Bureau of Energy Efficiency
(A Statutory body Under Ministry of Power)

Azadi Ka Amrit Mahotsav

ENERGY EFFICIENCY SERVICES LIMITED
A JV of PSUs under the Ministry of Power

DEMONSTRATION OF ENERGY EFFICIENCY PROJECT (DEEP) IN PAT SECTOR

Auditorium,
SCOPE Convention Centre,
New Delhi

G20 भारत 2023 INDIA

DATE- 1st March 2023

Overview of DEEP

Agreement between BEE and EESL

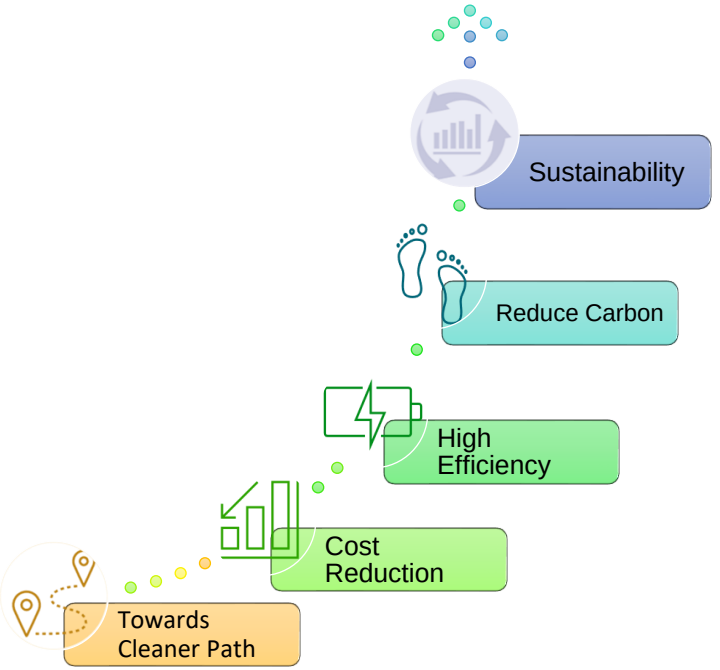
- To Demonstration of Energy Efficient Project (DEEP) in PAT industry
- EESL will implement the DEEP projects

Aim of Program

- Commercialization and Market transformation for Innovative Technologies
- Phase 1 : 8 Technologies & 27 Projects
- Phase 2 : Reach successful technology across PAT industry

Objective

- Demonstration of Innovative energy efficient technologies
- Large scale deployment and implementation
- Reduce specific energy consumption for PAT sectors
- Enable ecosystem through upscaling



Program Objectives

Identify **Energy Efficient technologies**

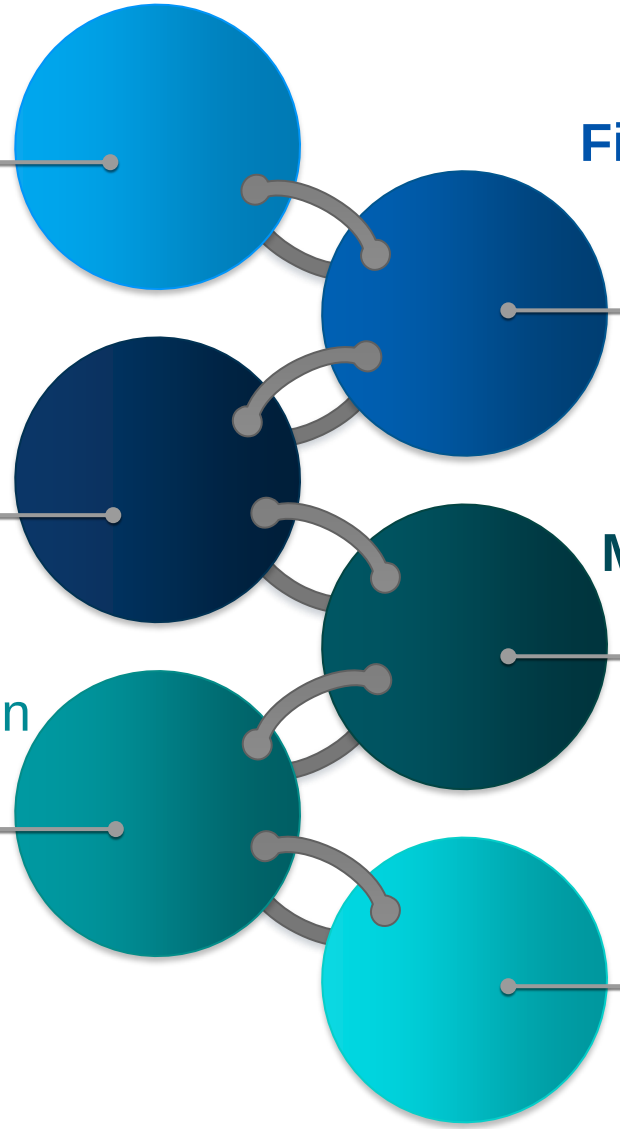
Financing models to support replication of EE projects in PAT DCs

