JAPAN-INDIA TECHNOLOGY MATCHMAKING PLATFORM (JITMAP)
Facilitating Japanese Low Carbon Technology Transaction in India

A partnership initiative of:

Supported by:

IGES Institute for Global Environmental Strategies
teri

Ministry of the Environment Government of Japan

兵庫県 Hyogo Prefecture
Background

India’s Nationally Determined Contribution (NDC) under the Paris Agreement includes a commitment to reduce its emission intensity of GDP by 33~35% below 2005 levels by 2030. In India, the industrial sector has a share of 58% of the total energy consumption. Adoption of low carbon technologies (LCTs) in the industrial sector can accelerate India’s efforts in GHG emissions reduction. Japanese companies are globally renowned for their LCT products, and technology transfer between Japan and India could facilitate mutually beneficial transaction.

The Institute for Global Environmental Strategies (IGES), Japan, and The Energy and Resources Institute (TERI), India, have been working together to promote Japanese LCTs in India through business matchmaking. IGES-TERI’s activities to promote business matchmaking include the following:

IGES-TERI have worked on the following cross cutting technologies provided by leading Japanese companies:

<table>
<thead>
<tr>
<th>Technologies</th>
<th>Technology Providers</th>
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| Heat Pumps (Electrical and Gas)     | - Mayekawa MFG Co. Ltd.  
|                                     | - Yanmar Energy System Co. Ltd.                          |
| Once-Through Boiler                 | - Miura Co. Ltd.                                          |
| Air Compressors                     | - Hitachi Industrial Equipment System Co. Ltd.           |
| Steam Management Systems            | - Kobelco Compressors India Pvt Ltd.                     |
| Energy Efficient Transmission Belts | - TLV International INC.                                 |

The selected technologies are applicable across large industries, SMEs, and in the sectors listed under the Perform Achieve and Trade (PAT) scheme.
Need for a technology transfer platform

Based on the previous activities in promoting Japanese LCT transfer under various projects funded by the Japanese Government from 2010-2016, IGES-TERI found that, despite the huge potential, LCT market in India remains largely untapped by Japanese companies mainly due to the following key constraints:

- Information/knowledge gap
- Access to “top” decision makers
- Higher upfront cost
- Maintenance/after sale services
- Policy/regulations/standards

Furthermore, IGES-TERI found that various stakeholders from Japan and India are making efforts to address these constraints, however, individual efforts are not well coordinated.

Japan-India Technology Matchmaking Platform (JITMAP)

In order to properly coordinate their efforts and facilitate technology transfer, IGES-TERI launched the ‘Japan-India Technology Matchmaking Platform’ (JITMAP) in July 2016 as part of the project on evaluation and verification of CO2 emissions reduction technologies (TA project) funded by the Ministry of the Environment, Japan (MOEJ). JITMAP is a bilateral multi-stakeholders’ platform to facilitate dissemination of Japanese LCTs which are beneficial for all the relevant stakeholders.

As indicated in diagram below, IGES-TERI support to facilitate technology transfer as the Secretariat of JITMAP by formulating models of LCT transfer that can be expanded by Indian and Japanese businesses in collaboration with the other stakeholders such as Business Associations, Finance/Supporting Agencies and Government Agencies.

JITMAP support LCT transfer from Japanese to Indian companies through various activities including matching of the related organizations, networking, awareness raising on LCTs, Feasibility Study (FS), provision of information about financial support, regulations and policies and arrangement of meetings with the other stakeholders, etc., depending on requests and needs of the target companies in process of technology transfer.
JITMAP has so far conducted several activities like FS of Japanese LCTs, Workshops, and Training of Trainers (ToT) targeting energy auditors and managers, etc. mainly in Gujarat and Maharashtra States. In addition, IGES and TERI have provided the Japanese LCT suppliers (companies) with necessary support by obtaining understanding and cooperation of the organizations indicated below as needed in order to promote smooth and effective transfer of Japanese LCT under JITMAP. (Please see Page 4 for case studies of technology transfer under JITMAP).

