



Annual Report

2017-18

ENABLING AN ENERGY
EFFICIENT INDIA



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AEEE Annual Report

AEEE has grown from strength to strength since 2008, moving steadily in new directions aligned to the increasing global focus on energy efficiency. Today, a decade later, the organisation is poised at a juncture of strategic growth through multiple collaborations and partnerships. AEEE is also increasingly becoming a credible and recognised voice among policy makers and businesses, and the preferred choice as a knowledge partner in energy efficiency.

As an **industry association**, we adopt a 360° approach, moving forward in tandem with the government's commitment to Nationally Determined Contributions (NDCs) and energy and climate action under Sustainable Development Goals (SDGs), bringing together all players to bring the best to the EE landscape in the country.

As part of providing value-added service to our members and partners, our focus has sharpened on two primary areas:

- **Policy Advocacy:** Advocate for data driven and evidence-based policies to unleash innovation and entrepreneurship to create an energy-efficient Indian economy
- **Market Enablement:** Help create a market for best available technologies and solutions by helping facilitate business models for energy efficient products and services

AEEE works towards establishing symbiosis between the 2 focal areas of Policy Advocacy & Market Enablement by:

- Providing support to the government, as a knowledge partner, in developing policy
- Developing impactful policies that would benefit members and scale the EE market



Help in energy efficiency policy making through research and analysis



Proactively address India's cooling needs through holistic and responsible cooling strategies and policies



Demonstrate thought leadership in energy efficiency



Catalyse a dynamic ESCO market through partnerships and financing



Contribute to India's climate change commitment through collaborative energy efficiency strategies



THEMATIC AREAS

AEEE is consistently identifying areas of improvement as it provides evidence to build an economic case for energy efficiency. Its work is focused on the areas that would enable energy to be used optimally thus contributing to building a clean environment.

1. ESCO and Financing

creating standardised frameworks to build trust and enable scale in the market; creating a collaboration forum for Energy Service Companies (ESCOs), customers, financial institutions; developing a nation-wide EE data repository with benchmarks; enhancement of ESCO accreditation process to increase ecosystem confidence

2. Buildings and Appliances

developing India's National Cooling Action Plan (NCAP); research and analysis to determine cooling demand, low energy cooling technologies, air conditioner performance and usage patterns; driving adoption of Energy Conservation Building Code; thermal comfort for affordable housing; appliance standards; EE appliances for rural households

3. Urban Infrastructure and Utilities

assessing the impact of states' EE initiatives and encouraging energy data disclosure through the State EE Index; creating awareness on clean and efficient transport through its green vehicle rating; creating awareness on utility-driven DSM strategies

Business and Industry Platform

a convening platform for industry, government and civil society; training and capacity building on EE technologies and solutions; flagship events and conferences spanning the thematic areas.

AEEE Members: 2017-18

AEEE members represent diverse segments of the energy efficiency (EE) industry – technology, equipment and service providers, consulting companies and varied energy end-users committed to energy efficiency. AEEE members also include reputed research and academic organisations. AEEE has a participatory approach involving members and seeking guidance from its knowledge partners and peer organisations.

AEEE supports its members to increase their credibility in the area of energy efficiency by providing a bouquet of value-added, customised services. AEEE creates opportunities for its members that enable scaling of energy efficiency products and services, and also catalyse EE financing.

AEEE has members from diverse sectors, and plans to substantially scale up membership in 2018.

PREMIUM MEMBERS



MEMBERS

5-Years
Members



3-Years
Members



1-Year
Members



STRATEGIC PARTNERSHIPS AND COLLABORATIONS

AEEE has inked strategic partnerships and collaborations:

1. MoU with NITI Aayog to work on energy efficiency
 2. Member of NITI Aayog Working Group on Demand (Consumption) Side Data Management
 3. MoU with Energy Efficiency Services Limited (EESL)
 4. MoU with Ministry of Environment, Forests & Climate Change to work on developing National Cooling Action Plan (NCAP)
 5. Member of MoEFCC Steering Committee on NCAP
 6. MoU with American Council for an Energy Efficient Economy (ACEEE)
 7. MoU with CEPT University
 8. Small Industries Development Bank of India (SIDBI)
 9. Bureau of Energy Efficiency (BEE)
 10. Department of Science and Technology (DST)
 11. AEEE's President and Executive Director, Dr Satish Kumar has been chairing the DST's research proposal evaluation committee under the I-PHEE (Initiative to Promote Habitat Energy Efficiency) project.
 12. Shakti Sustainable Energy Foundation
 13. Lawrence Berkeley National Laboratory (LBNL)
 14. Efficiency Valuation Organisation (EVO)
 15. Alliance to Save Energy
 16. International Energy Agency (IEA)
 17. National Resources Defence Council (NRDC)
 18. Rocky Mountain Institute (RMI)
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AEEE Leadership

As a membership-based industry body, AEEE is governed by its Executive Council. At the Annual General Meeting held in July 2017, a new Executive Council was elected per AEEE rules for a 2-year term (2017-2019). The new Council is chaired by Mr Upendra Bhatt, Managing Director, cKinetics Consulting Services Pvt. Ltd. with Mr Ajay Durrani, Managing Director, Covestro India Pvt. Ltd. and Mr Ranganath N Krishna, Managing Director, Grundfos Pumps India Pvt. Ltd. elected as Vice Chairperson and Treasurer respectively.

The new Council brings vast experience and knowledge, which will be extremely beneficial in guiding AEEE to the next level.