Demonstration of the Identified technology

To build up IOT based **Monitoring and verification** for the technology

Demand aggregation for the Identified technology in PAT sectors

Case studies and training



Stakeholders and Role

Bureau of Energy Efficiency (BEE)

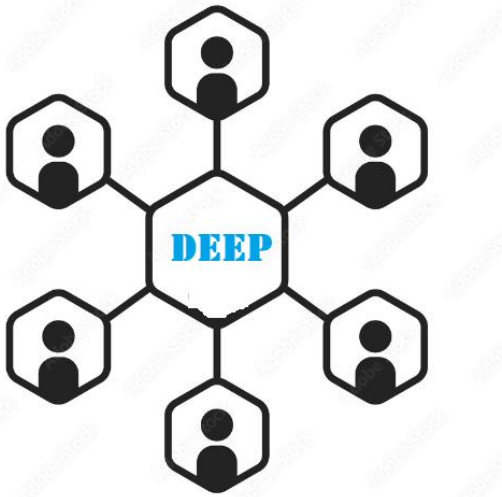
- Inform to SDAs
- Approval on funds and process
- Supporting and monitoring EESL for implementation
- Nomination of members for Joint Technical Working Committee

Energy Efficiency Services Ltd. (EESL)

- Successful implementation of Program
- Process Defining
- Monitoring of Programme
- Event organisation
- Desk study, Feasibility, M&V, IoT, DPR
- Cashflow management

State Designated Agencies (SDA) and PAT Cell/EmAEAs

- Invite all sector DCs, PAT cell, AEAs
- Awareness and capacity building for DEEP project.
- Receiving Expression of Interest from DCs.
- PAT cell official's follow-up for timely submission of EoIs.
- Facilitate signing of MoUs, agreements, etc.
- Support EESL/BEE for event organisation



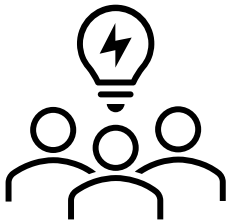
Designated Consumers (DCs)

- Submit EoI
- Approval for project
- Support for baseline and M&V studies
- Approval for Implementation of project
- Suggest more Innovative technologies

Original Equipment Manufacturer (OEM)

- Support for implementation
- Provide techno-commercial offer
- EPC of project

Implementation Methodology



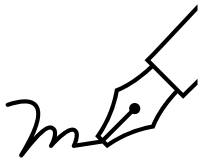
Desk Research (Validation of technology & DC selection criteria)

Shortlisting of Innovative technology

Receiving of Stage 1 – EoI On EESL Website (Technical detail)

Evaluation & Screening

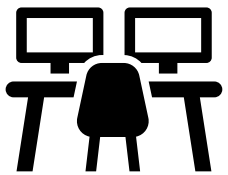
Receiving of Stage 2- EoI (DCs confirmation on estimated Technology Sizing and Cost Contribution)



FCC Ranking (Financial Cost Contribution)

Agreement Signing between EESL – DCs

Baseline study & DPR preparation



Procurement, Installation & commissioning of technology

Measurement and Verification (with correction curve)