**Locations and partners under JITMAP activities**

<table>
<thead>
<tr>
<th>State</th>
<th>Names of organizations</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Gujarat</td>
<td>Gujarat Energy Development Agency</td>
<td>GEDA</td>
</tr>
<tr>
<td></td>
<td>Gujarat Industrial and Technical Consultancy Organisation Limited</td>
<td>GITCO</td>
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<tr>
<td></td>
<td>Ankleshwar Industries Association</td>
<td>AIA</td>
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<td>Dahod Industries Association</td>
<td>DIA</td>
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<td></td>
<td>Vapi Industrial Association</td>
<td>VIA</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>Maharashtra Energy Development Agency</td>
<td>MEDA</td>
</tr>
<tr>
<td></td>
<td>Mahattra Chamber of Commerce, Industries and Agriculture</td>
<td>MCCIA</td>
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<tr>
<td>Andhra Pradesh</td>
<td>Andhra Pradesh State Energy Conservation Mission</td>
<td>APSECWM</td>
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<tr>
<td></td>
<td>Andhra Pradesh State Energy Efficiency Development Corporation</td>
<td>APSEEDCO</td>
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<tr>
<td></td>
<td>Marine Products Export Development Authority</td>
<td>MPEDA</td>
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The flow of LCT transfer is consisted of the following three steps. Under JITMAP, necessary supports have been provided to overcome the barriers in the process of these steps and promote technology transfer effectively.

**Schematic diagram of LCT transfer process**
## Compressed Air System (CAS) (Hitachi Industrial Equipment System Co. Ltd. & Kobelco Compressors India Pvt. Ltd.)

**Step 1: Stakeholders’ Identification**

Through network of JITMAP, Feasibility Study (FS) was conducted & recommendations on CAS & its Best Operating Practices (BOPs) were given for 14 Indian companies.

**Step 2: Technology application by Stakeholders’ matching**

Awareness raising workshops (WS) about the CAS were organized for local corporate managers & governmental officials, while Training of Trainers (ToT) were conducted for energy auditors & managers so that they could have a better understanding for technology transfer across CAS.

**Step 3: Upscaling**

- Through the FS, two companies installed air compressors of inverter model.
- Many companies adopted recommendations on BOPs of CAS.
- Air compressor of inverter model was adopted by a local company upon technical recommendation by ex-trainee of the ToT.

## Electrical Heat Pump (EHP) & Refrigeration System (RS) (Mayekawa MFG. Co., Ltd.)

**Step 2**

Through network of JITMAP, FS was implemented for 13 Indian companies.

**Outcomes**

- Through the FS, high feasibility to install the EHP & RS was found at many of those companies.
- Many stakeholders could have better understanding & interests in technology transfer to the EHP & RS.

## Steam Management System (SMS) (TLV International, Inc.)

**Step 2**

Through network of JITMAP, FS was implemented for 10 Indian companies.

**Outcomes**

- Through the FS, one company installed a steam trap, while potential for large energy saving by adopting the SMS was found at other companies.
- Many local corporate managers could have better understanding & interests in technology transfer to the SMS.

## Energy Efficient Transmission Belt (EETB) (Bando Chemical Industries Ltd.)

**Step 2**

Business meetings & FS were implemented for 6 Indian companies.

**Outcomes**

- In 2017 & 2018, 8 companies (2 through the FS & 6 through the WS) installed the EETB on trial.
- Many local stakeholders could have better understanding in technology transfer to the EETB.
Online information/knowledge sharing

JITMAP website (http://jitmap.org/) provides comprehensive information for the businesses on available technologies, financing options, policies from India and Japan, and database of over 40 feasibility studies across multiple sectors demonstrating energy savings by LCT implementation. Companies interested to know more about the content and/or to get in touch with potential counterpart in India or Japan can contact IGES-TERI for further details. JITMAP aims to support the "online" and the "on the ground" business matchmaking. A snapshot of the website is as follow:

Way Forward of JITMAP

Currently, JITMAP activities are supported by the Ministry of the Environment, Japan (MOEJ). Activities in Gujarat State in particular are supported also by Hyogo Prefectural Government, Japan through the activities of the IGES Kansai Research Centre as they have signed a Memorandum of Understanding (MOU) with the State Government of Gujarat. As a facilitator of LCT transfer between Japanese and Indian businesses, JITMAP will continue to implement its activities by selecting Japanese LCTs of high demand in India and identifying Japanese companies which can supply them, making full use of its network. Moreover, JITMAP will promote to transfer Japanese LCTs and contribute to reducing CO2 emission in India through matching of Japanese manufacturers of LCTs with Indian industries looking for such technologies.

For more information, contact:

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