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REPORT

CAPABILITIES AND REQUIREMENTS OF STATE DESIGNATED AGENCIES IN INDIA

Alliance for an Energy Efficient Economy

An initiative supported by

SHAKTI SUSTAINABLE ENERGY FOUNDATION

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Capabilities and Requirements of State Designated Agencies in India

Submitted to Shakti Sustainable Energy Foundation

An initiative supported by

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Alliance for an Energy Efficient Economy
New Delhi

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Abbreviations

AEA-Accredited Energy Auditor

AEEE-Alliance for an Enesrgy Efficient Economy

BLY- Bachat Lamp Yojna

BEE-Bureau of Energy Efficiency

CFL-Compact Fluorescent Lamp

DC - Designated Consumers

DENA-Designated Energy Auditor

ECAP-Energy Conservation Action Plan

EC Act - Energy Conservation Act, 2001

EE- Energy Efficiency

EESL-Energy Efficiency Services Limited

LED-Light Emitting Diode

MNRE- Ministry of New and Renewable Energy

MTEE-Market Transformation for Energy Efficiency

M&V-Measurement and Verification

NPC-National Productivity Council

PAT- Perform Achieve Trade

SDAs-State Designated Agencies

SEC-Specific Energy Consumption

SECF - State Energy Conservation Fund

SMEs -Small and Medium Enterprises

S&L-Standards and Labelling

SSEF- Shakti Sustainable Energy Foundation

Executive Summary

Background

Under the provisions of the Energy Conservation Act, 2001 the State Governments have been conferred the power to facilitate and enforce the efficient use of energy and its conservation. The State Governments have to designate State Designated Agencies in consultation with the Bureau of Energy Efficiency to coordinate, regulate and enforce the provisions of the Act in the State. Thus, the State Designated Agencies (SDAs) are the strategic partners for promotion of energy efficiency and programs under Perform, Achieve and Trade (PAT) and Market Transformation for Energy Efficiency (MTEE) for Bureau of Energy Efficiency (BEE), in the country.

The PAT scheme was launched by the Government of India for energy intensive industry in eight sectors involving 478 plants which were assigned targets for reduction of energy consumption to be achieved by March 2015.

For reduction of energy consumption in various appliances and equipment, the MTEE was conceived which was aimed at encouraging manufactures of energy efficient appliances and equipment. Star labelled products were introduced in the market under the scheme.

BEE coordinates with DCs, SDAs and other organizations to recognize, identify and utilize the existing resources and infrastructure for the effective implementation of the schemes such as PAT and MTEE in various states.

Objective

As a common platform for Energy Efficiency stakeholders to collaborate and address barriers to implementation of PAT and MTEE in India, AEEE had interactions with the SDAs working under the PAT and MTEEE scheme to assess the capabilities and requirements of the SDAs and a questionnaire was circulated to understand the role of the SDAs.

The purpose of these interactions was to assess the gaps between the existing and necessary capabilities and understand the obligations of the designated agencies and then give a feedback to establish a plan to fill these gaps.

Methodology

The State Designated Agencies were chosen in a way that all the four Zones in India are covered. The idea behind this was to understand the resources and competencies of SDAs across India so that all the information can be collected and observations can be recorded.

AEEE had conducted 4 Regional Workshops across India at Hyderabad, Kolkata, Chandigarh and Ahmedabad for exchanging views and discussing capacity building requirements of select SDA's to implement the PAT and MTEE Schemes. AEEE had collaborated with NEDCAP in Hyderabad, PEDA and HAREDA in Chandigarh, WBPDCL in Kolkata and GEDA in Ahmedabad. The workshop had the concurrence of the Bureau of Energy Efficiency (BEE).

The workshops were attended by officials from the regional SDAs, DCs, energy auditors and other agencies related to energy efficiency. The agenda included overview of the EC Act, and the role of the SDAs, the PAT and MTEE schemes and on Standards and Labelling of appliances. Issues in the implementation of the PAT scheme, normalization for changes in production parameters, lack of capacity at the state level on understanding the processes in the DC sectors, and need for technically qualified DENAs to undertake verification of the data submitted. Representative from BEE participated in some of the meetings and gave assurances on reviewing the feedback and incorporating these as feasible in the present PAT scheme and also in the forthcoming PAT scheme for new sectors.

Key Recommendations

The effectiveness of the SDAs can be increased by ensuring efficiency in the department by putting in place internal management and information systems. The emphasis should be laid on the development of Monitoring and Evaluation system. The SDAs should make timely interventions making the overall system responsive to situations. Also, an effective Knowledge Management system needs to be put in place and good practices need to be displayed and information needs to be exchanged.

According to the list of SDAs notified, these agencies can be categorised in different states as follows:

a. The Renewable Energy Development Agency - 12 states
b. State government departments- 12 states
c. Electrical Inspectorates - 5 states
d. Power corporations and distribution companies- 3 states.

SDAs designated under (a) are very familiar with renewable energy, technologies, policies, and implementation at the state level. SDAs under (b) are essentially state government departments that have been given the role of regulating EC activities in the state. SDAs under (c) and (d) have pool of technically qualified manpower, but still would need additional capacity building on EE technologies, policies, PAT process, industry processes for DCs and related areas. The SDAs are short staffed, and have persons who have other routine organizational responsibilities as well in addition to EE.

SDAs under (c) are very familiar in performing a regulatory function, while SDAs under (d) function under the broad mandate of the Electricity Supply act. SDAs under (a) have been historically undertaking a promotional role and have very limited or no experience in performing the regulatory role as required under the EC Act. SDAs under (b) are essentially administrative departments having no experience in taking on regulatory functions. Monitoring the PAT scheme and ensuring the correctness of certificates to be issued is a complex and challenging task. Thus, there is an urgent need for the SDAs, in particular those falling under (a) and (b) to be given special training and capacity building to be able to fulfil this regulatory role.

The suggested recommendations for making the SDAs more effective are:

Augmentation of staff

State designated agencies have very lean organization for energy efficiency as they have had other responsibilities such as developing non conventional energy and providing electricity supply etc. Details of augmentation of staff for PAT and MTEE schemes are given later in the report.

Training

The existing staff by and large is basically technically qualified which will need to be supplemented with their training in energy efficiency and basic process of PAT sector industries in the respective state. Training also needs to be given in understanding the calculations of SEC under the gate to gate concept and on issues relating to normalization of SEC due to variations in production and other parameters.

Organisation

SDAs are functionally responsible to their state governments and any recruitment would have to be done with the concurrence of respective governments. Thus the state policies on recruitment of additional staff would impact these agencies.

1. Introduction

1.1. Background

Following Copenhagen summit, India amongst other countries declared voluntary targets for reduction of GHG emissions. Even prior to this declaration, the National Action Plan on Climate Change was designed and launched by Prime Minister in 2008. One of the Eight Action plans was National Mission on Enhanced Energy Efficiency (NMEEE) with the objective of improving energy efficiency across all consuming sectors. The implementation of NMEEE would be through the Bureau of Energy Efficiency (BEE) which was set up after the passing of the Energy Conservation Act of 2001.

1.2. The Energy Conservation Act, 2001

The EC Act, 2001 received the assent of the President on the 29th September, 2001 as *an* Act to provide for efficient use of energy and its conservation and for matters connected therewith or incidental thereto. The EC Act, 2001 was amended in 2010 by the Indian parliament and received the Presidential assent on 24th August, 2010.[1]
Some of the amendments to the EC Act, 2001 in 2010 are:

- Issue of Energy Savings Certificate to DCs whose energy consumption is less than the prescribed norms & standards.
- DCs whose energy consumption is more than prescribed norms and standards shall be entitled to purchase the energy savings certificate to comply with prescribed norms and standards.
- Central Government and Bureau shall prescribe the value of per metric ton of oil equivalent of energy consumed.

1.3. Bureau of Energy Efficiency

The Bureau of Energy Efficiency (BEE) under the provisions of the EC Act, 2001 has been established with effect from 1st March, 2002 by merging into it, the erstwhile Energy Management Centre, being a society registered under the Societies Registration Act, 1860, under the Ministry of Power.
BEE aims to assist in developing policies and strategies with a thrust on self-regulation and market principles, within the overall framework of the EC Act, 2001 with the primary objective of reducing energy intensity of the Indian economy. This is expected to be achieved with active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

The major functions of BEE includes, among others:
(i) Develop and recommend to the Central Government the norms for processes and energy consumption standards.
(ii) Develop and recommend to the Central Government minimum energy consumption standards and labelling design for equipment and appliances.
(iii) Develop and recommend to the Central Government specific energy conservation building codes.
(iv) Recommend to the Central Government for notifying any user or class of users of energy as a designated consumer.
(v) Take necessary measures to create awareness and disseminate information for efficient use of energy and its conservation.