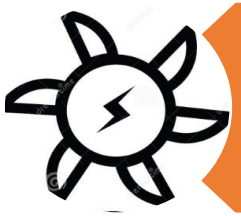
Knowledge Dissemination

Upscaling of successful technology

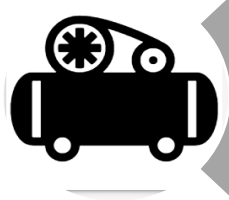
List of EE Technologies

- 9 Technologies
- 27 Projects

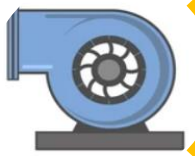
PHASE-A



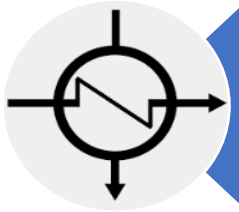
Technology 1 :
Micro Turbine



Technology 2 :
Energy Efficient Screw Compressor



Technology 3 :
Turbo Blower



Technology 4 :
Low Grade Waste Heat Recovery

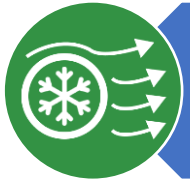
STATUS : DC SHORTLISTED

PHASE-B

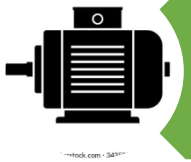
Technology : 5
High Grade Waste Heat Recovery system

