

Case study

Carbon Reduction and Energy Management



GGHH Agenda Goals

- Saving energy

Hospital Goals

- Reduce more than 8 million dollars in annual energy costs.
- Reduce 500 tCO₂e carbon emissions per year.

Progress Achieved

1. During 2009-2012 three years period, including rainwater storage facilities total reduction of carbon emission is 1500 tCO₂e.
2. Comparing the relationship between total amount of outpatient (including emergency cases) and inpatient services and energy expenditure between 2009 and 2012, the growth rate of services was 42% but the energy expenditure was only 24%.
3. Taipei Medical University Hospital (TMUH) upholds caring the earth concept, executes "Green Procurement Strategies" through purchase green energy index, low pollution, recycling and saving resource, and use products to meet the green environment goals. TMUH has won various honors reward such as "Green Procurement Benchmarking enterprise" for five consecutive years, "Taiwan green brand" for four consecutive years in first place in medical service, Energy Saving Business Awards and as benchmark hospitals in Green Friendly environment.
4. Set the electronic platform to reduce the paper consumption and manpower Saved more than 30 million NTD annually.



The Issue

1. Follow by the hospital vision in green environment policy, setting the short to long term plan in reducing carbon emissions.
2. Set out the budget and then to implement the project by specialized department.
3. Setup the environmental management plan to regularly review the daily work process, improve the environment and check all facilities and equipment, which include air, water, energy, all kind of waste, and recycling activities. To fulfill the social responsibilities and achieve sustainable development.

Sustainability Strategy

Set up the energy conservation and environmental management specialized to the internal and external ISO 14001 environmental auditing regularly, including air, water, energy, all kind of wastes and recycling. To fulfill the social responsibilities and achieve sustainable development; planning the short-term, medium-term and long-term environmental protection projects and track the target achievements every six months. The strategy was effective in reducing pollution and saving the energy. In order to become one of Taiwan Green Enterprise, TMUH input countless manpower and resources to improve environmental quality, promote reduction of energy and wastes, taking responsibility to protect the Earth.

Implementation Process

1. Establish systematic management structure: used the systematic manner to improve energy efficiency and reduce energy consumption to reach the continuous improvement goal. TMUH has the energy management team to integrated whole hospital's carbon reduction plan, implementation, execution, monitoring and reporting. Superintendent is the team head and other members including General Affairs Department Director, members in Maintenance Division and in Construction Division. The team has to track and monitor the saving implementation result.
2. In order to fully implement the energy management and change the management behavior, we hold internal training and encourage all employees to participate. The Construction Division members act as the specialist to manager the hospital's carbon reduction plan, implementation, execution, monitoring and reporting.
3. Benchmark the method in energy-saving to get the best plan in carbon reduction. Act early to control the energy efficiency by complying with greenhouse gas regulation to reach the best energy usage.
4. Air conditioning is the largest energy consumption. TMUH modifies the equipment to frequency converters and conducted years of central monitoring. Small fans switch are used to control temperature settings that can reduce energy consumption.
5. Central air condition condensers are cleaned with open water jet machine to clean them.
6. Diesel fuel for boiler was change to liquid natural gas.
7. High-efficiency lighting (LED and T5)
8. Introducing digital imaging systems: replace the tradition image system which causes films consumption and flushing solution pollution problem.
9. Set up the multi-channel message delivery platform to reduce printing paper: online Human Resources' system, electronic official document system and knowledge management system. These systems can streamline internal processes and enhance the operational efficiency, and can reduce more than 400,000 sheets of paper annually, equivalent to building 1.5 Daan Forest Parks.

Tracking Progress

Include the energy-saving plans into the hospital's annual development plan. The energy management team executed the plan, monitor the indicators and hold regular meetings to track the effectiveness of energy saving and carbon reduction.

Challenges and Lessons Learned

Energy saving plan must rely on cross-sector cooperation and executed by responsible division. In the initial year of implementation, TMUH only set up the annual development plan and faces restriction during execution. After observing benchmark institutions and review the literature, the hospital developed 3-5 years long-term projects. After obtaining

consensus by the board, the energy saving plan was incorporated into sustainable management than enhance the energy conservation efficiency.

Next Steps

Energy saving plan with conservation toward "high efficiency", "high-value", "low emission" and "low reliance on" energy consumption and supply system. We will create win-win situations in energy, environmental and economic.

Demographic Information

The name of the institution: Taipei Medical University Hospital

Its network: The first Affiliated Hospital in Taipei Medical University Healthcare System

Address: 252, WuXing St., XinYi Dist., Taipei City 11031, Taiwan.

Building scale: 3 medical building in total

Number of beds: more than 800 beds.

Number of employee: more than 2000 staffs

Quotes

"Green Environmental Hospital" is the Taipei Medical University Hospital Sustainability goal.

Create a patient-centered service platform to wholeheartedly dedicate the comprehensive care form body to soul.



Keywords / topics:

Carbon emissions