1.4. The PAT scheme

Several national and international reports have identified the potential for increasing energy efficiency in the consuming sectors in the country. The industrial sector accounts for over 50% of the total energy consumed in the country. BEE designed and notified the Perform, Achieve Trade Scheme (PAT) with the objective of increasing the pace of adoption of energy efficiency in the industries sector. PAT is a market based mechanism to enhance cost effectiveness of improvements in energy efficiency in energy intensive large industries and provides for incentives through provision of energy saving certificates that could be traded. Targets for improvements in energy efficiency are set under section 14 of the Energy Conservation Act, 2001 in a manner that reflects fuel usage and the economic effort involved. The Government, in March 2007 notified units in nine industrial sectors, namely aluminium, cement, chlor-alkali, fertilizers, iron and steel pulp and paper, railways, textiles and thermal power plants, as Designated Consumers (DCs). The PAT scheme is currently applicable for eight designated sectors as listed above, with railways being excluded in the first instance.
PAT scheme is a multi- cycle process with the first cycle being in operation till 2014-15. The target setting for each of the designated consumer was based on gate-to-gate specific energy consumption (SEC) and SEC has to be reduced as given in the target by 2014-15, as compared to baseline year (2009-10). The Monitoring and Verification (M&V) would be undertaken through data provided by DCs to BEE and SDAs on energy purchases and product sales. This data would be verified by accredited energy auditor for verification and subsequent issuance of Energy Saving Certificates (ESCerts).
The savings due to PAT mechanism is estimated at 6.686 MTOE and 26.21 MT of GHG emissions, resulting in expected avoided capacity addition of 5,263 MW, in the first 3 years of the implementation of the scheme. An investment of about Rs. 30,000 crores is expected to be made by the industry.

It is important to note that the SDAs at the state level have a key role to play in interacting with DCs, in verification of the data submitted by DCs and in any other matter related to the PAT scheme.

1.5. Scope of Work

The BEE has been engaged in building the capacity of the SDAs in the implementation of the PAT scheme over the last few years. This included workshops with SDAs and DCs, understanding the process of the DCs and in identification of accredited energy auditors and other experts who would assist SDAs in the implementation of the PAT scheme at the state level. Shakti Sustainable Energy Foundation (SSEF) and Alliance for an Energy Efficient Economy (AEEE) identified capacity building of the SDAs for the PAT scheme as an area of cooperation, considering the working relationships established by AEEE during the course of ongoing interactions. SSEF and AEEE identified the following scope of work for the grant provided by SSEF.

a) Map the present status of all the SDAs
b) Develop a short questionnaire in consultation with SSEF and the BEE. Identify role, responsibilities and obligations of SDAs under the PAT and MTEE Schemes.
c) Identify the powers conferred to SDAs under the EC Act and implementation
d) Based on the present situation and obligations under implementation of PAT and MTEE Schemes and power embodied under EC Act, Identify the resources, competencies and system required for successful implementation of the scheme in the respective states.
e) Interact with three SDAs including sharing information and obtaining inputs identified on pilot basis for development of the blueprint to implement the PAT and MTEE Schemes.

2. State Designated Agencies (SDAs)

2.1. History & Structure

The State Governments, under the provisions of the EC Act, 2001 have been conferred the power to facilitate and enforce the efficient use of energy and its conservation. The State Governments have to designate State Designated Agencies (SDAs) in consultation with the Bureau of Energy Efficiency to coordinate, regulate and enforce the provisions of the Act in the State Thus, the State Designated Agencies (SDAs) are the strategic partners for promotion of energy efficiency and programs under Perform, Achieve and Trade (PAT) and Market Transformation for Energy Efficiency (MTEE) for Bureau of Energy Efficiency (BEE), in the country.

The SDAs have been set up in 32 States[2] by designating one of the existing organizations and notified in the state gazette. According to the list of SDAs notified, these agencies can be categorised in different states as follows:

e. The Renewable Energy Development Agency - 12 states
f. State government departments- 12 states
g. Electrical Inspectorates - 5 states
h. Power corporations and distribution companies- 3 states.

It was also noted that most of these organizations have had very limited experience in Energy Efficiency and conservation, considering that their main areas related to either renewable energy, or supply of electricity or being an inspectorate giving approvals under the relevant legislations. This did necessitate resultant need for building capacity, enhancing understanding and knowledge about energy efficiency, having a common action plan to implement measures to reduce energy intensity of the State. The approved scheme of the Ministry of Power therefore, enables SDAs to:

(a) Prepare a 5 year Energy Conservation Action Plan (ECAP)
(b) Implementation of ECAP with yearly deliverables
(c) Enhance capacity to undertake regulatory duties that they are required to be performed under the Act.

2.2. Role of SDA's under PAT and MTEE

SDAs are statutory bodies set up at the state level to implement the EC Act under the overall supervision of the BEE. They are the nodal agencies at state level and need to coordinate and cooperate with BEE at the central level to ensure a smooth and speedy implementation of the Act in the country.

"The State Designated Agency shall prepare a check list in consultation with the Bureau to undertake inspection, enforcement of the prescribed norms and standards, issue and purchase of energy saving certificates, and if necessary, initiate action for adjudication for the purpose of imposition of penalty under the Act."[3]

The key responsibilities of the SDAs under amended EC Act Include:

- Updation and maintenance of list of Designated Consumers and ensure the submission of energy return form by each DC every year.
- Maintaining the list of Designated Energy Auditors (DENAs).
- Develop a Market mechanism for ESCerts and promote transfer of knowledge in energy efficiency.
- Inspection of Designated Consumer for compliance to energy consumption norms and standards and makes provisions for levying penalty for the defaulters.

As defined in the **PAT** consultation document the role of SDAs has been as follows:

- Exchange of information among all stakeholders relating to ESCerts trading mechanism through a central on-line integrated information system.
- Enable tracking, monitoring and reporting energy reduction details.
- Access information available on PAT NET to calculate and levy penalty on designated consumers.
- Provide information to BEE through PAD (PAT Assessment Document)
- Gather, monitor and analyse data reported by DCs to identify any uneven aberrations in energy savings so as to conduct on site audits.
- Receive trading details and obligations from trading exchanges.
- Obtain audit details conducted by DENAs through PAT NET.
- Act as the body responsible for adjudicating matters related to penalizing the DCs for non compliance.

In the Market Transformation for Energy Efficiency, the role of SDAs is envisaged in DSM programmes, monitoring Standards and Labelling of products, replacing inefficient appliances and enforcing ECBC.

It is important to understand the role given to State designated agencies (SDAs) in different states in terms of carrying forward various energy efficiency initiatives at the state level. They have an important role to play particularly in creating public awareness and enforcement of the EC Act, 2001 especially at the grass-root level. The main focus areas during the 12th Plan, of the SDA program will be on strengthening the 32 SDAs to enable them to implement various programs and activities initiated by BEE or SDAs themselves.

During the 11th Plan, BEE supported by way of technical assistance, guidance and funding in preparation of action plans, building institutional capacity of SDAs to perform their regulatory, developmental and promotional functions in their respective states. Each SDA has been supported to develop a five year Energy Conservation Action Plan, customized to local needs aiming at and delivery of the EC Act mandates.

The primary focus areas for the current 12th Plan include areas like municipality (drinking water and sewage treatment), agriculture sector (pumping), street lighting, commercial buildings, government buildings and waste heat recovery in SMEs, including demonstration projects. Some of the initiatives that would help in strengthening the capacities of SDAs and undertaking of various projects and programmes to promote energy efficiency in their respective states are:

- Support for implementing state-wise sector specific energy saving plan by the SDAs.
- Continued engagement of SDAs with energy efficiency professionals like energy auditors, energy managers and ESCOs
- Implement various EE demonstration projects in the states to showcase the effectiveness of the most advanced energy efficient technology and pursue state governments to replicate the project in other parts of the state.
- LED village campaign in the villages and pursue state governments to replicate the project in other parts of the state.
- Publicity /awareness on EE in the states and Workshops/ training programmes for all the SDA's

The State Energy Conservation Funds (SECF) as mandated under the EC Act, 2001, have already been constituted in 22 states and funds have been released to 21 states during the 11th Plan to operationalize the SECF for various energy efficiency initiatives. The state governments of Andhra Pradesh, Rajasthan, Chhattisgarh, Karnataka, Haryana, Gujarat and Mizoram have also contributed a matching grant to the SECF. In the 12th Plan, it is proposed to set up the SECF in all the states and

- Pursue with SDAs for constitution of SECF in the states and matching contribution by the state governments to the SECF.
- Coordinate with SDAs to implement various energy conservation activities and utilization of fund under SECF.