NEW SECRETARIAT LEADERSHIP

As part of AEEE's continued evolution and to enhance the operational leadership, Dr Satish Kumar has been appointed as President and Executive Director by the Executive Council effective January 2018. His leadership, vision, and substantial achievements in energy efficiency, sustainable development and climate change will go a long way in contributing to the growth trajectory of AEEE.



Executive Council(EC) 2017-19

Mr Upendra Bhatt, cKinetics Consulting Services Pvt. Ltd.

Chairperson, AEEE EC

Mr Ajay Durrani, Covestro India Pvt. Ltd.

Vice Chairperson, AEEE EC

Mr Ranganath N Krishna, Grundfos Pumps India Pvt. Ltd.

Treasurer, AEEE EC

INVITED MEMBERS OF EXECUTIVE COUNCIL

Dr Ajay Mathur

Director General, The Energy
Resources Institute
Former DG-BEE
Climate Change & EE Expert

Mr S Padmanabhan

Former Dir. USAID SARI/E
Strategic Energy, Water &
Environment Expert

MEMBERS

Mr Arun Bhatia

United Technologies Corporation
India Pvt. Ltd.

Mr Milind Chittawar

See-Tech Solutions Pvt. Ltd.

Mr Venkat Garimella

Schneider Electric India Pvt. Ltd.

Mr Arjun Gupta

Smart Joules Pvt. Ltd.

Mr Devidas Kulkarni

Siemens Limited

Mr Mahesh Patankar

MP Ensystems Advisory Pvt. Ltd.

Mr Ravichandran Purushothaman

Danfoss Industries Pvt. Ltd.

Prof Rajan Rawal

CEPT University

Dr Satish Kumar

Secretary to Executive Council

AEEE's President and Executive Director works directly with the Board, i.e., the Executive Council (EC). To enable effective governance and coordination, AEEE's operational matters are overseen by a Management Committee comprising of the Chairperson, Vice Chairperson and the Treasurer.

In addition, to help provide guidance and oversight to the AEEE Secretariat on key policies, the Executive Council has established 3 sub-committees:

- Finance and Audit Committee
- HR and Compensation Committee
- Programmes and Projects Oversight Committee

The Finance and Audit Committee provides oversight on budgets, spending, approval of budget for capital expenditure, new projects and programmes.

The HR and Compensation Committee oversees HR policies, conducts senior leadership performance reviews, approves annual increments, approves senior hires.

The Programmes and Projects Oversight Committee ensures AEEE's programmes and engagement with partners and member companies are aligned to AEEE's vision and mission.

CURRENT COMMITTEE MEMBERS INCLUDE

Finance and Audit Committee	HR and Compensation Committee	Programmes & Projects Oversight Committee
Convener Mr Ranganath N Krishna	Convener Mr Ajay Durrani	Convener Mr Mahesh Patankar
Other Members Mr Rajmohan Rangarajan (Past EC Member) Mr Arjun Gupta Mr Upendra Bhatt Mr Ashish Rakheja (Past Treasurer)	Other Members Mr Arun Bhatia Mr Venkat Garimella Mr Ranganath Krishna Mr Upendra Bhatt	Other Members Mr R. Purushothaman Mr Milind Chittawar Prof Rajan Rawal Dr Satish Kumar Mr Upendra Bhatt

Activities at AEEE

AEEE is the only organisation in India which works towards creating awareness about energy efficiency as a resource. It is committed to positioning energy efficiency as the first fuel in India and to ensuring that every organisation in every sector has energy efficiency embedded as a core value and embedded in its mission.

The year gone by, 2017, has been momentous for AEEE in more ways than one. This year has seen unparalleled growth in diverse directions, meaningful dialogue with a range of partners, implementation of exciting new projects, fruitful culmination of some key projects that have left an indelible mark on India's energy efficiency landscape, and last, but not the least, the mega event, INSPIRE2017, India's first ever, signature energy efficiency conference, organised by AEEE in partnership with EESL and the World Bank.

AEEE also has a new, energetic Executive Council that brings its expertise, knowledge and mentoring to help spur greater growth.

As AEEE enters its 10th year of operations, it has emerged as the partner of choice for the Indian government, multilateral and bilateral organisations, private sector players and research and academic institutions. Increasingly, AEEE's work has been focussed on areas that are in alignment with the government's own focal areas, viz. Space Cooling, ESCO markets, ECBC, E-Mobility and Urban Housing.

As part of this, AEEE organised and facilitated meetings and events, covering Sustainable and Smart Space Cooling Coalition; ESCOs, Financial Institutions and End Users; ECBC, etc., that served as a stimulus to establishing new collaborations and incubating new projects. These activities benefitted from active participation from leading experts and influencers from the private sector and the development community.

LEADING INITIATIVES

INSPIRE 2017 -AEEE ENERGY EFFICIENCY CONCLAVE

AEEE organised International Symposium to Promote Innovation & Research in Energy Efficiency - INSPIRE 2017 in collaboration with Energy Efficiency Services Limited (EESL) and the World Bank. Other key supporters were Bureau of Energy Efficiency (BEE), Department of Science and Technology (DST), Government of India and The Energy and Resources Institute (TERI). INSPIRE 2017 was a 5-day (27 November - 1 December 2017) flagship event attended by 300+ national and international delegates from government, think tanks, business and industry, bilateral and multilateral development and funding agencies, financial institutions, academic and research institutes. The conference had 4 plenaries, 7 executive panel discussion and 64 technical paper presentations across three tracks - 1) Buildings, Systems and Technologies; 2) Business, Industry and Finance; 3) Codes, Standards

and Policies. The Inaugural Session on 27 November consisted of addresses by a range of senior-level speakers from the Government of India, The World Bank, Government of Rajasthan, EESL, BEE and AEEE.

