

Cyberport

Energy Management for Grade A Commercial Complex (2007)

Energy Management Objective

A Upon successfully joined the Energy Efficiency Registration Scheme of EMSD in 2005, Property Management Company of Cyberport has committed to maintain the high energy performance of the commercial complex. In 2007, our energy consultancy team was invited to conduct energy audit service reinforce the efficiency of its energy consuming facilities and identify further energy saving opportunities. By the end of the auditing service, different new approaches and technologies have been introduced.

Basic Information of Property

- Buildings: 10 Commercial grade A office buildings and 1 shopping arcade
- GFA, m²: 150,000
- Operating years until 2007, years: 5

Figure A and Figure B illustrate the electricity portfolios of the whole Cyberport complex and Chiller System.

Figure A. Electricity consumption profile of Cyberport complex in 2006

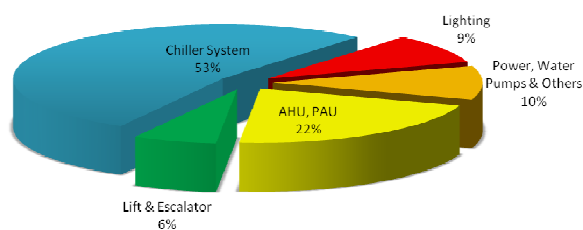
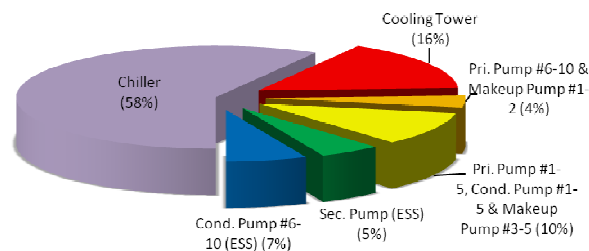


Figure B. Electricity consumption profile of the Chiller System in 2006



INERGI has proposed solutions (Energy Management Opportunities, EMOs) to the client which could reduce the energy consumption and CO₂ emission by 13% with reasonable investments. (Some of which are presented in the following table)

Energy Management Opportunities EMOs	Estimated Annual Energy Saving (kWh)	Estimated CO ₂ Emission Reduction (TonCO ₂)	Annual Saving in Energy Cost (\$)	Estimated Investment Cost (\$)	Payback (Yrs)
Optimal Start/Stop and Supply Temperature Reset for AHU for Concourse	17,000	8	\$18,000	No or Minimal Investment Cost Involved	
Demand Side Management	197,000	88	\$211,000		
Chiller Optimization and Sequencing	642,000	288	\$789,000		
Optimal Start/Stop of Chillers	402,000	180	\$493,000		
Installation of Variable Speed Drive on Chillers	818,000	367	\$1,004,000		
Application of Re-lamping for Halogen Lamp	31,000	14	\$33,000	\$ 3,038,700	-2.0
Dynamic Pressure Reset of AHU	192,000	86	\$207,000		
Inactive and Active Mode Operation of Lift System	15,000	7	\$16,000		
Enhancement of Power Quality Management	192,000	86	\$207,000		

Remark: The total estimated energy saving of all EMOs could reduce about 13% of the electricity consumption in 2006.