A contribution of **Rs. 70 Crores** to SECF is proposed under the 12th Plan. Total fund required for strengthening of SDAs and SECF has been estimated to be **Rs. 210 Crore.**[4]

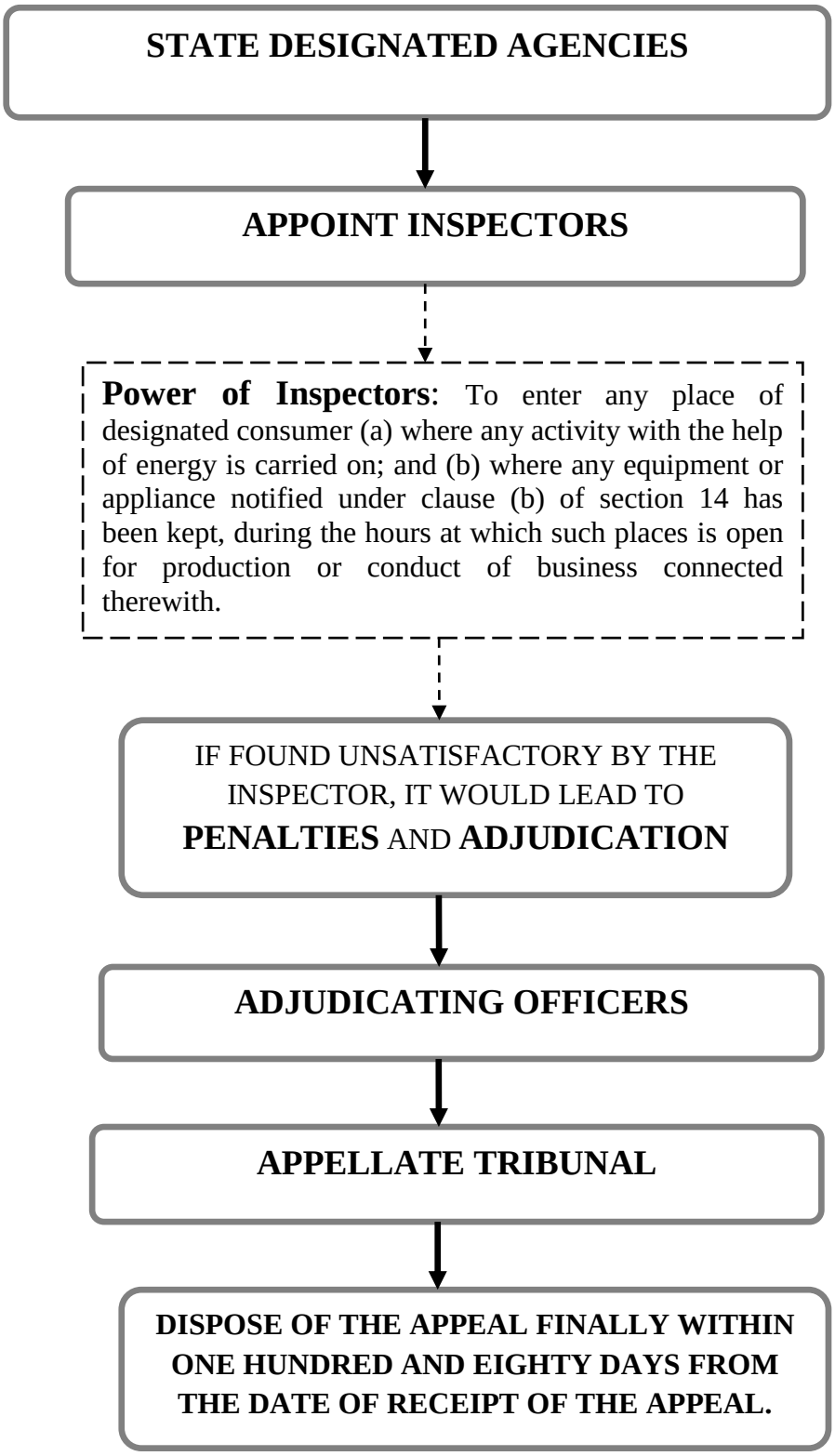
2.3. Issues of DCs under the PAT Scheme

While BEE has followed an extensive consultation process in formulating the PAT scheme there still remain concerns with the DCs that place some doubts on the correctness of the baseline and normalization parameters to be followed. Though DCs have been raising these issues with BEE, the DCs continue to maintain that these have not been resolved to the satisfaction of DCs. Consequently, when the target achievement or non achievement is decided, because of the huge financial implications of such decisions, there are bound to be some DCs who would approach the adjudicating authority. This situation will also arise when the number of ECerts awarded to DCs on exceeding the target are not satisfactory for DCs and they expect higher number due to difference between the energy consumption levels which are determined by Accredited Energy Auditors (AEAs) and the DCs themselves.

In all these situations, the role of SDAs in verifying the energy consumption data will also be important and they will be required to justify their verification in each case. At the present juncture, the SERCs and SDAs have not dedicated sufficient resources to be prepared for a situation to be able to respond to the above.

2.4. Power conferred to SDAs under the EC Act

The State Government may, by notification, in consultation with the Bureau designate any agency as designated agency to coordinate, regulate and enforce provisions of this Act within the State. An Overview of Powers Conferred to SDAs under the EC ACT is given below:



2.4.1. Power of the Central Government to facilitate and Enforce Efficient use of Energy and its Conservation.

The Central Government may, by notification, in consultation with the Bureau,

- Specify the norms for processes and energy consumption standards for any equipment, appliances which consume, generates, transmits or supplies energy;
- specify, having regarding to the intensity or quantity of energy consumed and the amount of investment required for switching over to energy efficient equipments and capacity or industry to invest in it and availability of the energy efficient machinery and equipment required by the industry, any user or class of users of energy as a designated consumer for the purposes of this Act;
- establish and prescribe such energy consumption norms and standards for designated consumers as it may consider necessary:
- Provided that the Central Government may prescribe different norms and standards for different designated consumers having regard to such factors as may be prescribed;
- direct every designated consumer to comply with energy consumption norms and standards;
- direct any designated consumer, who does not fulfil the energy consumption norms and standards prescribed under clause (g), to prepare a scheme for efficient use of energy and its conservation and implement such scheme keeping in view of the economic viability of the investment in such form and manner as may be prescribed;

The State Government may, by notification, in consultation with the Bureau, designate any agency as designated agency to coordinate, regulate and enforce provisions of this Act within the State.

2.4.2. Appoint Inspectors

The designated agency may appoint, after the expiry of five years from the date of commencement of this Act, as many inspecting officers as may be necessary for the purpose of ensuring compliance with energy consumption standard specified under clause (a) of section 14 or ensure display of particulars on label on equipment or appliances specified under clause (b) of section 14 or for the purpose of performing such other functions as may be assigned to them.

Subject to any rules made under this Act, an inspecting officer shall have power to –

• inspect any operation carried on or in connection with the equipment or appliance specified under clause (b) of section 14 or in respect of which energy standards under clause (a) of section 14 have been specified;

• enter any place of designated consumer at which the energy is used for any activity and may require any proprietor, employee, director, manager or secretary or any other person who may be attending in any manner to or helping in, carrying on any activity with the help of energy -

•to afford him necessary facility to inspect –
(A) any equipment or appliance as he may require and which may be available at such place;
(B) any production process to ascertain the energy consumption norms and standards

2.4.3. Power of Inspecting Officers

An inspecting officer may enter any place of designated consumer –
•where any activity with the help of energy is carried on; and
•where any equipment or appliance notified under clause (b) of section 14 has been kept, during the hours at which such places is open for production or conduct of business connected therewith.
•An inspecting officer acting under this section shall, on no account, remove or cause to be removed from the place wherein he has entered, any equipment or appliance or books of accounts or other documents.

2.4.4. Penalties and Adjudication

If any person fails to comply with the provision of clause (c) or the clause (d) or clause (h) or clause (i) or clause (k) or clause (l) or clause (n) or clause (r) or clause (s) of section 14 or clause (b) or clause (c) or clause (h) of section 15, he shall be liable to a penalty which shall not exceed ten thousand rupees for each such failures and, in the case of continuing failures, with an additional penalty which may extend to one thousand rupees for every day during which such failures continues:
Provided that no person shall be liable to pay penalty within five years from the date of commencement of this Act.
Any amount payable under this section, if not paid, may be recovered as if it were an arrear of land revenue.

2.5. Adjudicating Officers

For the purpose of adjudging section 26, the State Commission shall appoint any of its members to be an adjudicating officer for holding an inquiry in such manner as may be prescribed by the Central Government, after giving any person concerned a reasonable opportunity of being heard for the purpose of imposing any penalty.
While holding an inquiry the adjudicating officer shall have power to summon and enforce the attendance of any person acquainted with the facts and circumstances of the case of give evidence or produce any document which in the opinion of the adjudicating officer, may be useful for or relevant to the subject-matter of the inquiry, and if, on such inquiry, he is satisfied that the person has failed to comply with the provisions of any of the clauses of the sections specified in section 26, he may impose such penalty as he thinks fit in accordance with the provisions of any of those clauses of that section:
While adjudicating the quantum of penalty under section 26, the adjudicating officer shall have due regard to the following factors, namely:-

a. the amount of disproportionate gain or unfair advantage, wherever quantifiable, made as a result of the default;
b. the repetitive nature of the default.

