

Insights on Promoting Low Carbon Technology Transfer (LCTT)

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Content

1) Importance of linkage between the phases in the LCTT process:

Insights based on IGES, TERI and UNU-IAS research

2) Stakeholder's matchmaking as innovative approach to promote LCTT:

Insights based on IGES and TERI projects in India

3) Conclusion

Note: UNU-IAS activities to promote LCTT include the examination of selected projects and initiatives at three levels: national (bilateral), multilateral and city to city cooperation. IGES-TERI activities include examination of initiatives as well as “on the ground” actual intervention.

1) Importance of linkage between the phases in the LCTT Process

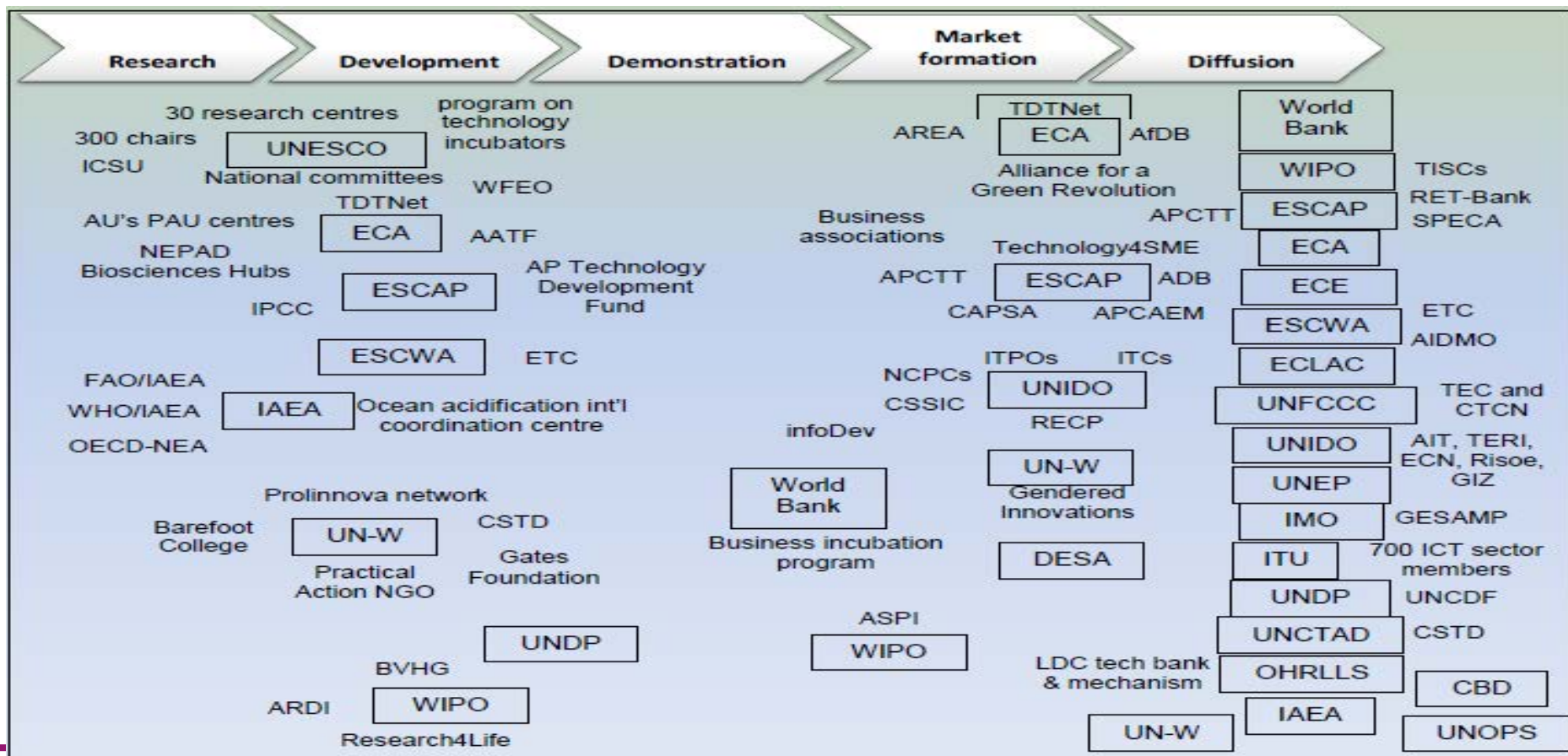
Insights based on IGES, TERI and UNU-IAS research

