IGES-TERI efforts to promote environmentally sound technologies deployment in India
B2B Matching: Feasibility studies

FS on Gas Heat Pump (GHP)  
FS on Electric Heat Pump (EHP)  
FS on Compressed air (CA)  
FS on Induction Furnace (IF)  
FS on Once Through Boiler (OTB)  
FS on Steam System Optimization (SSO)
B2B Matching: Demonstration projects and impact evaluation

- **Electric Heat Pump (EHP):** 30%-40% energy saving due to reduction in fuel consumption of boiler and electricity consumption of chiller

- **Gas Heat Pump (GHP):** 35%-45% energy saving due to switch from electricity to Natural Gas as source of energy
B2B Matching: Awareness creation and capacity building

On site trainings for plant engineers

In house trainings for energy auditors (TOT)

Awareness creation and capacity buildings for businesses managers and/or owners
B2F Matching: Explore potential financing options

Mtg. with Small Industries development bank in India (SIDBI)

Mtg. with JICA (India)

Mtg. with JBIC (India)
B2P Matching: Explore supporting policy/programme options

e.g. mtg. with Central Boiler Inspectors regarding IBR

e.g. Mtg. with Gujarat Energy Development Agency (GEDA)

e.g. mtg. with MCCIA, MEDA and SHAKTI foundation
In brief: The whole technology transfer process is addressed, while creating synergy among efforts/projects.
Emission reduction from EHP demonstration project:
-Average CO2 reduction is 180 ton/year

Notes:
• Note: In Year 2013, EHP started operation in 23 Jul.
• Year 2015, EHP was under breakdown for 4 months
• Year 2017, the data was just until Mid July.
Installation of new receiver and new air compressors (not inverter type)

Emission reduction from improving compressed air systems:
- 20-40% emission reduction due to implementation of the proposed BOP;
- 10 to 20% more could be generated by implementing Japanese hard technologies

Adjusting pressure setting

Reduce air leakage through installing foot switch

Reconsider pipe size and design

Start the use of efficient air gun
## Examples of untapped potentials

<table>
<thead>
<tr>
<th>Sites</th>
<th>Proposals for hardware/equipments installation</th>
<th>Estimated Energy saving (kWh/year)</th>
<th>Estimated emission reduction (Ton/year)</th>
<th>Estimated operation cost saving (Million JPY/year)</th>
<th>Initial cost (in Japan market) (1000 JPY)</th>
<th>Estimated Pay back period (Year)</th>
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</thead>
<tbody>
<tr>
<td><strong>Mahindra Hinoday Co. Ltd</strong></td>
<td>Install Inverter A.C (NL-0)</td>
<td>308,160</td>
<td>302</td>
<td>3,513,024</td>
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<td>Install Inverter A.C (NL-1)</td>
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<td>Install Inverter A.C (NL-2)</td>
<td>256,543</td>
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<td>Install two stages A.C</td>
<td>391,500</td>
<td>384</td>
<td>4,463,100</td>
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<td></td>
<td>Install Booster</td>
<td>108,864</td>
<td>106</td>
<td>1,241,050</td>
<td>3,000</td>
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<td><strong>Ahmednagar Forging Co. Ltd.</strong></td>
<td>Install Inverter A.C</td>
<td>350,000</td>
<td>343</td>
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<td></td>
<td>Install 2 stage A.C</td>
<td>130,500</td>
<td>128</td>
<td>1,487,700</td>
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<td><strong>Bombay Dyeing Co. Ltd.</strong></td>
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<td>693,462</td>
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<td><strong>Arvind Textile Co. Ltd.</strong></td>
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<td>660,200</td>
<td>647</td>
<td>7,526,280</td>
<td>12,000</td>
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<tr>
<td></td>
<td>Install high-efficiency drain trap</td>
<td>158,000</td>
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<td>1,801,200</td>
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<td><strong>Morarjee Textile Co. Ltd.</strong></td>
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<td><strong>Raymond UCO textile</strong></td>
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</tbody>
</table>
What support is actually needed and which stakeholder(s) could/should provide it?

- **Matching B2B is sufficient**
  - e.g.: Install one efficient standard air compressor

- **Matching B2F is also required**
  - e.g.: Install several efficient standard air compressors

- **Matching B2F and B2P is also required**
  - e.g.: Install free inverter type air compressor

Note: B= Business, F= Finance, P= Policy/programme

Current “Appropriate technology” Zone?

Maximum Own Capacity

Required capacity through training programme

Required project funding

Financial capacity
Key challenges to tap opportunities:

- High upfront cost of Japanese technologies;
- Significant information/knowledge gap exists: No comprehensive database on “seeds” and “needs” (technologies, financing options, stimulating policies, case studies, approximate prices, etc.);
- Incomplete, fragmented, and uncoordinated efforts among stakeholders to tap opportunities;
- Communication barriers (mindset, language, etc.).

>> It was concluded that there is a need to initiate a stakeholders' matchmaking platform to address all the above challenges in practical and systematic manner.
Initiating Japan-India Technology Matchmaking Platform (JITMAP)
Key feature of the platform

- **Bilateral**: Specific focus on Japan and India;

- **Multistakeholder**: Ensuring wider networking, knowledge & expertise, resources;

- **Practical**: unique forum where matching B2B, B2F and B2P can occur on the ground as well as online in faster way;

- **Comprehensive**: Information and knowledge sharing about various aspects (technologies data base, policies data base, financing options data base, etc). not just about one of them as in most existing platforms;

- **Systematic**: It addresses all the stages of Technology Transfer process, with special focus given to follow up activities;

- Ultimate goal is to materialize the opportunities rather than just identifying them; Develop information rather than just collect and share it;

- **It is not an alternative option** to existing platforms, but rather a complementary one to them.
JITMAP was initiated/launched as a trial basis on **Jul. 13th, 2016**. IGES and TERI as core members.

Leading Indian organizations has joined as dialogues members, namely: GEDA, MEDA, MCCIA, GITCO. Others are also expressing interests, from India and Japan.

Overall we think that JITMAP is working/operational given that:
- Actual emission reduction has been generated;
- Business opportunities have been created;
- Positive and encouraging feedbacks were received from Japanese private sector with whom we have been working. The involvement of Honda, Kobelco compressor, Bando chemical in FY2017 is well acknowledged.

Holding this Thematic Track, attended by high level representatives from Japan and India is an additional achievement under JITMAP. It is the best timing to launch the JITMAP website, which means to kick off the online matching as well.
Japan-India Technology Matchmaking Platform (JITMAP)

http://jitmap.org
Thank you for your kind attention