This was followed by a Keynote Address by Dr Amory Lovins of the Rocky Mountain Institute (RMI), which set the tone of the conference by reinforcing energy efficiency as a resource, and highlighting empirical evidence that energy efficiency can produce expanding returns. Information about INSPIRE 2017, including the conference proceedings and paper proceedings, is available on AEEE's website <http://www.aeeconclave.org/>



From L to R:-

Mr Ajay Durrani, Managing Director, Covestro India.;
Ms Jennifer Layke, Global Director – Energy Program, World Resources Institute;
Mr Dhiraj Wadhwa, Director, Integrated Solutions & Key Accounts, United Technologies Corporation;
Dr Ajay Mathur, Director General, The Energy and Resources Institute;
Dr Amory Lovins, Cofounder and Chief Scientist, Rocky Mountain Institute; Mr Venkat Garimella, Vice President, Schneider Electric India;
Mr R. Purushothaman, President, Danfoss Industries

THERMAL COMFORT FOR ALL – REPORT LAUNCH

AEEE, with support from Shakti Sustainable Energy Foundation, took the initiative in bringing together research and academic institutions, industry associations, and non-profit organisations, to form the Sustainable and Smart Space Cooling Coalition (SSSCC). The Coalition recommended policy initiatives to ensure the success of various government programmes, while ensuring affordable and sustainable thermal comfort to all.

The “Thermal Comfort for All” report, was launched during a Roundtable for Managing Space Cooling in India, held in New Delhi on 22 September 2017. The event saw participation from ministries, industry, coalition members, GIZ, and other key organisations. The report was released by Mr Gyanesh Bharti, Joint Secretary, Ministry of Environment, Forests & Climate Change; Dr Sanjay Bajpai, Department of Science and Technology, Government of India; and all the Coalition partners.

The report prepared by the Coalition provides a holistic view on sustainable and smart space cooling strategies and recommends the adoption of Lean, Mean and Green space cooling strategies to meet India's thermal comfort needs.



Launch of the report, "Thermal Comfort for All," September 2017, New Delhi

ESCO MARKET ASSESSMENT - REPORT LAUNCH: FIRST STEP TOWARDS TRANSFORMING THE ESCO MARKET IN INDIA

AEEE, with support from Shakti Sustainable Energy Foundation, carried out country-wide survey of Energy Service Companies (ESCOs), interviews and workshops with various stakeholders of ESCO market, market sizing exercises, and research on techno-economic solutions for the market. This culminated in the development and launch of the ESCO report "Transforming the Energy Services Sector in India - Towards a Billion Dollar ESCO Market" on 29 August 2017 in New Delhi. The report came up with actionable recommendations for the transformation of the ESCO sector in India.

From L to R: Mr Asheesh Maroo, President and National Credit Head, YES Bank; Dr Satish Kumar, President and Executive Director AEEE; Mr Upendra Bhatt, Managing Director, cKinetics; Mr Abhay Bakre, Director General, Bureau of Energy Efficiency; Mr Krishan Dhawan, CEO, Shakti Sustainable Energy Foundation; Dr Ajay Mathur, Director General, The Energy and Resources Institute



ROLE OF SUPER-EFFICIENT APPLIANCES IN REDUCING ENERGY CONSUMPTION IN URBAN AREAS AND IMPROVING ENERGY ACCESS IN RURAL AREAS.

AEEE, with assistance from ACEEE, will conduct research on available high-efficiency products in India, the potential for introducing highly-efficient designs from elsewhere in the world, and the costs and benefits of such products. The focus will be on 4-5 appliances primarily those targeted for the rural market. ACEEE will research and provide information on best practice efforts elsewhere in the world on programs and policies to promote these efficient products, drawing on its own work in China, Thailand and the United States, and elsewhere. This work will come together in a research report on findings and recommended actions.

NATIONAL CONFERENCE FOR ESCOs

AEEE will be organising a National level conference for ESCO Market stakeholders in February 2019. The conference will aim at sharing experience of various stakeholders and emerge with replicable business models, tried and tested during the ongoing project's timeline. The conference will also be a significant platform for all the market players for dissemination of key findings and awarding successful ESCO projects. The forum will also be open to ESCOs as well as end-users for submitting their project details for National level recognition. The intended participation will be from National and International experts in ESCO domain, companies with successful past projects, organisations seeking to enter the market, financial institutions eyeing EE as priority sector lending and other interested stakeholders.

ENABLING ELECTRIC MOBILITY IN INDIA

Road transport in India and around the world is at a crossroads of a potential disruption with the electrification of vehicles. There is growing interest among policymakers in India to encourage electric vehicle (EV)-based mobility in cities and phase out fossil fuel consuming Internal Combustion Engine (ICE) driven vehicles.

The road to realize such a major paradigm shift is not without challenges. Many stakeholders have shared their concerns regarding the impact and feasibility of complete electrification of the vehicle fleet in India. AEEE's Urban Infrastructure & Utilities vertical is closely following the developments in this space. Recognizing AEEE's unique position in India's energy market and its credibility in knowledge creation, our inputs and support have been sought by some of the key players in this field as AEEE ramps up its understanding and expertise in partnership and with support from our member organisations. In view of the ongoing debate around electric mobility, we have synthesised our thoughts on this matter in the form of a brochure titled "Enabling Low Emission Mobility in India - The AEEE Approach".