No civil court shall have jurisdiction to entertain any suit or proceeding in respect of any matter which an adjudicating officer appointed under this Act or the Appellate Tribunal is empowered by or under this Act to determine and no injunction shall be granted by any court or other authority in respect of any action taken or to be taken in pursuance of any power conferred by or under this Act.

2.6. Appellate Tribunal

Section 30 of EC Act 2001 mentions that "The Central Government shall, by notification, establish an Appellate Tribunal to be known as the Appellate Tribunal for Energy Conservation to hear appeals against the orders of the adjudicating officer or the Central Government or the State Government or any other authority under this Act.

Section 31 of EC Act also mentions that "Any person aggrieved, by an order made by an adjudicating officer or the Central Government or the State Government or any other authority under this Act, may prefer an appeal to the Appellate Tribunal for Energy Conservation: Provided that any person appealing against the order of the adjudicating officer levying any penalty, shall while filing the appeal, deposit the amount of such penalty: Provided further that where in any particular case, the Appellate Tribunal is of the opinion that the deposit of such penalty would cause undue hardship to such person, the Appellate Tribunal may dispense with such deposit subject to such conditions as it may deem fit to impose so as to safeguard the realisation of penalty."

The EC Act amendment 28 of 2010 has amended section 30 to state as follows:

The Appellate Tribunal established under section 110 of the Electricity Act, 2003 (36 of 2003) shall, without prejudice to the provisions of the Electricity Act, 2003 (36 of 2003), be the Appellate Tribunal for the purposes of this Act and hear appeals against the orders of the adjudicating officer or the Central Government or the State Government or any other authority under this Act.

The procedures and powers of the AT are as given sections 120-123 of the electricity Act, 2003 in the discharge of its functions.

Every appeal shall be filed within a period of forty-five days from the date on which a copy of the order made by the adjudicating officer or the Central Government or the State Government or any other authority is received by the aggrieved person:

Appellate Tribunal may entertain an appeal after the expiry of the said period of forty-five days if it is satisfied that there was sufficient cause for not filing it within that period.

On receipt of an appeal under sub-section.
The Appellate Tribunal may, after giving the parties to the appeal an opportunity of being heard, pass such orders thereon as it thinks fit, confirming, modifying or setting aside the order appealed against The Appellate Tribunal shall send a copy of every order made by it to the parties to the appeal and to the concerned adjudicating officer or the Central Government or the State Government or any other authority.

Appeals under the Appellate Tribunal

The appeal filed before the Appellate Tribunal under sub-section (l) shall be dealt with by it as expeditiously as possible and endeavour shall be made by it to dispose of the appeal finally within one hundred and eighty days from the date of receipt of the appeal:
Provided that where an appeal could not be disposed of within the said period of one hundred and eighty days, the Appellate Tribunal shall record its reasons in writing for not disposing of the appeal within the said period.

3. Present Status of SDAs under PAT and MTEE

Andhra Pradesh

ANDHRA PRADESH	DETAILS
State Designated Agency	**New Renewable Energy Development Corporation of Andhra Pradesh Ltd (NREDCAP)**
Number of Designated Consumers #	36

NREDCAP was established in 1986 by the Govt of Andhra Pradesh with the original objective of working on developing renewable energy in the state but subsequent to the Energy Conservation Act 2001, NREDCAP is the nodal agency in Andhra Pradesh for implementation of the EC Act, including the PAT and MTEE schemes.

The Energy efficiency department is headed by Project Director and it was found that the staff dedicated to implementation of PAT and MTEE Schemes was quite small. However, when the need arises staff from the other departments not directly concerned with energy efficiency is also included for such requirements.

The Staff is aware of its responsibilities in PAT and MTEE, but do not have adequate technical knowledge of the Energy Consuming loads in the Sector Specific PAT Industries i.e Designated Consumers (DC's) of the State such as Power plants, Cement, Paper & Pulp etc. The staff showed keenness for detailed technical training for such Industries.

Assam

ASSAM	DETAILS
State Designated Agency	**Assam state designated agency (ASDA)**
Number of Designated Consumers #	7

The Chief Electrical Inspector-cum-Adviser, Government of Assam is the State Designated Agency under the EC Act, 2001.

The inspectorate of electricity, under the power, mines and minerals department, Government of Assam is a Directorate Level establishment with the Chief Electrical Inspector-cum-Adviser as the Head of the Directorate. According to ASDA, as per the latest norms, the categorization of DCs on the basis of energy consumption in terms of MTOE has been completed. The prospective DCs have been requested to furnish energy consumption

According to updated list of 478 DCs in BEE Website:http://beeindia.in/miscellaneous/dc/list%20of%20DC's%20updated.pdf,break-up of DCs may vary from actual.

in terms of MTOE and as per reports received, Hindustan Paper Corporation, Nagaon's consumption is 44,885 MTOE, Hindustan Paper Corporation Cachar's consumption is 76,200.5 MTOE, Brahmaputra Valley Fertilizers Corporation's consumption is 4,36,074 MTOE and NEEPCOs Assam Gas Based Power Plant at Bokuloni is 4,27,538.95 MTOE for the year 2006-07.

Bihar

BIHAR	DETAILS
State Designated Agency	**Bihar Renewable Energy Development Agency (BREDA)**
Number of Designated Consumers [#]	2

BREDA is the state designated agency in Bihar for carrying out the schemes of PAT and MTEE in the state. It mentioned that it is relatively familiar with the duties and responsibilities of a SDA under the EC Act 2001 & 2010. The SDA is aware of its duties and basic provisions under the PAT Scheme. BREDA is relevant with the methods for awarding star labels to various appliances though there has been a partial awareness of the market transformation programme.

Chhattisgarh

CHATTISGARH	DETAILS
State Designated Agency	**Chattisgarh Renewable Energy Development Agency (CREDA)**
Number of Designated Consumers [#]	45

CREDA initially had been registered under society Act 1973 on 25.05.01.The State Government of Chhattisgarh appointed **CREDA** as the SDA to coordinate, regulate & enforce the provisions of "EC Act 2001" in the state of Chhattisgarh. The notification was issued on 29th July 2002.CREDA has been constituted under Department of Energy, Government of Chhattisgarh for implementation of various schemes pertaining to Renewable Energy sources and Energy Conservation activities.

Within a short span CREDA has done a pioneering job in various Energy Efficiency activities in Chhattisgarh and the agency has also been recognized as a model state in the field of Energy Efficiency and Renewable energy activities.

Delhi

NEW DELHI	DETAILS
State Designated Agency	**Delhi Transco Limited (DTL)**
Number of Designated Consumers #	5

DTL is the SDA and has taken up energy conservation work under the Energy Conservation Act, 2001 in the state. The earlier Energy Efficiency and Renewal Energy Management Centre which was set up on 5th July, 2006 has been set up to draw an action plan for this.

Gujarat

GUJARAT	DETAILS
State Designated Agency	**Gujarat Energy Development Agency (GEDA)**
Number of Designated Consumers #	61

GEDA, the State Nodal Agency for the Ministry of New and Renewable Energy Sources (MoNRE). GEDA has been notified as the state designated agency (SDA) for BEE.

GEDA has been one of the premier organizations and a forerunner in India in the field of renewable energy development and energy conservation time by tapping on to its rich renewable energy resources. Its major focus area over the years has been Renewable Energy .

GEDA has reported that they have been able to build a good rapport with the Designated Consumers in the state and that work for the PAT and MTEE schemes is on track as they have been receiving the Annual Energy Consumption form submission from the DC's under the 1st PAT cycle.

Haryana

HARYANA	DETAILS
State Designated Agency	**Department of Renewable Energy, Government of Haryana**
Number of Designated Consumers #	7

The Department of Renewable Energy, Haryana was designated as the State Designated Agency on 2.7.2003 for implementing the EC Act. The Department formulates policies and programmes necessary for popularizing the applications of various non-conventional and

renewable sources of energy in the state is done by the agency. Subsequent to the EC Act, 2001, The Department is also acting as the state designated agency for the implementation of PAT and MTEE Schemes.

Haryana Renewable Energy Development Agency (HAREDA) was set up in May 1997, to give impetus to the process of implementation, and to act as a nodal agency to implement various centrally and state sponsored schemes/ projects in the area of renewable energy in the State. The State has 7 Designated Consumers under the PAT Scheme and have been interacting with them regularly. In their interactions with AEEE they have reported that the DCs were forthcoming in submitting their Annual Energy Consumption forms for the 1st PAT cycle, as per the requirements in the PAT document.