Technology Transfer: A complex process

- ❑ Horizontal vs. vertical process of Technology Transfer
- ❑ Transfer of new technology. vs. commercially available technology
- ❑ Transfer of mitigation vs. adaptation technology
- ❑ Transfer of soft vs. hard technology
- ❑ Transfer of 100\$? vs. 100,000\$ vs 1 million\$ technology
- ❑ Transfer to a private company vs. to a government?
- ❑ Low carbon, environmental, clean, climate, green, cobenefits technology vs other technology
- ❑ ...

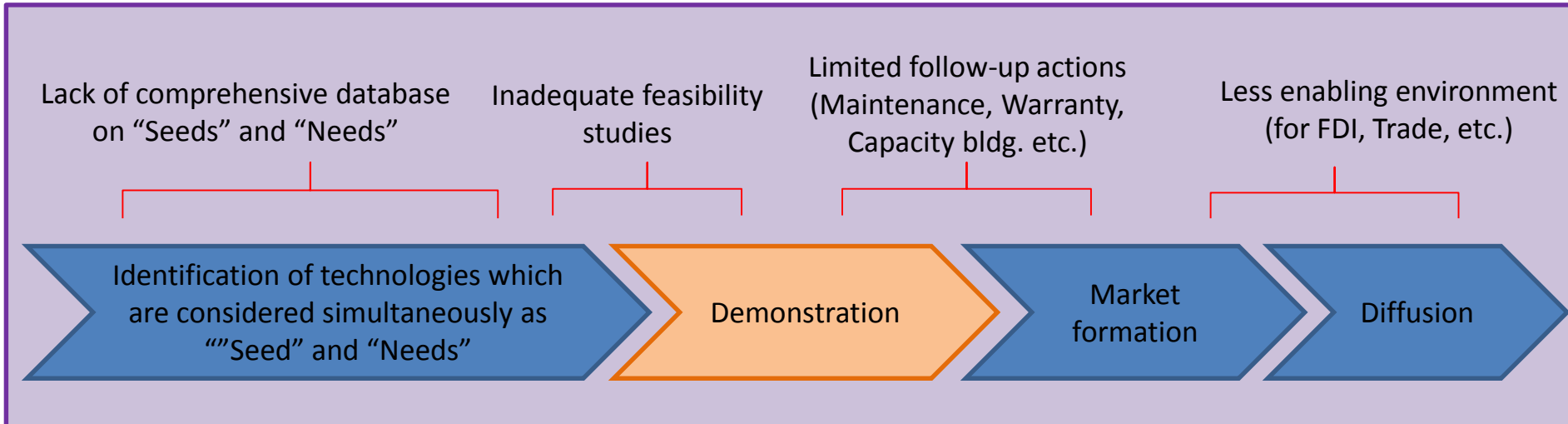
Fragmented and weakly coordinated efforts

Numerous programmes/approaches/models are addressing LCTT, but they remain somehow fragmented and weakly coordinated over the whole LCTT process. No long term cooperation through integrated and continued projects



Inadequately linked phases of LCTT process

- Lack of comprehensive database on “Seeds” & “Needs”;
- Inadequate feasibility studies (in quantity and/or quality);
- Less focus/interest in demonstration projects;
- Limited follow-up actions to demonstrated projects;
- Less focus on adapting technology to local needs;
- Less enabling environment/supportive institutional infrastructure and policies to enhance the diffusion.