Technology : 6
Cooling solutions from waste heat recovery

Technology : 7
Industrial automation



Technology : 8
Inlet air cooling system from waste heat recovery



Technology : 9
IE4 motors with VFD

STATUS : STAGE 1 EOI RECEIVED

Sector wise Details of EOIs for 4 technologies

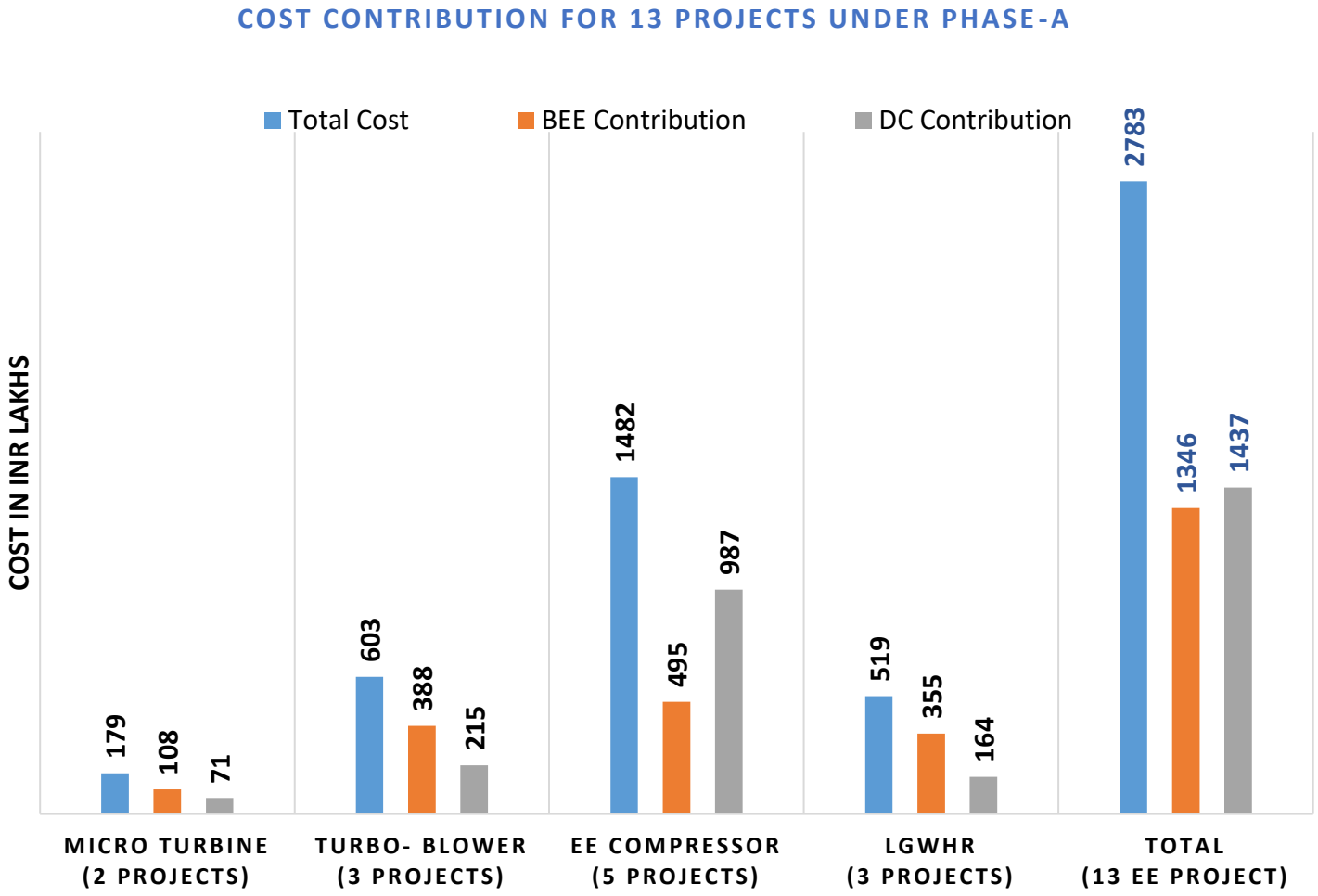
DEEP	Micro-turbine			Efficient Compressor			Turbo Blower			LG Waste Heat Recovery			Total (4 tech)		
Sector	EoI	Feasible Project	Feasible Equipment	EoI	Feasible Project	Feasible Equipment	EoI	Feasible Project	Feasible Equipment	EoI	Feasible Project	Feasible Equipment	EoI	Feasible Project	Feasible Equipment
Aluminium	1	0	0	2	1	1	1	0	0	0	0	0	4	1	1
Cement	2	0	0	15	15	57	4	3	5	5	0	0	26	18	62
Chlor Alkali	1	1	4	1	1	1	0	0	0	0	0	0	2	2	5
Fertilizer	1	1	1	1	1	1	1	1	1	0	0	0	3	3	3
Iron and steel	3	0	0	5	4	10	2	1	1	2	1	2	12	6	13
Petrochemicals	0	0	0	3	1	1	1	1	2	1	0	0	5	2	3
Pulp and paper	2	2	2	1	1	1	0	0	0	1	1	1	4	4	4
Refinery	1	0	0	1	1	3	0	0	0	0	0	0	2	1	3
Textiles	3	2	4	8	4	13	3	2	9	4	3	7	18	11	33
Thermal power plant	2	2	3	3	2	34	0	0	0	0	0	0	5	4	37
Grand Total	16	8	14	40	31	122	12	8	18	12	5	10	81	52	164

Note:- Out of 52 feasible EOIs acceptance received for 22 EOIs.

EoI Status

Phase-A EoI status (1st 4 Technologies)	
DCs submitted EoI	52
EoI Received	81
Feasible EE Projects	52
FCC received for projects	19
Total value of shortlisted project	2922 Lakh

Phase-B EoI status (2nd 5 Technologies)	
No. of DCs submitted EoI	37
No. of EoI Received	53



Upscaling of these 4 technologies to start from May-2023

Scope of Work

Included in Project Cost

- DPR Preparation
- Feasibility Study
- Manufacturing of Equipment
- Required Instruments and BoPs
- Freight of Supplied Items
- Installation of Supplied Material
- Testing and Commissioning of Supply
- Measuring and Validation

Excluded from Project Cost

- Civil Job
- Preparation of Earthing
- Integration with existing system
- Extra Piping/ Cabling beyond the battery limit
- Any service beyond the battery limit
- Additional Taxes
- Statutory approval required

Way Forward

Agreement Signing with DCs

Baseline study and DPR preparation

Procurement & **Project Execution**

Case Study and Knowledge dissemination

Upscaling

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