具備對應之策略，並訂定可量化之績效計算標準</p> <p>(6) The targets set for economy, environment and society due to climate change, shall all be equipped with corresponding strategies and qualitative performance calculating standards.</p>			
<p>1.1.3. 適當之預算和人力配置</p> <p>1.1.3. Appropriate budget and manpower</p>	<p>1. 組織架構明確，由醫院具決策能力之高階主管擔任召集人，並由專人進行相關推動作業，以整合各單位科室之減量及調適措施，強化橫向推動</p> <p>1. The unit in charge should have clear organizational structure with high level supervisor who has the capability to make decision as convener and together with special persons to carry</p>	<p>透過具有決策能力的高階主管擔任召集人，由上至下帶領醫院推動因應氣候變遷，同時整合各科室之減量及調適措施，強化橫向推動。並劃分盈利比例，成立「因應氣候變遷」預算</p> <p>Through the designation of a high level decision making supervisor as convener to lead a bottom down implementation of climate change response with the integration of reduction and adaptation measures from all departments to enhance horizontal cooperation. A</p>	<p>下列項目每完成一項可得○分： Each of the following item can receive a core of ○</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 氣候變遷因應組織架構明確，由醫院具決策能力之高階主管擔任召集人，並由專人進行相關推動作業</li> <li><input type="checkbox"/> The unit in charge has clear organizational structure with high level supervisor who has the capability to make decision as convener and together with special persons to carry out the operation.</li> <li><input type="checkbox"/> 建立推動措施人員的獎勵機</li> </ul>		



進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
	<p>out the operation so as to integrate the reduction and adaptation measures from all departments to enhance horizontal cooperation.</p> <p>2. 提撥預算以用於醫院推動因應氣候變遷相關事宜</p> <p>2. Contribution of budget to the hospital's implementation of climate change related matters.</p>	<p>percentage of the hospital's profit should be dedicated to form the "climate change response" budget.</p>	<p>制</p> <p><input type="checkbox"/> Establishment of incentive mechanism for persons in charge of the operation.</p> <p><input type="checkbox"/> 編列氣候變遷因應預算</p> <p><input type="checkbox"/> Contribution of budget in climate change response.</p>		
<p>1.2. 公共參與 1.2. Public participation</p>					
<p>1.2.1. 積極掌握相關政策、法規及資訊以提供院內參考，並鼓勵公共政策參與</p>	<p>1. 定期追蹤國內氣候變遷相關政策及法規</p> <p>1. Periodic follow-up on domestic climate change related policy and regulations.</p> <p>2. 掌握國際醫療院所因應氣候變遷之新知</p> <p>2. Timely acquisition of</p>	<p>氣候變遷因應組織（小組或委員會）應定期追蹤、彙整國內氣候變遷相關法規及政策（如：因應氣候變遷之健康衝擊白皮書、溫室氣體減量及管理法、國家氣候變遷調適政策綱領、國家氣候變遷調適行動計畫等相關法規及政策）</p>	<p>下列項目每完成一項可得○分： Each of the following item can receive a core of ○ points.</p> <p><input type="checkbox"/> 定期追蹤、彙整國內氣候變遷相關法規及政策</p> <p><input type="checkbox"/> Periodic follow-up on domestic climate change related policy and regulations.</p>	<p><input type="checkbox"/> 資訊發布彙整表</p> <p><input type="checkbox"/> Lists of information distributed and compiled.</p>	

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1.2.1. Timely acquisition of policies, regulations and information to provide for the hospital's internal references and to encourage participation in public policies.	<p>up-to-date international knowledge on climate change response.</p> <p>3. 透過管道將前述蒐集之資訊傳達給醫院所有同仁，以提升其對氣候變遷之認知</p> <p>3. Distribution of the above information collected among co-workers in the hospital to facilitate the awareness of climate change.</p>	<p>The climate change response unit (division or committee) shall carry out periodic follow-up and compilation of domestic climate change related policy and regulations (such as: The White Paper In Response to Health Impacts From Climate Change, Greenhouse Gas Reduction and Management Act, Adaptation Strategy to Climate Change in Taiwan, National Climate Change Adaptation Action Plan and related policies and regulations).</p> <p>掌握國際因應氣候變遷之溫室氣體減量作為及調適因應政策，以利評估醫院之氣候變遷因應策略</p> <p>Acquisition of international greenhouse gas reduction actions and adaptation policies in response to climate change to facilitate the hospital in the evaluation of climate change strategies.</p>	<p><input type="checkbox"/> 定期收集彙整氣候變遷之國際資訊</p> <p><input type="checkbox"/> Periodic collection and compilation of international climate change information.</p> <p><input type="checkbox"/> 透過管道（如醫院系統、電子郵件、公告欄等）將前述國內外資訊傳遞給醫院同仁</p> <p><input type="checkbox"/> Distribution of the above domestic and international information among colleagues through information channels (such as the hospital system, e mail, bill boards, etc.).</p>		

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		<p>掌握國內外動態，透過理教育訓練，以提升同仁對於氣候變遷之認知</p> <p>Acquisition of domestic and international trends through educational training to enhance climate change knowledge among colleagues.</p>			
	<p>4. 直接或間接的參與影響氣候變遷之公共政策</p> <p>4. Direct or indirect participation in influencing public policies in climate change.</p>	<p>醫院鼓勵同仁積極投入由中央政府(衛福部、國健署、國發會、能源局、環保署)、地方政府(各縣市政府)或民間團體所倡議和制定的公共政策，包含溫室氣體減量及氣候變遷調適等議題</p> <p>To encourage hospital colleagues dedication to public policies initiated and established by central governments (Ministry of Health and Welfare, Health Promotion Administration, National Development Council, Bureau of Energy, Environmental Protection Administration) or civilian groups, including issues such as greenhouse gas reduction and</p>	<p>派員參與由中央政府、地方政府或民間團體辦理與氣候變遷相關議題活動，每年參加6場次以上，可得3分，每多參加1場次0.5分，最高得6分</p> <p>Designate persons to participate in climate change related activities sponsored by central governments, local governments or civilian groups. Participation over 6 sessions of activities can receive a score of 3 points with each additional session of participation to receive a score of 0.5 points and the maximum score is 6 points.</p>	<p><input type="checkbox"/> 結業或出席或學習證明文件</p> <p><input type="checkbox"/> Certification of attendance or documents to prove the participation.</p>	

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		climate change adaptation.)			
2. 溫室氣體減緩落實					
2. Greenhouse Gases Mitigation and Management					
2.1 再生能源使用與節約能源 (能源)					
2.1 Renewable energy use and energy saving					
2.1.1. 推動使用 再生能源 2.1.1.promote the use of renewable energy	1. 裝置太陽能發電系 統,提供公共區域用電 1. Installation of solar power systems to provide electric for public areas.	醫院推動建置裝置太陽能發電 系統(如晶矽太陽能電池、或於 建築西曬立面採用薄膜太陽能 電池),提供院內用電,或出租 屋頂給太陽光電供應商,發電回 饋醫院費用 The hospital promotes to implement the installation of solar power system (such as silicon solar cells or thin-film solar cells on the sunny side of building) to provide electric for the hospital internal use or leasing the roof to PV suppliers with fee paid back to	評估建置太陽能發電系統之可 行性,並依評估結果施行,可得 0分 Evaluation of feasibility to install solar power system and implement according to the result of evaluation. Receive the score of 0 points.	<input type="checkbox"/> 設置再生能源 系統之評估文 件 <input type="checkbox"/> Documentation to show the evaluation to install renewable energy systems. <input type="checkbox"/> 照片 <input type="checkbox"/> Photos	

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		the hospital.			
	2. 裝設小型風力發電或風光互補戶外照明 2. Installation of small scale wind power or wind and solar combined systems for outdoor lighting.	醫院推動建置裝設小型風力發電或風光互補戶外照明，提供部分公共區域用電，或出租給供應商，發電回饋醫院部分費用 The hospital promotes to implement the installation of small scale wind power or wind and solar combined systems for outdoor lighting, to provide a portion of the power for public area electric needs, or leasing to renewable power system suppliers with fee paid back to hospital.	評估建置小型風力發電或風光互補戶外照明之可行性，並依評估結果施行，可得0分 Evaluation of feasibility to install small scale wind power or wind and solar combined systems for outdoor lighting and implement according to the result of evaluation. Receive the score of 0 points.		
	3. 使用其他再生能源設備 3. Utilization of other renewable energy equipment	(1) 採用其他再生能源發電設備，如踩踏發電、旋轉門發電等設備 (1) Utilization of other renewable energy equipment, such as power by walking, power by revolving door. (2) 推動再生能源並設置儲能設備，且儲能設備能結合不斷電系統，以提升醫院電力系統之穩定性	評估建置其他再生能源發電設備之可行性，並依評估結果施行，可得0分 Evaluation of feasibility to install renewable power equipment and implement according to the result of evaluation. Receive the score of 0 points.		

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		(2) Installation of renewable power and power storage equipment, with the power storage equipment connected to uninterruptible power system to enhance the stability of the hospital power system.			
2.1.2. 推動醫院電力系統節約措施* 2.1.2.Promote hospital electric power system energy saving measures	1. 建置電力系統運轉節能實務 1. Establish practices in electric power system operation and saving.	醫院運轉節能實務建議如下： Suggestions for practices in the operation and saving of energy as follows: (1) 總量管理：電力契約容量、用水量及蒸汽量 (1) Total capacity management: according to contracted capacity of electric consumption, water consumption and steam consumption. (2) 單位成本用量分析管制，制定降低能源耗量目標 (2) Analysis of the cost of power per unit to set target for reducing power consumption. (3) 可控成本管制：自動化、時間程序管制、減少人員操作模式	下列項目每完成兩項可得○分，最高○分： Each of the following item can receive a maximum core of ○ points. <input type="checkbox"/> 醫院能資源耗用之總量管理 <input type="checkbox"/> Total capacity management of hospital energy and resource consumption. <input type="checkbox"/> 單位成本用量分析管制 <input type="checkbox"/> Analysis and control of consumption cost per unit. <input type="checkbox"/> 異常差異追蹤分析 <input type="checkbox"/> Tracking and analysis of differences in abnormality. <input type="checkbox"/> 運轉績效評核 <input type="checkbox"/> Assessment of operation performance. <input type="checkbox"/> 老舊耗能設備汰換評估	<input type="checkbox"/> 醫院電力系統管理文件 <input type="checkbox"/> Documentation of hospital electric power system management. <input type="checkbox"/> 年度用電/節能計畫 <input type="checkbox"/> Annual electric consumption and energy saving plan.	

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		(3) Options for cost control: automation, time process control, manpower reduction operation model. (4) 異常差異追蹤分析改善及運轉績效評核 (4) Tracking and analysis of differences in abnormality for improvement and assessment of operation performance. (5) 老舊耗能設備適時汰換及自動化控制 (5) Retirement of outdated high energy consumption equipment for automation of control.	<input type="checkbox"/> Evaluation for retirement of outdated high energy consumption equipment. <input type="checkbox"/> 設備自動化控制 <input type="checkbox"/> Automation of equipment control. <input type="checkbox"/> 其他設備運轉節能措施 <input type="checkbox"/> Other equipment operation and energy saving measures.		
	2. 建置電力系統保養實務 2. Establish practices in electric power system maintenance.	醫院保養節能實務建議如下： Suggestions for practices in electric power system maintenance as follows: (1) 建立保養指標，落實保養作業及修護時效管理 (1) Establishment of indexes for maintenance and to implement the maintenance operation with timely effective management. (2) 建立多元維修管道(請修專	下列項目每完成兩項可得 0 分，最高 0 分： Each of the following item can receive a maximum core of 0 points. <input type="checkbox"/> 建立保養指標 <input type="checkbox"/> Established maintenance index. <input type="checkbox"/> 建立多元請修管道 <input type="checkbox"/> Established versatile maintenance channels.		