Worth emphasizing initiatives: Role of stakeholders

- ❑ UNEP's Seeds Capital Assistance Facility (SCAF) supports investment at early stage of investment in a clean energy projects;
- ❑ Technology Facilitating Mechanism (TFM) promotes coordination, coherence and cooperation within UN System, etc.;
- ❑ GIZ not only run demonstration projects, but also develops guidelines for enabling investment to replicate them;
- ❑ MNRE in India introduced the achievement-linked incentives, where the sum of subsidies is provided according the degree of the success of a project;
- ❑ Businesses initiatives:
 - ❖ The Ultra-Low CO2 Steelmaking (ULCOS) which is a cooperative R&D initiative among 48 EU companies to drastically reduce CO2 emission;
 - ❖ The Cement Sustainable Initiative (CSI) is a platform facilitating effective stakeholder engagement and providing sustainable solution;

2) Stakeholder's Matchmaking as Innovative Approach to Promote LCTT:

Insights based on IGES and TERI projects in India

Identification of “Seeds” and “Needs” to kick off the matching process

IGES identifies potential technologies which are commercially available in Japan, “Seeds”, and TERI identifies potential technologies needed in Indian industries “Needs”. Technologies which are identified simultaneously as “Seeds” and “Needs” could be considered for further investigation through feasibility studies (FS).

Example of technologies covered so far:

| |
|---------------------------|
| Gas Heat Pump (GHP) |
| Electric Heat Pump (EHP) |
| Once Through Boiler |
| Steam System Optimization |
| Compressed air system |
| Induction furnace |

Conduct of feasibility studies (B2B matching)

FS on Gas Heat Pump (GHP)



FS on Electric Heat Pump (EHP)



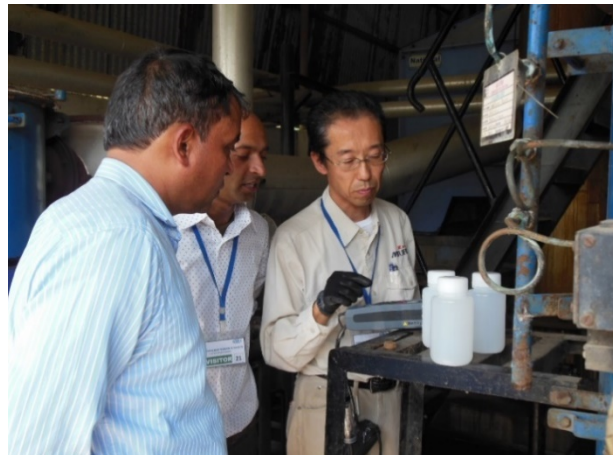
FS on Compressed air (CA)



FS on Induction Furnace (If)



FS on Once Through Boiler (OTB)



FS on Steam System Optimization (SSO)



Implementation of demonstration projects

- **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



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



Approaching to Financing Institutions (B2F)

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



Mtg. with JICA (India)



Mtg. with JBIC (India)

Approaching to Policy Makers (B2P)

