

23th Feb. 2015

Heat Pump & Thermal Storage Technology Center of Japan

Heat Pumps Workshop in India

Heat Pump & Thermal Storage Technology Center of Japan (Chuo-ku, Tokyo; Chairman: Hiroshi Komiyama), a general incorporated foundation that endeavors to popularize heat pump and thermal storage systems that contribute greatly to measures for saving energy and mitigating global warming and are recognized as the equipment to use renewable energy in Europe, has participated the workshop on “Japanese Experience on Promoting Heat Pump Systems for Energy Efficiency” and made public relations for diffusion of heat pump equipment in India.

○ Workshop in India

- Date: Wednesday, 04 February 2015
- Venue: Hotel Taj Palace
- Organizer: The Energy Conservation Center, Japan, ECCJ
The Energy and Resources Institute, TERI
- Theme: Japanese Experience on Promoting Heat Pump Systems for Energy Efficiency
- Session: Opening session and Technical session
- Number of participant: 60 people (Maximum of the seat capacity)
- Inaugural address: Dr Ajay Mathur, Director General, BEE (Bureau of Energy Efficiency) mentioned that although the expectation to the heat pump is high the cost should be lower for dissemination in India.

○ Presentation

- **Mr. Junichi Noka, ECCJ**
「Energy Conservation Potential of Heat Pump System」
 - ・ Introduction of ECCJ’ s activity and their cooperation as to capacity building in India.
- **Mr. Yukinobu Hirose, HPTCJ**
「Heat Pump Technology -Benefits, Applications and Case examples-」
 - ・ Introduction of basic knowledge of Heat Pump Technology, it’ s variable application and advanced introduction examples in Japan.
- **Mr. Pradeep Kumar/Mr Sandeep Kacchawa TERI, India**
「Energy Conservation Potential of Heat Pump System」
 - ・ As an effect of urbanization (26%:1991→36%:2020) the electricity consumption in the building will be 3 times by 2021 from 2010 level. Therefore, air conditioning industry will grow 5 times by 2020 taking 2007 as a reference. Which result that the dissemination of heat pump will grow 2.5 times by 2020 taking 2007 as a reference.

➤ **Mr. A M Ghosh, TERI, India and Mr Rabhi Abdessalem, IGES, Japan**

「Application of Heat Pump Technology in the Indian Buildings –Potential&TERI’s Experience-」

- Potential industries for heat pump applications are as follows;
 - ① Industries; textile, pulp and paper, dairy, food processing
 - ② Service sector; hotels and commercial building
- ⇒ Potential energy saving with heat pump will be 30~40%.
- Pilot heat pump technologies already successfully demonstrated in Indian industries by TERI and IGES.

➤ **Mr. Tsutomu Masamoto Toshiba Carrier Corporation, Japan**

「High Temperature Water Circulation Type Heat Pump for Industries」

- CAONS is an air-source heat pump for industrial use. They could provide hot water up to 90°C which is the highest among circular heat pump system.
- Compact unit design considering space-saving.
- Easy installation for narrow space as the unit size is almost same as that of compact commercial air-conditioners.

➤ **Mr. Hideaki Suzuki, Toshiba Carrier Corporation, Japan**

「High-Efficient Operations of Multi-Split Type Air Conditioning System for Building in Japan 」

- VRF system has increased 1.7 times in last 10 years.
- The ratio of VRF systems is large in small-medium size buildings. So the performance improvement of VRF is directly effective for energy saving of the buildings.
- By the cooperation control of the following matters, it is possible to achieve energy saving 8.7% in cooling and 14.2% in heating.
 - to perform the cooperation control by the indoor units
 - to arrange the indoor units in zigzag layout

➤ **Mr. Hitoshi Tanaka & Mr. Gaurav Mehtani, Daikin Air-conditioning India,**

「Heat Pump Technology -A Future Prospective-」

- In 2013, total sales of residential AC in India was 28,000 units while Daikin India’s sales were 7,000 units which account for 25% of this market.
- Also in 2013, total sales of VRF in India was 20,000units while Daikin India’s sales were 11,000units which account for 56% or this market.
- They promote inverter air conditioner in India and emphasize the merit like reduction of electricity consumption.



○ Agenda of the workshop

Time	Theme	
10.00 - 10:30	Registration with Tea/ Coffee	
10:30 - 11:10	Opening Session	
	❖ Welcome remarks	Mr Girish Sethi, Director, TERI, India
	❖ Opening remarks	Mr. Jiro Sogawa, Managing Director Energy Conservation Center Japan (ECCJ)
	❖ Special address	Mr. Tsunemasa Teramoto Embassy of Japan
	❖ Special address	Ms Varsha Joshi Joint Secretary, MNRE, India
	❖ Inaugural address	Dr Ajay Mathur Director General, BEE, India
11:10 - 12:10	Technical Session - I: Heat pump application in industry & building sectors Chairperson : Mr Girish Kumar, Director, MNRE	
	❖ Energy conservation potential of heat pump system	Mr. Naoya Sugai ECCJ, Japan
	❖ Heat pump technology -Benefits, Applications and Case examples -	Mr. Yukinobu Hirose Heat Pump and Thermal storage Center Japan (HPTCJ)
	❖ Application of heat pump technology in the Indian buildings - potential & TERI' s experience	Mr. Pradeep Kumar/Mr Sandeep Kacchawa TERI, India
	❖ Application of heat pump technology in the Indian industries - potential & TERI' s experience	Mr. A M Ghosh, TERI, India and Mr Rabhi Abdessalem, IGES, Japan
	❖ Q&A	
12:10 - 12:25	Tea/ Coffee	
12:25 - 14:00	Technical Session - II: Japanese experience on application of heat pump technology Chairperson: Mr Abhay Bakre, Executive Director , PCRA	
	❖ High Temperature Water Circulation Type Heat Pump for Industries	Mr. Tsutomu Masamoto Toshiba Carrier Corporation, Japan
	❖ High-Efficient Operations of Multi-Split Type Air-Conditioning System for Buildings in Japan	Mr. Hideaki Suzuki Toshiba Carrier Corporation, Japan
	❖ "Heat Pump technology" - A Future Prospective	Mr. Hitoshi Tanaka & Mr. Gaurav Mehtani Daikin Air-conditioning India, Pvt. Ltd
	❖ Q&A	
14:00 - 14:10	Closing remarks	
	❖ Closing remarks	Mr Junichi Noka, ECCJ, Japan
	❖ Closing remarks	Mr Chetankumar A Sangole, TERI, India
14:10 - 15:00	Lunch	
15:00 - 16:00	One to one meeting of interested participants with Japanese experts	