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		<p>線電話、網路、APP)</p> <p>(2) Establishment of versatile maintenance channels (such as telephone hot line, internet website, APP).</p> <p>(3) 建立重要設備即壞即修機制、修護材料檢討和代用品開發</p> <p>(3) Establishment of on-call immediate repair mechanism for major equipment and conduct review of repair materials and alternative materials development.</p> <p>(4) 建立保養績效評核：負荷、效率、品質</p> <p>(4) Establishment of maintenance performance assessment: loading, efficiency, quality.</p> <p>(5) 預防保養，主動巡修減少損漏、災害</p> <p>(5) Preventive maintenance, routine maintenance and repair to reduce damage and disaster.</p> <p>(6) 落實執行室內空氣品質管</p>	<p><input type="checkbox"/> 建立重要設備即壞即修機制</p> <p><input type="checkbox"/> Established on-call immediate repair mechanism for major equipment.</p> <p><input type="checkbox"/> 建立保養績效評核制度</p> <p><input type="checkbox"/> Established maintenance performance assessment.</p> <p><input type="checkbox"/> 建立預防保養制度，評估設備維護週期</p> <p><input type="checkbox"/> Established Preventive maintenance system and assessment of maintenance routine equipment maintenance cycle.</p> <p><input type="checkbox"/> 定期執行室內空氣品質管理及RO系統檢測保養作業</p> <p><input type="checkbox"/> Periodic implementation of indoor air quality management and RO system inspection and maintenance.</p> <p><input type="checkbox"/> 其他保養實務措施</p> <p><input type="checkbox"/> Other practice of maintenance measure.</p>		



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		理作業及RO系統檢測保養 (6) Implementation of indoor air quality management and RO system inspection and maintenance.			
	3. 導入自動卸載裝置，運用離峰電力儲備水源或給排水，避免尖峰用電超載 3. Introduction of automatic unloading device for storage or discharge of water during off-peak hour to avoid overloading of electric at peak hour.	(1) 導入自動卸載裝置，如建置電力監控系統或需量控制器，可抑低尖峰需量，減少超約附加費支出 (1) Introduction of automatic unloading device, such as the installation of electric power monitoring system or demand control device to lower peak hour demand and to reduce the payment on additional fee charged for over the contract limit use of electric. (2) 藉由電力監控系統，運用離峰較低電價作電力儲備水源或給排水，減少流動電費支出 (3) To operate the storage and discharge of water at off-peak low electric price hour through the help of electric power	建立電力超約警示系統及抑低尖峰用電機制，並於用電超約時有效控制尖峰需量，可得0分 Established the over the contract limit use of electric warning system with peak hour lowering electric use mechanism to effectively control the over the limit electric use at peak hour. Receive the score of 0 points.		

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		monitoring system.			
	<p>4. 多部電梯時採用高低樓層輸送或分層停靠，離峰時間則部分管制停用；採用高效能IE2或IE3馬達</p> <p>4. Control of elevators to separate the elevator docking at high and low floors and close some elevators at off-peak hour; also use high efficiency IE2 or IE3 motors.</p>	<p>(1) 電梯採用高低樓層輸送或分層停靠，離峰時間則部分管制停用，可提高運轉效率，或採用電能回收裝置，減少電梯用電量</p> <p>(1) Application of elevator control system for effective management of elevators docking at different high and low floors and to close some elevators at off-peak hour to increase the efficiency of operation. Or, application of the elevator electric power recovery installation to reduce the use of electric by the elevators.</p> <p>(2) 採用高效能IE2或IE3馬達取代老舊馬達設備</p> <p>(2) Replace the old motor equipment with high efficiency IE2 or IE3 motors</p>	<p>下列項目每完成一項可得○分： Each of the following item can receive a core of ○ points.</p> <p><input type="checkbox"/> 採用電梯高低樓層輸送或分層停靠</p> <p><input type="checkbox"/> Application of elevator control system to separate docking at high and low floors.</p> <p><input type="checkbox"/> 離峰時間部分電梯管制停用</p> <p><input type="checkbox"/> Some elevators are closed at off-peak hour.</p> <p><input type="checkbox"/> 採用電梯電能回收裝置</p> <p><input type="checkbox"/> Application of the elevator electric power recovery installation.</p> <p><input type="checkbox"/> 長時間使用之馬達，採用高效能IE2或IE3馬達</p> <p><input type="checkbox"/> Replacement of high efficiency IE2 or IE3 motors for motors that run for long hours.</p>		

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	5. 提昇變壓器負載率設計在55~80%，使變壓器運轉效率於最佳曲線位置 5. Increase the converter designed loading ratio to 55~80% to obtain optimum efficiency on the performance curve.	變壓器負載率設計在 55~80%為最高運轉效率，可推廣醫院變壓器運轉效率進行整併，提高運轉效率，減少變壓器轉換耗電 Converter loading ratio designed for 55~80% can provide the highest operation efficiency, which can be implemented in hospitals to increase converter operation efficiency and to reduce loss of electric power in the conversion process.	長時間運轉之冰水主機，採用變頻設備或加裝變壓器，並且變壓器負載率為55~80%，抑或主機設備已是高負載運轉，可得○分 Use frequency conversion equipment or install converter for chillers that run for long hours, and design the converter loading ratio at 55~80%, or that the chiller is already at high loading operation. Receive the score of ○ points.		
2.1.3. 推動醫院照明用電節約設備或措施 2.1.3.Promote electric saving equipment for hospital illumination	1. 醫院靠窗採光區域採用自動點滅器管理 1. Apply automatic on/off control for lights installed near the window daylighting areas.  2. 醫院公共區域燈具採用區域或時間控制管理 2. Apply regional or timing control for the	醫院靠窗採光區域採用自動點滅器管理，於日間光線充足時，節省照明燈具之能源耗用 Use automatic control to turn lights near the window areas on and off during daylighting hours to save energy consumption for lighting.  醫院公共區域燈具採用區域或時間控制管理，於行經人數較少區域，控制燈具啟停數量 Use regional or timing control for the management of public area	靠窗採光區域於日間光線充足時，具備減少燈具能源耗用之設備，可得○分 Save energy consumption from lighting by using daylight at near window areas. Receive the score of ○ points.  公共區域燈具於離峰或行經人數較少之範圍，有施行節能管控，可得○分 Implementation of energy saving control for public areas at off-peak	<input type="checkbox"/> 醫院照明系統管理文件 <input type="checkbox"/> The hospital's lighting system management documentation.	

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	management of public area lighting.	lighting, control the number of lights turned on at area with less people passing through.	hours or with less people passing through.		
	<p>3. 樓梯間、儲藏室、庫房及污衣間等人員使用率不高之場所，採用感應控制管理</p> <p>3. Apply sensor control for area such as stair case, storage room, warehouse and laundry room where less people stay.</p>	<p>醫院樓梯間、儲藏室、庫房及污衣間等人員使用率不高之場所，採用感應控制管理照明</p> <p>Use sensor control for management of lighting at area such as stair case, storage room, warehouse and laundry room</p>	<p>於下列區域建置感應控制，每完成一項可得○分，最高○分： Installation of sensor control at the following area with each can receive a core of ○points, to a maximum of ○points.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 醫院樓梯間</li> <li><input type="checkbox"/> The hospital stair case</li> <li><input type="checkbox"/> 儲藏室</li> <li><input type="checkbox"/> Storage room</li> <li><input type="checkbox"/> 庫房</li> <li><input type="checkbox"/> Warehouse</li> <li><input type="checkbox"/> 污衣間</li> <li><input type="checkbox"/> Laundry room</li> <li><input type="checkbox"/> 其他人員使用率不高區域</li> <li><input type="checkbox"/> Other areas with low ratio of utilization.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 照片</li> <li><input type="checkbox"/> Photos</li> </ul>	
	4. 醫院安全門燈、避難方向燈，航空障礙燈、書畫、裝飾照明、景觀、指標招牌等場所採用	醫院安全門燈、避難方向燈、緊急出入口指示燈、航空障礙燈、書畫照明、裝飾照明、景觀照明、指標招牌和地下停車場等場	醫院長時間運轉之照明燈具採用LED燈具，並持續規劃汰換T9/T8/T5/PL燈具，可得○分 Plan for long term retirement of T9/T8/T5/PL lighting replaced by	<ul style="list-style-type: none"> <li><input type="checkbox"/> 照片</li> <li><input type="checkbox"/> Photos</li> </ul>	

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	高效率LED燈具，取代T9/T8/T5/PL燈具 4. Use high efficiency LED lights instead of T9/T8/T5/PL lighting for the hospital emergency exit, emergency direction, aviation obstruction lights, painting and calligraphy, decoration lighting, landscape, indicator signboard.	所，以及須長時間照明之場域，以高發光效率或具節能標章之LED燈具取代T9/T8/T5/PL燈具 Use high efficiency LED lights instead of T9/T8/T5/PL lighting for the hospital emergency exit, emergency direction, aviation obstruction lights, painting and calligraphy, decoration lighting, landscape, indicator signboard, and underground parking with long hours of lighting.	LED lights and use LED lights for long hour lighting areas. Receive the score of 0 points.		
2.1.4. 空調用電 節約措施 2.1.4. Air conditioner electric saving measures	1. 評估採用空調管理系統，提高冰水主機運轉效率(COP)值 COP(coefficient of performance) 1. Evaluate to use air conditioner management system to enhance the coefficient of performance (COP) of the chiller.	醫院推動逐年建置空調管理系統，統計各單位及主要耗電設備用量，依需求操作管理設備，提高設備能源使用效率，例如：提高冰水主機運轉效率(COP)值，降低醫院源能源營運成本 Build air conditioner management system and keep records of electric consumption of major equipment for each department, Operate equipment according to need to increase the energy efficiency of equipment for	建置醫院空調管理系統，或於能源管理系統管控空調設備，統計主要耗電設備資訊，可得0分 Build the hospital's air conditioners management system, or make control of air conditioners through the energy management system, and keep records of electric consumption of major equipment. Receive the score of 0 points.	<input type="checkbox"/> 醫院空調系統管理文件 <input type="checkbox"/> Documentation of the hospital's air conditioner system.	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
		example to increase the coefficient of performance (COP) of the chiller and reduce the hospital's energy operation cost.			
	2. 變電室、電梯機房等場所通排風設定28°C運轉 2. Setting temperature at 28°C for places such as transformer rooms, elevator facility rooms.	醫院變電室、電梯機房為發熱場所，需裝置抽排風扇或冷氣機降溫，以提高變電室、電梯機房設備壽命 Places such as transformer rooms and elevator facility rooms are usually warm that need exhaust fans or air conditioning to cool off in order to maintain the life time of the equipment.	於變電室、電機機房等場域，建立降溫機制，可得0分 Establish temperature lowering mechanism for places such as transformer rooms and elevator facility rooms. Receive the score of 0 points.		
	3. 每半年定期評估主機效率，優先採用變頻冰水主機或磁浮式冰水主機 3. Evaluate the water chiller's efficiency every half year, take priority to choose variable frequency water chiller or active magnetic bearing water chiller.	採用變頻冰水主機或磁浮式冰水主機取代運轉效率衰退之老舊冰水主機 Replace the outdated low efficiency water chiller by variable frequency water chiller or active magnetic bearing water chiller.	每半年量測設備之運轉效率，並評估汰換運轉效率衰退之冰水主機，完成上述可得0分 Measure the coefficient of performance of the equipment at every half year, and evaluate to retire the low efficiency water chiller. Completion the above can receive the score of 0 points.		

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	<p>4.院區域冰水泵浦、送水泵浦及冷卻水泵浦評估採變頻控制</p> <p>4. Evaluate to use variable frequency controlled chiller water pump, water pump and cooling water pump.</p>	<p>醫院區域冰水泵浦、送水泵浦及冷卻水泵浦，採用依季節或負載調整轉速之變頻控制，以節省電力耗用</p> <p>Use variable frequency controlled chiller water pump, water pump and cooling water pump that can be adjusted according to season or loading to save electric consumption.</p>	<p>評估醫院泵浦採用變頻控制，並依評估結果施行，可得○分</p> <p>Evaluate to use variable frequency controlled pump and carry out according to the evaluation results. Receive the score of ○ points.</p>		
	<p>5.院區冷卻水塔風車評估採變頻控制</p> <p>5. Evaluate to use variable frequency controlled cooling tower fan.</p>	<p>醫院冷卻水塔風車，採用依季節或負載調整轉速之變頻控制，以節省電力耗用</p> <p>Use variable frequency controlled cooling tower fan that can be adjusted according to season or loading to save electric consumption.</p>	<p>評估冷卻水塔風車採用變頻控制之可行性，若可行再依評估結果施行，可得○分</p> <p>Evaluate the feasibility to use variable frequency controlled cooling tower fan and carry out accord to the evaluation results if it is feasible. Receive the score of ○ points.</p>		
	<p>6.醫院空調箱送風機、小型送風機評估採變頻控制</p> <p>6. Evaluate to use variable frequency controlled air</p>	<p>醫院空調箱送風機、小型送風機，一般採用定頻運轉，採用依季節或負載調整轉速之變頻控制，以節省電力耗用</p> <p>Air conditioner blowers and small blowers in hospital are usually</p>	<p>評估空調箱送風機、小型送風機採用變頻控制之可行性，若可行再依評估結果施行，可得○分</p> <p>Evaluate the feasibility to use variable frequency controlled air conditioner blowers and small</p>		

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	conditioner blower and small blower.	operated at fixed frequency, the use of variable frequency controlled blowers hat can be adjusted according to season or loading can save electric consumption.	blowers and carry out accord to the evaluation results if it is feasible. Receive the score of 0 points.		
2.1.5. 熱能系統 (鍋爐) 能 耗減量 2.1.5.Reduction of energy consumption for thermal energy system (boilers)	1. 逐步將燃油鍋爐改造或汰換為使用低污染之加熱設備，以符合行政院環境保護署公告之「鍋爐空氣污染物排放標準」 1. Gradual transformation or retirement of oil burning boiler for low pollution heating equipment to comply with EPA publicized "Air Pollutant Emission Standard for Boiler".	逐步將燃油鍋爐改造或汰換為使用低污染性氣體燃料、太陽能或電能之加熱設備，以減少重油、柴油等高污染性燃料燃燒過程產生的污染物 Gradual transformation or retirement of oil fuel boiler for low pollution gas fuel, solar energy or electric powered heating equipment to reduce air pollutants emitted from burning high pollution heavy oil or diesel oil.	<ul style="list-style-type: none"> <li>◆ 已完成燃油鍋爐改造或汰換為使用低污染性氣體燃料、太陽能或電能之加熱設備，可得0分</li> <li>◆ Completed the transformation or retirement of oil burning boiler for low pollution gas fuel, solar energy or electric power heating equipment. Receive the score of 0 points.</li> <li>◆ 已評估燃油鍋爐改造或汰換之可行性，並將依評估結果施行，可得0分</li> <li>◆ Completed evaluation of the feasibility to transform or retire oil burning boiler and carry out according to the evaluation results. Receive the score of 0 points.</li> <li>◆ 已評估燃油鍋爐改造或汰換之</li> </ul>	<input type="checkbox"/> 醫院熱能系統管理文件 <input type="checkbox"/> Documentation of the hospital's heat energy system.	