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



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

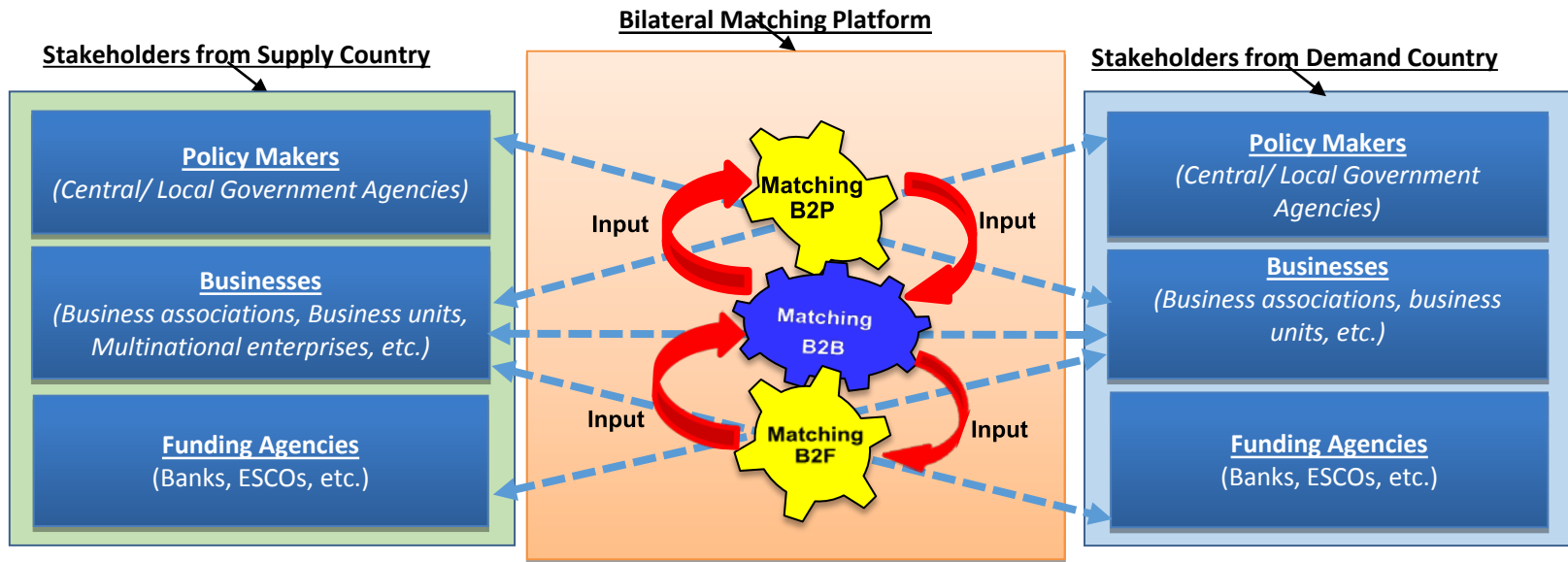


e.g. mtg. with MCCIA

Key findings

- Huge potential/market for Japanese low carbon technologies deployment in India however:
 - High upfront cost of Japanese technologies;
 - Significant information/knowledge gap exists;
 - Incomplete, fragmented, and uncoordinated efforts to tap opportunities;
- >> 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.

Matching Platform Concept



Note1: The **bilateral** matching platform has to be implemented/executed not for **profit purpose**;

Note2: It should include **matchmakers from both supply and demand side**;

Note3: The matching is made through two forms:

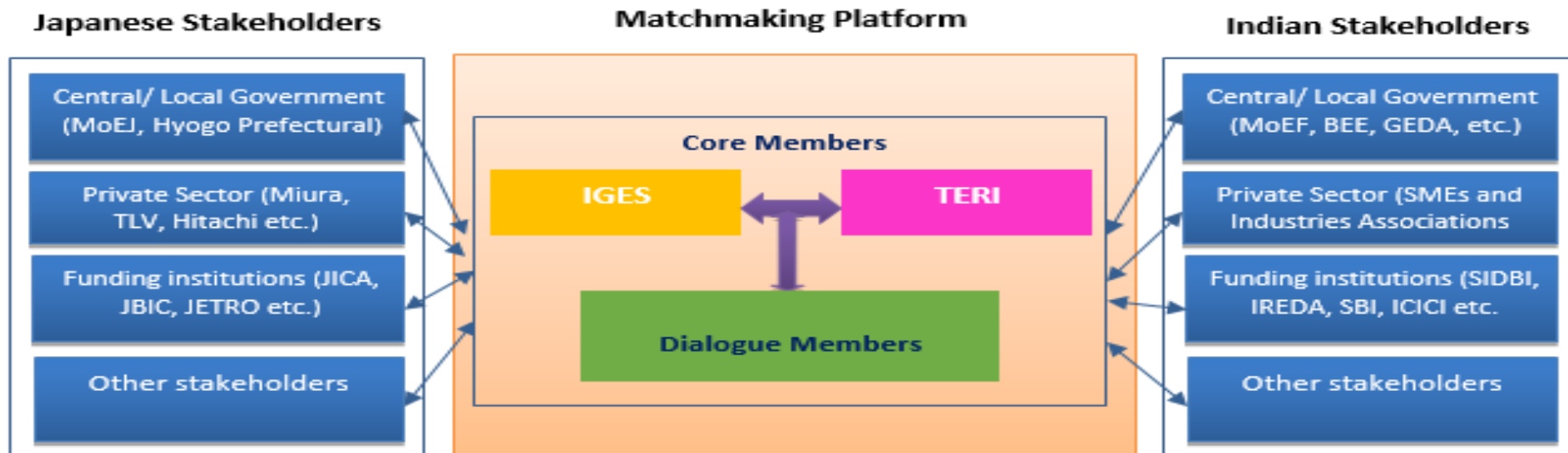
- **On the ground matching:** Through actual/direct interaction among stakeholders to conduct **market assessments, feasibility studies, project proposals, demonstration projects, technical assistance and capacity building, loan syndication, Training of Trainers, PR and outreach, etc.**
- **Online/Virtual matching:** Through collection, mapping and online sharing of relevant knowledge/information (**online databases on technologies, policies, financing options, etc.**), along with disseminating the **findings/lessons learnt from the above on the ground matching.**

Key feature of the platform

- Practical: unique forum where matching B2B, B2F and B2P can occur on the ground as well as online in faster wa.
- Comprehensive: Information and knowledge sharing is about various aspects (technologies data base, policy data base, financing data base, etc. not just about one of them
- 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 the information rather than just collecting it
- It is not an alternative option to existing platforms, but rather a complementary one to them.

