

6th North-East Asia Multistakeholder Forum on  
Sustainable Development Goals 2022  
7-8 September 2022

# Promoting Japanese environmental technologies and better operational practices in India



**Institute for Global Environmental Strategies (IGES)  
Kansai Research Centre (KRC)**



# Profile of Institute for Global Environmental Strategies (IGES)

**Name of the Institute:** The Institute for Global Environmental Strategies (IGES)

**Established:** March 1998

**Aims:** Bringing about a transition to a sustainable, resilient, shared, and inclusive Asia-Pacific region and the world through:

- Acting as an Agent of Change
- Conducting strategic research to generate collective impact generation with key stakeholders (co-design and co-production): United nations organisations, multilateral banks/ financial institutes, central/local governments, and the private sector.

## Offices :

IGES Headquarters

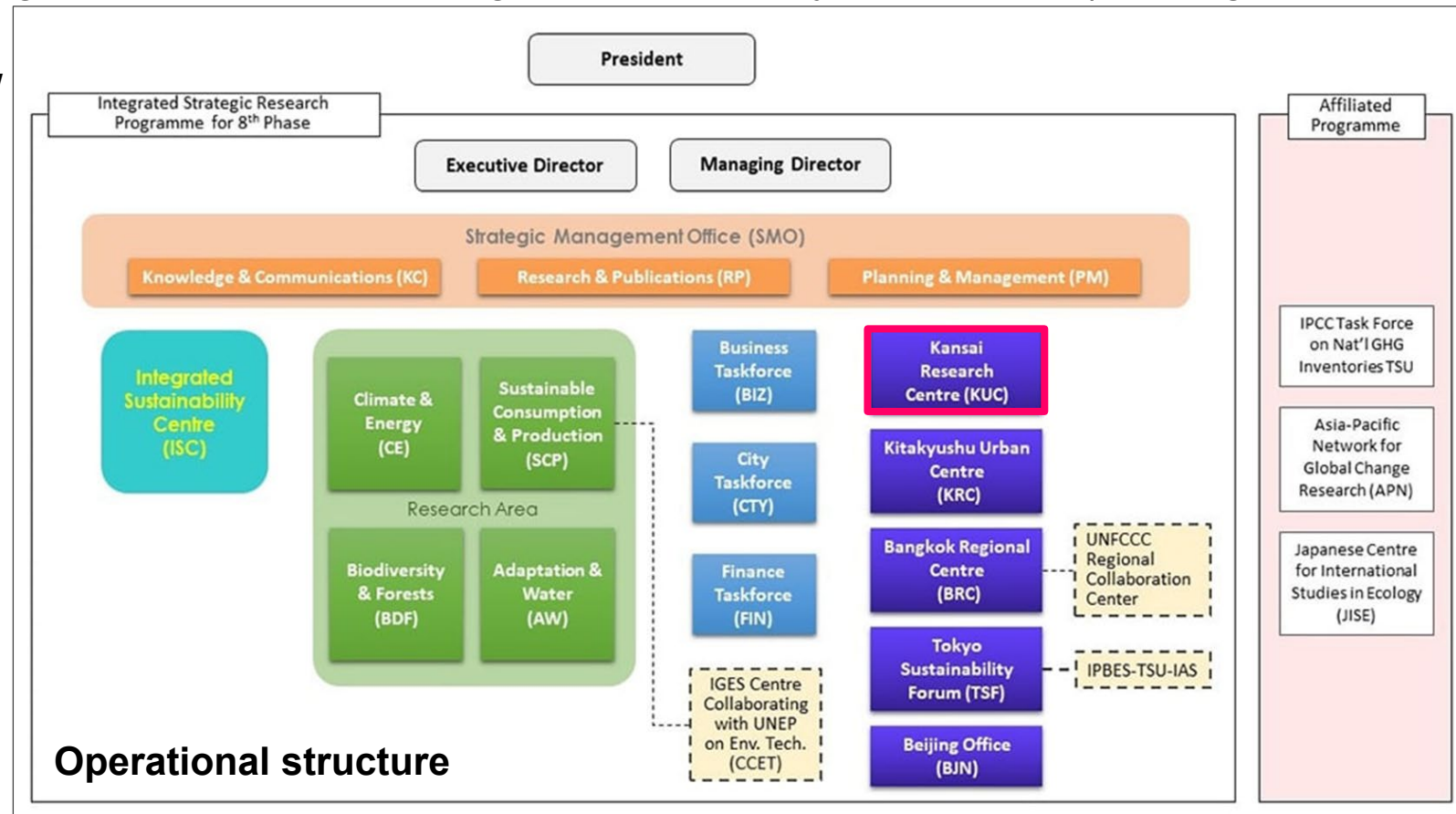
**Kansai Research Centre**

Kitakyushu Urban Centre

Regional Centre in Bangkok

Beijing Office

Tokyo Sustainability Forum



## Background: Japan-India Environmental Cooperation

- Japan and India have set ambitious targets for their energy transitions, with India declaring plans to become carbon neutral by 2070, and Japan committing to achieve net-zero by 2050.