Himachal Pradesh

HIMACHAL PRADESH	DETAILS
State Designated Agency	**Himachal Pradesh State electricity Board (HPSEB)**
Number of Designated Consumers #	8

HPSEB was constituted on 1st September, 1971 in accordance with the provisions of Electricity Supply Act (1948) and has been reorganized as Himachal Pradesh State Electricity Board Ltd. w.e.f. 14.06.2010 under company act 1956.It is the state nodal agency for carrying out schemes such as PAT an MTEE subsequent to the EC Act 2001.

Karnataka

KARNATAKA	DETAILS
State Designated Agency	**Karnataka Renewable Energy Limited (KREDL)**
Number of Designated Consumers #	19

KREDL, the State Designated Agency for Karnataka is an organization working under the purview of Energy Department, Government of Karnataka. The agency has estimated energy savings in the State of Karnataka as 11.395 MU for the period 2009-10.The corresponding reduction in avoided generation capacity is 2.25 MW for the same period.

KREDL has very limited capacity and has undertaken very limited activities for PAT and MTEE. While KREDL has received some funds from BEE for capacity building activities, they have faced a constraint on staff for EC activities. KREDL is presently coordinating with BESCOM and other utilities to be able to carry out EC activities in a coordinated manner across the state.

Kerala

KERALA	DETAILS
State Designated Agency	**Energy Management Centre (EMC)**
Number of Designated Consumers [#]	11

The Kerala Government was the first State Government in India to establish an **Energy Management Centre (EMC)** as an autonomous agency at the State level, aiming primarily to remould and instrumentalise energy sector as a catalyst in promoting a development process which is "Econo-*Ecologically Sustainable"*.

The DCs have shared their energy use data with EMC and have filed their yearly energy conservation action plan which details the energy conservation programmes that they will be deploying. The DCs are cooperative with EMC. Beyond the regulatory necessities, the cooperation has been successful owing to EMC's EE outreach programmes since 1996. It was pointed out in the discussions that PAT consultants from BEE did not necessarily consult the SDA during the base-line audit. A better collaboration with the consultants and SDAs would produce better understand of energy use scenarios of each DC. However, EMC has been maintaining a great rapport with FICCI and NPC whose consultant sought EMC's cooperation in reaching out to energy managers of DCs. .

Madhya Pradesh

MADHYA PRADESH	DETAILS
State Designated Agency	**Madhya Pradesh Urja Vikas Nigam Limited (MPUVN)**
Number of Designated Consumers [#]	23

MPUVN established by the Government of Madhya Pradesh in 1982 acts as the nodal agency for implementing various programs and policies of the Government of India as well as the State Government for the renewable energy sector.

It is the only such agency in the country having a full fledged Energy Management Cell-setup exclusively for this purpose of conducting energy audits for suggesting ways of saving on conventional power and feasibility studies for the uses of non conventional energy in industry.

For Energy Conservation measures, MPUVN has a registration service for consultants for energy audit activities in MP. Under this, the consultant is to submit a yearly work report pertaining to their overall activity, including relevant work done by them privately or under MPUVN/BEE etc. Though such measures help in realising the energy conservation mission, it does not cater to the implementation of the PAT and MTEE schemes and the focus areas

largely remains on Bio-Fuel Based Power Generation and development of Solar-Photovoltaic programmes.

Maharashtra

MAHARASHTRA	DETAILS
State Designated Agency	**Maharashtra Energy Development Agency (MEDA)**
Number of Designated Consumers [#]	48

In line with the Central Government policy, Maharashtra created **Maharashtra Energy Development Agency (MEDA)**- Registered as a Society on 26 July 1985, MEDA as an organization commenced functioning from July 1986. It has the additional responsibility of promoting and developing energy efficiency, besides facilitating renewable energy development.

The largest consumer of electricity in Maharashtra is the industrial sector. It consumes about 37.58 per cent of the total generated energy. The agency has identified the potential for energy conservation in the state for the industrial sector at 25 per cent, which means avoided capacity of 726 MW.

MEDA, since its origin, due to its relationship with MNRE, there is only a small group directly concerned with energy conservation. As the state has highest number of designated consumers in PAT and a very robust consumer market, there is a substantial need for capacity building firstly by way of adding to the staff through approved positions, followed by capacity building on PAT and MTEE.

The Staff for PAT and MTEE is technically well informed and willing to acquire the necessary capabilities. From their point of view, in house training in each of the concerned PAT sectors and process of labelling is necessary and training programme of atleast one week duration should be conducted.

Odisha

ODISHA	DETAILS
State Designated Agency	**Engineer in Chief Electricity-cum-PCEI Odisha**
Number of Designated Consumers [#]	17

Engineer in Chief Electricity-cum-PCEI Odisha has been notified as State Designated Agency for the State of Odisha for implementation of EC Act-2001. Apart from the EC Act implementation other activities carried out are: Electrical Inspection of installations under IE rules and acts as a nodal agency for implementation of REP (Rural Electrification Programme) in the state.

Punjab

PUNJAB	DETAILS
State Designated Agency	**Punjab Energy Development Agency (PEDA)**
Number of Designated Consumers [#]	22

PEDA, the Nodal Agency in the state of Punjab was formed in Sept. 1991. Punjab, under consideration of the fact that Electricity is one of the key enablers of development, has been aggressively pushing for major capacity addition of power generation to cover the current and anticipated shortages due to the growth of the economy.

PEDA has a total of 22 Designated Consumers in the State and has been active in the implementation of PAT and MTEE Schemes.
A list of Designated Consumers and their Targets for the year 2012-13 to 2014-15 under the PAT Scheme is available on their official website [5].

Rajasthan

RAJASTHAN	DETAILS
State Designated Agency	**Rajasthan Renewable Energy Corporation Limited (RRECL)**
Number of Designated Consumers [#]	58

Rajasthan Renewable Energy Corporation Limited (RRECL) had been formed by merging erstwhile REDA (Rajasthan Energy Development Agency) and the Rajasthan State Power Corporation Ltd (RSPCL) in August 2002. Corporation is registered under Companies Act 1956.

Tamil Nadu

TAMIL NADU	DETAILS
State Designated Agency	**Tamil Nadu Electrical Inspectorate**
Number of Designated Consumers [#]	38

The **Tamil Nadu Electrical Inspectorate Department** was created in September 1961 as separate Department with Chief Electrical Inspector as its Head of the Department. After the formation of Energy Secretariat Department on 1.8.93, it has come under the administrative control of the Energy Department.

The Government Electrical Standards Laboratory, attached to the Office of the Chief Electrical Inspector to Government, is engaged in the calibration and testing of electrical equipments received from various State Electricity Boards, Quality Control Department of Industries, Contractors, etc.

The Tamil Nadu Electrical Inspectorate has sought furnishing of energy consumption data in a prescribed format and has made it mandatory for all energy intensive units, namely, the designated consumers. The energy consumption details is to be furnished in the specified format prescribed The Government of India through the Ministry of Power in Gazette order No.GSR No.174 E dated 02.03.2007.

It has notified in its official website that the energy data pertaining to every financial year (April to March) should be filed to the BEE, New Delhi with copy to this department before 31st June of every year. The Tamil Nadu State Designated Agency has also provided an on line e-data filing in this portal with a view to enable a data base on the Energy use by the Designated Consumers and to evolve policy measures on energy conservation.

Uttar Pradesh

UTTAR PRADESH	DETAILS
State Designated Agency	**Uttar Pradesh Power Corporation Limited (UPPCL)**
Number of Designated Consumers [#]	28

U.P. State Government has nominated **UPPCL** as Designated Agency for Uttar Pradesh with effect from December 2007 in consultation with Bureau of Energy Efficiency (BEE), Ministry of Power, and Government of India to coordinate, regulate and enforce provisions of this Act within the State of Uttar Pradesh.

West Bengal

WEST BENGAL	DETAILS
State Designated Agency	**West Bengal State Electricity Distribution Company Limited (WBSEDCL)**
Number of Designated Consumers [#]	17

The Government of West Bengal has restructured the erstwhile WBSEB into two successor entities, namely **West Bengal State Electricity Distribution Company Limited (WBSEDCL)** and West Bengal State Electricity Transmission Company Limited (WBSETCL). WBSEDCL is assigned the role of State Designated Agency and it is discharging all the functions of SDA. Thus it is the state nodal agency to ensure implementation of the PAT and MTEE Schemes.

SDA functions are lead by a team headed by Director, and comprising Chief Engineer and other engineers for carrying out the functions of the SDA. West Bengal has a State Level Working Committee of 15 to 20 members from various stakeholders in electrical energy who initiate energy efficiency proposals. With the present staff, which also has other DISCOM related execution responsibilities, there is a need for a review of the staffing and capacity building requirements to be able to discharge their responsibilities for PAT and MTEE in the state.

The States and Union Territories such as Manipur, Mizoram, Nagaland, Meghalaya, Andaman and Nicobar Islands, Lakshadweep and Pondicherry have very few or in some case no designated consumers. The SDAs lack the physical and financial resources to carry out the PAT and MTEE schemes and a comprehensive plan needs to be developed to implement the schemes in these states.