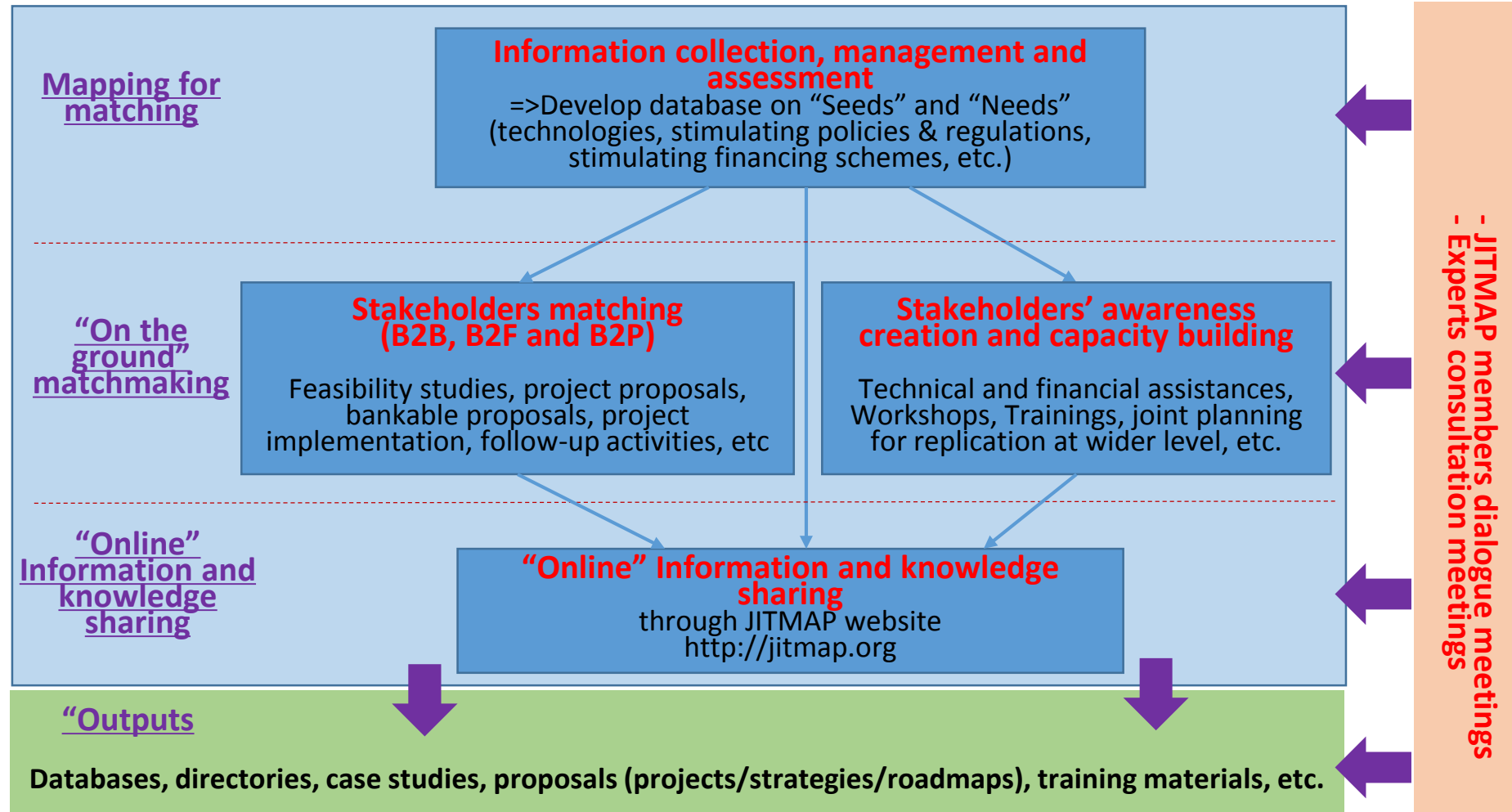
Japan-India Technology Matchmaking Platform (JITMAP)

- 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.



Key activities under JITMAP

IGES and TERI, in coordination with JITMAP Dialogue Members, enable matchmaking of B2B, B2F and B2P through the following activities:



Japan-India Technology Matchmaking Platform (JITMAP)

<http://jitmap.org> (PW: QWER1234)

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JAPAN-INDIA TECHNOLOGY MATCHMAKING PLATFORM (JITMAP)