- In the domains of environment and climate, several high level initiatives on-going:

### MEMORANDUM OF COOPERATION

BETWEEN THE MINISTRY OF THE ENVIRONMENT OF JAPAN AND THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE OF THE REPUBLIC OF INDIA IN THE FIELD OF ENVIRONMENTAL COOPERATION (Signed October, 2018):

**Areas of cooperation:** **Pollution control** (air, soil, water), **environmental technology**, and **climate change**, etc.

**Forms of cooperation:** Joint seminars, workshops and meetings, regular dialogues, exchange programs on environmental management and human resource development, etc.

### 1ST Japan-India High-level Policy Dialogue (September, 2021)

The policies of both Japan and India and future bilateral cooperation between two countries in the following four areas were explained and discussed, and policies for cooperation were confirmed. :

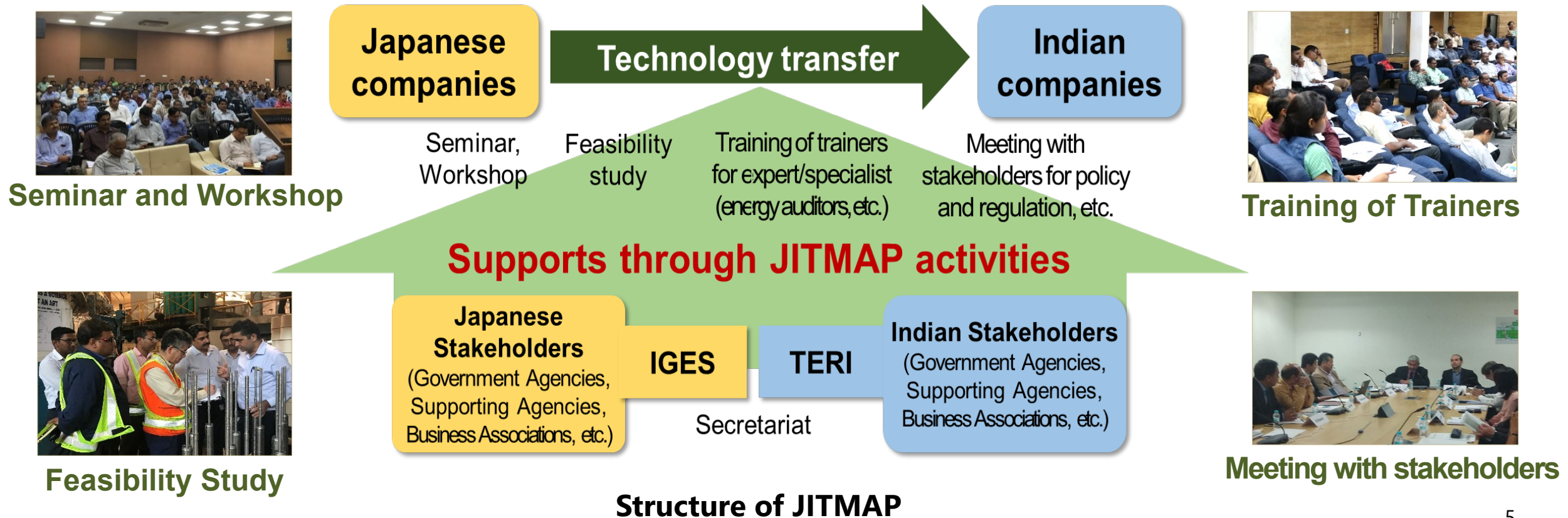
- |   |  |
|---|--|
| (1) <b>Climate change</b> , CFC measures, | (2) <b>Marine litter</b>                         |
| (3) <b>Air pollution</b> ,                | (4) <b>Sustainable transportation/technology</b> |