進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
			可行性，可得0分 ♦ Completed evaluation of the feasibility to transform or retire oil burning boiler. Receive the score of 0 points.		
	2. 醫院鍋爐冷凝水回收再利用 2. Recycle and reuse of the hospital's boiler cooling water.	醫院實施鍋爐冷凝水回收再利用於提供鍋爐補充水預熱，可減少醫院鍋爐燃料用量 The hospital implements recycle and reuse of boiler cooling water for pre-heating of the boiler feed water to reduce the hospital's fuel consumption.	回收鍋爐冷凝水，再利用於鍋爐補充水預熱，可得0分 Recycle and reuse of boiler cooling water for pre-heating of the boiler feed water. Receive the score of 0 points.		
	3. 醫院鍋爐煙囪效應改善，提昇鍋爐熱效率 3. Improvement of the boiler stack effect to increase the boiler heating efficiency.	醫院實施鍋爐煙囪效應改善，提昇鍋爐熱效率，減少醫院鍋爐燃料用量 The hospital implements the improvement of boiler stack effect to increase the boiler heating efficiency and reduce the boiler fuel consumption.	♦ 已完成鍋爐煙囪效應改善，可得0分 ♦ Completed the improvement of boiler stack effect. Receive the score of 0 points. ♦ 已評估鍋爐煙囪效應改善之可行性，並將依評估結果施行，可得0分 ♦ Completed the evaluation of feasibility to improve the boiler stack effect and carry out according the evaluation results.		

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			Receive the score of 0 points. ♦ 已評估鍋爐煙囪效應改善之可行性，可得0分 ♦ Completed the evaluation of feasibility to improve the boiler stack effect. Receive the score of 0 points.		
	4. 日照充足地區使用太陽能板預熱鍋爐補充或增設熱泵系統，提高熱水使用效率 4. Use solar energy panel at places with enough sunshine to preheat boiler feed water or installation of heat pump system to increase the efficiency of hot water utilization.	日照充足地區醫院裝置太陽能板預熱鍋爐補充或增設熱泵系統，可提高熱水使用效率，減少醫院鍋爐燃料用量 The installation of solar energy panel at places with enough sunshine to preheat boiler feed water or installation of heat pump system to increase the efficiency of hot water utilization can reduce the boiler fuel consumption.	♦ 已完成裝置太陽能板預熱鍋爐或熱泵系統，可得0分 ♦ Completed the installation of solar energy panel for preheating of boiler or installation of heat pump system. Receive the score of 0 points. ♦ 已評估裝置太陽能板預熱鍋爐或熱泵系統之可行性，並將依評估結果施行，可得0分 ♦ Completed the evaluation of feasibility to install solar energy panel for preheating boiler or to install heat pump system and carry out according the evaluation results. Receive the score of 0 points.		

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			<ul style="list-style-type: none"> <li>◆</li> <li>◆ 已評估裝置太陽能板預熱鍋爐或熱泵系統之可行性，可得0分</li> <li>◆ Completed the evaluation of feasibility to install solar energy panel for preheating boiler or to install heat pump system. Receive the score of 0 points.</li> <li>◆</li> </ul>		
	<p>5. 醫院熱水系統評估採用熱泵系統供應，降低使用成本</p> <p>5. Evaluate the use of heat pump for the hospital hot water supply system to reduce cost.</p>	<p>醫院熱水供應裝置採用熱泵系統，以提高熱水使用效率</p> <p>The hospital install heat pump for hot water supply to increase the efficiency of hot water utilization.</p>	<ul style="list-style-type: none"> <li>◆ 已採用熱泵系統，可得0分</li> <li>◆ Completed the use of heat pump system. Receive the score of 0 points.</li> <li>◆ 已評估採用熱泵系統之可行性，並將依評估結果施行，可得0分</li> <li>◆ Completed the evaluation of feasibility to use heat pump system and carry out according to the evaluation results. Receive the score of 0 points.</li> <li>◆ 已評估採用熱泵系統之可行性，可得0分</li> <li>◆ Completed the evaluation of</li> </ul>		

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			feasibility to use heat pump system. Receive the score of 0 points.		
2.2 溫室氣體管理 (製造) 2.2 Greenhouse gas management (manufacturing)					
2.2.1. 溫室氣體盤查與揭露 2.2.1.Greenhouse gas accounting and disclosure	執行醫院溫室氣體排放量調查，包含直接及間接溫室氣體排放資料，並預期可進一步完成醫院溫室氣體盤查作業，包含彙整、計算及分析排放量之作業。最後將前述數據於醫院網站對外公布 Implementation of greenhouse gas emissions survey for the hospital, including direct and indirect greenhouse gas emissions data with the expectation to go further to complete the hospital greenhouse gas emissions accounting, including the integration,	(1)執行醫院溫室氣體排放量調查，包含直接及間接溫室氣體排放資料 (1) Implementation of the hospital greenhouse gas emissions survey, including direct and indirect greenhouse gas emissions data. (2)進一步完成醫院溫室氣體盤查作業，包含彙整、計算及分析排放量之作業 (2) Move further to complete the hospital greenhouse gas emissions accounting, including the integration, calculation and analysis of emissions. (3)將前述資料於醫院網站對外公布 (3)Publicize the above information on the hospital website.	調查或盤查醫院溫室氣體排放數據，並主動揭露於醫院網站，可得0分 Implement survey or accounting of the hospital greenhouse gas emissions data and actively disclose the data on hospital website. Receive the score of 0 points.	<input type="checkbox"/> 溫室氣體調查或盤查資料揭露網址 <input type="checkbox"/> Greenhouse gas emissions survey or accounting disclosure website.	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
	calculation and analysis of emissions to finally publicize the data on the hospital website.				
2.2.2. 建置溫室氣體管理系統 2.2.2. Establish greenhouse gas management system	系統性盤查能源使用量及溫室氣體排放量數據，期藉由整合溫室氣體管理、電力管理及節約能源等重點項目，協助醫院達到有效管理 Systematic accounting of energy consumption and greenhouse gas emissions data with the expectation to integrate several key issues such as greenhouse gas management, electric power management and energy and resource saving, to facilitate the hospital to achieve effective management.	建置電力、燃料及瓦斯等資源用量管理系統，利用統計數據探測耗電設備用量，進行有效管理、提高管理效率。依認證標準妥適規劃節能監控、資源回收利用建置工程節能實務規範，於工程設計時，事先達到節能功效。視情況進一步導入溫室氣體查證(ISO 14064)，並通過第三方認證 Establish electric power, fuel and gas consumption management system and apply the statistical data to detect electric consuming equipment for further effective management so as to enhance the management efficiency. Proper planning for energy saving monitoring and control, resource recycle and reuse, establish rules for engineering energy saving practices during the engineering design phase to achieve energy	建置溫室氣體管理系統，可得○分 The establishment of greenhouse gas management system. Receive the score of ○ points.	<input type="checkbox"/> 醫院溫室氣體排放管理文件 <input type="checkbox"/> Documentation on the hospital greenhouse gas emissions management.	

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		saving in advance. Further depending on the condition, to bring in ISO 14064 greenhouse gas emissions verification and pass third party certification.			
2.3 綠色運輸 (運輸) 2.3 Green transportation (transportation)					
2.3.1. 建置綠色接駁系統 2.3.1. Establish green shuttle system	透過規劃良好的接駁系統 (包含路線、班距、運具種類) 以減少醫院同仁與到院民眾使用私人運具 Reduce the use of private transportation by hospital colleague and the public through proper planning of public transportation system (including the routes, schedule and the type of transportation).	規劃及開闢醫院至鄰近車站之接駁路線，減少私人運具使用，或可更進一步以低排放運具 (如電動巴士) 提供接駁系統服務 Planning to develop shuttle bus services between the hospital and transit stations to reduce the use of private transportation or to further provide low emission transportation (such as electric bus) for the shuttle services.	下列綠色接駁系統項目每完成一項可得○分： Each of the following green shuttle service can receive a score of ○points. <input type="checkbox"/> 開闢醫院至鄰近車站之交通車接駁路線 <input type="checkbox"/> Develop shuttle transportation services between the hospital and nearby transit stations. <input type="checkbox"/> 使用低排放運具 (如電動交通工具) 作為接駁之交通工具 <input type="checkbox"/> Use low emission transportation vehicles (such as electric transportation) for the shuttle service.	<input type="checkbox"/> 大眾運具/低排放運具接駁班次表 <input type="checkbox"/> Public transportation/low emission vehicle shuttle schedule.	

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2.3.2. 鼓勵使用 公共運輸 系統 2.3.2. Encourage the use of public transportati on	規劃並向醫院同仁與到 院民眾宣導使用大眾運 具 Planning of promotional program for hospital colleagues and the public to take public transportation.	鼓勵醫院同仁與到院民眾使用 公共運輸系統或共乘，同時推廣 騎自行車或步行，提高身體活動 量，結合健康促進和環保理念 Encourage hospital colleagues and the public to take public transportation or share rides to the hospital, in the meantime also promote for bicycle riding and walking to enhance physical activity that links the concept of health and environment together.	下列公共運輸項目每完成一項 可得○分，最高○分： Each of the following public transportation can receive a score of ○ points, with the maximum score of ○ points. <input type="checkbox"/> 建立共乘機制 <input type="checkbox"/> Establish ride sharing mechanism. <input type="checkbox"/> 建立採用低排放運輸（如步 行、自行車及大眾運輸等） 到院鼓勵機制 <input type="checkbox"/> Establish the mechanism to encourage using low emission transportation (such as walking, bicycle, and public transportation). <input type="checkbox"/> 其他綠色運輸鼓勵機制 <input type="checkbox"/> Other green transportation encouragement mechanism.	<input type="checkbox"/> 使用綠色運具 之宣導文件 <input type="checkbox"/> Documentation for the promotion to use green transportation. <input type="checkbox"/> 照片 <input type="checkbox"/> Photos	

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2.3.3. 推動使用 低排放運具 2.3.3. Promote the use of low emission vehicles	推廣使用低排放運具 (如電動小客車、電動機車等) Promotion to use low emission transportation (such as electric cars, electric scooters).	(1)推廣使用電動運具，並規劃 使用者導向之誘因機制 (1) Promote the use of electric vehicle plan for user oriented incentive mechanism. (2)醫院停車場電動自小客或機 車集中區域，以減少停車樓 層排風扇使用時間 (2) Localize the parking for electric cars and scooters to reduce the running time for exhaust fans. (3)視醫院需求，預先評估並規 劃V2G (Vichael to Grid)雙向 充電需求，使電動車可做為 智慧調度之用 (3) Depending on the need of the hospital to do evaluation for vehicle to grid (V2G) charging system that can provide intelligent charging services to electric vehicles.	醫院附屬（或合作）之停車場提 供低排放運具停車優惠（如設置 專用停車格、充電站或提供折扣 等），並集中電動運具停車區 域，可得○分 The hospital's affiliated (or cooperated) parking lots provide discount rate for low emission vehicle parking (such as provision of reserved parking spaces, changing stands or the offer for discount rate), as well as localize electric vehicle parking zone. Receive the score of ○points.		
2.4 節能建築（住商） 2.4 Energy saving building (residential and commercial)					
2.4.1. 推動醫院	1.新建、增建及改建之建	醫院新建、增建及改建之建築工	於建築新建、增建及改建時，	<input type="checkbox"/> 醫院綠建築規	



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建築能耗 減量措施 2.4.1.Promote the reduction of energy consumption for hospital building	築工程或內部翻修 時,應採用綠建築之規 劃設計 1. Green building planning and design adopted for new buildings, and expansion or renovation of buildings or for building inside renovation.	程或內部翻修時,採用綠建築之 規劃設計,並洽詢專業技師或專 業顧問公司,將「提升能源效 率」、「節約能源」、「資源與 材料妥善利用」、「室內環境品 質」及「符合環境容受力」等配 置列入優先考量,並評估建置 Green BIM 模型,以系統方式管 理能資耗材,或投入建築自動化 裝置 Green building planning and design adopted for new buildings, and expansion or renovation of buildings or for building inside renovation. Consultation with professional engineers or consultants to include “increase energy efficiency”, “energy saving”, “proper use of resource and material”, “indoor environmental quality” and “compliance with environmental carrying capacity” as priority considerations.	For new buildings and expansion or renovation of buildings ◆採用綠建築規劃設計,可得O 分 ◆ Adopt green building planning and design. Receive the score of O points. ◆已評估採用綠建築規劃設計之 可行性,並將依評估結果施 行,可得O分 ◆ Completed the evaluation of feasibility to adopt green building planning and design, and carry out according to the evaluation results. Receive the score of O points. ◆已評估採用綠建築規劃設計之 可行性,可得O分 ◆ Completed the evaluation of feasibility to adopt green building planning and design. Receive the score of O points.	劃評估文件 □ Documentation for the hospital green building planning and design evaluation.	