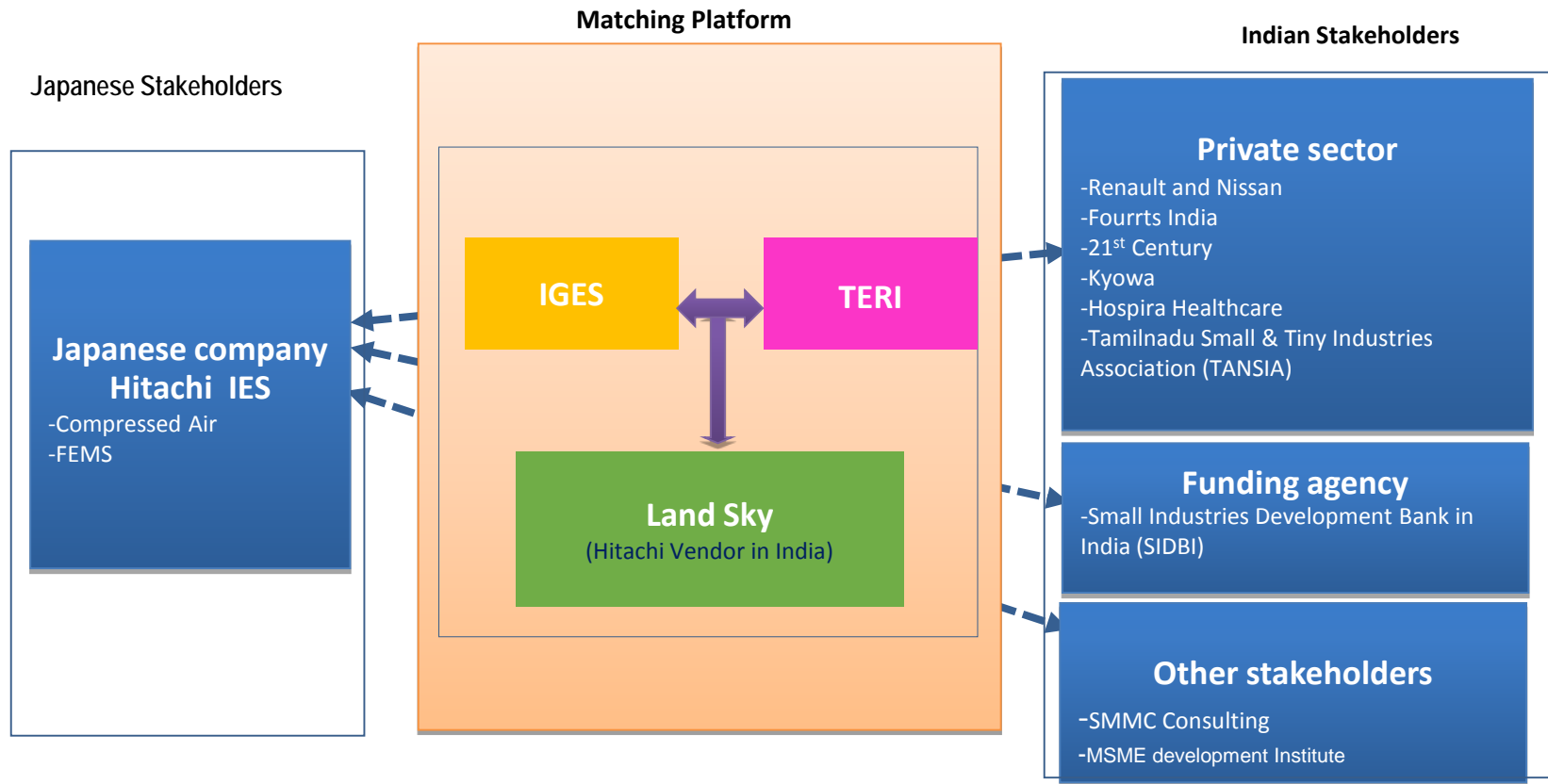
JITMAP is a multi-stakeholder platform initiated to promote the engagement and matching (direct and virtual) of Japanese and Indian stakeholders, public and private, to facilitate mutually beneficial transactions in clean energy, which includes energy efficient technologies (EETs) as well as renewable energy technologies (RETs)

OPPORTUNITIES FOR JAPANESE ORGANIZATIONS

OPPORTUNITIES FOR INDIAN INDUSTRIES

E.g.: of Matching in FY2016:

IGES and TERI, along with Land Sky(India), successfully matched experts from Hitachi IES (Japan) with several Indian stakeholders as shown in the fig. below:



3. Conclusion

- There is no shortage of technologies, no shortage of funding, no shortage of initiatives, but there is shortfall in coordination/synergy among efforts to develop and implement projects;
- Aiming at long term Public Private Partnership approach is required through integrated and continued projects, where the role sharing of public and private sector vary proportionally opposite along the LCTT process;
- Successfully matching B2B, B2F, and B2P creates synergy among efforts, fills part of the information/knowledge gap and ultimately alleviates part of overall business cost (reduction of transaction cost, information cost, etc.);
- Bilateral matchmaking platforms could be considered as innovative business model as long as they include the adequate matchmakers to address the issues mentioned earlier to link the phases of LCTT;
- Bilateral matchmaking platform should be non for profit, practical, comprehensive and systematic to avoid the shortfall of existing platforms

Thank you for your attention