NATIONAL COOLING ACTION PLAN

AEEE's work is being used to meaningfully inform the National Cooling Action Plan – a flagship initiative of the Ministry of Environment, Forest and Climate Change, Government of India. This is a 20-year outlook on how India's cooling needs will evolve and an action plan to meet this growing demand sustainably. AEEE is playing a prominent role in the themes of cooling in buildings and cold chain.

DEMAND ANALYSIS FOR COOLING BY SECTOR IN INDIA IN 2027

- A first-of-its-kind aggregation of India's present and upcoming cooling energy consumption and carbon emission
- Measures the cumulative savings potential of technological, operational and market interventions

PROJECTING NATIONAL ENERGY SAVING ESTIMATE FROM SPACE COOLING STRATEGIES IN 2030

- Mapping the impact of adaptive thermal comfort standards on air-conditioning usage patterns and on the resulting nation-wide energy savings, utilizing field-tests, simulation and secondary research
- Assessing the impact of the use of high performance windows glazing on reducing air-conditioning energy demand

SUSTAINABLE AND SMART SPACE COOLING COALITION (PHASE 2)

Component 1: Mainstreaming Low Energy Cooling Technologies: A Forward-looking Initiative

- Explores the techno-economic feasibility of alternate cooling technologies
- An extensive survey of manufacturers and users to assess low energy cooling technologies and mainstream their use in suitable application areas and climate zones

Component 2: Towards a Windows Energy Labelling Programme in India

- A technical investigation into the criteria and testing protocols for providing energy ratings to windows
- A summation of the gaps and challenges and the way forward

MAINSTREAMING THERMAL COMFORT FOR ALL AND RESOURCE EFFICIENCY IN AFFORDABLE HOUSING

AEEE, with support from Shakti Sustainable Energy Foundation (SSEF), carried out scoping study to identify potential opportunities as well as research and data gaps, for mainstreaming thermal comfort and energy optimization in affordable housing.

The study's objective was to assess the mission targets (building stock analysis) to understand the type of housing being built and highlight the energy impact (embodied and operational) of building design and construction within affordable housing segment. This was a first step, and one of its kind exercise, towards understanding the energy impacts and pathway consequences of affordable housing construction under the Government of India's flagship program, Pradhan Mantri Awas Yojana (PMAY) - Urban mission.

STATE ENERGY EFFICIENCY INDEX

AEEE, under the guidance and leadership of the Bureau of Energy Efficiency (BEE) and NITI Aayog, has developed the State Energy Efficiency (EE) Index for 29 Indian states and the National Capital Territory of Delhi. The State EE Index comprises 63 qualitative, quantitative, outcome-based indicators to assess energy efficiency initiatives, programmes and outcomes in 5 sectors – Buildings, Industry, Municipalities, Transport, Agriculture and Distribution Companies (DISCOMs); looking at policy & regulation, financing mechanisms, institutional capacity, adoption of EE measures and energy savings.

The State EE Index was inspired by the US State EE Scorecard published annually by American Council for an Energy Efficient Economy (ACEEE). ACEEE has provided technical support in developing the Index.

The Index is scheduled for a Q2 2018 and aims to:

- Help drive EE policies & program implementation at state and local level
- Track progress in managing India's energy footprint
- Highlight best practices & encourage healthy competition among states
- Set a baseline for EE efforts to date & set state-specific EE targets

As of March 2018, 27 of 30 State Designated Agencies (SDA) had provided data for the Index. AEEE also collected data from other state & central government sources such as EESL, Central Electricity Authority (CEA), Ministry of Road Transport and Highways (MoRTH), State Electricity Regulatory Commissions (SERCs).

AEEE aims to make the State EE Index an annual exercise, to enable data-driven evidence-based policy formulation and help drive EE policies & program implementation at the state and local level.

DSM NEWSLETTER

AEEE continues to publish a monthly digest of news on Demand Side Management (DSM) and the quarterly newsletter with original articles and interviews from experts. The newsletter is sent to DISCOMs, ERCs, companies and organisations with a keen interest in the power sector.

ESCO MARKET ASSESSMENT CATALYZER

AEEE's objective is to enable ESCO market through a collaborative framework that brings together ESCOs, technology suppliers, end consumers, financing institutions and policy makers to have focused discussions and come out with a road map to transform this market. AEEE has been interacting for the past several months with ESCOs, technology providers, end users, financial institutions and policy makers to identify the ways to transform the ESCO market.

The key activities under this project are as follows-

- i. Facilitating enablement of Energy Service Performance Contracts of at least INR 10 million
- ii. Standardization of EE solutions for audits, technical specifications, project execution, measurement & verification etc.
- iii. Operationalization of ESCONet platform

AEEE conducted the following activities in last few months to establish communication between the ESCOs and end consumers:

Utility and ESCO Meet

AEEE organized a business meet for DISCOM and ESCOs in Delhi on 9 January 2018. The BSES Yamuna Power Limited (BYPL) is the DISCOM serving the East Delhi area which participated in this business meet. There were ESCOs and FIs who attended this meet and discussed the modalities of engagement between BYPL in ESCOs for projects within their service area. The Utility has expressed their keen interest in engaging the Residential sector consumers for ESCO based projects and urged ESCOs to develop business framework for a mix of commercial and residential projects. The ESCOs shared their positive feedback towards the utility taking interest in the Energy Efficiency projects. The engagement has helped AEEE, in connecting the Utility with the Energy service companies to come together for the implementation of energy efficiency projects.