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	<p>2. 參考綠建築相關認證標準建設醫院建築</p> <p>3. Take reference from green building related certification standards for the construction of hospital buildings.</p>	<p>(1) 參考綠建築相關認證，例如：EEWH、LEED、智慧建築、智慧醫院等醫院建築認證，以此標準建設或改善醫院建築。</p> <p>(1) Take reference from green building related certification, such as: the hospital building certification for smart building, smart hospital and construct or improve hospital building according to the referenced standards.</p> <p>(2) 長期以取得綠建築相關認證為目標邁進</p> <p>(2) Set long term goal to receive green building related certification.</p>	<ul style="list-style-type: none"> <li>◆ 以綠建築相關認證，評估改善醫院建築之可行性，並依評估結果施行，可得 <b>0</b> 分</li> <li>◆ Evaluation of the feasibility to improve hospital building according green building related certification and carry out according to the evaluation results. Receive the score of <b>0</b> points.</li> <li>◆ 以EEWH為例，取得合格級綠建築認證，可得 <b>0</b> 分，若取得銅級、銀級、黃金級、鑽石級等不同級別之認證，每往上一級別額外增加<b>0</b>分</li> <li>◆ Take EEWH for example, to receive Certified Class of green building certification, can receive the score of <b>0</b> points. An additional <b>0</b> points will be given to buildings that receive the Class in the order of Bronze, Silver, Gold, and Diamond.</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 綠建築認證文件</li> <li><input type="checkbox"/> Green building certification</li> </ul>	
2.4.2. 建築綠化	推動綠化增量策略，促	(1) 景觀綠美化，妥適管理植栽	下列建築綠化項目每完成一項	<input type="checkbox"/> 照片	

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2.4.2.Greening of buildings	<p>進健康的環境 Implementation of greening strategy to facilitate healthy environment</p>	<p>並種植誘鳥誘蝶的品種，建構綠屋頂或綠牆，降低醫院空調負荷，亦可推動空中花園及志工認養，結合植物園藝醫療概念，鼓勵病友及志工參與，建議綠地面積能以15%以上</p> <p>(1) Landscape greening with proper management of plantation to attract bird and butterfly species. Construct green roofs and green walls to lower the hospital air conditioner loading. Open for volunteer adoption of roof-top garden maintenance. Combine the concept of gardening and nursing to encourage patients and volunteer participation. A green area of above 15% is suggested.</p> <p>(2) 提升基地開發的綠地生態品質，並鼓勵創造多樣化的小生物棲地環境，同時以原生植物、誘鳥誘蝶植物為主，達到植栽物種多樣化</p> <p>(2) Upgrade the ecological quality</p>	<p>可得○分，最高○分： Each of the following items of building greening can receive a score of ○ points, with the maximum score of ○ points.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 景觀綠美化</li> <li><input type="checkbox"/> Landscape greening</li> <li><input type="checkbox"/> 種植誘鳥誘蝶植栽</li> <li><input type="checkbox"/> Plantation pf bird/butterfly attracting plants</li> <li><input type="checkbox"/> 建構綠屋頂</li> <li><input type="checkbox"/> Construct green roof</li> <li><input type="checkbox"/> 建構空中花園</li> <li><input type="checkbox"/> Construct roof-top garden</li> <li><input type="checkbox"/> 其他建築綠化措施</li> <li><input type="checkbox"/> Other building greening measures</li> </ul>	<p><input type="checkbox"/> Photos</p>	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
		<p>of the green area and encourage the creation of various small scale biological habitats, with mainly the protophyta and bird/butterfly attracting species to achieve diversification of plantation.</p> <p>(3) 建構透水撲面，增加建築物周邊涵水能力，並在確保容積率條件下，盡量降低建蔽率，且不要全面開挖地下室，以加強基地保水性能</p> <p>(3) Construct permeable payment to enhance the water holding capacity around the building. Keep the building coverage ratio as low as possible while assuring the condition of floor area ratio. Do not conduct full scale excavation of the basement so as to enhance the water holding capacity of the building site.</p>			
<p>2.4.3. 提升室內環境品質 2.4.3. Upgrade indoor environme</p>	<p>完善醫院建物之音環境、光環境、通風換氣，並鼓勵減少室內裝修量，或採用具有綠建材標章之健康建材，以減</p>	<p>(1) 採用厚度15cm以上RC外牆與厚度15cm以上RC樓板結構。並採用氣密性二級以上玻璃窗以保良好隔音性能 (1) Adopt the structure design</p>	<p>下列建築室內環境品質項目每完成一項可得○分，最高○分： Each of the following items for indoor environmental quality can receive a score of ○points, with</p>	<p><input type="checkbox"/> 照片 <input type="checkbox"/> Photos</p>	

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ntal quality	<p>低有害空氣污染物之逸散</p> <p>Optimize the hospital building's environment in terms of sound, lighting and exhaustion. Encourage the reduction of building interior renovation or the use of healthy materials with green building materials labeling to reduce fugitive emissions of hazardous air pollutants.</p>	<p>with over 15 cm thickness of RC wall and RC slab. Adopt class II air tight window design for favorable sound proof.</p> <p>(2) 採用輕玻璃或low-E玻璃，取代高反射玻璃或重顏色之色版玻璃以保良好採光</p> <p>(2) Adopt light weight window or low-E window instead of high reflection window or heavy color window for favorable lighting.</p> <p>(3) 中央空調系統建議設置新鮮外氣系統</p> <p>(3) Installation of fresh air ventilation system for central air conditioning system.</p> <p>(4) 室內裝修建材盡量採用具備國內外環保標章、綠建材標章之建材</p> <p>(4) Adopt domestic materials with environmental protection label, green building material label for interior renovation.</p>	<p>the maximum score of 0 points.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 強化建築物隔音性能之措施</li> <li><input type="checkbox"/> Take measures to enhance building sound proof.</li> <li><input type="checkbox"/> 設置建築物良好採光之措施</li> <li><input type="checkbox"/> Installation for favorable building lighting.</li> <li><input type="checkbox"/> 加強室內通風換氣之設備</li> <li><input type="checkbox"/> Installation of equipment to enhance indoor air exhaustion.</li> <li><input type="checkbox"/> 建築物擴建、裝修或改建時，評估並採用具備國內外環保標章、綠建材標章之建材</li> <li><input type="checkbox"/> Conduct evaluation to adopt domestic and foreign materials with environmental protection label, green building material label for building expansion, renovation or re-construction.</li> </ul>		
<p>2.5 低碳及健康飲食 (健康促進)</p> <p>2.5 Low carbon and healthy foods (health promoting)</p>					

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
2.5.1. 購入在地 食材 2.5.1. Procurement of local foods	購入在地食材和永續食 材 Procurement of local foods and sustainable food materials	(1)與食材供應商協商需求，支 持在地與當令食材， <u>醫院營 養餐</u> 優先考量有機或無毒認 證之食材 (1) Negotiate with food suppliers to support local and seasonal food materials. Set priority to choose organic and GMP certified food materials for the hospital nutrient food. (2)要求 <u>美食街廠商</u> 優先考量有 機或無毒認證之食材 (2) Request food court suppliers to set priority to choose organic and GMP certified food materials.	<u>醫院營養餐：</u> The hospital nutrient food: <ul style="list-style-type: none"> <li>◆採購在地與當令食材，可得○ 分</li> <li>◆ Procurement of local and seasonal food materials. Receive the score of ○points.</li> <li>◆已評估採購在地與當令食材之 可行性，並將依評估結果施 行，可得○分</li> <li>◆ Completed evaluation of feasibility to procure local and seasonal food materials and carry out according to the evaluation results. Receive the score of ○points.</li> <li>◆已評估採購在地與當令食材之 可行性，可得○分</li> <li>◆ Completed evaluation of feasibility to procure local and seasonal food materials. Receive the score of ○points.</li> </ul> <u>美食街廠商：</u> The food court suppliers: <ul style="list-style-type: none"> <li>◆要求美食街廠商優先考量有機</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> 在地/有機/低 碳食材採購表</li> <li><input type="checkbox"/> Local/organic/l ow carbon food material procurement list.</li> <li><input type="checkbox"/> 照片</li> <li><input type="checkbox"/> Photos</li> </ul>	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
			<p>或無毒認證之食材，可得0分</p> <ul style="list-style-type: none"> <li>◆ Request the food court suppliers to set priority to choose organic and GMP certified food materials. Receive the score of 0 points.</li> <li>◆ 要求美食街廠商評估採購在地與當令食材之可行性，並將依評估結果施行，可得0分</li> <li>◆ Request the food court suppliers to evaluate the feasibility to procure local and seasonal food material and carry out according to the evaluation results. Receive the score of 0 points.</li> <li>◆ 要求美食街廠商評估採購在地與當令食材之可行性，可得0分</li> <li>◆ Request the food court suppliers to evaluate the feasibility to procure local and seasonal food material. Receive the score of 0 points.</li> </ul>		

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
2.5.2. 降低肉食比例並提升肉類品質 2.5.2.Reduce the portion of meat products and increase the quality of meat	減少肉食比例與提升肉類品質 Reduce the portion of meat products and increase the quality of meat	院內提供多樣蔬食餐及健康餐之選擇，並推薦但不強迫客人選用蔬食餐 The hospital provides variety of vegetarian meals and healthy meals for selection and recommends but not forcing customers to choose vegetarian meals.	評估院內提供蔬食餐之可行性，並依評估結果施行，可得0分 Evaluation of the feasibility to provide vegetarian meals in the hospital and carry out according to the results of evaluation. Receive the score of 0 points.		
2.5.3. 健康飲食之其他措施 2.5.3.Healthy foods and other measures	院內提供健康飲食 Provision of healthy drinks in the hospital	推動無速食以及少鹽糖油醫院，不使用自動販賣機販售飲用水及食品，並以低加工食品、少烹調步驟為餐點優先選擇 Implement no fast food and low salt, low sugar, low oil food in the hospital. The hospital does not provide vending machine to sell drinking water and food. Genetic and mild cooking meals are priority selection.	不使用販賣機販售飲用水及食品，可得0分 No vending machine to sell drinking water and food. Receive the score of 0 points.		
2.6 能資源減量及永續採購 (環境) 2.6 Energy and resource conservation and sustainable procurement (Environment)					



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2.6.1. 廢棄物管理* 2.6.1. Waste management	1. 事業廢棄物 <sup>2</sup> (包括有害事業廢棄物及一般事業廢棄物) 管理及減量 1. Industrial waste (including industrial hazardous waste and general industrial waste) management and reduction.	事業廢棄物減量建議如下： Suggestions for industrial waste reduction as follows: (1) 系統性盤查，揭露廢棄物用量、品牌和材料，連結採購並從源頭管理 (1) Systematic accounting and disclosure of the quantities, categories and materials of waste with linkage to procurement for management from the source. (2) 採購包裝減量、可重複使用、再生的環境友善產品，盡量避免採購含有毒材料（如水銀、PVC）與非必要的一次性產品（如使用檢驗合格且可重複使用之餐具取代免洗餐具） (2) Procurement of products with reduced packing, recyclable	下列項目每完成三項可得 0 分，最高 0 分： To complete any 3 items from the following list can receive a score of 0 points, for a maximum score of 0 points. <input type="checkbox"/> 盤查事業廢棄物資訊 <input type="checkbox"/> Accounting of industrial waste information. <input type="checkbox"/> 事業廢棄物源頭減量措施 <input type="checkbox"/> Reduction of industrial waste from the source. <input type="checkbox"/> 訂定回收機制，並執行減量、分類及再利用措施 <input type="checkbox"/> Establish recycle mechanism and implement reduction, classification and reuse measures. <input type="checkbox"/> 妥善分類貯存、管理及回收有害事業廢棄物	<input type="checkbox"/> 廢棄物產出量統計 <input type="checkbox"/> Statistics of waste output. <input type="checkbox"/> 廢棄物管理文件 <input type="checkbox"/> Documentation of waste management. <input type="checkbox"/> 年度廢棄物減量計畫 <input type="checkbox"/> Annual waste reduction plan	

<sup>2</sup> **廢棄物清理法 8 2**：一、一般廢棄物：指事業廢棄物以外之廢棄物。二、事業廢棄物：指事業活動產生非屬其員工生活產生之廢棄物，包括有害事業廢棄物及一般事業廢棄物。（一）有害事業廢棄物：由事業所產生具有毒性、危險性，其濃度或數量足以影響人體健康或污染環境之廢棄物。（二）一般事業廢棄物：由事業所產生有害事業廢棄物以外之廢棄物。

