

Training of Trainer Program - Japanese Low Carbon Technology (Steam Management System)

November 17, 2021 | Webinar

IGES and TERI organised a Training of Trainers (TOT) program (webinar) on steam management system on 17th November 2021, targeting mainly energy auditors and managers and energy professionals. A total of 74 participants attended the program.

The key objectives of the training program were:

- To further deepen the understanding of participants on the technologies and their importance in relation to energy efficiency; and
- To support the capacity building initiatives of Indian government, in order to promote the technology transfer of Japanese LCTs in India.



Mr Girish Sethi, Senior Director, Energy Program, TERI welcomed the participants and explained that TERI and IGES have been promoting many energy efficient Japanese technologies under the Japan India Technology Matchmaking Platform (JITMAP) initiative. He mentioned that Japan is a leader in energy-efficient technologies for industry as well as

other sectors.

Mr Toshinori Hamaguchi, Programme Manager, IGES Kansai Research Centre (KRC) made a presentation of the activities undertaken under JITMAP. He mentioned that IGES was established in 1998 and is working on a number of areas like green economy, climate change and so on. KRC and TERI have been collaborating to promote energy efficiency among Indian industries for the past 10 years. The JITMAP initiative was launched to match Japanese



manufactures to Indian companies. He explained the following steps of technology matchmaking under the platform:

Step 1: Matchmaking the supply-side technologies with demand in India

Step 2: Support activities such as feasibility studies, awareness creation, training and so on

Step 3: Demonstration of the technology in end-use industry

Step 4: Dissemination of the demonstrated technology

Activities under JIPMAP have been undertaken in various locations within India like Delhi, Haryana, Gujarat, Maharashtra, Andhra Pradesh and so on. So far, the platform has facilitated more than 75 interactions (feasibility studies, awareness workshops, training of trainers, etc.) between Indian and Japanese businesses. He presented case studies of two recent activities undertaken under the platform.

Mr Peush Jaitly, General Manager-Country Head (India Operations), TLV India Liaison Office made a detailed presentation on the company's operations, business philosophy and policy. TLV offers a complete range of products related to steam system. He underlined that a better steam system has several benefits apart from energy efficiency, such as tackling climate change and improving safety, reliability and profitability. He emphasized the need for precise monitoring and measurements while doing energy audits. For better energy auditing three things are important: knowledge, methodology and equipment. He mentioned that we should not look only at the steam trap but also at the associated system. He explained what could happen when a steam trap fails and how it could reduce the efficiency of heat transfer. Good steam management involves managing the condensate discharge locations (CDLs) within the plant.



He presented detailed case studies of a few plants where the steam survey was carried out by TLV. It was found that the typical return on investment in a good steam trap is just a couple of months. Usually auditors rely on visual, ultrasonic and temperature measurements which can lead to errors. TLV used proprietary equipment called Trapman which leads to better accuracy, reliability and traceability. Design data of more than 4700 models of steam traps from 30 suppliers are stored in the equipment. Detailed reports are generated on how much steam loss occurs trap-wise, return of investment, and benchmarking of steam leakages with respect to other similar companies. The software also generates reports for management and operational levels.



Mr Takaharu Nakashima, General Manager for India, Latin America, South Africa, Middle East, TLV International, Inc. Japan focused on SSOP (Steam System Optimization Program). He highlighted the steam system optimization study undertaken by TLV at a petroleum refinery in Muroran in Hokaido in northern part of Japan. Under the study, 35 tph

of steam saving was identified. Subsequently the recommended measures were implemented by the company which resulted in steam savings of 35 tph (5% of steam generation). About 20 tph saving came from CDLs and 15 tph was from steam system optimization. He mentioned that TLV is willing to provide a sample steam trap survey to interested companies. Generally, there is no charge for the sample survey.

A video demonstration of inspection tools and energy efficiency equipment was made by TLV. The Trapman is to be placed before the steam trap (not on the discharge side). The data is downloaded to a computer and then the reports can be generated. TLV has done steam surveys in numerous plants all over the world.

In his closing remarks, Dr. Satoshi Kijima, Programme Director, IGES KRC thanked TLV for the presentation. He mentioned that at COP 26, India has made zero commitment by 2070. Similar training programs will be useful to help India reduce carbon emissions. He also acknowledged the support received from Hyogo Prefectural Government towards organization of the event.

Key takeaways

Some key takeaways from the Q&A session are listed below.

Q: What are the operational constraints of using the Trapman?

A: Maximum temperature and pressure it can be used at are 300 °C and 100 bar respectively.

For study of supercritical turbine, a temperature gun and a Trapman can be used in combination.

Q: Can insulation be checked with Trapman?

A: Insulation quality cannot be checked using Trapman.

Q: Is TLV selling Trapman?

A: TLV is not selling the equipment since it requires a trained operator.

Q: Where to get more information on steam management?

A: TLV website has a more information on SSOP and SSRM (Steam System Risk Mitigation) and also has several videos.