Development and Upgradation of ESCONet

AEEE has developed the ESCONet portal which is a unique platform which brings together different stakeholders of the Energy Efficiency ecosystem under one roof – Service Providers,

Technology Providers, Start-ups, End Users, Financiers, Policy makers and Influencers. This is envisaged as a collaborative platform to spark discussions and dialogue and provide a platform for announcements and success stories.

It is a unique, peer learning forum where industry professionals, end consumers and policy makers come together to discuss opportunities and strategies to grow the

ESCO market. The portal is still evolving and will lead to creation of a country-wide repository of energy efficiency data, eventually maturing into a marketplace for energy efficiency.

ENERGY CONSUMPTION DATA FOR INDIA UNDER IEA'S ENERGY EFFICIENCY IN EMERGING ECONOMIES PROGRAMME (E4 PROGRAMME)

AEEE with support from International Energy Agency (IEA) is working on an assignment on collecting energy efficiency data/ indicators and energy efficiency policies/ programmes and investments. This work provides inputs to IEA on their publication on annual Energy Efficiency Market Report which aims at analysing the global energy efficiency progress and investment. The assignment requires extensive research on energy efficiency data and indicators and policies /programmes. The task has provided the opportunity in identifying the key data points and energy efficiency indicators for various economic sectors which will support in providing recommendations to the Government of India on the energy efficiency policy design, implementation and evaluation.

AEEE is maintaining a database of all policies and regulations related to Energy Efficiency segment, covering all the Ministries of Government of India. This is being done to create a broader ecosystem. The database has been compiled and interpreted by AEEE, with the support of Oak Foundation and the experience and knowledge gained while working on various projects supported by other foundations and donor organisations.

GREEN VEHICLE RATING (GVR) FOR TWO WHEELERS (2W) AND THREE WHEELERS (3W) IN INDIA

Fast-paced urbanisation and rising per capita incomes have seen an exponential increase in demand for mobility to move people and goods. This, in turn, has seen a sharp rise in ownership of motor vehicles – particularly 2 and 3 wheelers.

As part of its larger vision, AEEE made a foray into transportation and Green Mobility via a project to develop an environmental rating for two and three wheelers that will create awareness in users and shift their demand towards greener variants that rely in low emissions technology and high fuel economy.

This project, aimed to recognise top performers in this segment, will empower consumers to take more informed decisions that lean towards opting for low emission two and three wheelers vehicle models. It will also enable policy makers to identify the cleanest and greenest passenger car models and inform policy decisions while creating the right mix of regulations and incentives to stimulate lowering of emissions and increase in fuel economy and create a level playing field for automakers to roll out efficient products.



Seminar, Trainings and Workshops

AEEE advocates Energy Efficiency as a resource and raise its profile as THE organisation for Energy Efficiency via outreach to Members and Stakeholders through various awareness, training and capacity building events.

ECBC WORKSHOPS ON BUILDING ENERGY EFFICIENCY

Five high-level regional workshops were conducted by AEEE, in collaboration with BEE and UNDP-GEF. The workshops, held in Chandigarh, Ahmedabad, Guwahati, Ranchi and Hyderabad, saw participation from all key stakeholders in different ministries and departments that are involved in its implementation. These workshops, conceptualised by NITI Aayog, have created a very positive momentum with ECBC 2017 already having been notified in 11 Indian states, with others to follow suit shortly.

ROUNDTABLE ON HVAC STANDARDISATION OF CENTRAL COOLING PLANTS

AEEE's project on ESCO Market Assessment aimed to develop standardised technologies for easier financing and adoption different sectors. This would facilitate adoption of those technologies which had wide applications and replication potential in buildings, hospitals, hotels and commercial spaces. AEEE brought together experts in Central Cooling Plants on 2 May 2017 at Delhi to discuss the options of standardisation of Central Cooling Plants. The Roundtable discussed and developed recommendation that were incorporated in the Final Report.

ESCO DEAL DAY WITH THE HEALTHCARE INDUSTRY

AEEE convened a Deal-day for ESCOs on 5 May 2017 which included the ESCO Service Providers, as well as the equipment suppliers. It also brought together end-users such as Hospitals who were considering hosting ESCO projects. Smart Joules, one of AEEE member companies, which had implemented ESCO projects in several Hospitals shared about their work and expertise in the space, particularly with regards to enabling an overall competitive prices (given their sourcing relationships with suppliers of Fans, Air-conditions and Chillers), as well as equipment performance guarantees. This raised the awareness of Hospital Administrators and Facility Managers on the potential energy and cost saving opportunities that ESCO projects could achieve.

ENHANCING ENERGY EFFICIENCY IN OPERATION OF HVAC SYSTEMS

AEEE Conducted Training in Measurement and Verification (M&V) of HVAC Systems in Hospitals in Chennai and Coimbatore. These training were hosted by Grundfos



Pumps India Ltd in Chennai on 8 June 2017, and Kovai Medical Centre and Hospitals in Coimbatore on 9 June 2017.

MEMBERS' MEET

AEEE organized a Members Meet in Bangalore on 23 March 2018. The meeting saw robust participation, including from AEEE Members companies, represented by their CEOs or top Management. AEEE's President and Executive Director, Dr Satish Kumar, made a presentation covering AEEE projects and programmes being undertaken in the current year, AEEE policy and advocacy programs and the studies and reports.

RAISING AWARENESS OF M&V SYSTEMS AND PRACTICES

AEEE organised a Seminar on M&V Fundamentals for Industry, SME and Buildings at The Energy and Resources Institute in Bangalore, to raise the awareness of M&V systems and practices on 15 September 2017. This was followed by a Training on M&V of Energy Savings in HVAC Systems on 16 September 2017.

ROUNDTABLE ON SPACE COOLING COALITION

Under the Sustainable and Smart Space Cooling Coalition Project, AEEE conducted a Roundtable meeting of key Stakeholders on 6 March 2018.

TRAINING AND EXAM ON CERTIFIED MEASUREMENT AND VERIFICATION PROGRAMME (CMVP)

AEEE conducted three Training and Certification Programs in Delhi, from 18 to 20 May 2017, another from 12 to 14 October 2017, and the last from 15 to 17 February 2018. This was jointly designed by Efficiency Valuation Organization (EVO) and the Association of Energy Engineers (AEE). AEEE is the only partner organisation of AEE in India to conduct CMVP training. The participants represented a wide range of large Corporate entities as well as small consulting companies and individual auditor who felt the need to quip themselves with a global Certification.

With the increasing adoption and mandating of PAT (Perform Achieve and Trade) Scheme to raise the energy efficiency standards in large industry designated consumers, as well as adoption of ECBC standards and codes at the level of states, M&V expertise is in demand, and AEEE is helping to build the expertise across the country and industry.

Webinars

AEEE webinars are a convening platform to engage in dialogue with policy makers, associations, institutions and multilateral/bilateral organisations for wider market transformation centered exclusively on Energy Efficiency in India. Following webinars were held during 2017-18, that saw active participation from EE practitioners.

- Advancing Energy Efficiency in the Healthcare Industry – 18 May 2017
- Energy Efficiency in Hospitals – 1 June 2017
- AEEE's emerging Networking Platform for ESCOs and Clients in Industry, Utility Services and Buildings Sectors – 30 June 2017
- Highlights of Networking Roundtable for ESCOs, Clients and Financiers – 20 July 2017
- Electric Vehicles in India: Impact on the Electricity Grid – 1 November 2017



AEEE Convenings

January 2017 - March 2018

No	Event Type	Theme	Venue	Date	Participants
1	Seminar	DSM in USA and India - Steve Nadel, ED, ACEEE	American Centre	12 Jan	45
2	Roundtable	Consultation: Agriculture Water Pumping	BEE, New Delhi	17-Apr	15
3	Workshop	Dialogues to Fast Track ECBC Implementation in States	Ranchi	19-Apr	35
4	Workshop	Dialogues to Fast Track ECBC Implementation in States	Hyderabad	27-Apr	42
5	Roundtable	HVAC Standardization of Central Cooling Plant	New Delhi	02-May	22
6	Deal-Day	Smart Joules ESCO Deal Day in the Healthcare Industry	New Delhi	05-May	32
7	Training	Certified M&V Professional Training & Exam	New Delhi	18-20 May	7
8	Webinar	ESCO Transactions	Online	18-May	58
9	Webinar	EE in Hospitals	Online	01-Jun	31
10	Training	HVAC-Buildings - Hospitals & Institutions	Chennai	08-Jun	10
11	Training	HVAC-Buildings - Hospitals & Institutions	Coimbatore	09-Jun	15
12	Webinar	ESCO Market & Fiscal Incentives	Online	30-Jun	82
13	Deal-Day	ESCOs, Financiers & Clients	Bangalore	11-Jul	52
14	Webinar	ESCO Deal-day Highlights	Online	20-Jul	25
15	Report Launch	Launch of ESCO Market Report	New Delhi	29 Aug	51
16	Seminar	M&V Fundamentals for Industry, SME & Buildings	Bangalore	15-Sep	22
17	Report Launch	Panel Discussion on ESCO Market Report	Bangalore	15-Sep	35

No	Event Type	Theme	Venue	Date	Participants
18	Training	HVAC-Buildings - Hospitals & Institutions	Bangalore	16-Sep	24
19	Roundtable	Managing Space Cooling in India - Coalition's Thermal Comfort for All Report Launch	New Delhi	22-Sep	20
20	Training	Certified M&V Professional Training & Exam	New Delhi	12-14 Oct	13
21	Webinar	EVs in India	Online	1 Nov	25
22	Symposium	INSPIRE 2017 EESL-WB/ AEEE's EE Conclave	Jaipur	28 Nov - 1 Dec	225
23	Roundtable	Sustainable and Smart Space Cooling Coalition Roundtable Meeting	New Delhi	6-Mar	20
24	Training	Certified M&V Professional Training & Exam	New Delhi	15-17 Feb	14
25	Members' Meet	AEEE Members' Meet	Bangalore	23 March	30

SUSTAINABLE AND SMART SPACE COOLING COALITION (PHASE 1)

In 2016, 10+ leading research, academic and industry organisations came together to form the Sustainable and Smart Space Cooling Coalition, with a common drive to jointly advocate the philosophy Thermal Comfort for All in one definitive and effective voice.

Thermal Comfort for All

- Aggregates the current body of knowledge under the simple 'Lean, Mean and Green' construct; cites wide-ranging benefits of innovative and effective cooling solutions
- Puts forth detailed actionable measures for short, medium and long-time frames, designed to promote the vision of Thermal Comfort for All in India

ESCO MARKET ASSESSMENT AND SCALING EE INVESTMENTS IN INDIA – PHASE I

The Energy Efficiency market potential in India is estimated to be over \$20 billion. AEEE has been interacting with ESCOs, technology providers, end users, financial institutions and policy makers in India to identify ways to transform the ESCO market. AEEE aims to create a market transformation model through a collaborative framework that brings together the policy and business worlds of the ESCO ecosystem. Through a two-pronged strategy of business-driven and technology-driven enablement, AEEE intends to create a \$0.5 billion ESCO market over a 5-year period.