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		<p>products and regenerated environmental friendly products. Avoid purchasing products with toxic materials (such as silver, PVC) and non-necessary disposable products (use qualified reusable tableware instead of disposable ones).</p> <p>(3)紙類回收考量採用水銷，取代焚燒，減少污染產生</p> <p>(3) Destruct recycled paper by water instead of burning to reduce pollution.</p> <p>(4)<u>一般事業廢棄物</u>減量、分類及再利用</p> <p>(4) <b>General industrial waste</b> reduction, classification and reuse.</p> <p>(5)<u>有害事業廢棄物</u> (如<u>生物醫療廢棄物</u><sup>3</sup>)妥善分類貯存及管理</p> <p>(5) <b>Hazardous industrial waste</b></p>	<p><input type="checkbox"/> Proper classification and storage, management and recovery of hazardous industrial waste.</p> <p><input type="checkbox"/> 醫療用品減量措施</p> <p><input type="checkbox"/> Implement reduction of medical supplies.</p> <p><input type="checkbox"/> 實施事業廢棄物管理教育培訓</p> <p><input type="checkbox"/> Implement industrial waste management educational training.</p>		

<sup>3</sup> **有害事業廢棄物認定標準 §3**：生物醫療廢棄物：指醫療機構、醫事檢驗所、醫學實驗室、工業及研究機構生物安全等級第二級以上之實驗室、從事基因或生物科技研究之實驗室、生物科技工廠及製藥工廠，於醫療、醫事檢驗、驗屍、檢疫、研究、藥品或生物材料製造過程中產生附表三所列之廢棄物。

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		<p>(such as <b>bio-medical waste</b>) for proper classification and storage management.</p> <p>(6)屬<u>生物醫療廢棄物</u>之廢棄<u>銳器具</u> (包含不含針頭之廢針筒)，經滅菌後可進入資源回收體系</p> <p>(6) <b>Sharp bio-medical waste</b> (including needles and syringe ) should be sterilized before entering into recycle system.</p> <p>(7)檢討藥品、試劑貯存方法，提升有效期限，並以先進先出的方式取用藥品</p> <p>(7) Review the drug and reagent storage to increase their time of validity and withdraw the drug by its order of storage time.</p> <p>(8)使用數位式X光片系統，取代傳統X光片系統</p> <p>(8) Use digital x-ray imaging system instead of the traditional x-ray film system.</p> <p>(9)醫院應對工作人員實施教育培訓，確保廢棄處理者之作</p>			

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		<p>業安全</p> <p>(9) The hospital shall provide educational training to workers to assure safe operation of waste management.</p>			
	<p>2. 一般廢棄物管理及減量</p> <p>2. General waste management and reduction.</p>	<p>一般廢棄物（如員工生活垃圾）減量建議如下：</p> <p>General waste (such as living waste from workers)</p> <p>(1)系統性盤查，揭露廢棄物用量、品牌和材料，連結採購並從源頭管理</p> <p>(1) Systematic accounting and disclosure of the quantities, categories and materials of waste with linkage to procurement for management from the source.</p> <p>(2)採購包裝減量、可重複使用、再生的環境友善產品，盡量避免採購含有毒材料（如水銀、PVC）與非必要的一次性產品（如使用檢驗合格且可重複使用之餐具取代免洗餐具）</p> <p>(2) Procurement of products with</p>	<p>下列項目每完成三項可得○分，最高○分：</p> <p>To complete any 3 items from the following list can receive a score of ○ points, for a maximum score of ○ points.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 盤查一般廢棄物資訊</li> <li><input type="checkbox"/> Accounting of general waste information.</li> <li><input type="checkbox"/> 一般廢棄物源頭減量措施（如優先採購包裝少、可重複使用之產品）</li> <li><input type="checkbox"/> Reduction of general waste from the source. (such as to set priority to purchase products with reduced packing and recyclable products.)</li> <li><input type="checkbox"/> 設置資源回收及分類機制</li> <li><input type="checkbox"/> Establish resource recycle and classification mechanism.</li> </ul>		

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		<p>reduced packing, recyclable products and regenerated environmental friendly products. Avoid purchasing products with toxic materials (such as silver, PVC) and non-necessary disposable products (use qualified reusable tableware instead of disposable ones).</p> <p>(3) 訂定分類規範，設置分類垃圾桶及資源回收桶，並落實教育訓練。其中紙類回收建議考量採用水銷，取代焚燒，減少污染產生</p> <p>(3) Establish waste classification rules and use separate tanks for trash and resource recycle. Destruct recycled paper by water instead of burning to reduce pollution.</p> <p>(4) 廢棄物盡可能在地處理</p> <p>(4) Waste should be treated locally as much as possible.</p>	<p><input type="checkbox"/> 一般廢棄物在地處理</p> <p><input type="checkbox"/> Treatment of general waste locally.</p> <p><input type="checkbox"/> 實施一般廢棄物管理教育培訓</p> <p><input type="checkbox"/> Implement educational training for general waste.</p> <p><input type="checkbox"/> 其他一般廢棄物減量/回收措施</p> <p><input type="checkbox"/> Other general waste reduction and recycle measures.</p>		
	3. 醫療用品及化學品之安全管理 3. Medical supplies and	推動醫療用品及化學品安全管理建議如下： Suggestions for the	下列醫療用品及化學品安全管理項目每完成兩項可得○分，最高○分：		

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	chemicals safety management	<p>implementation of Medical supplies and chemicals safety management as follows:</p> <p>(1)改用更安全的化學物質、材料、產品與流程 (1)Switch to use safer chemicals, chemical materials, products and process.</p> <p>(2)預防醫療院所的化學品暴露，強化化學品安全管理 (2)Prevent the exposure of the medical institution's chemical materials and reinforce the chemicals safety management.</p> <p>(3)配合WHO和HCWH，發展全球衛生保健之無汞醫療，妥善管理含汞設備，擬定意外應變措施，妥善處理含汞廢棄物，並汰換含汞設備 (3)Coordinate with WHO and HCWH in developing global mercury free medical care and plans for incidence response measures to carry out proper treatment of waste mercury and retire mercury containing</p>	<p>To complete any 2 items from the following list can receive a score of 0 points, for a maximum score of 0 points.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> 評估更安全之醫療產品</li> <li><input type="checkbox"/> Evaluation to sue safer medical products.</li> <li><input type="checkbox"/> 建置化學品安全管理制度</li> <li><input type="checkbox"/> Establish chemical safety management system.</li> <li><input type="checkbox"/> 推動無汞醫療</li> <li><input type="checkbox"/> Implement mercury free medical care.</li> <li><input type="checkbox"/> 建立有害化學品控管制度</li> <li><input type="checkbox"/> Establish hazardous chemicals control system.</li> <li><input type="checkbox"/> 其他廢棄物減量措施</li> <li><input type="checkbox"/> Other waste reduction measures.</li> </ul>		

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		<p>equipments.</p> <p>(4)控管有害化學品使用，如： 戊二醛、鹵化阻燃材料、PVC (聚氯乙炔)、DEHP(磷苯 二甲酸酯)、BPA(雙酚基 丙烷)，選用較為安全的其 他產品或替代品</p> <p>(4)Monitoring and control over the use of hazardous chemicals such as: Glutaraldehyde, Halogenated flame retardant material, PVC, DEPH, BPA, and choose other safer products or alternative products.</p>			
	<p>4.推動醫院無紙化活動 4.Implement the paper free hospital action</p>	<p>推動醫院無紙化活動建議如下： Suggestions for the implementation of paper free hospital action as follows:</p> <p>(1)無紙化OA(Office Automation 辦公自動化系 統)、作業以視訊、電子郵件 或其他方式取代紙本文件使 用</p> <p>(1)Paper free Office Automation, visual communication, use e mail</p>	<p>評估醫院推動無紙化之推動措 施，並依評估結果施行，可得 0 分</p> <p>Evaluation for the hospital to implement paper free measures and carry out according to the results of evaluation. Receive the score of 0 points.</p>	<p><input type="checkbox"/> 醫院會議/病 例無紙化推動 管理文件</p> <p><input type="checkbox"/> Documentation to show the hospital implement paper free meeting and medical records.</p>	

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		or other kinds of paper free documentation. (2)醫療影像自動化、醫囑電子化、全面電子表單作業 (2)Automation of medical imaging, electronic medical prescription, use electronic spreadsheets for all documents.			
2.6.2.永續採購* 2.6.2.Sustainable procurement	1.優先採購綠色產品 1.Set priority to procure green products  2.建立以價值為基礎的採購政策 2.Establish value based procurement policy	採購設備時，優先考量具備節能、節水或環保標章的設備，例如：能效分級一級冷氣機、節水水龍頭或環保標章電器等 For the procurement of equipment, set priority to buy energy saving, water saving or environmental protection certified equipment, such as tier 1 energy efficiency air conditioner, water saving facets or environmental protection certified electrical appliances.  醫院購買的產品（藥、食材）和使用的服務，應將低碳和環境友善納入評估項目，建立以價值為基礎的採購政策 The hospital sets low carbon and	將節能、節水或環保標章的設備，列入採購之考量項目，可得 0 分 To include energy saving, water saving or environmental protection certified electrical equipment into the list of procurement under consideration. Receive the score of 0 points.  將低碳及環境友善，列入購買產品之考量項目，或獲得綠色採購表揚，可得 0 分 To include low carbon and environmental friendly into the list	<input type="checkbox"/> 年度採購文件或紀錄 <input type="checkbox"/> Document or records of annual procurement.	



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		environmental friendly as conditions for procurement of products (medicine, food materials) to establish its value based procurement policy.	of procurement consideration or to receive green procurement awards. Receive the score of 0 points.		
2.6.3. 設有廚房設備能源管理系統、水資源回收再利用 2.6.3.Installation of kitchen energy management system, water resource and reuse, appliances consumption and food resource recovery and reuse	增加廚房設備能源管理系統、水資源回收再利用、廚房器材能源消耗及運送伙食之運輸能耗的盤查 Include kitchen energy management system, water resource recycle and reuse, kitchen energy consumption and food transportation energy into accounting.	掌握廚房設備用電效能，將效率不彰之設備進行保養或汰換，以有效實施節能烹調 Monitor the kitchen equipment energy efficiency to retire or repair the less efficient ones so as to effectively carry out energy saving cooking.	建置廚房設備能源管理系統，並依廚房設備管控之完整度予與評分，最高得0分 Establish kitchen equipment energy management system and carry out a complete management of the kitchen equipment. Receive the score of 0 points.	<input type="checkbox"/> 廚房設備能資源管理文件或紀錄	
2.6.4. 廚餘管理 2.6.4.Kitchen waste management	廚餘管理及減量 Kitchen waste and reduction	盤查並設定管理目標和改善機制，可透過推動廚餘堆肥或發電，達成廚餘減量 Implement accounting and set target for management and improvement mechanism to carry	建立廚餘管理機制，規劃減量措施，可得0分 Establish kitchen waste management mechanism, and plan for reduction measures. Receive the score of 0 points.	<input type="checkbox"/> 廚餘產出量統計 <input type="checkbox"/> Statistics of kitchen waster output.	

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		out composting treatment of kitchen waste or power generation to achieve kitchen waste reduction.			
2.6.5. 推動醫院水資源減量措施* 2.6.5.Promote hospital water resource conservation measures	1. 空調冷凝水、雨水回收用於植栽噴灌；植栽噴灌設雨水感知器節省水資源 1. Recycle of air conditioning condensate and rain water for irrigation of plants. Install rain water sensor on plant irrigation facilities to save water.	醫院回收空調冷凝水、雨水回收用於植栽噴灌；植栽噴灌設雨水感知器，以減少醫院用水量 The hospital recycles air conditioning condensate and rain water for irrigation of plants as well as installs rain water sensor on plant irrigation facilities to save water.	下列項目每完成一項可得○分，最高○分： To complete any 1 item from the following list can receive a score of ○ points, for a maximum score of ○ points. <input type="checkbox"/> 空調冷凝水回收再利用 <input type="checkbox"/> Recycle and reuse of air conditioning condensate. <input type="checkbox"/> 雨水回收再利用 <input type="checkbox"/> Recycle and reuse of rain water. <input type="checkbox"/> 其他水資源回收再利用 <input type="checkbox"/> Other recycle and reuse of water resource.	<input type="checkbox"/> 年度節水計畫 <input type="checkbox"/> Annual water saving plan.	
	2. 醫院洗腎用RO水、RO飲水機，排放水回收用於植栽噴灌、廁所沖洗用 2. Recycle of	醫院實施洗腎用RO水、RO飲水機，排放水回收用於植栽噴灌、廁所沖洗用，以減少醫院用水量 Recycle the RO water used for dialysis, the RO water from	下列項目每完成一項可得○分，最高○分： To complete any 1 item from the following list can receive a score of ○ points, for a maximum score of ○ points.		

