Best practices of policy linkage

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Promotion of "Green Hospitals" by improving efficiency/environment in national hospitals in Vietnam (2013～2017)

Outline of the Project

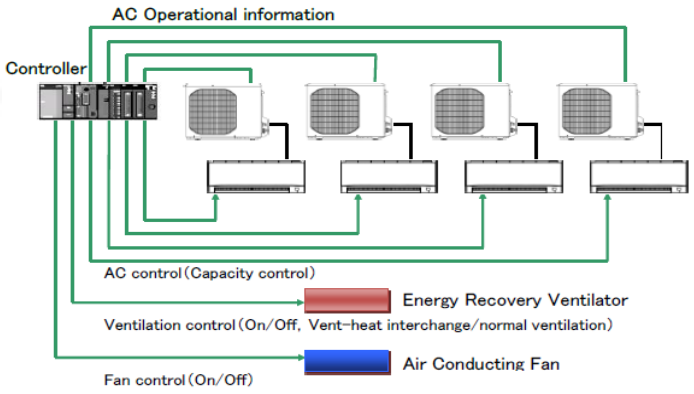
In this demonstration project, high efficiency performance inverter ACs, compliant to the energy efficiency rating standard in Vietnam, will be introduced in two state-owned hospitals, one located in Hanoi and the other in Ho Chi Minh City. Not only will the inverter ACs be installed, but energy management system (EMS) will be developed and installed to enhance the energy efficiency of the entire hospital. Together with the EMS, improving the ventilation will lead to a better indoor air quality, thus contributing to changing these hospitals into environmental friendly "green hospitals". As a JCM Project, one year monitoring will be put into effect and the amount of CO2 emission reduction as well as energy efficiency effect will be verified.

Implementing Company (JAPAN)	Mitsubishi Electric Corporation Mitsubishi Corporation Mitsubishii UFJ Morgan Stanley Securities
Project Site	TVCI/IEMM (Hanoi) Viet Doc Hospital (Hanoi) People's Hospital 115 (Ho Chi Minh City)
Counter Part Ministry	MOIT
GHG Emission Reduction Effect	Estimated emission reduction about 30% 500t-CO2/y

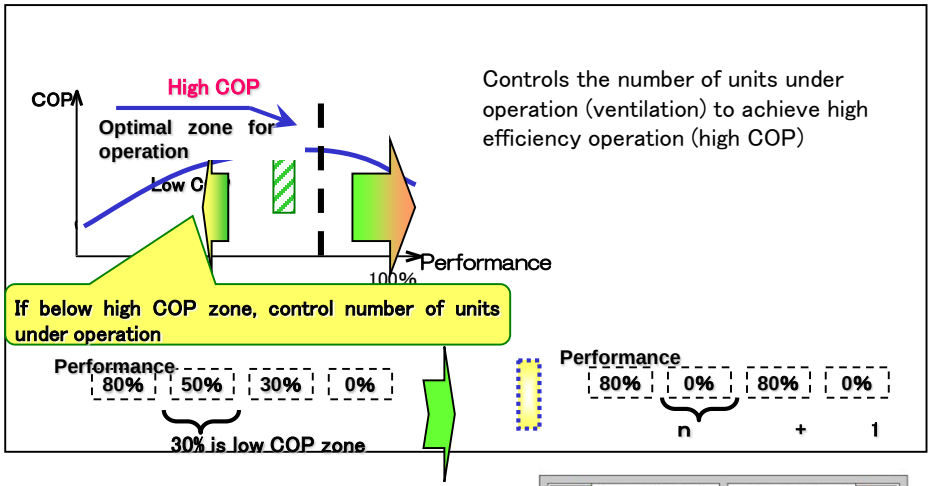
Introduced technologies

EMS for RAC

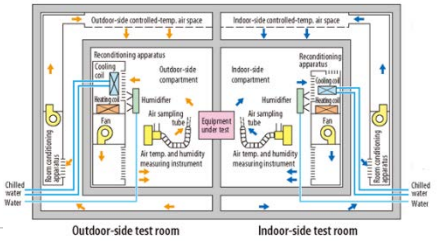
In the room AC system commonly used in Japan, each indoor unit is optimally controlled according to its operation conditions. However, in most hospitals in Vietnam where individual RACs are still used, EMS is yet to be introduced. By collecting data on operation condition (frequency, current, piping temperature, air speed, etc.), performance is assessed and optimal operation control of each unit is realized.



Development of EMS for RAC



Effectiveness assessment using balanced room type ambient calorimeter



Inverter Air Conditioners Installed at the state-owned hospital

Demonstration site in Hanoi

Demonstration site in Ho Chi Minh City

Energy saving and operational improvement of fishing vessels through special LED lighting equipment with new technology, COB module in Vietnam 2014～2018

Project outline

Fishery industry, which accounts for about 5% of the Vietnam GDP, and around 400 million people are engaged. Due to the recent fuel price hike, the implementation of energy-saving measures in line with the policy of the Vietnamese government are needed to implement. Most of the consumed oil in the fishing boat are from fishing lamp. By introducing a special LED lamp with high energy-efficiency developed by Stanley Electric, fuel consumption will be reduced and greatly contributes to energy saving, safety, and improvement in productivity.

Subcontractor	Stanley Electric Co ltd.,
Demonstration site	Department of Science and Technology of Quang Tri(DOST) Eternity Technology Energy Stock Company
Counter part	Quang Tri Province People's Committee
GHG Reduction (Written in PDD)	Expected GHG reduction: About 70%　840 t-CO_2/y ※Install 1800 lights on 40 ships

※Expected application amount of JCM credit
GHG reduction :143t-CO2(March 24 2017-Dec 28 2017)

Product outline

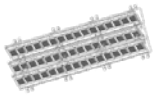
① Special new technology (COB) of the LED light

This LED light is using special new technology (COB).

②Effectiveness of LED fishing light system

Stanley Electric implemented feasibility study for installation of LED fishing light. In the study, Stanley confirmed and clarify the effectiveness of using LED light for fishing, high reduction of fuel consumption, and improvement of safety and work efficiency by cool and brightness light. Through this feasibility study, Stanley made the draft of practical JCM Methodology and verified its applicability. Stanley implemented demonstration project with producing the product that match Vietnams needs.

× 12pcs.



× 10pcs.

Mobile arm light		Mobile arm light	Use for	Side light		Side light
Middle		Narrow	Beam angle	Wide		全方向
30,000 W	97.5% Reduction	760 W	Power consumption	2280 W	77.2% Reduction	10,000 W
15 lm/W	686% Up	103 lm/W	Efficiency	103 lm/W	7% Up	96 lm/W
1,000 h	4000% Up	40,000h	Life	40,000h	333% Up	12,000 h
×		IP67	Water proof dust proof	IP67		×
×		◎	Salt damage	◎		×

Comparison specification of LED lamp and

Specification	HID		LED Light
Beam angle	Wide		Wide
Power Consumption	20,000 W	70% down	6,000W
Efficiency	97 lm/W		100 lm/W
Lux	1,942,000lm		516,000lm
Life	12,000h	Up to 33%	40,000h
Waterproof - Dustproof	—		IP66

Picture of installation process
Fishing ship（QT99939；68 LED fishing ligh

Key Message

1. There are a lot of interference between economic activities and climate actions which seem to have only trade-offs at a glance, but have potential for co-benefit or more/multi-benefit, if correctly recognized.

2. In order to maximize such co-benefits in the socio-system, it is necessary to consider the nexus among resources(e.g. energy, water, air…), economy, health, life, and other socio-environmental issues. Close linkage with the policies is also important to accelerate the business viability and deployment of technology.