# Progress: Promoting Application of Japanese Environmental Technology in India

<b>2010~2013</b>	Implemented the SATREPS project on "Promotion of Application of Japanese Low Carbon Technologies in India" and introduced Japanese technologies ( <b>gas heat pumps (GHP), electric heat pumps (EHP), induction furnaces, and compressed air systems</b> ) to Indian companies and verified the effectiveness of these technologies by collaborating with Japanese companies.
<b>2014</b>	Conducted the JCM (Joint Crediting Mechanism) feasibility study on "Promotion of Application of Low Carbon Technologies in India" to investigate the feasibility of application and dissemination of <b>compressed air systems</b> for equipment and its operational practice in Indian industries.
<b>2015</b>	Conducted the Ministry of the Environment of Japan (MOEJ) project to identify the possibility of applying Japanese technologies ( <b>once-through boilers, steam management systems, and compressed air systems</b> ) in India by analyzing opportunities and challenges/barriers.
<b>2016~</b>	Launched <b>Japan-India Technology Matchmaking Platform (JITMAP)</b> jointly with The Energy and Research Institute (TERI) to promote low-carbon technology (LCT) transfer/diffusion in India in 2016. Conducted JITMAP activities with targeted Japanese technologies ( <b>compressed air system, EHP, refrigeration system, steam management system, and energy-saving belt</b> ) .
<b>2020~</b>	<b>Expanded target technologies</b> for JITMAP to include <b>Japanese environmental technologies</b> .

# Japan-India Technology Matchmaking Platform (JITMAP)

- Launched jointly with TERI in July 2016 with the support of the Ministry of the Environment of Japan (MOEJ) to promote low-carbon technology (LCT) transfer and diffusion in India.
- **Multi-stakeholder platform** to match Japanese manufacturers of Environmental Technologies (ETs) including LCTs with Indian companies that are looking for such technologies.