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		drinking fountain and discharged water for irrigation and flushing the toilets to save water for the hospital.	<input type="checkbox"/> 洗腎用RO水回收再利用 <input type="checkbox"/> Recycle and reuse the RO water for dialysis. <input type="checkbox"/> RO飲水機回收再利用 <input type="checkbox"/> Recycle and reuse the RO water from the drinking fountain. <input type="checkbox"/> 排放水回收再利用 <input type="checkbox"/> Recycle and reuse the discharged water.		
	3.定期檢修漏水 3.Periodical inspection and repair for leakage	醫院每年定期檢修漏水，以減少用水量 The hospital inspect and repair leakage periodically every year to save water.	定期檢修漏水，可得○分 Periodical inspection and repair for leakage. Receive the score of ○points.		
	4.採用省水型馬桶、水龍頭等節水設備 4.Use water saving types of toilets and faucets to save water.	醫院採用省水型（二段沖水）馬桶（15公升降成9公升）、省水龍頭；或於水龍頭加裝節水器，減少醫院用水量 The Hospital uses water saving (dual selection for flushing) type of toilets (with 15 liters and 9 liters), water saving faucets; or install water saving devices on faucets to save water for the hospital.	下列項目每完成一項可得○分，最高○分： To complete any 1 item from the following list can receive a score of ○points, for a maximum score of ○points. <input type="checkbox"/> 採用省水型馬桶 <input type="checkbox"/> Use water saving toilets. <input type="checkbox"/> 採用省水水龍頭或加裝節水器		

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			<input type="checkbox"/> Use water saving faucets or install water saving devices on faucets.		
3. 氣候變遷風險調適					
3. Climate Risk and Adaptation					
3.1. 氣候危害與脆弱度評估					
3.1. Climate hazard and vulnerability assessment					
3.1.1. 氣候風險 評估 3.1.1. Climate risk assessment	1. 評估氣候變遷造成當地潛在的健康風險，降低因氣候變遷帶來的衝擊，並揭露氣候變遷因應能力，提出調適策略 1. Assessment of potential health risks caused by climate change to lower climate change impacts and to disclose climate change response capability and bring out adaptation strategies.	(1) 有效利用當地衛生局或其他公共衛生相關研究單位所發佈的流行病學或脆弱性評估結果（如傳播疾病媒介、極端炎熱氣候）等資訊，評估由氣候變遷造成當地的健康風險，並定期分析自身氣候調適能力以及減少碳足跡之潛力，降低因氣候變遷造成醫院損失，並以降低醫院的溫室氣體排放為目標，提出因應策略 (2) Effective application of information regarding epidemic or vulnerability assessment results from local health bureau or other public health research institutions	評估當地健康風險，定期分析自身氣候調適能力，可得 0 分 Evaluation of local health risk and periodic analysis of the hospital's capability in climate adaptation. Receive the score of 0 points.	<input type="checkbox"/> 醫院因應氣候變遷風險評估及調適策略文件 <input type="checkbox"/> Documentation of the hospital's climate risks evaluation and adaptation strategies.	

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		<p>(such as vector-borne diseases, extreme hot temperature weather), for the evaluation of local health risks caused by climate change and conduct periodic analysis of the hospital's potential capability in climate adaptation and carbon foot print reduction to lower damage to the hospital from climate change and to bring out response strategies for the purpose of reducing the hospital's greenhouse gas emissions.</p> <p>(3)上述評估、分析及推動策略，應明確記錄所用之標準、方法和假設，以利醫院進行長期規劃</p> <p>(3)The above evaluation, analysis and implementation strategies should have specific records of the standards, methods and assumptions applied to facilitate long term planning for the hospital.</p>			

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	2.積極參與恢復和改善生態系統服務之活動，以培養調適能力 2.Agressive participation in actions of services to recover and improve ecological system so as to cultivate adaptation capability.	定期參與恢復和改善生態系統服務之活動，以培養韌性及調適能力 Periodic participation in actions of services to recover and improve ecological system so as to cultivate resilience and adaptation capability.	參與恢復和改善生態系統服務之活動，可得○分 Participation in actions of services to recover and improve ecological system. Receive the score of ○ points.		
3.1.2. 各類災害預防及調適 3.1.2. Various disaster prevention and adaptation	1.建立醫院風險管理機制 1.Establish the hospital's risk management mechanism	依據氣候風險與醫院脆弱度評估結果，建立醫院風險管理機制，訂定氣候調適計畫，包括災害預防、準備、應變及復原等內容，評估短、中、長期階段風險，定期檢視調適措施成效及檢討改善 Establishment of the hospital's risk management mechanism according to the assessment results on climate risks and the hospital's vulnerability to set plans for climate adaptation including disaster prevention, preparation, response and recovery. Evaluate the short, intermediate and long term risks	下列項目每包含一項可得○分，最高○分： To complete any 1 item from the following list can receive a score of ○ points, for a maximum score of ○ points. <input type="checkbox"/> 建立醫院風險管理機制 <input type="checkbox"/> Establishment of the hospital's risk management mechanism. <input type="checkbox"/> 訂定災害預防措施 <input type="checkbox"/> Establishment of disaster prevention measures. <input type="checkbox"/> 訂定災害事前準備措施 <input type="checkbox"/> Establishment of pre- disaster preparation measures.	<input type="checkbox"/> 醫院風險管理文件 <input type="checkbox"/> Document of the hospital's risk management.	

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		with periodical review of the effectiveness of adaptation measures for improvement.	<input type="checkbox"/> 訂定災害應變措施 <input type="checkbox"/> Establishment of disaster response measures. <input type="checkbox"/> 訂定災害復原措施 <input type="checkbox"/> Establishment of post-disaster recovery measures. <input type="checkbox"/> 定期檢討、改良訂定之機制及措施 <input type="checkbox"/> Periodic review to improve the established mechanism and measures. <input type="checkbox"/> 其他災害風險管理策略 <input type="checkbox"/> Other disaster risk management strategies.		
	<p>2. 訂定符合醫院風險和危機管理需要之緊急災害應變計畫及作業流程，並落實演練</p> <p>2. Draw plans for emergency disaster response that comply to the needs of the hospital's risk and crisis management with implementation of practices.</p>	<p>針對火災、風災、水災及地震等緊急災害，訂定符合醫院與災害特性之緊急災害應變計畫及作業程序，並具備完善緊急聯絡網及災害應變啟動機制；緊急災害應變計畫應定期實施演練，並記錄演練的過程和結果，以利事後檢討改進</p> <p>Draw plans and operation procedures for emergency disaster response regarding disaster of fire,</p>	<p>下列緊急災害應變項目，每完成一項可得○分，最高○分：</p> <p>To complete any 1 disaster response item from the following list can receive a score of ○ points, for a maximum score of ○ points.</p> <input type="checkbox"/> 建立災害緊急聯絡網絡 <input type="checkbox"/> Establish disaster emergency communication network. <input type="checkbox"/> 建立災害應變啟動機制		

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		storm, flood and earthquake that comply with the needs of the hospital, and develop complete network for emergency communication and disasters response start-up mechanism, with periodical practice of the emergency disaster response plans and records of the process of practice to facilitate the later review and improvement.	<input type="checkbox"/> Establish disaster response start-up mechanism. <input type="checkbox"/> 建立緊急災害（如火災、水災、風災、地震等）應變計畫及作業程序 <input type="checkbox"/> Establish emergency hazard (disaster of fire, storm, flood and earthquake, etc.) response plans and operation procedures. <input type="checkbox"/> 定期實施緊急災害應變計畫演練 <input type="checkbox"/> Periodical implementation of practices for emergency disaster response plans.		
	3. 建立特定科別對於氣候災害之預防 3. Establish climate disaster prevention for specific divisions.	針對氣候變遷風險較高之科別（如心臟科、胸腔科等）研擬氣候災害之應變機制 Establish climate disasters response mechanism for divisions with higher risk from climate change (such as the division of cardiology and the division of chest).	評估醫院針對氣候變遷風險較高之科別加強其因應措施，可得 <b>0</b> 分 Evaluation of divisions with higher climate change risks for reinforcement of their response measures. Receive the score of <b>0</b> points.		
3.2. 緊急應變管理 3.2. Emergency response management					



進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
3.2.1. 緊急應變管理 3.2.1. Emergency response management	建立緊急應變系統，加強醫院韌性 Establish emergency response system to enhance the hospital's resilience	(1) 醫院內部應建立緊急應變系統，包含快速的需求評估和緊急事件應變計畫，因應更嚴重、更頻繁的氣候災難，並強化脆弱族群（年長者、身障、幼兒、住院/加護病房病人）緊急應變計畫 (1) The hospital should establish emergency response system, including expedited evaluation of requirement for emergency response to incidents so as to be able to respond to more serious and more frequent climate disaster, and to enhance the emergency response plans for vulnerable group (the elderly people, handicapped people, children, and hospitalized/ICU patients). (2) 醫院對外應建立與政府單位、鄰近醫院、媒體或其他組織的協調和溝通機制，建立災害應急或後送機制，以利提供病人最妥適的安排	醫院緊急應變系統包含下列項目，每完成一項可得 0 分： To complete any 1 emergency response item from the following list can receive a score of 0 points. <input type="checkbox"/> 需求評估和緊急事件應變計畫 <input type="checkbox"/> Evaluation of requirement and plans for emergency response. <input type="checkbox"/> 脆弱族群分析及應對計畫 <input type="checkbox"/> Analysis of vulnerable group and emergency response plan. <input type="checkbox"/> 建立與政府單位、鄰近醫院、媒體或其他組織的協調和溝通機制 <input type="checkbox"/> Establish external coordination and communication mechanism with government units, neighbouring hospitals, media or other organizations. <input type="checkbox"/> 建立災害應急（如確保醫療院所於緊急情況能源供應之穩定度）或後送機制	<input type="checkbox"/> 醫院緊急應變管理文件或紀錄 <input type="checkbox"/> Documentation of the hospital's emergency response management.	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
		(2)The hospital should establish external coordination and communication mechanism with government units, neighbouring hospitals, media or other organizations, to establish disaster emergency response and evacuation mechanism so as to facilitate and provide patients with the best appropriate arrangements.	<input type="checkbox"/> Establish disaster emergency response (such as to assure the medical institution can receive stable power supply under the emergency condition) and evacuation mechanism.		
3.2.2. 醫院防災應變能力及災後復原能力 3.2.2.Hospital disaster prevention and response capability and post-disaster recovery capability	設置大量傷患緊急應變計畫及指揮系統，並加強醫療院所於災後之復原能力 Establish the plan and command system for response to emergency with large number of injury and reinforce the post-disaster recovery capability of the hospital.	訂定大量傷患緊急應變計畫，規劃完備之應變啟動機制、指揮系統、院內外聯絡網及到院前病人處理接軌等步驟，並定期辦理演練、檢討結果及修正緊急應變與災後復原計畫，確保病人安全 Establish the plan for response to emergency with large number of injury, with thorough planning for start-up mechanism, command system, internal and external communication and procedures for treatment of patients arriving at the hospital, with periodical practicing and review of the	下列項目，每完成一項可得○分，最高○分： To complete any 1 item from the following list can receive a score of ○points. <input type="checkbox"/> 建立災後應變機制 <input type="checkbox"/> Establish disaster response mechanism. <input type="checkbox"/> 建立災後變化指揮系統 <input type="checkbox"/> Establish disaster command system. <input type="checkbox"/> 建立災後之病人到院前處理接軌機制 <input type="checkbox"/> Establish the procedures for treatment of patients arriving		

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
		results for revision to the emergency response and post-disaster recovery plan to assure the safety of people.	at the hospital. <input type="checkbox"/> 建立災後院內外聯絡網絡 <input type="checkbox"/> Establish the hospital's internal and external communication network for disaster. <input type="checkbox"/> 定期辦理演練 <input type="checkbox"/> Periodical implementation of practice. <input type="checkbox"/> 其他災後應變及復原措施 <input type="checkbox"/> Other disaster response and recovery measures.		
3.3. 氣候風險溝通 3.3. Climate risk communication					
3.3.1. 氣候變遷 風險溝通 3.3.1. Climate risk communication	與院內同仁、病人、家屬及社區民眾進行有效的氣候風險溝通，提供氣候調適措施相關資訊，並減緩負面衝擊 Effective communication with the hospital colleagues, patients, family members and community people to provide climate adaptation measure	有關氣候所帶來的災害，與同仁、病人、家屬及社區民眾進行風險溝通，提升防災意識及有效的調適措施 Communicate with colleagues, patients, family members and community people regarding disasters caused by climate change to bring up the awareness disaster prevention and effective adaptation measures.	至少每年與院內同仁、到院及社區民眾進行當地氣候風險溝通，視其溝通之議題及對象予與評分，最高○分 At least every year, communicate with colleagues, patients, family members and community people regarding disasters caused by climate change. Depending on the issue and people communicated to give score for a maximum score of ○ points.	<input type="checkbox"/> 氣候風險宣導文件或紀錄 <input type="checkbox"/> Documentation or records of climate risk propaganda.	

進階指標 Advanced Indexes	預期結果 Expected Results	操作措施 Operation Measures	評分標準參考 Reference Scoring Standards	可提供之具體事蹟 或佐證資料 Facts or Evidence	配分 Score
	related information to reduce negative impacts.				

### 三、案例介紹

### 三、Practical Cases Introduction

各領域之實際案例，以單獨醫院為單位，呈現醫院於該領域之實務執行做法和推動成果，供其他醫院參考，若欲掌握各領域指標的預期結果及其操作措施，可參酌前一章節之「氣候智慧醫院進階指標」，並評估醫院狀況進行調整，以利措施之效益最大化。

In this section one practical case is selected for each domain to show how it is conducted in a hospital and the results of the practice to provide references to other hospitals. Please refer to the previous section regarding “Advanced Indexes for Climate Smart Hospital” for more details about the expected outcome for each index, so as to evaluate the condition of hospital and make adjustment to optimize the effectiveness of adopted operation measures.

#### (一) 領導與治理領域實務案例

#### (一) Practical Case in Leadership & Governance

##### 【中部某區域教學醫院】

##### 【Practical Case in Leadership & Governance】

1. 10 月由院長主持討論訂定年度節能減碳計畫目標，並於每月定期召開院務主管會議，檢討上個月目標執行成果，各級主管參與討論醫院氣候變遷調適及節能減碳策略；此外，設立能源管理小組，結合工務課、總務課、採購課、勞安室及護理部等單位之管理人員，執行能源監控管理、公共區域用電巡檢、廢棄物減量、綠色採購和氣候災害應變等資訊，彙整能源管理執行成效，包括用電、用水、天然氣、廢棄物減量，並利用 BI(Business Intelligence) 工具製成統計報表，量化指標與過去 3 年同期的數據進行比較分析，即時能源使用監控及報告，讓節能減碳日常化成為醫院文化。
1. The hospital's Director holds meeting in October to discuss and set target for energy saving and carbon reduction for each year. The results for each month are evaluated during every monthly meeting. Climate change mitigation and adaptation strategies are discussed

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among all level of administrative supervisors. In addition, the hospital established an energy management team that combines members from the division of engineering, general affairs, procurement, labor safety and the department of nursing to implement supervision on energy monitoring and control, routine check on electric use in public area, waste reduction, green procurement and collection on climate disaster response information. Results from the implementation of energy management are collected, including electricity, water, natural gas, waste reduction, and compiled into statistical report using Business Intelligence (BI) tool. Quantatative indexes are campared to those of the same period in the previous 3 months. The timely monitoring and reporting of energy utilization helps to build energy saving a routine for the hospital.

2. 由院長、副院長帶領各級主管簽署力行節能減碳，宣示「我日行一善減碳一公斤」的減碳目標。



2. The Director and Deputy Director led all level of supervisors to sign the commitment on carbon reduction target for “the reduction of 1 kg of carbon as daily practice”.

3. 持續不斷地教育訓練與宣導，朝「每人每天減碳一公斤」的推動目標邁進。
- 3.Continued educational training and promotion towards the implementation of “the reduction of 1 kg of carbon each day by each person”.
- (1)持續減碳生活推動，舉辦「員工家戶節電競賽」，並推及就醫民眾、員工家庭及社區，102 年至 107 年共辦理節能減碳宣導 48 場次、1,857 人次參與。
- (1) Promotion of carbon reduction living by supporting the “family energy saving competition” among hospital workers and expanding the activity to the general public and community. A total of 48 sessions of promotional activities were held from 2013 to 2018 with 1,857 people participated in these activities.
- (2)藉由門診電漿電視、跑馬燈及海報廣宣「1人1日1kg減碳生活」。
- (2) Promotion of carbon reduction living by supporting the “family energy saving competition” among hospital workers and expanding the activity to the general public and community. A total of 48 sessions of promotional activities were held from 2013 to 2018 with 1,857 people participated in these activities.
- (3)藉由醫院季刊宣導「減碳生活 111 為地球降溫」，分享社區民眾節能小撇步。



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- (3) The promotion of “carbon reduction 111 living to lower global temperature” through the hospital’s quarterly magazine.
4. 推展電子病歷、X光片轉換成影像傳輸(PACS)，資訊系統研發，取代傳統紙本傳輸，減少紙張使用，上線系統有：異常事件通報系統、BPM 線上公文簽核系統、線上學習系統、預算系統、請修系統、人事請假系統、請購採購系統、護理資訊系統...等。
4. Promotion for electronic medical records, X-ray films replaced by Picture Archiving and Communication System (PACS) to reduce the consumption of paper for hard copies. The established systems include, automatic warning system of abnormal conditions, Business Process Management (BPM) on-line document electronic signature system, on-line learning system, budget system, repair order system, personnel system, procurement system nursing system, etc.
5. 每半年透過「醫療器材援助平台計畫」將閒置資產捐贈友邦國家，如護理工作車、呼吸器、超音波檢查儀器、麻醉監視儀、X光機等。
5. Donation of spared equipments to our friendship nations through the “Global Medical Instruments Support & Service Program” (GISSP), such as trolley, respirator, ultra-sound examination instrument, Anesthesia System, X-ray system, ect.



(二) 溫室氣體減緩落實領域實務案例

(二) Greenhouse Gases Mitigation and Management

【北部某區域教學醫院】

【a regional teaching hospital in north Taiwan】

1. 建築物符合綠建築要求指標，包含綠化量指標、日常節能指標、廢棄物減量指標、水資源指標及污水垃圾改善指標

1.

(1)綠化量指標：有大小喬木 24 種，灌木及植被共計 9 種，生態綠化優待係數  $\alpha = 1.0$ ，綠化設計值  $TCO_2=5,808,760$  大於  $TCO_2=3,254,280$  符合綠化量指標。

(1)Greenery Index: The hospital has 24 varieties of trees, 9 varieties of scrubs and vegetation, the eco-green discount coefficient  $\alpha = 1.0$ ; and the green design towards CO2 fixation  $TCO_2=5,808,760$  is greater than  $TCO_2=3,254,280$  that complies to greenery index.

(2)日常節能指標：依建築技術規則綠建築專章第四節第 308~311 條，而本院建築外殼耗能低於建築外殼耗能指標。

(2) Energy Saving Index: According to Article 308-311 of Section 4 of the Green Building Chapter of Building Technical Regulations, the hospital building shows better than the ENVLOAD (envelope load) index requirement.

(3)廢棄物減量指標：工程施工全面使用乾式隔間牆，採用空氣防治污染措施。

(3) Waste Reduction Index: All construction works apply dry wall system with air pollution control measures.

(4)水資源指標：採用電沖式小便斗、感應式水龍頭及二段式省水馬桶，並有雨水儲集槽，所回收雨水用以噴灌院區內綠地草坪；再經藥劑處理後可用於沖廁，可節省自來水用水量。

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(4) Water Conservation Index: Water conservation devices are used in the hospital such as, auto flush urenals, sensor control facets and dual control water saving toilets. In addition, the rain water storage tanks collect rain water for irrigation of the vegation in the hospital, the rain water is also treated for toilet flushing to save tap water.

(5) 污水垃圾改善指標：污水量採三級生物處理法，並有預留接管陰井，另設有垃圾冷藏處理空間。

(5) Sewage and Garbage Improvements Index: Sewage is treated by tertiary biological treatment system with reserved connection wells, and cooler system is provided for garbage storage.

2. 建置節能設備監控能源耗用

2. Installation of energy saving monitoring and control devices

(1) 智慧冷熱雙效節能系統：用以製造熱水，相較原先鍋爐系統及其邊際效益，降低了約三分之二的天然氣使用量及四分之三的電力使用量。

(1) Intelligent cold and hot water energy saving system: The system provides hot water compared to the original boiler system and its marginal benefit, 2/3 of natural gas 3/4 of electric consumption are saved.

(2) 提高功率因數：加裝電容器設備，增設自動功率因數調整器，用以節省用電量及電費支出。

(2) Increase of power factor: Capacitors and power factor adjustment devices are installed to save electric consumption and electric bill payments.

(3) 鍋爐閃發蒸氣回收系統：以加強冷凝水回收及採用熱泵熱水系統，配合季節調整儲水槽設定溫度，用以降低天然氣及電力使用。

(3) Boiler flash steam recovery system: The system can facilitate the recovery of chill water and it uses heat pump hot water system to achieve better control of selected storage tank water temperature adjusted accordin to seasons to save natural gas and electric consumption.

(4)RO 水回收再利用：將每日消耗的 4 噸水回收後供沖廁使用。

(4) RO water recycle and reuse: About 4 tons of consumed water are recycled for flushing the toilets.

### 3. 推動節能措施

#### 3. Promote energy saving measures

(1)調整空調開放時段：於每年夏季進行空調開放時段管控，調查每層樓及區域常態使用情形，在人數少時段，由中央控制系統關閉該區域空調箱。

(1) Adjustment of air conditioners using time: Implementation of air conditioner control in summer season by checking the regular utilization of air conditioner at each floor and area to have the central control system turn off air conditioners of particular area at time when less people are in the area.

(2)調整電梯運轉時段：全院共 21 部電梯，設定分成 7 個群組控制，評估電梯每時段載客率後，於夜間 11 點至次日 6 點及每週日等離峰時段，關閉其中 9 部電梯

(2)Adjustment of elevators operation time: The hospital has a total of 21 elevators divided into 7 groups for control after assessment of loading at different time, 9 elevators are shut-off during off-peak hours from 11 pm to 6 am everyday and every Sunday.

(3)調整照明開放時段：調查每層樓及區域常態使用情形，在人數較少區域(如貨梯入口)裝設感應式節能照明燈具。

(3) Adjustment of air conditioners using time: Implementation of air conditioner control in summer season by checking the regular utilization of air conditioner at each floor and area to have the central control system turn off air conditioners of particular area at time when less people are in the area.

(4)更換 LED 燈具：逐漸汰換 PL 燈具，改採 T8、T5 燈具，於 2012 年開始陸續將 T8、T5 燈具陸續更新 1000 盞高效率 LED 燈具。另將原為 PL 燈管逃生指示燈更新為高效率 LED 燈具。

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(4) Replacement of LED lights: Gradual phase out of PL lights for T8 and T5. Since 2012, a total of 1000 LED lights have replaced the T8 and T5. The original PL emergency exit indication lights are also replaced by high efficiency LED lights.

4. 節能減碳成效：統計 2014~2015 年全院每月每人用電度數，兩年相互比較每月每人用電度數減少 2.91 度，依能源局公佈之電力排放係數，減少約 3,092,231 公斤碳排放量。

4. Energy saving and carbon reduction results: The average monthly consumption of electric for each person has dropped 2.91 kwh between 2014 and 2015 to equals to the reduction of 3,092,231 kg carbon emissions according to the electric emission factor published by the Energy Bureau.

(三) 氣候變遷風險調適領域實務案例

(三) Climate Risk and Adaptation

【南部某區域教學醫院】

【a regional hospital in southern Taiwan】

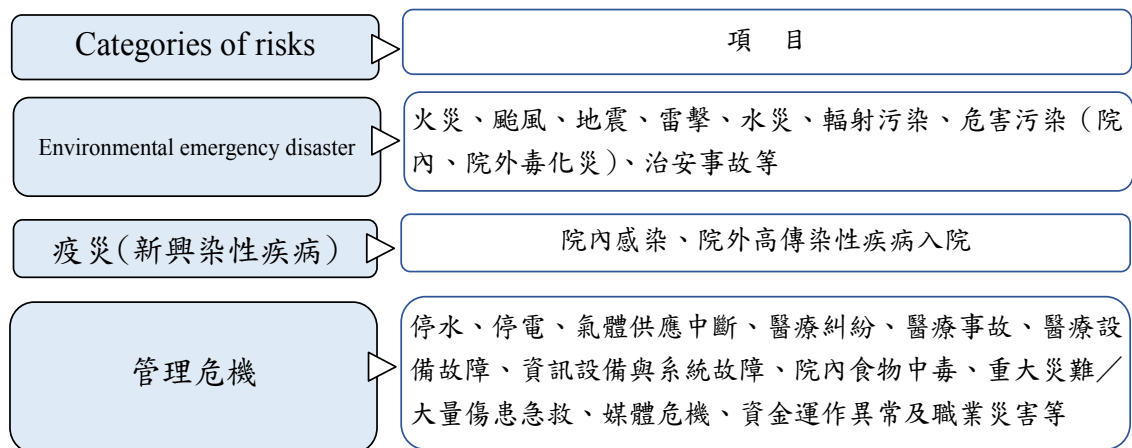
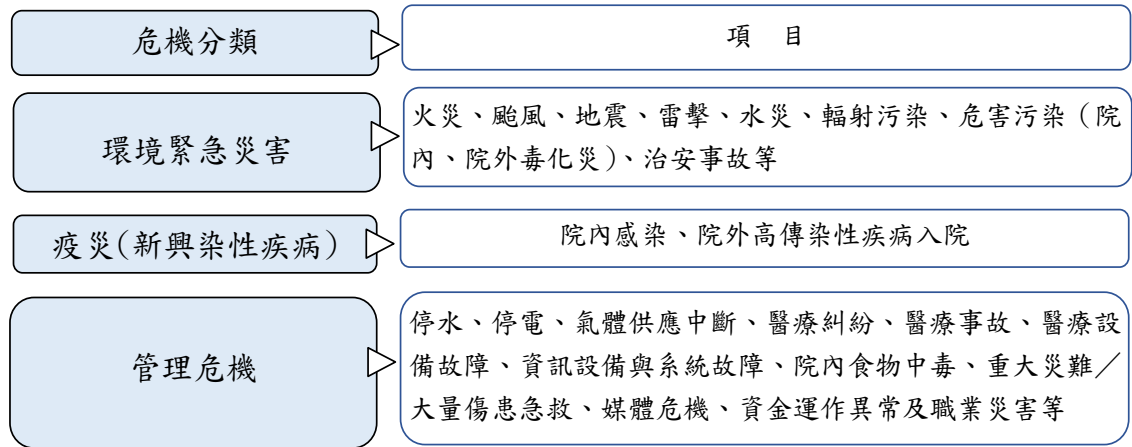
醫療院所面對可能造成營運中斷的危機事件類型可分為環境緊急危害、疫災及管理危機等三大類。為訂定風險預防策略，設有「緊急應變委員會」、「生物安全管理委員會」、「感染控制委員會」、「醫療品質暨病人安全委員會」及「輻射安全委員會」等相關組織，針對內、外部風險定期全面進行危害辨識、風險評估、預防與控制，負責醫院各項風險管理制度之規劃、執行、查核、檢討、管理及持續改善等事項。透過預防與因應等各種有效對策，達到解除危機之目的，並在面臨危機時能短時間內提出處理方法與決定。

Crisis events that could cause a hospital to stop operation can be categorized into 3 kinds as environmental emergency disaster, epidemic disaster and management crisis. In order to build risk prevention strategies, the hospital has established “emergency response committee”, “bio-safety management committee”, “epidemic control committee”, “medicare quality and patient safety committee” and “radiation safety committee” etc. in charge of disaster identification and risk assessment, prevention and control, to be responsible for all kinds of risk management system planning, implementation, auditing, review, management and continued improvements, so as to achieve timely resolution of risks through effective prevention and response strategies prepared in advance.

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## 1. 院內危機事件分類

### 1. Category of in-hospital risk events



## 2. 災害應變組織

### 2. Disaster response organization

為強化跨團隊突發危機事件應變能力，建立「醫院應變指揮體系(HICS)」，由委員會召集人擔指揮官，並指派副指揮官、安全官、連絡官、與醫療指揮官各一人，另依災害規模成立執行處、計畫處、後勤處與財務處之功能性任務編組，並依實際災害類型下令啟動組別。

In order to strengthen the capability to response to any emergency crisis events, the hospital has established “Hospital Incidents Control System” with the committee convenor as leader to appoint the deputy

leader, safety officer, communication officer and the medical leader. In addition, divisions of implementation, planning, logistics and finance will be formed according to the scales and types of disaster.

3. 訂有各項危機事故之監測及通報機制

3. Establish the monitoring and reporting mechanism for all categories of crisis

災害類別	監測機制	通報方式
火災	1.實施高壓配電設備停電歲修。 2.全院安全巡查。 3.以紅外線熱影像儀針對高耗能設備/家電做安全確認。	1.按下手動發報器。 2.由單位主管請總機廣播啟動緊急應變機制。
大量傷患	藉由 EMOC 或院內接獲大量傷患事件通知。	通知護理長、當班資深護理組長或急救區主治醫師。
資訊系統異常	1.定期保養檢查，並檢視機房設備用電負載。 2.機房設有門禁管制。 3.每日依工作日誌針對相關主機設備進行檢查。	由使用單位向資訊室通報；若當機達 30 分鐘仍未恢復，則由資訊室主任通報總機啟動緊急應變機制。
新興傳染病	1.感控室時查詢疾病管制局最新消息掌握最新疫情。 2.針對疑似傳染病個案，協助戴上外科口罩。	由感控室通總機啟動緊急應變機制。
風、水災	1.當發布海上颱風警報或豪雨特報後，隨即依防颱工作查檢表查檢。 2.增派人力監看各類污排水泵浦運作狀況。	由單位主管請總機廣播啟動緊急應變機制。
地震	1.定期施行建物安全檢查。 2.有感地震發生災害後，蒐集院內相關災情。	由單位主管請總機廣播啟動緊急應變機制。
暴力事件	1.各醫療單位設置監視器。 2.警衛組每日定時實施全院巡查。	由現場單位主管請總機廣播啟動緊急應變機制。
院內急救醫療小組	1.總機每日 3999 急救醫療小組人員 GSM 手機功能測試及確認輪值人員。 2.小組人員三分鐘內到達現場查核。	由發現者通報總機。
媒體危機	管理室應立即查閱各大平面媒體（報紙），彙整涉關與醫院相關重大及負面新聞。	遇案立即通知新聞主題相關單位研擬「重大醫療輿情報告」(Q&A)或「新聞稿」，同時報告醫療附副院長。

Category	Monitoring Mechanism	Reporting Tools
Fire	<ol style="list-style-type: none"> <li>1. Implement annual inspection of high voltage power distribution system.</li> <li>2. Implement routine fire safety inspection of the whole hospital.</li> <li>3. Use infra-red imaging instrument for safety inspection of high energy consumption equipment and appliances °</li> </ol>	<ol style="list-style-type: none"> <li>1. Press down the alarm button to manual start the alarm.</li> <li>2. The department supervisor will request for broadcast to start the emergency response mechanism.</li> </ol>
Large quantity of wounded patients	Through EMOC system or the hospital receive notice of large quantity of wounded patients.	Notice the nursing director, on-duty senior nurse chief or the emergency room attending physicians.
Information system abnormality	<ol style="list-style-type: none"> <li>1. Periodic inspection and maintenance, and routine inspection of the mechanic room power loading.</li> <li>2. Access control of the mechanic room.</li> <li>3. Daily inspection of main equipment according to working protocol.</li> </ol>	Equipment operation unit shall report any failure to the information office; in case the failure persists for over 30 minutes, the information office director shall report to start emergency response mechanism.
Emerging infectious diseases	<ol style="list-style-type: none"> <li>1. The control office shall survey and receive the most updated information from the Centers for Disease Control.</li> <li>2. Assist the suspected infectious disease patient to put on surgical mask.</li> </ol>	The control office shall start the emergency response mechanism.
Storm and flood	<ol style="list-style-type: none"> <li>1. Upon typhoon sea warning or torrential rain notification, the typhoon protection procedure shall be started following the checklist.</li> <li>2. Increase manpower to monitor the sewage pump operation condition.</li> </ol>	The supervisor in charge shall request for broadcast to start the emergency response mechanism.
Earthquake	<ol style="list-style-type: none"> <li>1. Periodic inspection of building safety.</li> <li>2. Collect information on any disaster occurred in hospital immediately after the earthquake.</li> </ol>	The supervisor in charge shall request for broadcast to start the emergency response mechanism.
Violence	<ol style="list-style-type: none"> <li>1. Installation of monitors at every medical unit.</li> <li>2. The security guard division shall conduct daily routine patrol within the whole hospital.</li> </ol>	The on-site supervisor in charge shall request for broadcast to start the emergency response mechanism.
Emergency medical	<ol style="list-style-type: none"> <li>1. Daily inspection of the medical team GSM mobile phone function test and</li> </ol>	The finder shall report to the broadcast office.



Category	Monitoring Mechanism	Reporting Tools
team	confirmation of the person on duty. 2. Team member shall arrive at site within 3 minutes of notification.	
Media crisis	The administrative office shall survey all media (newspaper) regarding any reporting that could negatively impact the hospital.	Immediate inform the news related unit to submit the “Important medical news report” (Q&A) or “press release” and report to the deputy director of the hospital.

#### 四、結語

#### 四、Conclusion

面對全球氣候變遷危機，世界衛生組織(WHO)配合聯合國氣候變化綱要公約，在 2008 年號召健康部門與醫療人員，從 Climate Change and Health 角度，於減緩氣候變遷的行動中，扮演更積極的領導角色。

Facing the global climate change crisis, the World Health Organization (WHO) in cooperation with the UN Framework Convention on Climate Change (UNFCCC), call for all medical workers and the health sectors to play more aggressive leadership in climate change mitigation action from the perspective of Climate Change and Health.

2010 年 10 月，國民健康局在國內發起「減碳救地球 醫界作先鋒」活動，獲 128 家醫院響應，宣誓將於 2020 年達到比 2007 年減少 13% 碳排放量的目標。

In October of 2010, the Health Promotion Administration launched “Carbon reduction to save earth with leadership from medical field” action that received responses from 128 hospitals declared to reduce carbon emission by 13% in 2020 compared to the level in 2007.

除研擬溫室氣體減量策略並達成減碳目標外，本署希望擴大醫院範疇及視野，從醫院減碳行動擴大至溫室氣體減量、因應氣候變遷和永續經營策略，更期望透過氣候智慧醫院推動指引，協助全國醫療院所建立自我環境診斷的機制，定期評估、追蹤及改善醫院因應氣候變遷各項措施與活動，增進員工、病人及社區的安全與健康，在達到「健康醫院認

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證」標準七的基礎上，進而往低碳醫院、氣候智慧醫院邁進，並逐步朝向醫院永續發展的目標，使醫療院所涵蓋環境、社會、治理及永續發展目標等各項面向，為地球永續與美好家園共盡一份心力。

In addition to establishing greenhouse gas reduction strategy and reaching the carbon reduction target, the Health Promotion Administration also wish to expand the scope and vision for hospitals from carbon reduction action to greenhouse gas reduction, climate change response and sustainable operation strategy. The HPA highly expects to assist nationwide medical institutions to establish their environmental self-diagnostic mechanism through the climate smart hospital promotion guideline to implement periodic evaluation, follow-up and improvement of hospital climate change response measures and actions, to enhance workers, patients and community safety and health, to achieve the basis of “Healthy Hospital Accreditation” level 7, so as to move forward to become low carbon hospital, climate smart hospital, and further towards the target for hospital sustainable development, to build the medical institution in all aspects including environment, society, governance and sustainable development, to dedicate our efforts to global and family sustainability.

## 五、附錄

### 五、Appendix

國內外氣候變遷相關資訊網站如下表所示：

The domestic and international climate change related information websites are listed below:

序號 No.	網站所屬單位名稱 Organization	網站網址 website
<b>國際氣候變遷網站 International Climate Change Website</b>		
1	聯合國氣候變化綱要公約網站 (UNFCCC)	<a href="https://unfccc.int/">https://unfccc.int/</a>
2	政府間氣候變化專門委員會 (IPCC)	<a href="http://www.ipcc.ch/">http://www.ipcc.ch/</a>
3	世界衛生組織(WHO)	<a href="http://www.who.int/">http://www.who.int/</a>
4	全球報告倡議組織(GRI)	<a href="https://www.globalreporting.org/Pages/default.aspx">https://www.globalreporting.org/Pages/default.aspx</a>
5	國際可再生能源機構(IRENA)	<a href="https://www.iea.org/">https://www.iea.org/</a>
6	全球綠色健康醫院(GGHH)	<a href="https://www.greenhospitals.net/">https://www.greenhospitals.net/</a>
<b>國內氣候變遷網站 Domestic Climate Change Website</b>		
1	經濟部能源局 溫室氣體減量資訊網 Greenhouse Gas Reduction Information, Bureau of Energy, Ministry of Economic Affairs	<a href="https://www.go-moea.tw/">https://www.go-moea.tw/</a>
2	經濟部能源局 服務業節能服務網 Energy Saving for Service Businesses, Bureau of Energy, Ministry of Economic Affairs	<a href="https://www.ecct.org.tw/">https://www.ecct.org.tw/</a>
3	國家發展委員會 氣候變遷調適 Climate Change Adaptation,	<a href="https://www.ndc.gov.tw/cp.aspx?n=5E865E40CA33E974&amp;s=406CB85C0FFDB9E2">https://www.ndc.gov.tw/cp.aspx? n=5E865E40CA33E974&amp;s=406C B85C0FFDB9E2</a>

	National Development Council	
4	環境保護署 國家溫室氣體減量法規資訊網 National Greenhouse Gas Reduction Regulations, Environmental Protection Administration	<a href="https://ghgrule.epa.gov.tw/">https://ghgrule.epa.gov.tw/</a>
5	經濟部水利署 氣候變遷水環境知識庫 Climate Change and Water Resources, Water Resources Agency, Ministry of Economic Affairs	<a href="http://demosite.sinotech-eng.com/CCKMV2/">http://demosite.sinotech-eng.com/CCKMV2/</a>
6	國立臺灣大學 全球變遷研究中心 Global Change Research Center, National Taiwan University	<a href="http://www.gcc.ntu.edu.tw/main.php">http://www.gcc.ntu.edu.tw/main.php</a>
7	環境保護署 推動台灣參與氣候變化綱要公約 Towards UNFCCC, Environmental Protection Administration	<a href="https://unfccc.epa.gov.tw/UNFCCC/chinese/">https://unfccc.epa.gov.tw/UNFCCC/chinese/</a>
8	環境保護署 綠色生活資訊網 Green Living Information Platform, Environmental Protection Administration	<a href="https://greenliving.epa.gov.tw/public">https://greenliving.epa.gov.tw/public</a>