To plug this gap and scale up investments in energy efficiency, AEEE has embarked on an ESCO Market Assessment Report that ESCOs, their customers and FIs could use to identify business opportunities for Energy Efficiency projects. AEEE will also identify ten Energy Conservation Measures (ECM) and develop a structured financing framework for some of these ECMs in discussions with the FIs.

The enablement with in-built sustainability, will see a social impact spawning 100 new energy services companies, while avoiding 300 MW of generated capacity and 1.1 million metric tons of carbon.

Significantly, Yes Bank through its MOU with SIDBI, to increase its lending to ESCOs and EE projects, has reached out to ESCOs through AEEE and is partnering with the AEEE to increase its lending to this sector. Deal Days, organised by AEEE have added substantial traction already, with member ESCOs being supported by Yes Bank.

ECBC IMPLEMENTATION IN STATES

Five high-level workshops were conducted by AEEE as conceptualised by NITI Aayog and supported by BEE and UNDP-GEF. These were a call for action to state and local governments to implement building energy efficiency policy on a priority basis. These workshops complemented the efforts of BEE in Energy Conservation Building Code (ECBC) implementation by leveraging NITI Aayog's mandate for developing capacity and skill sets of states. Successful implementation is possible when states can independently adopt the Government of India's policies and regulations seamlessly.

The workshops also provided a boost to inter-ministerial and inter-state dialogues. The workshops reached out to more than 500 government officials across India from various central, state and local level government departments involved in ECBC implementation process. The workshops primarily focussed on the administrative aspect of the code along with ECBC implementation best practices and initiated regional dialogues among the participants to fast track ECBC in their respective states. AEEE has on board domain experts and dedicated professionals who are actively engaged in taking AEEE to the next level..



First Regional
Workshop on ECBC
Implementation,
Chandigarh,
February 2017

AEEE has on board domain experts and dedicated professionals who are actively engaged in taking AEEE to the next level.

- **Dr Satish Kumar**, President and Executive Director
- **Dr Koshy Cherail**, Director
- **Sudha Setty**, Director
- **Sneha Sachar**, Senior Programme Lead
- **Sangeeta Mathew**, Programme Lead
- **Shyamasis Das**, Principal Research Associate*
- **Sandeep Kachhawa**, Senior Research Associate
- **Deepak Tewari**, Senior Research Associate
- **Mohini Singh**, Senior Research Associate
- **Akash Goenka**, Research Associate
- **Neha Yadav**, Research Associate
- **Akshay Pandey**, Research Associate
- **Gerry George**, Research Associate
- **Saikiran Kasamsetty**, Research Associate
- **Swati Lal**, Office Manager*
- **Bhairav Sharma**, Executive Officer
- **Sumit Sharma**, Assistant Manager Accounts

**Joined after March 2018*

ALLIANCE FOR AN ENERGY EFFICIENT ECONOMY

BALANCE SHEET AS AT 31ST MARCH 2018

<u>LIABILITIES</u>	<u>Note</u>	<u>AMOUNT (RS.)</u>	<u>ASSETS</u>	<u>Note</u>	<u>AMOUNT (RS.)</u>
<u>Capital Account</u>			<u>Fixed Assets</u>	12	1,666,157
Corpus Fund	1	5,554,517			
Capital Reserve	2	-	<u>Investments</u>		
Capital Grant Reserve	3	678,068	Fixed Deposits (Corpus Fund)	7	3,792,938
<u>Current Liabilities</u>			<u>Current Assets</u>		
Duties & Taxes	4	1,215,898	Security Deposits		419,390
Sundry Creditors & Other Payables	5	9,945,673	Cash and Bank Balance	8	21,661,232
Grant Balances	6	9,153,753	TDS Receivable	9	882,727
Membership Fees in Advance		1,710,368	Interest Accrued on FDR		58,550
<u>Income & Expenditure</u>			Income Receivable	10	6,118,061
Opening Balance	3,368,063		Other Current Assets	11	1,027,456
Add: Excess of Income over Expenditure for Current Year	6,000,170				
Less: Appropriation towards Corpus Fund	(2,000,000)	7,368,233			
Total		35,626,511	Total		35,626,511

As per our certificate of even date

For Singh K V Gupta & Co
Chartered Accountants
(FRN 000133N)

CA Rakesh K Agarwal
Partner
M.No. 085908

Place: New Delhi

Dated: 02/07/2018

For Alliance for An Energy Efficient Economy

Satish Kumar

Secretary

Satish Kumar
Secretary

Alliance For an Energy Efficient Economy

Dated: 30/06/2018
Place: USA

[Signature]