4. Interventions made to implement Programs under PAT and MTEE.

The Bureau of Energy Efficiency had commissioned the National Productivity Council (NPC) to assess the capacity and capabilities of the SDAs with respect to implementation of the Act. NPC had in its report inter-alia recommended that infrastructure of most of the SDAs needed to be strengthened to enable them to coordinate, regulate and enforce the provisions of the Energy Conservation Act. SDAs had also prepared with assistance from NPC, a comprehensive Five year action plan for energy efficiency activities under the EC Act in their states.

Given below are the points of the 5 year action plan to be undertaken[6]:

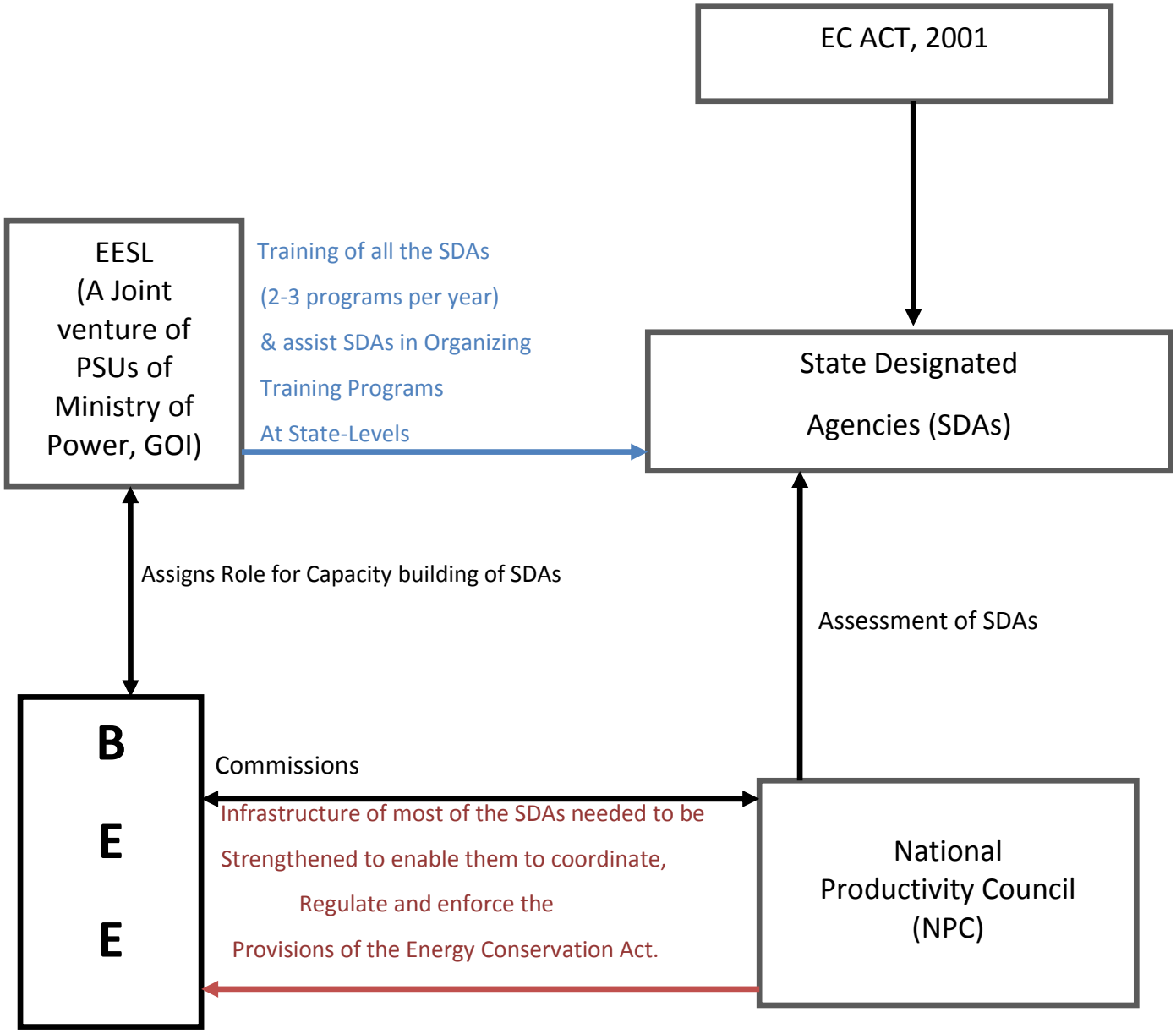
1) Establishment of Internet Platform for communication with SDA
2) Preparation of list of certified energy managers and accredited energy auditors which work or reside in the State (ESCOs).
3) Preparation of list of Designated Consumers and their energy consumption
4) Preparation of set of forms concerning communication of data and other information with BEE
5) Half yearly State level meeting with certified energy managers and Accredited energy auditors to discuss duties and responsibilities as well as joint progress
6) Annual State level conference of energy intensive industry, as well as certified energy managers and accredited energy auditors:
7) Half yearly meeting for exchange of information about lessons learned on State level implementation of EC Act
8) Annual meeting of all SDAs to discuss progress and next year's action plan with BEE
9) Design and printing of promotional material to be distributed to all four stakeholders: Certified energy managers, accredited energy auditors, designated consumers and general public
10) Conduct mandatory refresher course for certified energy auditors and energy managers
11) Implementation and conduct of Lifelong learning (3L) Program of BEE for certified energy auditors and accredited energy managers and interested parties
12) Training of designated consumers for annual reporting of energy data
13) Collection of data concerning manufacturing as well as sales of household appliances and other equipment at State level falling under the Energy Conservation Act
14) Annual report about State wise sales of labelled household appliances and other energy intensive equipments
15) Annual survey and analysis of impact of Energy Conservation Act, based on reports of accredited energy auditors as well as energy managers and other sources of information in the State
16) Preparation and publishing of annual year book of energy conservation measures at State level

17) Survey of buildings at State level which fall under the Energy Conservation Act
18) Preparation of report and analysis of State level incentive as well as disincentive policies concerning energy conservation measures in energy intensive industries including power sector
19) Preparation of recommendation for streamlining State level policies concerning energy conservation.

EESL has also indicated that they could be BEE Resource centre for all such activities as recommended by the National Productivity Council in its report and these are:

a) Training of all the SDA's (2-3 programs per year)
b) To assist SDA's in organizing training programs for all stakeholders at the state level
c) To organize regular training programs for personnel from various utilities.

Gaps in the Implementation of PAT and MTEE Schemes



There exist a number of agencies working towards the scheme including: BEE to be the overall regulator and dispute resolution agency, *State Designated Agencies (SDAs)* for implementation, The *National Productivity Council (NPC)* for the assessment of the SDA's in terms of Capacity building, and *Energy Efficiency Services Limited (EESL)* to be the process manager, and have also shown willingness in acting as a Resource Centre for capacity building and training of SDA's for the PAT and MTEEE schemes.

There is thus a need for improved co-ordination between these agencies for the smooth and effective implementation of the PAT scheme.

The Effectiveness of the SDAs can be increased by:

a) Ensuring Efficiency in the department by putting in place internal management and proper information systems
b) Emphasis on the development of Monitoring and Evaluation System and need based practices and standards.
c) Initiate timely interventions and actions making the overall system responsive to situations
d) Good practices need to be displayed and information needs to be exchanged and a good Knowledge Management System

5. Interactions with SDAs

- **BREDA (Bihar Renewable Development Agency)**

BREDA mentioned that it is relatively familiar with the duties and responsibilities of a SDA under the EC Act 2001 & 2010. The SDA is aware of its duties and basic provisions under the PAT Scheme. BREDA is relevant with the methods for awarding star labels to various appliances though there has been a partial awareness of the market transformation programme.

The SDA stated that they require additional training and inputs with a view to achieving the results under the PAT scheme. BREDA expressed that training is required in the areas of understanding the processes of the DCs in the state, issues relating to normalization of parameters, baseline benchmarking and data verification would benefit the SDA. More information on things to be implemented by SDAs and DCs on a sector-wise and point-wise basis would assist the SDA in further implementing its duties. BREDA also highlighted efforts of developing an internet platform and software and procuring basic equipment for implementing measurement techniques. BREDA also drew attention to the need of additional manpower to be added, which has to be taken up at the organizational level.

BREDA emphasized that a SOP has to be developed in order to facilitate any scheme in terms of measurement or any other verification.

- **WBSEDCL (West Bengal State Electricity Distribution Company Ltd)**

WBSEDCL indicated during the interactions that the SDA is aware of its duties and responsibilities under the EC Act 2001. The SDA identified the requirement of training and more inputs to perform on PAT as they are less familiar of their roles and duties to be performed under the PAT Scheme. The representative highlighted the need for the SDA to be trained on DSM, MTEE, and SEEP among others.