# JITMAP Activities (FY2016~FY2021)

## Seminars and workshops:

**Total: 15**

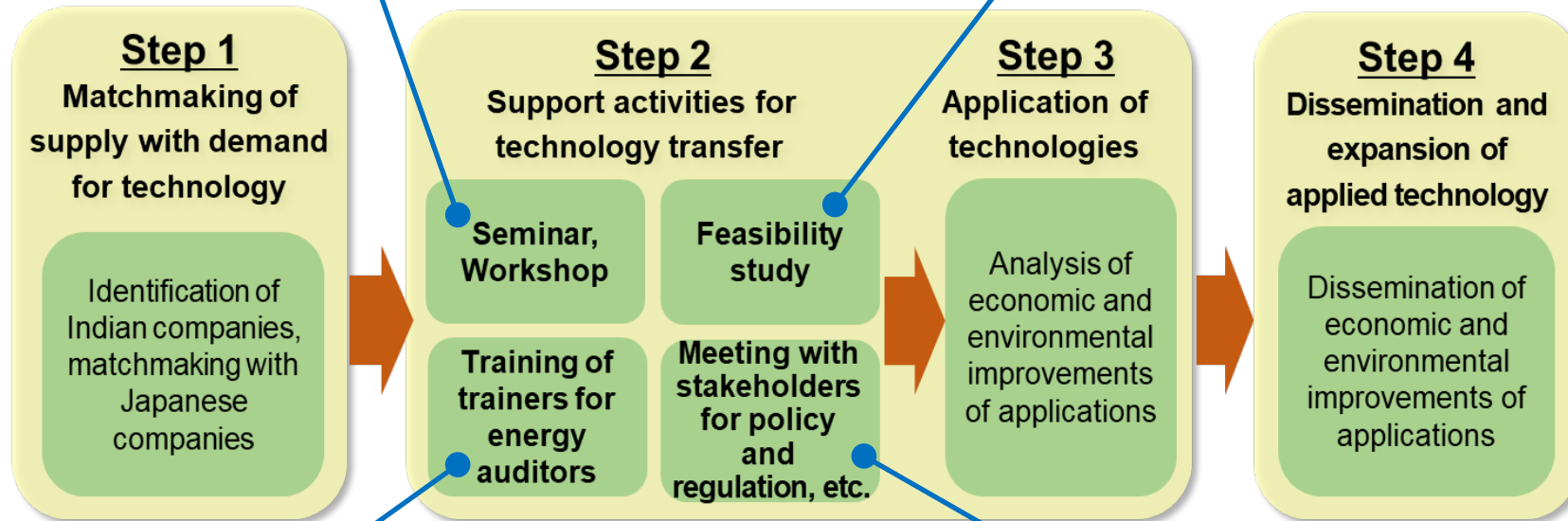
- Compressed air system: 5
- EHP/Refrigeration system: 2
- Steam management system: 4
- Energy-efficient belt: 1
- LCT/EE technologies: 1
- CEMS: 2 (Continuous emission monitoring system)



## Feasibility study (preliminary energy audit):

**Total: 54**

- Compressed air system: 21
- EHP/Refrigeration system: 13
- Steam management system: 14
- Energy-efficient belt: 6



## Training of trainers:

**Total: 6**

- Compressed air system: 5
- Steam management system: 1



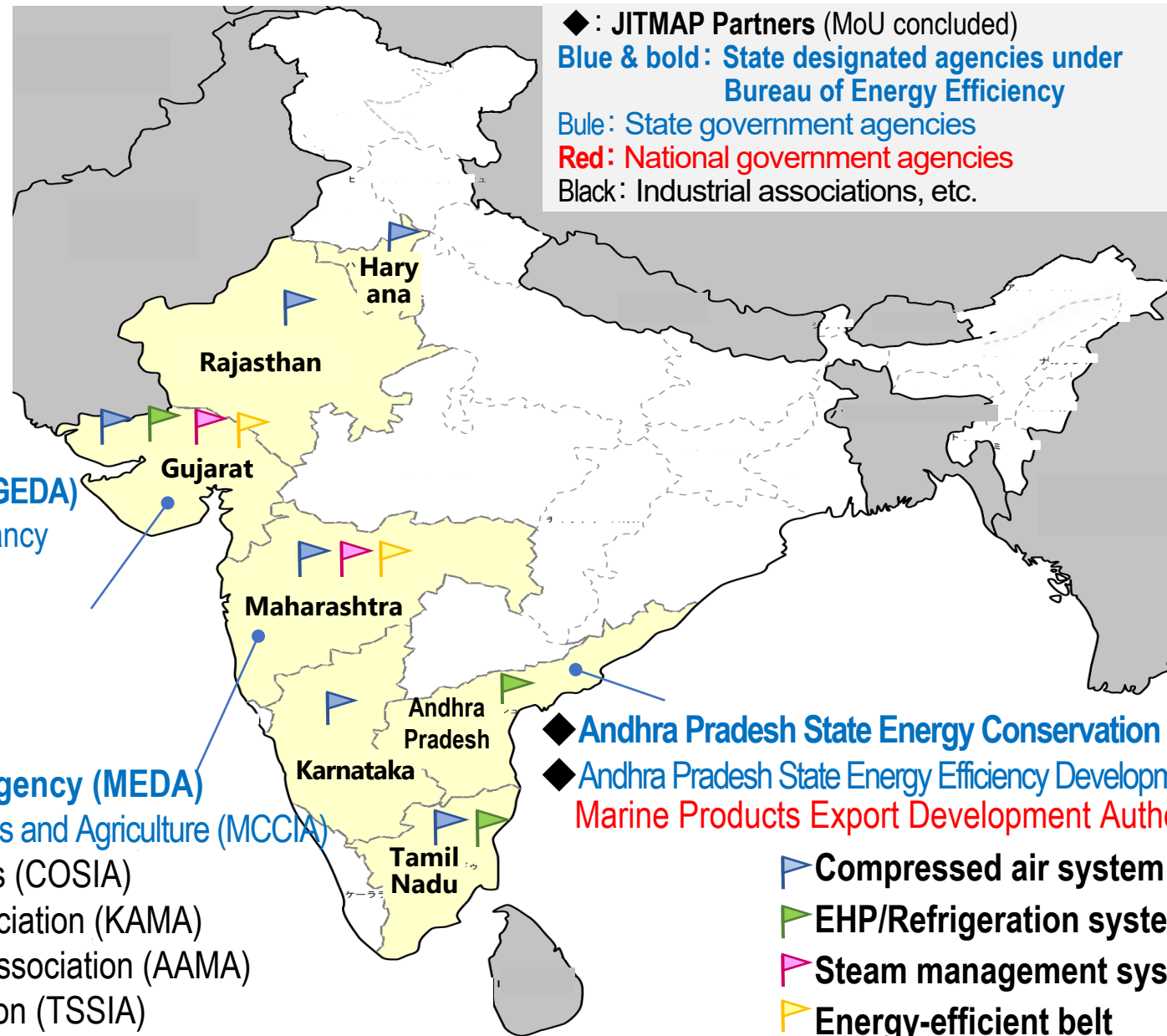
## Meeting with stakeholders:

**Total: 5**

- Compressed air system: 2
- EHP/Refrigeration system: 2
- Energy-efficient belt: 1



# JITMAP Partners & Locations of the Activities (FY2016~FY2021)



◆ : JITMAP Partners (MoU concluded)  
**Blue & bold** : State designated agencies under Bureau of Energy Efficiency  
**Blue** : State government agencies  
**Red** : National government agencies  
 Black : Industrial associations, etc.

■ No on-site activities were conducted in FY2020~FY2021 due to COVID19.

- ◆ **Gujarat Energy Development Agency (GEDA)**
- ◆ Gujarat Industrial and Technical Consultancy Organisation Limited (GITCO)
- Ankleshwar Industries Association (AIA)
- Dahej Industries Association (DIA)
- Vapi Industries Association (VIA)

- ◆ **Maharashtra Energy Development Agency (MEDA)**
- ◆ **Mahratta Chamber of Commerce, Industries and Agriculture (MCCIA)**
- Chamber of Small Industry Associations (COSIA)
- Kalyan Ambernath Manufacturers Association (KAMA)
- Additional Ambernath Manufacturer's Association (AAMA)
- Thane Small Scale Industries Association (TSSIA)

- ◆ **Andhra Pradesh State Energy Conservation Mission (APSECM)**
- ◆ **Andhra Pradesh State Energy Efficiency Development Corporation (APSEEDCO)**
- Marine Products Export Development Authority (MPEDA)**

- ▶ **Compressed air system**
- ▶ **EHP/Refrigeration system**
- ▶ **Steam management system**
- ▶ **Energy-efficient belt**

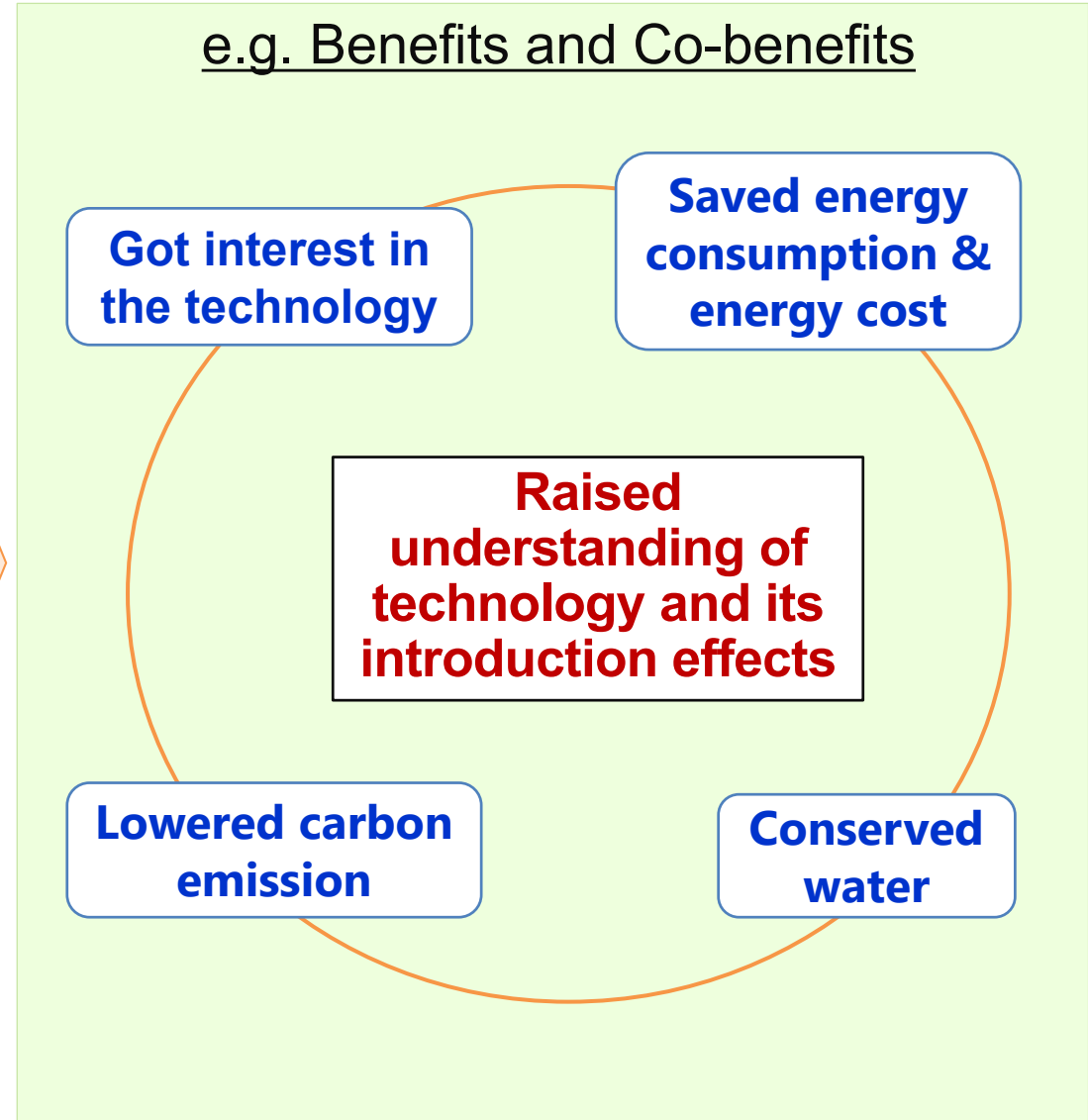
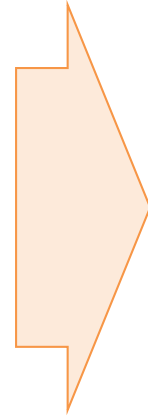
## Recent case studies: Promoting Japanese LCTs (1/2)

### 【Case 1】 Awareness raising of steam management system in a seminar by the state government

- Date: Feb. 2020 · Venue: Gujarat
- Activity: Introduction of **Steam Management System** of TLV International, Inc. in a seminar of the state government.
- Implementing Partners:
  - 1) **Gujarat Energy Development Agency (GEDA)**
  - 2) **National Productivity Council (NPC)**
- Participants: **About 120 Certified Energy Auditors and Energy Managers.**
- Outputs:



Understanding of participants for possibility of energy saving by using efficient steam valves and traps based on the results of feasibility studies in Indian industries was increased.





## Recent case studies: Promoting Japanese LCTs (2/2)

### 【Case 2】 Approx. 30% energy saving by improving the operating practices

· Activity:

**Feasibility study** (Sep.2017)  
Follow-up survey (Jan.2020)

· Location: Maharashtra

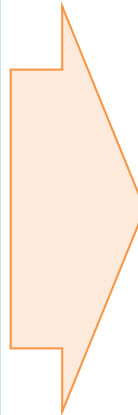
· Target industry: Automobile parts

· Recommendations on the FS by the expert of compressed air system :

- 1) To **replace** an outdated reciprocating air compressor with **an energy-efficient inverter compressor**.
- 2) To improve the **operating practices** such as reducing the air leakage.

· Findings in the follow-up survey:

By implementing most of the recommendations, the company resulted in **reducing the annual power consumption by about 1.8 million kWh, which is equivalent to about INR16 million.**



e.g. Benefits and Co-benefits

Increased employees' awareness of environment and energy efficiency

Reduced energy consumption & CO2 emission

Improved working environment by reducing noise, etc.

Saved running cost including maintenance cost

# Sharing and disseminating of JITMAP activities and results

JITMAP activities and results related to technology feasibility studies, workshops and technical trainings, etc. are shared with public general in the JITMAP website and brochure, etc.



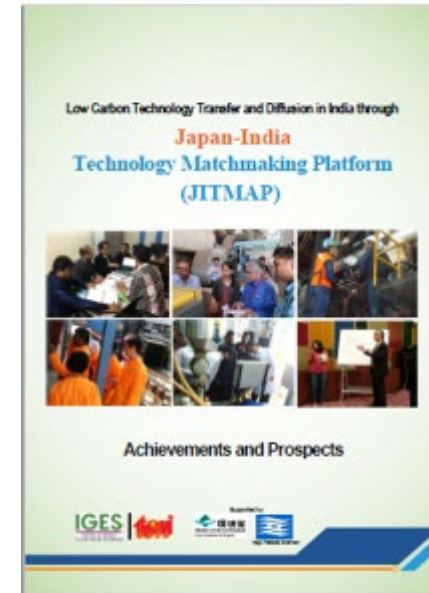
Workshop, Seminar, etc.



JITMAP Website (English ver.)  
<http://jitmap.org/>



JITMAP Website (Japanese ver.)  
<https://www.iges.or.jp/jp/projects/jitmap>



JITMAP Brochure



JITMAP Booklet

# Way forward of JITMAP activities

## 1. Continued implementation of JITMAP activities especially for SMEs

- In cooperation with the Japanese & Indian stakeholders including the MOEJ, the Embassy of Japan in India and private companies.

## 2. Expansion of target technologies (including technology needs assessment)

- Expansion of target technologies to include environmental technologies and collaborations with Japanese stakeholders like Japan Platform for Redesign: Sustainable Infrastructure (JPRSI), the Blue Sky Initiatives, Japan Environmental Technology Association (JETA), The Energy Conservation Center, Japan (ECCJ), etc.
- To identify new target technologies and Implementing areas and partners,

## 3. Establishing deeper cooperation with the local JITMAP Partners and local stakeholders

- To implement JITMAP activities for their own programs/initiatives (e.g. Demonstration Projects, Training for Energy Auditors and Managers, and co-innovation with local industries) .
- To promote inclusive and sustainable industrialisation through innovation.

## 4. Formation of model clusters

- For technology transfer through intensive and multi-year implementation of JITMAP activities.

## 5. Continued contribution to SDGs through JITMAP activities

- Not only for SGD 9, JITMAP continues to contribute to other SDGs as well; SGD 7, SDG 12, SDG 13, and SDG 17.



# Thank you for your kind attention



## **【Contact】**

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