Chairman

Chairperson
Executive Council

Alliance For an Energy Efficient Economy

ALLIANCE FOR AN ENERGY EFFICIENT ECONOMY

INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2018

EXPENDITURE	Note	AMOUNT (RS.)	INCOME	Note	AMOUNT (RS.)
Project Related Expenditure			Direct Income		
Professional Services Contract: UNIDO	13	2,973	Membership Fees		794,797
Professional Services Contract: ACEEE	14	11,667,532	Professional Services Contract: ACEEE		12,819,690
LBNL	15	6,164,556	Professional Services Contract: UNIDO		-
NRDC	16	1,939,129	LBNL		7,157,019
IGEF	17	1,424,904	NRDC		5,126,102
IEA	18	37,576	IGEF		1,425,223
EESL M&V Review	19	450,000	IEA		-
Inspire Event	20	5,819,474	Inspire-Contribution & Sponsorship Fees		7,232,895
UNDP-ECBC	21	1,521,327	Project Income		
Project Expenses			Grant Received (ESCO Market)		2,654,097
ESCO Market	22	2,654,097	Grant Received (Space Cooling)		3,099,074
Space Cooling-2	23	3,099,074	Grant Received (Space Cooling-2)		2,046,326
Space Cooling	24	2,046,326	Grant Received (DSM Newsletter)		1,441,562
DSM Newsletter	25	1,441,562	Grant Received (Affordable Housing)		8,970,109
Affordable Housing	26	8,970,109	Grant Received (Vehicle Rating Program)		4,709,105
Vehicle Rating Program	27	4,709,105	Grant Received (Oak Core Grant)		5,208,848
Oak Core Grant	28	5,208,848	Income From Workshop		
Administrative Expenditure			Workshop UNDP - ECBC		1,215,445
Expenses: Oak Discretionary Fund	29	582,690	Workshop HVAC		177,300
Salary		297,095	Other Workshops		25,495
Professional Services		552,800	Other Income		
Travel Expenses		61,388	Interest on Grant (Oak Discretionary Fund)		4,440
Difference in Foreign Exchange		19,218	Income From EESL M&V Review		450,000
Communication Expenses		19,853	Interest Received on FD		223,807
Conveyance		35,621	Interest on IT Refund		8,049
Depreciation	12	360,224	Bank Interest		113,691
Rates and taxes		7,393	Miscellaneous Income		500
Meeting and Conference		224,766	CMVP Training & Certification		1,797,404
Membership Expenses		14,584	CMVP Renewal Certificate		194,146
Office Expenses		9,000	Transfer from Capital Grant Reserve		183,942
Office & IT Maintenance		33,785			
Insurance		1,050			
Postage & Courier Expenses		15,254			
Committee Meeting Expenses		61,704			
Audit Fees		82,600			
Short/excess Adjustment		1			
Misc. Exp.		59,577			
Printing and Stationery		53,081			
Staff Welfare Expenses		67,727			
CMVP Training & Certification		1,362,893			
Excess of Income over Expenditure		6,000,170			
Total		67,079,066	Total		67,079,066

As per our certificate of even date

For Singh K V Gupta & Co
Chartered Accountants
(FRN 000133N)

CA Rakesh K Agarwal
Partner
M.No. 085908

Place: New Delhi
Dated: 02/07/2018

For Alliance for An Energy Efficient Economy

Satish Kumar

Secretary

Satish Kumar
Secretary

Alliance For an Energy Efficient Economy

[Signature]

Chairman

Chairperson
Executive Council
Alliance For an Energy Efficient Economy

ALLIANCE FOR AN ENERGY EFFICIENT ECONOMY

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH 2018

RECEIPTS	AMOUNT (RS.)	PAYMENTS	AMOUNT (RS.)
Opening Cash & Bank Balances	12,083,697	Salary	15,989,658
Membership Fees	591,100	Professional Fees	26,704,572
Professional Services Contract ACEEE	11,862,737	Internship	37,500
Professional Services Contract UNIDO	73,713	Audit Fee	66,500
LBNL	3,589,790	TDS & Interest on TDS	35,594
NRDC	4,225,460	Meeting & Conference	1,052,671
IGEF	285,045	Committee & Members Meeting Expenses	51,674
Inspire-Contribution & Sponsorship Fees	7,232,895	Travel Expense	2,092,638
Workshop UNDP ECBC	2,582,680	Books/ Report	938,776
Workshop HVAC	177,300	Printing & Stationary	776,766
Other Workshops	25,495	Software Expense	35,980
Income From EESL M&V Review	702,000	Insurance	7,553
Interest Received on FD	202,541	Conveyance	427,979
Interest on IT Refund	8,049	Bank Charges	1,368
Bank Interest	113,691	Communication	492,263
Miscellaneous Income	500	Staff Welfare	90,845
CMVP Training & Certification	1,790,658	Postage & Courier	169,775
CMVP Renewal Certificate	194,146	Electricity Charges	67,883
Income Tax Refund	115,071	Membership/ Subscription	128,446
Tds Recovered	2,506,973	Office Expense	101,415
Grant Received (Space Cooling-2)	4,249,869	Office & IT Maintenance	244,039
Grant Received (DSM Newsletter)	1,594,615	Office Rent	1,356,859
Grant Received (Affordable Housing)	11,433,436	Security Deposit for Rent	204,390
Grant Received (Vehicle Rating Program)	6,558,819	Investments -FDR	1,067,311
Grant Received (Oak Core Grant)	6,468,000	CMVP Certification Fees	719,195
Bank Interest	421,565	Website Maintenance	58,609
		Fixed Assets Purchased	388,123
		Event Expenses	615,309
		TDS deducted on income received	782,664
		Difference in Foreign Exchange	30,790
		TDS Paid	2,317,646
		Designing Charges	33,040
		International Travel	315,778
		Staff Capacity Building	25,002
		Closing Cash & Bank Balances	21,661,232
Total	79,089,844	Total	79,089,844

As per our certificate of even date

For Alliance for An Energy Efficient Economy

For Singh K V Gupta & Co
Chartered Accountants
(FRN 000133N)

CA Rakesh K Agarwal
Partner
M.No. 085908

Place: New Delhi
Dated: 02/07/2018

Satish Kumar

Secretary

Dated: 30/06/2018

Satish Kumar Place: USA

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