WBSEDCL indicated that the SDA had adequate manpower, sufficient equipment for carrying out the activities required under the PAT scheme. WESEDCL is aware of its roles and responsibilities for the MTEE programme and is familiar with the method for awarding star labels to various appliances. WBSEDCL has organized a number of interactions with various stakeholders on PAT as well as on building up a pool of trained specialists for EE in the state.

- **EMC (Energy Management Centre, Kerala)**

EMC has been a pioneer in the field of energy efficiency at the state level, being one the first and perhaps only state level agency dedicated to energy efficiency. EMC have interacted with various stakeholders for energy efficiency in the state and have initiated schemes for energy audit at highly subsidized rate in SME sectors, put up a register of audit firms registered with EMC as also put out guidelines for the evaluation of Energy Audit Reports. Kerala is the first state to have issued notification of the State Energy Conservation fund and

its rules. EMC has a cadre of trained professionals on energy efficiency and is in a position to carry out the activities as required under PAT and MTEE. Additional capacity building on DCs, their processes and on understanding the verifications processes for PAT would add to their capabilities. Additional staff for PAT scheme has been requested and approvals were likely to be received.

- **Electrical Inspectorate, Government of Tamil Nadu**

The Electrical Inspectorate (EI) in the Government of Tamil Nadu is the designated state agency for activities under the EC Act. EI has organized several interactions with stakeholders on energy efficiency in the state, and also has built up a cadre of technical specialists for EE in the state. EI has put in place a system of E-filing of energy consumption data from large consumers. The Government of India has issued notification through the Ministry of Power in Gazette order No. SO 394 E dated 12.03.2007 specifying levels of Energy Consumption among specific category of energy intensive units. The energy consumption details are to be furnished in the specified format prescribed The Government of India through the Ministry of Power in Gazette order No.GSR No.174 E dated 02.03.2007. The energy data pertaining to every financial year (April to March) should be sent to BEE with copy to this department before 30 June every year.

With a view to enable a data base on the energy use by the designated consumers and to evolve policy measures on energy conservation, the Tamil Nadu State Designated Agency has provided an on line e-data filing in this portal. The designated consumers should make use of this process in order to achieve the objective of the Government.

6. Recommendations for Effectiveness of SDAs in discharging their responsibilities in PAT and MTEE.

According to the list of SDAs notified, these agencies can be categorised in different states as follows:

a. The Renewable Energy Development Agency - 12 states
b. State government departments- 12 states ,
c. Electrical Inspectorates - 5 states
d. Power corporations and distribution companies- 3 states.

SDAs designated under (a) are very familiar with renewable energy, technologies, policies, and implementation at the state level. SDAs under (b) are essentially state government departments that have been given the role of regulating EC activities in the state. SDAs under (c) and (d) have pool of technically qualified manpower, but still would need additional capacity building on EE technologies, policies, PAT process, industry processes for DCs and related areas. The SDAs are short staffed, and have persons who have other routine organizational responsibilities as well in addition to EE.

SDAs under (c) are very familiar in performing a regulatory function, while SDAs under (d) function under the broad mandate of the Electricity Supply act. SDAs under (a) have been historically undertaking a promotional role and have very limited or no experience in performing the regulatory role as required under the EC Act. SDAs under (b) are essentially administrative departments having no experience in taking on regulatory functions. Monitoring the PAT scheme and ensuring the correctness of certificates to be issued is a complex and challenging task. Thus, there is an urgent need for the SDAs, in particular those falling under (a) and (b) to be given special training and capacity building to be able to fulfil this regulatory role.

Regional Workshops conducted in four geographical regions with most of the SDAs participating have brought up the necessity of making significant changes in their working to develop these agencies as arms of BEE in making implementation of PAT and MTEE schemes effective across the country.

Thus, recommendations for making them effective are enumerated below:

1. Augmentation of staff
2. Training
3. Organisation

1. Augmentation of staff

State designated agencies have very lean organization for energy efficiency as they have a legacy of developing non conventional sources of energy. Augmentation of dedicated

staff for PAT and MTEE schemes would be the necessary first step. Suggested augmentation is placed at enclosure.

2. Training

The existing staff by and large is basically technically qualified which will need to be supplemented with their training in energy efficiency and basic process of PAT sector industries in the respective state would. Suggested training modules for each state are placed at enclosure.

3. Organisation

SDAs are functionally responsible to their state governments and any recruitment would also have to be done with the concurrence of respective Governments. Thus the state policies on recruitment of additional staff would impact these agencies.

Table for Suggested Augmentation of Staff and Training for SDAs

S No	State	No of DCs	Staff for PAT	MTEE	Training in sectors
1.	Karnataka	19	4	1	Cement, Power
2.	Odisha	17	5	1	Steel, Power, Paper
3.	West Bengal	17	3	1	Power, Steel
4.	Chhattisgarh	45	5	1	Steel, Power, Cement
5.	Uttar Pradesh	28	3	1	Power, Fertiliser
6.	Maharashtra	48	5	2	Power, Steel, Textile
7.	Gujarat	61	6	2	Power, Textile, Cement
8.	Tamil Nadu	38	5	1	Power, Cement,
9.	Rajasthan	58	6	1	Textile, Cement, Power
10.	Madhya Pradesh	46	5	1	Cement, Textile
11.	Punjab	22	2	1	Textile, Paper
12.	Andhra Pradesh	36	4	1	Power, Cement
13.	Himachal Pradesh	17	2	1	Textile, Cement
14.	Kerala	11	1	1	Power

6.1. Draft Capacity Building Plan

Most state agencies were originally created as state nodal agencies to assist the Ministry of New and Renewable Energy for development of renewable energy in their respective states. Subsequently, energy efficiency activities have also been assigned to them and they are being looked upon as extended arms of BEE in PAT and MTEE schemes. Accordingly, there is a major shift in their role and need for a suitable organisational structure. In PAT there are 478 DCs spread over the entire country and it would be a challenge for BEE to interact with all these DCs on a one to one basis given their unique background and structure. SDAs have accordingly a very significant role to discharge and they need to be equipped to handle this responsibility. Similarly, for MTEE the spread of consumers and commercial organisations would require that SDAs have the technical capacity and personnel to perform that role adequately.

SDAs would need augmentation of their staff in sufficient numbers and also technical capability to effectively monitor the designated consumers and accredited energy auditors when they handle the data of these DCs in PAT scheme.

The Distribution of Designated Consumers in sectors state wise is given below. This distribution provides an indication of capacity building for the PAT sectors in various states. It is suggested that energy auditors and energy managers are also included in the training in order that there is overall increased capacity to deliver PAT scheme at the state level.

Cement

Andhra Pradesh	Chhattisgarh	Gujarat	Himachal Pradesh	Madhya Pradesh	Maharashtra	Rajasthan	Karnataka
17	7	9	3	9	9	22	3

Proposed Training locations: It is proposed that for Cement sector, training for SDAs should be conducted in atleast four locations namely Hyderabad, Udaipur, Rewa and Raipur. These will enable participants to visit the plants located nearby.

Curriculum:

- Basic Cement process – ½ day
- Baseline determination – ½ day
- Energy consumption data for PAT– ½ day
- Scope for Energy efficiency – 1 day
- AEA measurements – ½ day

Textiles

Punjab	Chhattisgarh	Gujarat	Himachal Pradesh	Madhya Pradesh	Maharashtra	Rajasthan	Tamil Nadu
10	7	12	7	5	13	35	5

Proposed Training locations: Bhilwara, Ludhiana, Ahmedabad and Mumbai

Curriculum:

- Basic Textile process – ½ day
- Baseline determination – ½ day
- Energy consumption data for PAT– ½ day
- Scope for Energy efficiency – 1 day
- AEA measurements – ½ day

Thermal Power Plants

Andhra Pradesh	Chhattisgarh	Gujarat	Tamil Nadu	West Bengal	Maharashtra	Rajasthan	Karnataka	UP
12	9	17	19	13	12	7	5	12

Proposed Training locations: Hyderabad, Raipur, Vadodara, Kolkata, Mumbai, Lucknow, Chennai

Curriculum:

- Basic Thermal plant process – ½ day
- Baseline determination for heat rate– ½ day
- Energy consumption data for PAT– ½ day
- Scope for Energy efficiency – 1 day
- AEA measurements – ½ day

Iron and Steel

Odisha	Chhattisgarh	Gujarat	West Bengal	Maharashtra	Jharkhand	Karnataka	Goa
14	18	4	3	12	3	6	3

Proposed Training locations: Raipur, Bhubaneswar, Pune and Bangalore

Curriculum:

- Basic Integrated Steel plant process – ½ day
- Baseline determination – ½ day
- Energy consumption data for PAT– ½ day
- Scope for Energy efficiency – 1 day
- AEA measurements – ½ day

Paper and Pulp

Odisha	Assam	Punjab	Uttarakhand	Maharashtra	Tamil Nadu	Karnataka	UP
3	2	4	2	2	3	2	3

