

128 Taiwanese hospitals said “yes, we can!” on Oct. 23, 2010

Health Minister Yang CL

- Calculate reduction of CO₂ emission according to potential reduction in consumption of **electricity, water, oil, and gas**, and production of **waste**.
- 128 hospitals joined and committed to achieve **13% reduction of annual CO₂ emissions** by 2020 compared to the level in 2007
- The amount in CO₂ reduction is equivalent to the annual absorbing capacity of **34 New York Central Parks**



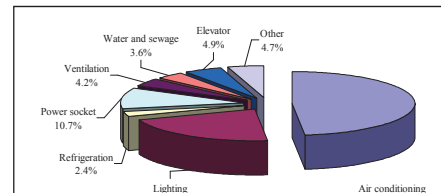
Source of energy consumption

- Major energy consumption:

Electricity: 79-83%; Waste: 11-14%; Oil: 3-4%

- Major electricity consumption:

Air conditioning: 48.5%; Lighting: 21%; Power socket: 10.7%



Source: 2009 ENERGY AUDIT ANNUAL REPORT FOR NON-MANUFACTURING INDUSTRIES, Bureau of Energy, Ministry of Economic Affairs

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Shared learning

- Workshops
- Site visits



Collection of Best Practice Evidences

- Bureau of Health Promotion published the manual of “**Green Hospital, Green Life, Green Planet**: Experience Sharing on Green Hospital”.
- With examples from 12 Taiwan Hospitals and the Alexandra Health Group in Singapore.
- both in Chinese and English.
- Available for download on <http://www.bhp.doh.gov.tw/BHPnet/English/ClassShow.aspx?No=201101190001>



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Environment-friendliness in hospital accreditation

- Current: Require the appropriate management of hygiene and waste
- Future: encourage the mitigation and adaptation of climate change

Front-line actions in health promoting hospitals

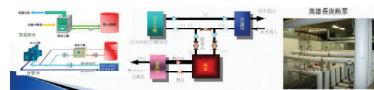


The organizational level: the action of change



Energy Efficiency

- Energy-saving management: Dx, Centralized plan, and control
- Install energy saving LED lights
- Replace old and inefficient facilities/ purchase machines with high EER
- Energy circulation technique (ex. heat pump)
- Energy saving practice by staff



Case Examples of Taiwanese Hospitals

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	Energy saving rate (%)	Improvements	Energy saved (kLOe ^a /year)	Costs saved (USD/Year)
NCKU Hospital	52	Lighting, heat pump	820	290,800
NTUH Yunlin Branch	61	Lighting, heat pump	44	36,700
DOH Miaoli Hospital	40	Lighting, heat pump	189	84,200
DOH Chang-Hua Hospital	49	Lighting, heat pump	227	111,900
Taipei Veterans General Hospital	51	Air compressor, AC, lighting, heat pump	564	361,230
Puli Veterans Hospital	58	Lighting, heat pump	290	136,800
Avg.	51.8	Total	2,134	36 to 361 thousand USD/yr

* kLOe: Kilo liter oil

Source: Taiwan Green Productivity Foundation, 2009

Alternative Energy Generation

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- Install roof-top **solar panels** to reduce sunlight exposure and air conditioning
- Subsidized by the Bureau of Energy, Ministry of Economic Affairs, for solar panel installations.



Green building design



1. Green Building Design



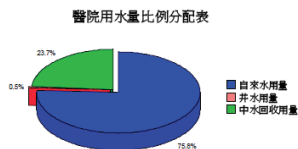
Garden on the roof

- a total of 6 roof-top gardens, with a combined area of 4579 meter square



Water

- Recover rain water and ground water for vegetation
- Recovery and treatment of waste water for use in toilet flushing, biological ponds and vegetation irrigation



Waste

- Replace
- Reduce
- Reuse
- Recycle



Paperless and filmless hospitals



Recycling



Nov 2009 - Doctor's Day - at a recycling station in Xindian



Food

- Use locally produced ingredients for meal service to patients and employees
- Sign purchasing contracts with local farmer's and fisherman's associations, purchase local goods
- Monday: the low-carbon day



Transportation

- BMW: B(bus), B(bike), M(metro), W(walk)
- Subsidize public transportation
- Encourage walking by placing staff parking further away from the hospital.

Biking to a summit meeting



40 bikes at the dormitory, free of charge