Proposed Training locations: Ludhiana, Chennai, Lucknow

Curriculum:

- Basic Pulp & Paper process – ½ day
- Baseline determination – ½ day
- Energy consumption data for PAT– ½ day
- Scope for Energy efficiency – 1 day
- AEA measurements – ½ day

Fertilisers

Andhra Pradesh	Assam	Gujarat	Uttar Pradesh	Punjab	Maharashtra	Karnataka
3	2	4	7	4	2	1

Proposed Training locations: Lucknow, Chandigarh, Hyderabad

Curriculum:

- Basic Pulp & Paper process – ½ day
- Baseline determination – ½ day
- Energy consumption data for PAT– ½ day
- Scope for Energy efficiency – 1 day
- AEA measurements – ½ day

Aluminium

Uttar Pradesh	Chhattisgarh	Odisha	Jharkhand	Maharashtra	Chhattisgarh	Karnataka
1	1	4	1	1	1	1

Proposed Training locations: Bhubaneswar, Varanasi

Curriculum:

- Basic Aluminium process – ½ day
- Baseline determination – ½ day
- Energy consumption data for PAT– ½ day
- Scope for Energy efficiency – 1 day
- AEA measurements – ½ day

Chlor Alkali

Andhra Pradesh	Tamil Nadu	Gujarat	Uttar Pradesh	Madhya Pradesh	Rajasthan	Jharkhand	Punjab	HP
2	2	8	1	1	2	1	2	2

Proposed Training locations: Ahmedabad, Chennai, Ludhiana

Curriculum:

- Basic Chlor Alkali process – ½ day
- Baseline determination – ½ day
- Energy consumption data for PAT– ½ day
- Scope for Energy efficiency – 1 day
- AEA measurements – ½ day

In each of these PAT sectors, the staff of respective SDAs will have to be imparted training in the process of these sectors with participation of experts drawn from the industry sectors. It is envisaged that this training will need to be conducted at 6 to 8 locations for one week for each sector. These locations can be selected based on the number of DCs of the respective sector in that state.

7. Concluding Remarks

BEE has launched a challenging PAT scheme to take EE in the industrial sector to the next level. This is also expected to make the industries more competitive in the global markets. The SDAs in the state levels have a key role to play in assisting the BEE in the PAT scheme.
According to the list of SDAs notified, these agencies can be categorised in different states as follows:

a. The Renewable Energy Development Agency - 12 states
b. State government departments- 12 states ,
c. Electrical Inspectorates - 5 states and
d. Power corporations and distribution companies- 3 states.

It is noted that the SDAs under (c) are very familiar in performing a regulatory function, while SDAs under (d) function under the broad mandate of the Electricity Supply act. SDAs under (a) have been historically undertaking a promotional role and have very limited or no experience in performing the regulatory role as required under the EC Act. SDAs under (b) are essentially administrative departments having no experience in taking on regulatory functions. Monitoring the PAT scheme and ensuring the correctness of certificates to be issued is a complex and challenging task. Thus, there is an urgent need for the SDAs, in particular those falling under (a) and (b) to be given special training and capacity building to be able to fulfil this regulatory role.
The suggested recommendations for making the SDAs more effective are:

Augmentation of staff

State designated agencies have very lean organization for energy efficiency as they have had other responsibilities such as developing non conventional energy and providing electricity supply etc. Details of augmentation of staff for PAT and MTEE schemes are given later in the report.

Training

The existing staff by and large is basically technically qualified which will need to be supplemented with their training in energy efficiency and basic process of PAT sector industries in the respective state. Training also needs to be given in understanding the calculations of SEC under the gate to gate concept and on issues relating to normalization of SEC due to variations in production and other parameters.

Organisation

SDAs are functionally responsible to their state governments and any recruitment would have to be done with the concurrence of respective governments. Thus the state policies on recruitment of additional staff would impact these agencies.

References

1. Energy Conservation Act 2001
   http://powermin.nic.in/acts_notification/pdf/ecact2001.pdf
2. SDAs in India
   http://www.beeindia.in/content.php?page=schemes/sdas.php
3. Power Exchange India Limited.
   http://www.powerexindia.com/PAT/Presentations/12August2011/Trading%20Mechanism%20&%20Role%20of%20SDAs%20%20.pdf
4. National Power Training Institute: Chapter 5: Demand Side Management Energy Efficiency and Energy Conservation.
5. PEDA Target for Designated Consumers
   http://peda.gov.in/eng/ENERGY_CONSERVETION/docs/targets.pdf
6. BEE Website –Background Note
   http://www.beeindia.in/miscellaneous/documents/useful_downloads/Background%20Note.pdf.
7. Potential for Energy Conservation in various Industries in Maharashtra.
   http://www.mahaurja.com/PDF/POTEcon.pdf
8. BEE Updated Designated Consumer List
   http://www.beeindia.in/miscellaneous/documents/useful_downloads/Background%20Note.pdf

Annexes

Annexure A

Regional Workshop for Capacity Building of PAT and MTEE

In these workshops, the various issues impacting PAT scheme in terms of M&V were discussed. The meeting was attended by representatives from the various PAT sector Designated Consumers. It included representatives from BEE/ GIZ, Multilateral and Bilateral Agencies, Consulting companies and potential DENAs, leading sector Associations & Research Institutions.

Region	Place	Number of Participants	SDA
North	Chandigarh	66	PEDA and HAREDA
South	Hyderabad	46	NEDCAP
East	Kolkata	41	WBSEDCL
West	Ahmadabad	24	GEDA

- **Chandigarh**

The Keynote Address for the workshop was made by Mr. Balour Singh, Director of **PEDA** and the workshop focussed on major industry sectors like Textile, Thermal power station, Cement, Pulp & Paper units from respective sectors. The Workshop was conducted on 12th March 2013.

The Textile Sector was covered by Dr. J V Rao – Director General, NITRA and Thermal Power Sector by Mr. Lakshmi Narain- Energy Consultant (ex. NTPC) who shared their valuable experiences in the workshop and helped in addressing the issues of the designate consumers for the PAT Scheme.

- **Hyderabad**

The Project Director of **NREDAP** Mr D. Ashok Kumar was present in the Workshop and was of the opinion that practical experiences in the form of field visits were essential and that equipments for measuring Energy Efficiencies should also be displayed.

Overall NREDCAP took very active part in the Regional Workshop held in Hyderabad with large number of representatives attending. Apart for detailed training of longer duration, they showed keenness for field visits to PAT industries. The focus of training suggested is on Cement process and Power plants.

Participants from **MEDA** were also present, and during their interaction in Regional Workshop MEDA also showed keenness to have detailed training with focus on PAT and MTEE covering the process in Cement and Power plants.

- **Kolkata**

The Workshop was attended by Ashok Kumar, Energy Economist from Bureau of Energy Efficiency and for the Standards and Labelling program Mr P K Mukherjee of CLASP was present. The Director of the National Productivity Council ,Dr P Biswas was also present.

A lot of valuable inputs were received in the Workshop, and the areas of discussions were**:** Application of Schemes in Steel and Thermal Power Plants Sectors and Normalization M& V Protocol for Designated Consumers under the PAT Scheme. **WESEDCL**, the SDA for West Bengal was fairly aware of its roles and responsibilities for the market transformation programme and is familiar with the method for awarding star labels to various appliances.

Also, **BREDA** the SDA for Bihar was present in the workshop and expressed relative familiarity with the duties and responsibilities of the SDA under the ECACT 2001 & 2010. BREDA is well versed with the methods for awarding Star Labels to various appliances though there has been a partial awareness of the market transformation programme.

- **Ahmedabad**

The workshop was inaugurated by Chairman of **GEDA**, Shri Ishwarbhai Bhavsar and Member, Gujarat Electricity Regulatory Commission Shri. Pravinbhai Patel and they were determined to hear from the relevant stakeholders, the various issues associated with implementation of the PAT and MTEE Schemes.

The participants in the programme included members from the GERC, representative from GSECL, consultants like Devki Energy and key designated consumers. The participants from a wide range of professional background were present- with engineering, energy auditing and CDM validation as their primary area of responsibility.

Annexure B

Questionnaire (For State Designated Agencies)

1) **How does the organization perceive its role in Energy Conservation Act 2001 as amended in 2010 for implementation of Perform, Achieve and Trade (PAT) Scheme?**

A.

2) **Are there any gaps in the organization for proper implementation of PAT scheme considering manpower, technical skills and resources necessary?**

A.

3) **Is any action envisaged or taken from your end to address these gaps?**

A.

4) **Do you require any external assistance for training in the processes in industries in PAT sectors in your state?**

A.

5) **In addition to the requirements mentioned above, for Market Transformation for Energy Efficiency (Star labelled appliances) do you have any further requirements?**

A.

6) **Any other comments for the role of state designated agencies for PAT scheme and market transformation through star labelled products:**

A.

(Authorised Signatory)

Name: