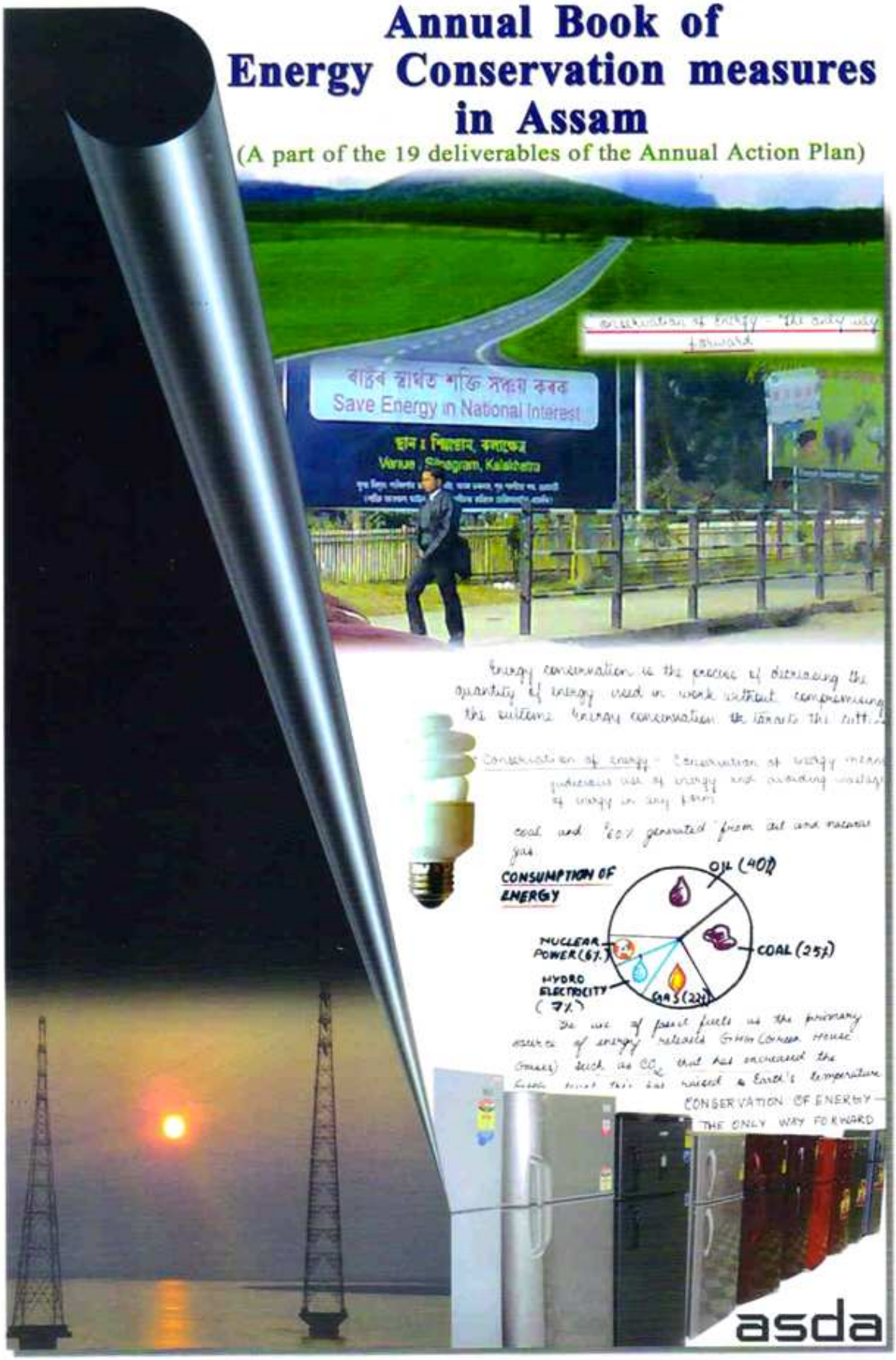
Annual Book of Energy Conservation measures in Assam

(A part of the 19 deliverables of the Annual Action Plan)



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Annual Book of Energy Conservation measures in Assam

(A part of the 19 deliverables of the Annual Action Plan)

Published by:

Chief Electrical Inspector-Cum-Adviser, Government of Assam

(State Designated Agency under Energy Conservation Act, 2001 for the State of Assam)

Assam State Designated Agency

CONTENTS

1. PREFACE:

"Energy" means any form of energy derived from fossil fuels, nuclear substances or materials, Hydro-electricity and includes electrical energy or electricity generated from renewable sources of energy or biomass connected to the grid.

- Section 2(h) of the Energy Conservation Act, 2001

• Introduction on Energy Conservation Act, 2001:

In today's economy, supply of quality energy is very much crucial for the economic prosperity of a nation, especially more so in case of a developing economy like India. Demand for electricity and fossil fuels have substantially increased over the time due to growing preference for commercial energy. While efforts are being made to improve availability of various energy sources, there is still a continuing gap between demand and supply of energy. For the purpose of fulfilling the energy requirement, increased generation of energy is a huge capital intensive option. By adopting energy efficiency measures, consumption can be reduced to a great extent that will reduce the need to create new capacity requiring mobilization of huge resources as well as result in substantial environment benefits in terms of reduced Green House Gas (GHG) emissions. To promote conservation of energy and to facilitate its efficient use in various sectors, there is need for certain statutory measures. Accordingly, appreciating the potential and importance of energy efficiency, for bridging the gap between demand and supply, reducing environmental emissions through energy saving, the Government of India enacted the EC Act to provide a legal framework that came into force with effect from 1st March 2002. A waiting period of five years from the date of enactment is provided in the Act, during which, all the institutional infrastructure including formalities of issuing notification of Rules, Regulations and other norms at the Central and State level to be completed besides continued endeavor for creation of awareness for efficient use of energy and its conservation among public.

• Bureau of Energy Efficiency (BEE):

The Govt. of India under Section 3(1) of the EC Act established the statutory body, The Bureau of Energy Efficiency (BEE) under the Ministry of Power, Govt. of India for implementation of policy programs and co-ordination of implementation of energy conservation activities. The BEE is headed by the Director General, BEE with its head quarter situated at New Delhi.

The mission of the BEE is to assist in developing policies and strategies with a thrust on self-regulation and market principles within the overall framework of the EC Act with the primary objective of reducing energy intensity aspect of the Indian economy. This will be achieved with active participation of all stakeholders in accelerated and sustained adoption of energy efficiency in all sectors.

• Role of BEE

As envisaged in the EC Act, BEE co-ordinates with all stake holders and recognize, identify and utilize the existing resources and infrastructure. The EC Act provides for both regulatory and promotional functions of the BEE -

• Regulatory functions:

The Major Regulatory Functions of BEE include:

- Develop minimum energy performance standards and labeling design for equipment and appliances.
- Develop specific Energy Conservation Building Codes.
- Activities focusing on designated consumers.
- Develop specific energy consumption norms.
- Certify Energy Managers and Energy Auditors.
- Accredit Energy Auditors.
- Define the manner and periodicity of mandatory energy audits.
- Develop reporting formats on energy consumption and action taken on the recommendations of the energy auditors

• Promotional functions:

The Major Promotional Functions of BEE include:

- Create awareness and disseminate information on energy efficiency and conservation.
- Arrange and organize training of personnel and specialists in the techniques for efficient use of energy and its conservation.
- Strengthen consultancy services in the field of energy conservation.
- Promote research and development.
- Develop testing and certification procedures and promote testing facilities.
- Formulate and facilitate implementation of pilot projects and demonstration projects.
- Promote use of energy efficient processes, equipment, devices and systems.
- Take steps to encourage preferential treatment for use of energy efficient equipment or appliances'
- Promote innovative financing of energy efficiency projects.
- Give financial assistance to institutions for promoting efficient use of energy and its conservation.
- Prepare educational curriculum on efficient use of energy and its conservation.
- Implement international co-operation programs relating to efficient use of energy and its conservation.

• Role of different Governments/Agencies:

Energy Conservation measures taken up by various organizations in Assam to achieve Energy Efficiency:

1. Numaligarh Refinery Limited, Golaghat District, Assam:

By adopting various Energy Efficiency measures, Numaligarh Refinery achieved a substantial saving of energy in the tune of 47418 Million Kcal per annum resulting in annual energy saving of Rs. 18.32 crore has been achieved.

Numaligarh Refinery won **Second prize** in the **'National Award on Energy Conservation for Industries'** under Refinary sector in **2008**.

2. **Nagaon Paper Mills, HPC, Jagiroad, Dist: Morigaon:**

The Nagaon Paper Mills is situated in Jagiroad in Morigaon District of Assam. By adopting various Energy Efficiency measures for last few years, more than 18.144MU of annual electrical savings reported to have achieved.

3. **Cachar paper Mills, HPC, Panchgeam, Dist: Hailakandi:**

The Cachar Paper Mills is situated in Panchgram in Hailakandi District of Assam. By adopting various Energy Efficiency measures, about 453,974 KWh of annual electrical savings reported to have achieved.

4. **Oil India Limited, Duliajan, Dist: Dibrugarh:**

Oil India Limited informed that various activities have been taken up through extensive programs for conservation of energy in different forms. Various short term and long term measures towards conservation of energy adopted by OIL in conservation of crude oil, recovery of condensate, conservation of natural gas, conservation of electricity, conservation of diesel (HSD) and petrol, conservation of lube oil. By implementing above measures OIL has achieved energy saving of 769.855×10^6 KWH during the year 2007-08.

5. **The PWD (Electrical), Assam:**

The PWD (Electrical), Assam informed that automatic switching devices have been fitted in streetlights in Guwahati city to reduce energy wastage. Arrangements have been made to fit energy efficient lamps in all Government offices/ buildings by PWD.

6. **NF Railways:**

The NF Railways informed that fluorescent lamps have been provided in staff quarters in place of incandescent lamps, automations done in pumps and provisions made in Level Crossing gates for solar panel.

2. INTRODUCTION:

State Designated Agencies (SDA) are the entities selected and notified from among the State Machinery as State Level nodal agencies under the BEE to coordinate, regulate and enforce the provisions of the EC Act in the respective State.

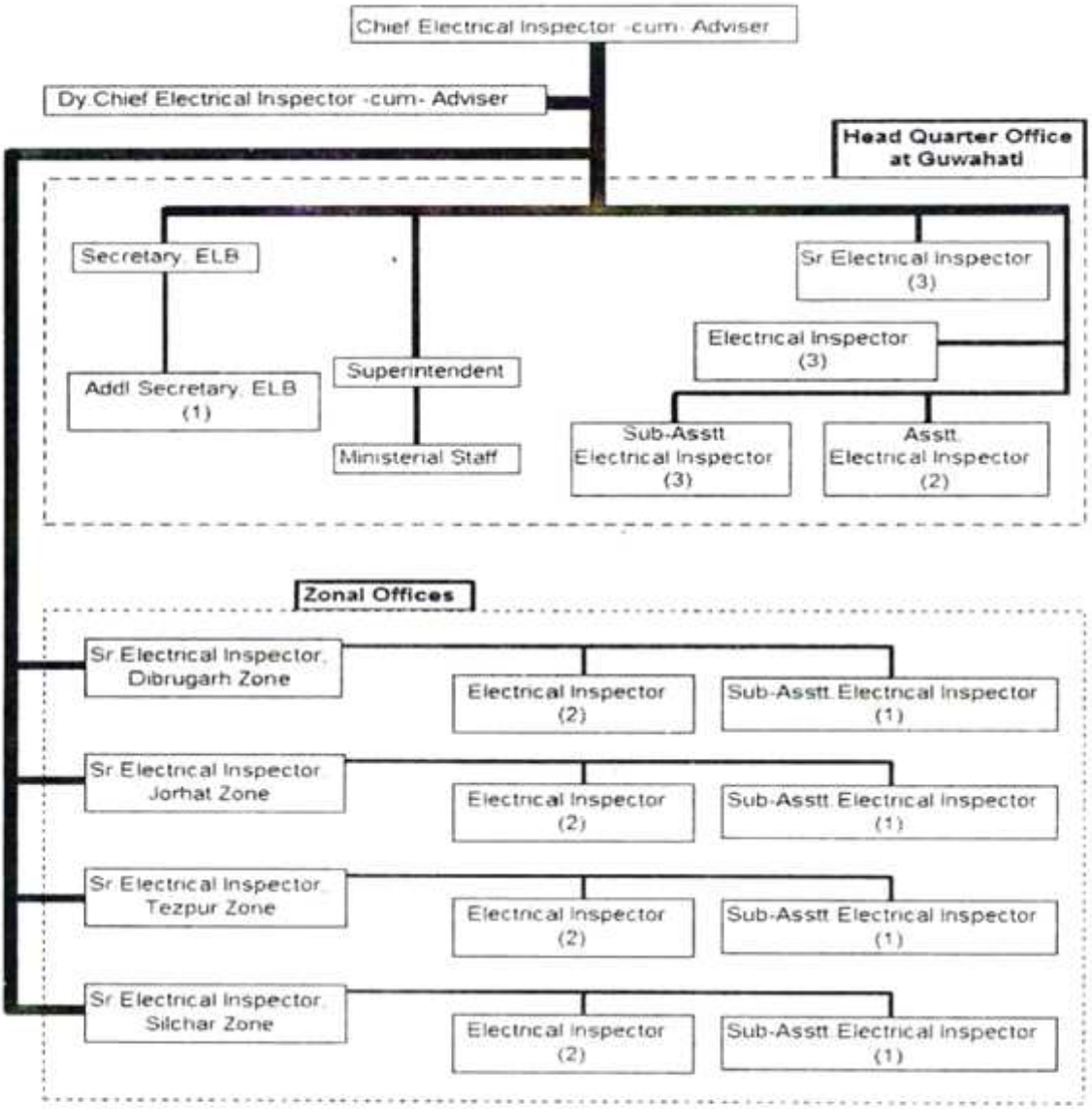
Amongst the North Eastern States of India, energy requirement of Assam is highest and more to it, the State is a power deficit state with lots of energy conservation opportunities. This necessitates a greater role on part of SDA for the State of Assam.

As required under Section 15(d) of the EC Act, the Government of Assam vide Notification No.PEL.81/2002/45, Dtd.06.09.2002 issued by the Commissioner and Secretary to

the Government of Assam, Power (Electricity) etc. Department designated the Chief Electrical Inspector -cum- Adviser, Assam as the SDA for Assam to coordinate, regulate and enforce the provisions of the EC Act in the State of Assam.

- **Organization Structure:**

Organizational chart of the
INSPECTORATE OF ELECTRICITY, ASSAM



- **About SDA (Roles and Responsibilities):**

The SDA for Assam, i.e. the Chief Electrical Inspector -cum- Adviser is the Head of the Inspectorate of Electricity, Assam, which is a Directorate Level organization under the Power (Electricity) etc. Department, Govt. of Assam. The Head Quarter Office of the Inspectorate is situated at Guwahati and it has four Zonal Offices situated at Silchar, Tezpur, Jorhat and Dibrugarh. Each zonal office is headed by a Senior Electrical Inspector. By virtue of nature of works and field activities, the Inspectorate has the advantage of direct and first hand reach to all stake holders in power scenario of the State.

The normal works and objectives of the Inspectorate are to implement and administer certain provisions of the following Acts, Rules and Regulations to ensure safety and conservation of energy:

- Certain provisions of the Electricity Act, 2003 and the Rules made there under in force from time to time.
- Certain provisions of the Assam Cinema (Regulation) Rules, 1960.
- The Assam Electrical Licensing Board Regulations, 1992.
- The Assam Lifts and Escalators Act, 2002.
- The Energy Conservation Act, 2001

• Profile and Energy Scenario of Assam:

Assam is situated in the northeast region of India with a geographical area of 78,438 Sq.Kms covered by 27 civil districts. Assam shares its boundary with other states of the country i.e. West Bengal, Arunachal, Nagaland, Manipur, Tripura, Mizoram and Meghalaya. It also shares international boundary with Bhutan and Bangladesh. Assam is having a total population 2.66 million (2001 Census) with density of population of 340 per Sq. km.

Total energy demand of Assam is about 850 MW in peak hours and 550 MW during off peak hours. The demand is met through own generation by the Assam State Electricity Board (ASEB) and from other sources like NEEPCO, NHPC, DLF etc. Total installed capacity in the State is 655 MW, out of which, 555 MW is Thermal Power Stations (Gas based) and 100 MW is Hydro Power Stations.

Total number of electricity consumers in Assam in different categories is 14,15,111 as per July 2007 records. Brahmaputra Valley Fertilisers Corporation, Nagaon Paper Mills (HPC), Cachar Paper Mills (HPC), Oil India Limited, Oil & Natural Gas Corporation, Bokajan Cement Factory (CCI), NF Railways besides three oil refineries, namely Numaligarh Refinery, Bongaigaon Refinery and Petrochemicals, Digboi Refinery and Guwahati Refinery etc. are among large consumers.

Tea Industry is considered to be a major consumer of electricity in Assam. Presently about 926 factories of Tea, Rubber and Coffee existed in the State, which consumes a considerable quantity of energy in their factories.

Among other categories are domestic, commercial, general purpose/ lighting, agriculture and industrial consumers, that include SME clusters consisting Steel Rolling Mills / Furnaces and few Plywood industries.

3. ENERGY CONSERVATION PLAN IN THE STATE:

• EU-EISEEI project:

Assam has been selected as one of the Six SDA's of the country for projects under European Union - India Sustainable Energy Efficiency Initiative (EU-EISEEI) initiated by BEE and GTZ-IGEN in partnership with the National Productivity Council (NPC). The other States covered by EU-EISEEI Project are West Bengal, Chattisgarh, Tamil Nadu, Haryana & Uttarnchal. Necessary MoU was signed with NPC by SDA, Assam enabling NPC to go ahead with the steps of capacity building of the SDA, Assam under the EU-EISEEI Project.

• Activities as per Energy Conservation Action Plan:

ACTIVITIES UNDER 19 DELIVERABLE ACTION PLAN:

PART-A

1.0✓	Establishment of internet Platform for communication with SDA
1.1✓	Design of Database/website linkage with other SDA/BEE
1.2	Status of compliance/non compliance of DCs & Notified Buildings
1.3	Status of availability of notified equipments in the state
2.0✓	Preparation of list of certified energy managers and accredited energy auditors which work or reside in the State
2.1✓	Prepare Energy Managers' & Auditors' list
2.2✓	Prepare Energy audit firms list with industry specialization
2.3✓	Prepare ESCO list
3.0✓	Preparation of list of designated consumers and their energy consumption
3.1✓	Prepare designated consumers list
3.2✓	Collect energy consumption data from designated consumers
4.0	Preparation of set of forms concerning communication of data and other information with BEE
5.0✓	Half yearly State level meeting with certified energy managers and accredited energy auditors to discuss duties and responsibilities
6.0	Annual State level conference of energy intensive industry, as well as certified energy managers and accredited energy auditors with award for all categories
6.1	Annual state level conference
6.2	Constitution of State Level EC Awards
6.3✓	State Level EC Day Celebration

7.0✓ Half yearly regional meeting for exchange of information about lessons learned on state level implementation EC Act
8.0✓ Annual meeting of all SDA's to discuss progress and next year's action plan with BEE
9.0✓ Design and printing of promotional material to be distributed to all four stakeholders: certified energy managers, accredited energy auditors, designated consumers and general public
9.1✓ Preparation of promotional materials like pamphlets, brochures, posters etc.
9.2✓ Organizing Awareness campaigns on EE products and services
9.3 Propagation of EE through school education
9.4 Provide DCs with the relevant standards developed by BEE from time to time (Maintaining a Library of Information)
9.5 Promotion of new technologies for EE improvement
9.6 List of EE technologies/Standards
10.0 Conduct mandatory refresher course for certified energy auditors and energy managers
10.1 Conduct Mandatory Refresher Course for certified EM/EA
10.2 Training of prospective EM/EA
11.0 Implementation and conduct of Life Long Learning (3L) Programme of BEE for certified energy auditors, accredited energy auditors and other interested parties -
12.0✓ Training of designated consumers for annual reporting energy data
12.1 Trainers database list (industry-wise, subject-wise)
12.2 Training of SDA personnel as trainers (through TOT)
12.3 Training of Designated consumers in the State
12.4✓ Training of Designated consumers on e-data filling/analysis of energy data
13.0✓ Collection of data concerning manufacturing as well as sales of house hold appliances and other equipment at state level falling under the Energy Conservation Act
14.0 Annual Report about state wise sales of labeled household appliances and other energy intensive equipments
15.0 Annual survey and analysis of impact of EC Act, based on reports of accredited energy auditors as well as energy managers as well as other source of information in the state
15.1✓ Impact of EC Act
15.2✓ Conduct demo projects (Govt. buildings, water pumping station, sewage pumping station, municipality, Street lighting system, traffic lighting system, etc.)
15.3✓ DSM demo projects (CFL, peak load management programs, etc.)
15.4✓ CDM projects
15.5 Dissemination of the demo project results
15.6 Development of SMEs clusters
15.7 EE in Agriculture pumping system
16.0✓ Preparation and publishing of annual year book of energy conservation measures at state level
17.0✓ Survey of buildings at state level which fall under the EC Act
17.1 Amend ECBC
17.2✓ Prepare commercial building list as designated consumers

18.0 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

18.1✓ Publication of State Level Annual Book of Energy Conservation Measures

19.0 Preparation of recommendation for streamlining state level policies concerning energy conservation

19.1 Formulation of State policy and action plan/operational plan

PART-B

20.0✓ Suggest State Government to establish State Energy Conservation Fund

21.0✓ Ensure implementation of EC Act in the State

21.1✓ Prepare list of DC industry-wise for notification (Repetitive)

21.2 Prepare list of commercial building for notification (Repetitive)

21.3✓ Ensure appointment of certified energy managers by DCs (Repetitive)

21.4✓ Ensure mandatory energy audit by DCs (Repetitive)

21.5 Establish systems and procedures for mandatory energy audit reports/action taken reports

21.6 Implement ECBC in State under the overall guidance of BEE/GOI on voluntary basis

21.7 Implement S&L Program under the overall guidance of BEE/GOI on voluntary basis

21.8✓ Prepare draft rules and regulations under EC Act (Section 57) (consistent with the rules and regulations framed by Central Government)

22.0 Co-ordination with State Government and other stakeholders

22.1 Provide list of DCs and Commercial buildings for notification

22.2 Notify by State Govt. for State Level EC day

22.3 Notify by State Govt. for S & L

22.4 Notify by State Govt. for ECBC

22.5✓ Report on impact of EC Act in State

22.6 Report on action taken on non-compliance in the state

22.7 Status of EC Fund utilization and the corresponding results achieved

* Items which have been initiated/completed are tick marked.

• Formation of ECAT:

As required under EU-EISEEI project for the purpose of enforcing the provisions of the EC Act in a meaningful and effective manner, the Assam SDA had formed the Energy Conservation Action Team (ECAT) to plan; design and draft the Energy Conservation Action Plan (ECAP) for this State vide Notification No.CEIA/EC-10/101, Dtd.12.06.2008. The list of ECAT members is as below:

Sl. No.	Name	Designation	Organization
1	Sri M.K. Choudhury	Addl. Director	Assam Energy Development Agency
2	Sri Hangsa Dhar Sarma	Manager Technical	Assam Industrial Development Corporation
3	Sri M. Gopal	Dy.Chief Engineer (PS)	NF Railways

4		The SE	Directorate of Municipal Administration
5	Smti Utpala Sarma	Dy. General Manager	Assam State Electricity Board
6	Sri S.K.Mitra	Chief Engg.Service Manager	Indian Oil Corporation Limited
7	Sri Mukut Das	Sr. Manager (Elect.)	Assam State Electricity Board
8	Sri B.K.Dash	Sr. Plant manager	Hindusthan Paper Corporation, Jagiroad
9	Smti N.H.Borbora	Asstt. Executive. Engineer, IRCA-I	Lower Assam Electricity Distribution Company Ltd
10	Sri A. Goswami,	Executive Engineer	Indian Institute of Technology, Guwahati
11	Sri R.S. Singh	Asstt. Manager (E)	Cement Corporation of India, Bokajan
12	Sri Dhiraj Kakati	Secretary	Assam Branch of Indian Tea Association
13	Sri Dipanjol Deka	Secretary	Tea Association of India
14	Sri P.C. Sarma	CEIA (Retd)	Individual
15	Sri Tapan Mahanta	Manager (Elect.)	Assam Power Generation Company Limited

• Activities carried out during 2007-2008:

Financial assistance was provided by the BEE for strengthening and capacity building of the State Designated Agencies of India for achieving the purpose and objectives of the EC Act. In case of SDA of Assam, a total amount of Rs.26.40 lakhs was received in November 2007 for the year 2007-08 for carrying out certain activities on priority basis from the list of 19 deliverables set by the BEE. A current bank account in the name of 'State Energy Works Fund' was opened at Allahabad bank as per approval of the Government vide letter No.PEL.81/02/Pt/168, Dtd.24.12.2007 to deposit the fund received from BEE for carrying out of works. Accordingly, the following activities were carried out as per the said action plan covered by 19 deliverables set by the BEE:

A. IT equipments and software procured for establishment of Internet platform. A new website in the name of SDA Assam **www.asda.gov.in** launched in March 2008.

B. Necessary Hardware & Software were procured and established Internet Platform having five (5) user points covering HQ office and one Zonal office of the Inspectorate. Besides, necessary Multimedia projection devices to cover seminar, workshop and training programs under action plan have been procured.

C. NPC, Guwahati was entrusted with the works of carrying out survey for preparation of list of certified energy managers and accredited energy auditors residing in the State, preparation of list of designated consumers in the State, collection of data concerning manufacturing as well as sales of household appliances and other equipment at the State level falling under the EC Act, annual survey and analysis of impact of EC Act, survey of buildings at State level which fall under the EC Act.

D. Under Workshops/ Training Programmes, four programmes were conducted viz. Workshop on EC awareness, Conference of EM & EA residing in the State, Regional Meeting with SDAs and BEE, conference of BEE on action plan.

E. Under Publicity/ Awareness programme, promotional materials like folders, banners, leaflets, flex banner displaying EC messages made for display and distribution among public/ energy users. News paper advertisements and promotional audio messages through FM radio channel published/ broadcasted.

F. Under Technical Assistance for preparation of consultants report on Demo projects (Govt. buildings, water pumping stations, sewage pumping stations, Municipality street lighting system etc, DSM demo projects such CFL, peak load management programme carried out through National Productivity Council, Guwahati.

Total expenditure incurred is Rs. 22.63 lakhs. Percentage utilization being 85.72%.

• Activities selected for 2008-2009:

An amount of Rs.28.00 lakhs was received by the Assam SDA from the BEE out of the total sanctioned amount of Rs.40.00 lakhs for the year 2008-09 for carrying out of certain priority activities from the list of activities under the 19 deliverables. The works were carried out:

A. Under IT Support design of database/ website linkage with other SDAs/ BEE carried out and database management software for maintaining database of EA & EMs, ESCOs, Buildings, and Designated Consumers procured. The activity on status of availability of notified equipments in the State was not carried out as the equipments have not been notified yet by the competent authority.
B. No activities carried out under Technical Assistance/ Consultancy/ survey during the year, as the same was carried out in 2007-08.
C. Under Workshop/ Training Programmes seven seminars/ workshop/ training programmes organised viz. an All India Seminar with Institution of Engineer (India), Assam State Centre, Workshop at Guwahati under EU programme, Workshop for Tea sectors at Jorhat, awareness workshops at Bongaigaon and Tezpur, training programme for designated consumers at Guwahati and a review meeting by BEE with SDAs.
D. Under Publicity/ Awareness large hoardings placed at Guwahati and other five places in the State, preparation of promotional materials like brochures, posters, banners, flex banners, leaflets, campaign through FM radio channel were taken up. National EC day celebrated on 14th December 2008 at Shilpgram with organizing an essay writing competition among 6th to 8th standard school children.
E. Activity on dissemination of demo project result was not undertaken as no demo project on Energy Efficiency taken up during the year.

An amount of Rs. 5.25 lakh out of total sanctioned amount of Rs. 7.50 lakhs was received by SDA Assam from BEE for carrying out of Investment Grade Energy Audits (IGEA) in Government buildings. Accordingly, IGEA in 15 Government buildings were carried out. PCRA, Kolkata carried out IGEA of five buildings and M/S Blue Star, Kolkata carried out IGEA of ten buildings.

An amount of Rs. 1.00 lakh was received from BEE for organizing an essay writing competition among 6th to 8th standard school students in the State. The State level essay writing competition was held on 14th December 2008 at Shilpgram, Guwahati and prizes to the winning students distributed in the evening at a function held on the occasion of the National Energy Conservation Day.

- **Funding Status for 2008-2009:**

Total fund received during the year: Rs. 34.25 lakh.
Total expenditure: Rs. 25.01 lakh.

The percentage utilization being 73.02%.

4. ACTIVITIES UNDERTAKEN BY THE STATE:

RESULTS ACHIEVED THROUGH ACTIVITITIES WITHIN 19 DELIVERABLES DURING 2007 - 2008 & 2008 - 2009

SDA Assam's web page:

- **Investment Grade Energy Audit of Government buildings in Assam:**

Investment Grade Energy Audit (IGEA) of the following fifteen Government buildings in Assam was carried out during 2008-09.

1. The Raj Bhawan, Guwahati.

2. The Assam Secretariat Complex, Dispur.
3. The Assam Administrative Staff College, Khanapara.
4. Guwahati Railway Station.
5. LGB International Airport, Guwahati.
6. Bijuli Bhawan, Paltanbazar, Guwahati.
7. NF Railway Head Quarter, Maligaon.
8. Deputy Commissioners office, Kamrup Metro District.
9. Deputy Commissioners office, Nagaon.
10. Deputy Commissioners office, Dibrugarh
11. Deputy Commissioners office, Jorhat
12. Deputy Commissioners office, Sivsagar
13. Deputy Commissioners office, Goalpara
14. Deputy Commissioners office, Sonitpur
15. Deputy Commissioners office, Silchar

The IGEAs show very encouraging picture of feasible energy savings through energy efficiency and energy conservation measures in those installations, as briefly outlined below:

Sl. No.	Building / Complex	Scope of Energy savings per year (KWh)	Investment required (Rs. Lakh)	Payback period (Years)	IGEA done by
1	Raj Bhawan, Assam	30,596	4.30	1.58	PCRA
2	Assam Secretariat Complex, Dispur, Guwahati	1,43,534	7.35	1.08	PCRA
3	Guwahati Railway Station	2,14,000	4.15	0.83	PCRA
4	LGB International Airport, Guwahati	2,15,612	7.17	0.33	PCRA
5	Administrative Staff Training College, Khanapara, Guwahati	94,315	12.38	1.03	PCRA
6	Bijuli Bhawan, Paltanbazar, Guwahati	85,536	17.85	2.46	Blue Star
7	NF Railway Head Quarter, Maligaon, Guwahati	99,467	16.34	3.25	Blue Star
8	Office of the Deputy Commissioner, Kamrup District	34,806	5.01	3.39	Blue Star
9	Office of the Deputy Commissioner, Nagaon District	10,560	15.0	3.55	Blue Star
10	Office of the Deputy Commissioner, Sonitpur District	15,036	21.25	3.45	Blue Star
11	Office of the Deputy Commissioner, Cachar District	7,156	1.2975	4.42	Blue Star
12	Office of the Deputy Commissioner, Dibrugarh District	8,560	1.2825	3.65	Blue Star
13	Office of the Deputy Commissioner, Jorhat District	18,135	1.7955	2.42	Blue Star
14	Office of the Deputy Commissioner, Sivasagar District	6,313	0.88	3.4	Blue Star
15	Office of the Deputy Commissioner, Goalpara District	3,407	0.5625	4.03	Blue Star

• Activities related to Designated Consumers, Energy Managers and Energy Auditors:

List of certified Energy Managers and Energy Auditors residing in the State:

(As per survey conducted by NPC in 2007-08)

Energy Auditors:

Name	Fathers Name	Year of Certification	Certificate No	Regd No	Present Address for communication	Present Status of Engagement	Job, Job description/ organization Name & address	Contact No /e-mail
Arvind Kumar	Kishore Prasanna	2005	0510	EA-2509	EMA- 22 Erector Hostel CPM Unit H P,C Limited Pentagram 788802 Assam	CPM Unit	H P,C Limited Pentagram 788802 Assam	arvind251972@yahoo com
Gopal Karmakar	Naravan Ch Karmakar	2005	0518	EA-2567	Assam Gas Based Plant Bokuloni Charials Dibrugarh 786191	Deputy Manager North Eastern Electric Power Corp	North Eastern Electric Power Corp, Assam Gas Based Plant Bokuloni Charials Dibrugarh 786191Assam	gopal_kama@rediffm ail com
Jasbe Singh Dadhala	Kamail singh	2005	0591	EA-3342	Upper Assam Tea Industries P O. Lahoal Dist Dibrugarh 786010-		Upper Assam Tea Industries P O Lahoal Dist.Dibrugarh 786010-	Jasbir_50@rediffmail com
Deva Kanta Rabha	Rajen Rabha	2005		EA-1344	Mechanical Engineering Department Jorhat Engineering College , Jothat Pin 785007	Lecture, Mechanical Engineering Department,	Lecture Mechanical Engineering Department Jorhat Engineering College , Jorhat Pin 785007	09854530883(M) debakr@yahoo com
Kishore Deka	Narendra Nath Deka	2005	0838	EA-2800	Care: Manju Stores AIDC RG, Baruah Road Guwahati Pin 781024 Assam	Field Engineering Department, OIL Duliyan	Oil India Limited, Duliyan, Pin 786602 Assam	0374-2808344 (O) 919864108062 (M) dekakrshore@redaffm ail com
Ravind Grayal	Brahmanan d Goyal	2006	1076	EA-4183	404Daula Apartment Nabian Nagar Near Modern School, Zoo Road, Guwahati-781024			
Suman Ghorai	Satyendra N Ghorai	2006	1255	EA-5264	A302, Swapnalaly Ats Narikel Bari Zoo Nareng Road , Guwahati-781 024			
Situsma Haiong	Harendra Nath Haiona	2006	1355	EA-2817	Bunglow No 470C old No 1361 Office'sColony Nambari Maligaon, Guwahati-781 011			shajong@yahoo com
Durgeswar Roy	Kabir Royprodhan i	2006	1394	EA-3516	P&U Department Digboi Refinery IOC(AOD) Digboi Pin 786171 Assam	Electrical Maintenance, IOCL (AOD)	Indian Oil Corporation limited Digboi Pin 786171 Assam	919435137827 (M) royd@iocl.co in
Om Prasad Chetry	Lal Bahadur Chetry	2006	1395	EA-3517	P&U Department Digboi, Refinery IOC(AOD) Digboi 786171Assam	P&U Department Digboi Refinery	Digboi, Refinery IOC(AOD) Digboi 786171Assam	chetry_op@iocl.co in
Phanindra Ch Sharma	Sobhan Sharma	2007	1874	EA-3337	49 Pub Sarania, Rajgarh Road, By Lane No 11 Guwahati-781 003			
Tapan Mahanta	Lakhmi Naraya Mahata	2007	1910	EA-4154	Gobinda kutir,chandmari, krishna nagar Guwahati-781 003	Planning, Monitoring, Evacuation of Power	ASEB, Bijulee Bhawan, Guwahati Pin 781001 Assam	0361-2556260 919864047060 (M) 919864070597 (M) tapan_maha@yahoo c o in
Khanindra Talukdar	D D Talukd ar	2007	2057	EA-5846	House-8, 5 th Bye Lane- , Gandhibasti, Guwahati-781 003	Executive Engineer	Nodal Office, APDRP ASEB, Paltan bazaar, Guwahati	
Jagadish Chandra Das	Lakshmi Ram Das	2007	2071	EA-6020	Power And Utilities Department Indian Oil Corporation (Assam oil division) Digboi-786 171	Power And Utilities Department	Indian Oil Corporation (Assam oil division) Digboi-786 171	
Rajdeep Baruah	Umesh Baruah	2006	2264	EA-2654	House No 40 Krishna Nagar, Satribari, Guwahati-781 001			919435145815 rajdeepbaruah@rediff mail.com
Sabyasachi Dhar	Soraj Kanti	2006	1244	EA-	Deputy Director Bureau	Deputy Director	Bureau of Indian	0361-2456508

	Dhar			0869	of Indian Standards,5th Bye Land, Apurba Sinha Path R.G. Baruah road, Guwahati-781003	BIS, Guwahati	Standards,5th Bye Land, Apurba Sinha Path R.G. Baruah road, Guwahati-781003	919435114523 (M) dharsabyasachi1@rediffmail.com
R Vidya Sagar	P S K Rajaratnam	2006	1789	EA-4745	Chief Engineer All India Radio & Doordarshan North East Zone, Dr. P. Kakati;s, Near Ganeshguri Flyover, G.S. Road, Guwahati 781 006	Chief Engieer	All India Radio & Doordarshan North East Zone, Dr. P. Kakati;s, Near Ganeshguri Flyover, G.S. Road, Guwahati 781 006	0361-2230326 (O) 919435197060 (M) rdidyasagar@yahoo.com
Amarendra Goswami-	Balabhadra Goswami	2006	1199	EA-0460	39, Hemgiri Road, South Sarania Guwahati-781 007	Executive Engineer In charge of internal & external AC work of IIT, Guwahati	IIT Guwahati North Guwahati Guwahati 781039,	0361-2582063 09954497741 agoswami@iitg.ernet.in
Mrinmoy Baruah	Kamakhya Baruah	2006	1554	EA-3511	221B GNB Nagar Gauhati University, Jalukbari, Guwahati-781 014			anadditya@rediffmail.com
Deba Prasad Hazarika	Hari Prasad Hazarika	2006	1582	EA-3674	Arya Nagar College Road Guwahati-781 016	Maintenance of the ancillary support for Diesel Electric locomotive, NF Railways Diesel Loco Shed New Guwahati Bamunimaidan, Guwahati Pin 781021	NF Railways Diesel Loco Shed New Guwahati Bamunimaidan, Guwahati Pin 781021 Assam	919864092040 (M) debaprasad_Hazarika@yahoo.com
Hari Krishna Bhimavarapu	Bhanuprasad Rao	2006	1663	EA-4104	Q.No2375, Secto-r2 Noonmati, Guwahati-781 020			
Shankhaneel Borah	Nani Gopal Borah	2006	1782	EA-4696	Guwahati Refinery Indian Oil Noonmati, Guwahati-781 020	Technical Service	Guwahati Refinery Indian Oil Noonmati, Guwahati-781 020	
Jerold R	Raju S.	2006	1847	EA-5158	Guwahati Refinery Indian Oil,RNo.315,Administrative, Noonmati Building, Guwahati-781 020	Process Engineer	Guwahati Refinery Indian Oil,RNo.315,Administrative, Noonmati Building, Guwahati-781 020	
Baljeet Singh	Ajmer Singh	2006	2012	EA-6172	Qtr.No,2373 Sector-2, G.R Township Noonmati, Guwahati-781 020	Guwahati Refinery	Guwahati Refinery, Noonmati Guwahati 781020	
Manas Kumar Banerjee	Subhas Chandra Banerjee	2007	2825	EA-6611	2404, Sector-2, Refinery Township Noonmati, Guwahati-781 020	Guwahati Refinery	Guwahati Refinery, Noonmati Guwahati 781020	
Sandeep Mehta	Vinod Kumar Mehta	2006	1985	5947	CPWD, Bamuni Maidan, Guwahti-871 021	Superintending Engineer	CPWD, Bamuni Maidan, Guwahti-871 021	
Jyoti Prakash Jena	Iswar Chandra Jeana	2007	2826	EA-6631	Guwahati Central Electrical Circle, Nirman Bhawan, Bamunimaidan, Guwahati-781 021	Assistant Executive Engineer (Planning)	Central Electrical Circle, Nirman Bhawan, Bamunimaidan, Guwahati-781 021	
Devajit Bhuyan	Surendra Nath Bhuyan	2004	0454	EA-2143	Flat No.201/a Tenement Apts. , Udaypath Zoo Road , Guwahati-781 024			pcra_guwahati@sify.com
Bijay Kumar Dash	Jagannath Dash	2005	1086	EA-3488	HPC Township Qtr.No.C-6/3 Jagi Road Kagajnagar-782413	HPC, Jagi Road	HPC, Jagi Road, Kagajnagar-782413	bunjayshalini@sify.co.in
Khanindra Talukdaar	Late D.D Talukdar	2007	2057	EA-5846	House no. 8 Bylene 5 Gandhi Basti Guwahati Pin 781003	Executive Engineer	Office of Nodal Officer APDRP Cell Bijulee Bhawan ASEB, PaltantBazar Guwahati Assam	0361-2662649 (O) 919435124503 (M) ktbasti@yahoo.co.in
Krishanu Dutta	Lalig Chandra Dutta	2006	1968	EA-5826	Qr.No.B-73/3 HPC Colony Jagi Road	Hindustan Paper Corporation, Jagi Road.	HPC, Jagi Road P.O.Kagajnagar-782413	

					P.O.Kagajnagar-782413			
Samirbaran Das	Anilbaran Das	2005	762	EA-2131	Dy. Manager TPM 465D, BRPL Township, Dhaligaron Bongaigaon	Dy. Manager, TPM,BRPL	Dy. Manager TPM 465D, BRPL	
Pramod A Sathyaseelan	Sathyaseelan A N	2006	1918	EA-5506	G-8, Gail Township P.O. Lakshmi Nagar			
Ranieet Prasad	Ashok Prasad	2006	1995	EA-6018	Process Engineer Technical Service Department IOC(AOD) DIGBOI-786 171	Process Engineer, IOCL	IOC(AOD) DIGBOI-786 171	
Kamaljit Medhi	Surendra Nath Medhi	2006	2562	EA-6019	Indian Oil Corpn L.td IOC(AOD) DIGBOI-786 171	DRMP Controller Room	Indian Oil Corpn L.td. IOC(AOD) DIGBOI-786 171	
Saurav Gupta	Debabrata Gupta	2007	2972	EA-8290	SPNE-HDTU HDT CONTROL ROOM - Digboi Refinery IOC(AOD) DIGBOI-786 171	Digboi Refinery	Digboi Refinery IOC(AOD) DIGBOI-786 171	
Arindam Bhattacharyva	Girindra Nath Bhattacharyya	2004	0089	EA-0355	Electrical Dptt. Oil India Limited Dist. Dibrugarh Duliajan-786602	Electrical Dptt. OIL	Electrical Dptt. Oil India Limited Dist. Dibrugarh Duliajan-786602	arindam@oil.asm.nic.in
Ashim Kumar Brharali	Badan Ch. Bharali	2006	2073	EA-0356	Electrical Deptt Oil India Limited Dist. Dibrugarh Duliajan-786602	In Charge O&M of Gas Turbine base power station, OIL	Oil India Limited Dist. Dibrugarh Duliajan-786602	919435038413 (M) ashimbharali@oilindia.in ashim_bharali@yahoo.colin
Dilip Kumar Baral	Madhusudan Baral	2006	1474	EA-2931	C/o Sh Pintu Paul, Prabasini Complex, 2nd, Floor G.C. College Road Silchar-788004			Dkbaral_29@yahoo.com
Om Prakash Misra	Bhagwan Shanker Misra-	2005	542	EA-0536	Hindustan Paper Corporation Limited Cachar Paper Mill, Panchgram Hailakandi-788 802	Sr Manager (CD), HPCL, Panchgram	Hindustan Paper Corporation Limited Cachar Paper Mill, Panchgram Hailakandi-788 802	
Ashok Kumar Roy	Hriday Narayan Roy	2005	1087	EA-3489	Cachar Paper Mill, Panchgram Hailakandi-788 802	Manager, Cachar Paper Mill	(Utility) Cachar Paper Mill, Panchgram Hailakandi-788 802	akmpm@yahoo.com
Rajeevan K.	Kannan Nambiar V	2006	1434	EA-2727	S.P.E. Electronics Electrical P MC, HPC,CPM, Panchgram Hailakandi-788 802	Cachar Paper Mill	S.P.E. Electronics Electrical P MC, HPC,CPM, Panchgram Hailakandi-788 802	
Ram Surat Singh	Ram Surat singh	2007	EA 8416	EA-8416	DEE/DBWS NFRailway Mechanical Workshop, K.C Gogoi Path Dibrugarh Pin 786001 Assam	District Electircal Engineer	DEE/DBWS NFRailway Mechanical Workshop, K.C Gogoi Path Dibrugarh Pin 786001 Assam	9194035130803 (M) sirghrsea@rediffmail.com
Debajit Das	Late Gobin Chandra Das	2007		EA-5855	National Productivity Council Rajgarh road Minakshi Bhawan,2 nd floor Guwahati-781 007	Dy. Director, NPC Guwahati	Sr. Consultant National Productivity Council Rajgarh road Minakshi Bhawan,2 nd floor Guwahati-781 007	
Satyendra Narah Sing		2007		EA-1515	Electrical Deptt., Oil India Ltd., Duliajan, Dibrugarh-786602	Oil India Ltd., Duliajan,	Electrical Deptt., Oil India Ltd., Duliajan, Dibrugarh-786602	satyendra@oilindia.in

Energy Managers:

Name	Fathers Name	Year of Certification	Certificate No.	Regd. No	Present Address for Commu-nication	Present Status of Engagement	Job, Job Description/ Organization Name & address	Contact No./e-mail
Prabir Kumar Dey	Jogesh Chandra Dey	2004	0020	EM-0042	Bongaigaon Thermal Power Station Salakati-783369 Assam	Junior Engineer	Bongaigaon Thermal Power Station Salakati-783369 Assam	pxdey@sanchamet.in
Rajendra Kumar Jha	Nilamber Jha	2004	0030	EM-0056	Bongaigaon Refinery & Petrochemical Limited P.O. Dhaligaon Dist. Bongaigaon Pin 783385	Tech. Services Deptt	BRPL P.O. Dhaligaon Dist. Bongaigaon Pin 783385 Assam	03664-253448 (O) 919435482488 (M) rkjhaji@hotmail.c

								om
Brij Mohan Sharma	Nav Ratan Sharma	2004	0196	EM-0391	Q.No.C-26/4H.P.C Morigaon Jagiroad 782413 Assam	Hindustan Paper Corporation Limited, Jagiroad Assam	N.P.M. Kagajnagar Jagiroad 782413 Assam	9435319088 bmsharma.cprn@mail.hpc.co.in
Ajit Kumar Maiti	Prahllad Chandra Maiti	2004	0212	EM-0423	TS 2 nd floor ADM Building NRL Golaghat -785699 Assama	Senior Manager	NRL Golaghat Pin 785699 Assam	ajit.k.maite@nrl.co.in
Indrajit Kumar	Shardanand Prasad	2004	0028	EM-O051	Otr.No.CT316 BRPL Township P.O. Dhaligaon Bongaigaon - 783385 Assam	BRPL	Bongaigaon Refinery & Petrochemical limited, P.O. Dhaligaon Bongaigaon Pin 783385 Assam	krinrahit@radiffmail.com
Abhijit Neog	Sachindra Nath Neog	2004	0213	EM-0425	Central Control Room Numaligarh Refinery Ltd Golaghat -785699	NRL Projects	Numaligarh Refinery Ltd Golaghat -785699	abhijit.neog@nrl.con.in
Nripen Kr. Bhattacharyya	Kandarpa Kr. Bhattacharyya	2004	0214	EM-0426	Numaligarh Refinery Ltd. P.O,NR Complex Golaghat -785699	Numaligarh Refinery Ltd	Numaligarh Refinery Ltd Golaghat -785699	nripen.k.bhattacharjee@nrl.co.in
Ritooraj Sharma				EM-0809	Bamunimaidan, Ananda Nagar, Guwahati - 781 021			
Kishore Kumar Sarma	A.N. Sarma	2004	0029	EM-0055	Qr.No.175A BRPL Township Dhaligaon - 783385 Assam	BRPL	Bongaigaon Refinery & Petrochemical limited, P.O. Dhaligaon Bongaigaon Pin 783385 Assam	kk_sarma2@rediffmail.com
Swapnabrata Lahkar	T.B.B. Lahkar	2004	0311	EM-0630	Tech. Services Deptt Indian Oil Corporation Limited Digboi Pin 786171	Tech. Services Deptt.	Indian Oil Corporation Limited Digboi Pin 786171 Assam	lahkarsb@iocl.co.in
Nur Alam	Kutubuddin Ahmed	2005	0362	EM-0310	Vill.Jogighopa P.O.Jogighopa Dist. Bongaigaon PIN.783382 Assam	Simplex Infrastructures Limited C/O Adani petonet (Dahej) Port Pvt Ltd. Survey no 604 Near CGPTCL Gate no. 2 Vill. Dahej Dist. Bharuch Gujarat 392130	Sr. Project Manager Simplex Infrastructures Limited	09898582839 09979864785 jan_jury@yahoo.co.in
Banajvoti Sarma Kaushik	Anand Chandra Sharma	2005	0459	EM-0996	CPP Control Room Numaligarh Refinery Limited Golaghat 785699	CPP Control Room	Numaligarh Refinery Limited Golaghat 785699	bs.kaushik@nrl.co.in
Kishore Kumar	Subodh Ranjan Dev	2005	0460	EM-0997	Dey Central Control Room Numaligarh Refinery Limited Golaghat 785699	Dey Central Control Room	Numaligarh Refinery Limited Golaghat 785699	kishorekdey@yahoo.co.in
Biju Sebas tian				EM-1764	Cement Corporation of India P.O. Bokajan Karbi Anglong Diphu-782493	Cement Corporation of India	Cement Corporation of India P.O. Bokajan Karbi Anglong Diphu-782493	
Rajib Kumar Srarma	Ghanakanta Sarma	2006	0897	EM-0998	Numaligah Refinery Limited Golaghat 785699Assam	Electric Maintenance Department	Electric Maintenance Department Numaligah Refinery Limited Golaghat 785699Assam	
Debabrata Nath	Kanai Nath	2006	0995	EM-I475	Arya Nagar Pankagrant Post, Numaligarh Refinery Complex Dist. Golaghat 785699	Numaligarh Refinery	Numaligarh Refinery Complex Dist. Golaghat 785699	debabrata.nath@.yahoo.co.in

List of Energy Audit Firms/ Consultants in the State:

1. National Productivity Council.
   Minakshi Bhawan, Rajgarh Road,
   Guwahati-781 007.
   Phone-0361- 22453396 / 2451896 / 2450160 (Telefax)

2. Assam Energy Development Agency
   Bigyan Bhawan, Near IDBI building,
   ABC bus stop,G.S. Road, Guwahati-781 005, Assam.
   Phone-0361- 2464618 / 2464619 / 2464617 (Telefax)

3. M/S Jas Raj Encon Systems
   S. Karnail Singh & Sons,
   A.T. Road, PO: Dibrugarh-786 001, Assam.
   Phone- 094351-30659

4. Bonti Consultancy Services,
   2nd floor, Lahkar Complex,
   Opp. Police Reserve,
   A.T. Road, Guwahati-781 001, Assam.
   Phone- 098640-92040

Workshops/ seminars organized during the year 2008-09:

• All India Seminar on 'Emerging trends in Energy Efficiency-Opportunities and Challenges':

An all India Seminar on 'Emerging Trends in Energy Efficiency-Opportunities and Challenges' was organized jointly by the Institution of Engineers (India), Assam State Centre jointly with SDA, Assam at Guwahati on 17th & 18th October 2008. Shri Pradyut Bordoloi, Hon'ble Minister of Power, Industries and Commerce, Assam was the Chief Guests while Sri Ajay Mathur, PhD, Director General of Bureau of Energy Efficiency & Shri C.K. Das, IAS, Chairman, Assam State Electricity Board were Guests of Honour of the inaugural session.

Presentations on EC Act & S/L programme, Gas Turbine inlet Air cooling, Prospects and Challenges of Direct Methanol Fuel Cells, Energy Efficiency Air Conditioning System design for buildings, Emerging trends in Energy Efficiency in HVAC systems, Energy Efficiency in Lighting system, Climate Responsive Building Design in NE India, Enhancement of profit through Comprehensive Energy Audit were delivered by noted speakers from various organizations and field. Sri D. Pawan Kumar, Group Head (EM), NPC, New Delhi delivered the keynote address.

• Two days' Training Programme on "General Awareness on Energy Conservation Act, 2001 – Module II Training Programme (Energy Audit in Buildings) held on 25th & 26th September 2008" under EU-EISEEI project.

DI Wolfgang Weissel, MD, Centric-Austria interacting with participants in the workshop

A two days 'Awareness Training Programme on Energy Audit in buildings' was held at the conference hall of Hotel Pragati Manor, G.S.Road, Guwahati on 25 th & 26 th September 2008 under EU-EISEEI project, in association with National Productivity Council. More than 30 participants from various organizations like PWD, ASEB, APGCL, AEGCL, NF Railways, IOCL, Jorhat Engineering College, APPL and Energy Auditors from various organizations attended the training programme along with SDA personnel and ECAT members. The training programme was primarily aimed for Energy Audit in Buildings.

DI Wolfgang Weissel, MD, Centric-Austria and Mr. A.K. Sinha, Regional Director, NPC, Kolkata gave presentations on Building Energy Audit, Energy Audit in Electrical System, Lighting System, Refrigeration and Air conditioning, Pumps etc.

The training programme was a part of EU-EISEEI project sponsored by the Bureau of Energy Efficiency, GOI and its EU partners, Centric and Adelphi, Germany.

• One day Meeting on Roles and Responsibilities of Energy Auditors and Energy Managers residing in the State:

A one day Meeting was held at Guwahati on 21st June 2008 for the Energy Managers and Energy Auditors residing in the State to discuss Roles and Responsibilities of Energy Auditors and Energy Managers. Presentation on Roles & Responsibilities of Energy Auditors and Energy Managers, Energy Efficiency in HVAC system, best practices on Energy conservation in Guwahati Refinery, Energy Audits carried out by Energy Auditors in the State were discussed in the meeting.

• One day workshop on 'Energy Conservation' for Tea Sector held at Jorhat on 06th December 2008:

Inaugural session Presentation by Shri P. Chattoraj, Addl. Director, PCRA

A one day workshop on Energy Conservation specifically aiming the Tea Sector was held at Jorhat on 06th December 2008 at the auditorium of the Tocklai Experimental Centre, TRA, Jorhat, in association of Petroleum Research Conservation Association (PCRA) and with active participation by ABITA, Zone 2, Jorhat. Presentation on the basic theme on Energy Efficiency and its Conservation was made Sri S. Barooa, Chief Electrical Inspector-cum-Adviser, Assam at the beginning and later presentations on matters relating to Energy Efficiency and Energy Conservation were made by Shri P. Chattoraj, Additional Director, PCRA, Sri M. Bondopadhaya, Joint Director, PCRA, Sri K.L. Bhutia, Dy. Director, PCRA, Sri S. Chakravarty, Thermax and Shri S. Hazra, L&T. Display of some energy efficient products and their technical literatures were made by L&T.

Smti L.S. Changsan, IAS, Deputy Commissioner, Jorhat the Chief Guest of the occasion. About 43 participants from different Tea Gardens in Central Assam participated in the event.

• Awareness workshop held at Tezpur and Bongaigaon on 18th and 20th February 2009:

An awareness programme held at Tezpur and Bongaigaon on 18th and 20th February 2009 at Tezpur and Bongaigaon. Total 34 participants attended the programme at Bongaigaon. Sri P.N. Deka, Chief Manager (Electrical Maintenance), BRPL addressed as

Chairman of the meeting. Several persons including Sri Mrinmoy Barua, an Energy Auditor delivered speech on energy efficiency and its conservation.

• Training programme for Designated Consumers on annual reporting of Energy Data:

A training programme for the Designated Consumers in Assam was held at Guwahati on 27th March 2009. The training programme was attended by participants from various Designated consumers in Assam, viz. Namrup Thermal Power Station, Lakwa Thermal Power Station, Brahmaputra Valley Fertilizer Corporation, Hindusthan Paper Corporation Jagiroad, Hindusthan Paper Corporation Cachar, NF Railways and NPC Guwahati. The training programme was mainly aimed on various duties and responsibilities of the Designated Consumers under the EC Act including submission of energy data to SDA and BEE. Shri A.K. Sinha, Regional Director, NPC, Kolkata and Shri M. Bandopadhya, Joint Director & Regional Coordinator, PCRA, Kolkata delivered various presentations on the said matters for the benefit of the participants. Shri S. Barooa, Chief Electrical Inspector-cum-Adviser & SDA Assam at the beginning of the programme gave a brief presentation on the basic duties/ responsibilities of Designated Consumers and provisions of the EC Act.

• Regional Meeting of SDAs held at Guwahati on 28th May 2008:

A regional Meeting of SDAs was held at Guwahati on 28th May 2008. SDAs from all NE States attended the meeting. Shri Jiwesh Nandan, IAS, National Coordinator, BEE attended the meeting along with other officials from BEE. The main purpose of the meeting was to review the activities carried out by SDAs in 2007-08 and submission of proposals for the next financial year.

• **Review Meeting by BEE on actions by SDAs held at Guwahati on 16th January 2009:**

A review meeting was held by BEE on 16th January 2009 at Guwahati to monitor various activities carried out by the SDAs of NE region. Shri Jiwesh Nandan, IAS, National Coordinator, BEE presided over the meeting. All SDAs delivered presentations on activities carried out during the year 2008-09 including utilization of fund provided by BEE to carry out activities under 19 deliverables and Investment Grade Energy Audit of Government buildings.

• Celebration of National Energy Conservation Day along with essay writing competition for school children of 6th to 8th standard.

The National Energy Conservation Day 2008 was celebrated on 14th December 2008 at a function held at Shilpagram, Guwahati. Sri B.S. Engleng, Hon'ble Parliamentary Secretary attended the function as Chief Guest. The State level Essay writing competition among standard 6th to 8th was arranged in the morning hour and prizes were awarded at the function held in the evening.

On the day of National Energy Conservation day, advertisements released through local news paper about the event. Energy Conservation messages were broadcasted through FM radio channel and TV. A large hoarding displaying Energy Conservation message was erected near the entrance road to the Assam Secretariat Complex, Dispur. Promotional materials printed by this office were distributed among the school children and public. T-shirts and sun shades carrying EC messages were distributed among students on the said day.

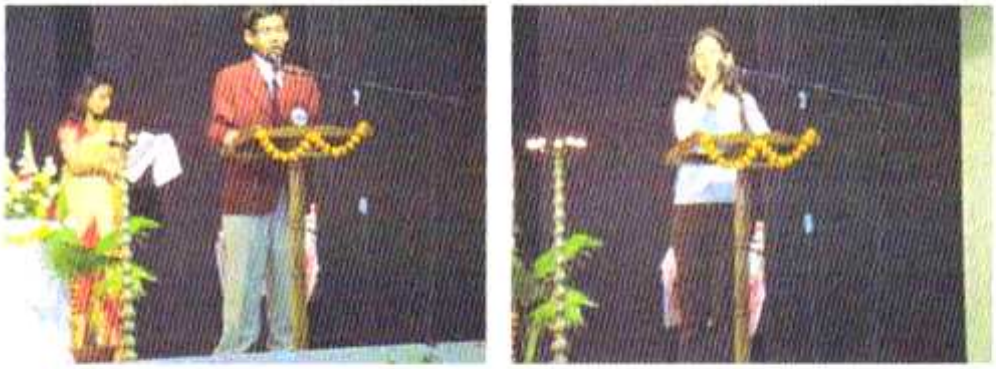
The State level Essay writing competition among standard 6th to 8th was arranged in the morning on the same day and prizes were distributed at the function held in the evening.

Photographs of celebration of National Energy Censervation Day 2008 & State Level Essay Writing Competition at Shilpagram, Guwahati on 14.12.2008

Address by the Chief Guest:

• **Essay Writing competition as part of EC Day Celebration**:

Participants at essay writing competition



Views offered by students participating in the painting competition:

Upamanyu Das and Ekta Saikia

Group photograph of participants

The names of the prize winners are:

1. Sri Upamanyu Das, Sarla Birla Gyan Jyoti, Amingaon, Guwahati.	First prize
2. Smti Ayushi Sarmah, Maria Public School, Guwahati.	Second prize
3. Smti Ekta Saikia. Maharshi Vidyamandir Public School, Sixmile, Guwahati	Third prize.
4. Sri Ankush Gogoi Modern High School. R.G. Barua Road, Guwahati.	Consolation prize.
5. Smti Shreyasmita Bhuyan, Maharshi Vidyamandir Public School, Silpukhuri, Guawahati.	-do-
6. Sri Arpit Sigchi, Don Bosco School, Panbazar, Guwahati.	-do-
7. Sri Kaushik Barman. Modern High School. R.G. Barua Road, Guwahati.	-do-
8. Smti Nimisha Kashyap. Christ Jyoti School, Nagaon.	-do-
9. Smti Bikoseeta Saikia. Christ Jyoti School, Nagaon.	-do-
10. Sri Parizat Choudhury. Don Bosco School, Silchar.	-do-
11. Smti Riya Rani Dutta. Jorhat Govt. Girls HS &MP School, Jorhat.	-do-
12. Sri Kaushik Hazarika. Maharshi Vidya Mandir Public School, Sixmile, Guwahati.	-do-
13. Sri Sabbir Zaman. Maharshi Vidya Mandir Public School. Silpukhuri, Guwahati.	-do-

• **State level Essay Writing competition:**

The 1st , 2nd & 3rd prize winning essays:

"Energy Conservation is the only way forward."

First Prize winner :

Upamanyu Das,
Class VIII,
Sarala Birla Gyan Jyoti,
Guwahati

Energy is the ability or capacity to do work. Energy lights our cities, powers our vehicles, runs our machinery, cooks our food, plays our music and shows us pictures on television.

Energy sources are of 2 types :- Renewable sources and non-renewable sources. Renewable sources, i.e., sources that can be easily replenished and these include solar energy, wind energy, geothermal energy, tidal wave energy, hydroelectric energy and biomass. The non-renewable sources, i.e., sources which are being used up and cannot be replenished in a short period of time and include fossil fuels like coal, oil and natural gas and also nuclear energy.

Over the past century, it has become widened that use of fossil fuels has cause more environmental damage that any other human activity. It has led to the increase in concentration of harmful gases in the atmosphere which has in turn led to other problems like ozone layer depletion and global warming.

The consumption of energy has also increased since the last decade. This is attributed to: - (i) The twofold increase in the consumption of energy by developing countries and (ii) The consumption of more than half of the world's energy by the developed countries. Also, the number of motor vehicles being used worldwide has more than doubled since 1970.

The energy efficiency factor is also very low. On an average, more than 90% of the energy consumed is wasted in the process of conservation from raw materials to the final energy service. This has led to the fear of encountering an energy crisis in the future. The problem is not that we use energy, but how we produce and consume energy. What we really need are energy sources that will not exhaust and can be used without polluting the environment.

The interaction between energy sources and the population has to be maintained at a balance in order to ensure the continuity of the human race. This can only be achieved through efficient energy conservation and management.

Energy conservation is the process of decreasing the quantity of energy used in work without compromising the outcome. Energy conservation targets the cutting down of energy wastage and facilitates the replacement of non-renewable sources with renewable sources.

Energy conservation is often the most economical solution to energy saving and a more environmentally benign alternative to increased energy production.

The energy consumption of India is very low, but compared to its gross domestic production, the relative consumption is very high. The cost of commercial energy production is also very high, compared to that of other countries. The industrial sector consumes about 50% of the total energy produced. The conservation of this commercial energy, particularly electric energy is very important. It can be achieved from the Supply Side as well as the Demand Side.

From the supply side, which are the production companies like ASEB, electrical energy can be conserved by preventing maximum wastage when electricity is produced and also when it is distributed through high voltage lines. From the demand side, energy can be conserved through efficient utilization of this energy and the use of 'Energy Star' rated products. But conservation alone is not enough. There has to be proper management of energy.

Energy management is a collective term for all the processes used to minimize and control the quantity and cost of energy used to provide a service.

Energy management should not be limited only to the power sector but should include the whole energy spectrum. This includes cooking, lighting, manufacturing, office work, transportation and agriculture. This inclusion of the entire energy spectrum leads to energy efficiency and development, not only in the energy sector, but across all other areas that contribute to national development. The use of national resources to achieve energy efficiency is the quickest route towards sustainable development.

A proper energy management policy should include:-

* Setting of a proper energy policy.
* User's involvement and awareness.
* Minimization of energy wastage.
* Optimization of energy efficiency through appropriate technology.
* The use of renewable sources of energy.

The above guidelines can be achieved by an individual, an organization or a country, by tailoring it according to their needs.

Energy conservation has become a national priority for a long time, but concrete steps have not been taken and the few which have been taken lack perspective and determination. Energy conservation and preservation has now become the need of the hour, and people on their part should try their best to conserve and preserve energy for ourselves and the generations to come.

*****

"Energy Conservation is the only way forward."

Second Prize winner:

Ayushi Sarmah,
Class – VI,
Maria's Public School,
Guwahati

Energy - Energy means capacity of doing work. Units of Energy are Joule and Kilowatt hour (KWh). Section 2 (h) of Energy Conservation Act' 2001 defines Energy as any form of energy derived from fossil fuel, nuclear substances or materials, hydro-electricity and includes electrical energy and electricity generated from renewable sources of energy or biomass connected to the grid. Apart from human life, perhaps the most important thing in this universe is the energy.

Conservation of energy:-

Conservation of energy means judicious use of energy and avoiding wastage of energy in any form.

Harmful effects of non-conservation –

(i) The main effect of wastage of energy is that it is contributing to severe shortage of energy sources, which is likely to lead to a crippling power crisis. About 64% of world's energy is produced by burning of fossil fuel, mainly coal assuring of 27% on Global Carbon Emission. (ii) Secondly, the wastage of energy is indirectly increasing necessity to produce more power, which is increasing Green House Gases like CO_2 in the atmosphere and increasing global warming. It is a serious environmental threat on the Earth. (iii) It is also adding the load on the Global Economy at present, it is considered as a factor of the Global Economy Crisis.

Energy Crisis :-

About 20% of the world's required energy comes from coal, whereas about 60% comes from oil and natural gas. India is developing at a fast rate. It is estimated that at this rate of growth India will require 250% more energy in 2020 than the present requirement. So, it is obvious that there will be dearth of energy in next 10 years. It is an alarming situation

Steps for conservation of energy taken by India:-

The strategy developments to make power available by 2012 include Conservation of Energy to great extent. Nearly 25,000 MW of capacity creation for energy efficiency is accepted.

The signatory of Kyoto Protocol, the Govt. of India introduced an Act, named Energy Conservation Act, 2001 (52 of 2001), and also set up a statutory body called Bureau of Energy Efficiency.

The Govt. of Madhya Pradesh assistance of $ 1.7 million from Asian Development Bank.

Under Indian Industry Programme for Energy Conservation (IIPEC) the cement and pulp & paper sector resulted in saving Rs. 175 Crore and Rs. 51 Crore respectively in 2005-06. BEE has taken several measures for conservation of energy. It has funded State Designated Agency.

Short term measures:-

BEE had to train core group, energy efficiency and energy audit had started in Govt. buildings.

Long term measures:-

Best policies are reported standard and labeling programme (energy star-marking), DSM, ECBC, etc.

Tips for common people :-

A) Household :

1) All should use CFL bulbs
2) All should switch off light and fans when not used.
3) All should plant trees.
4) All should use LPG Gas.
5) All should use less water for bath etc.
6) All should use energy star-marking appliances.

B) Vehicles :-

1) All should not use personal vehicles
2) All should use public vehicles.
3) Brakes and clutch should be minimized.

CONCLUSION :

Energy Conservation is the only quickest, cheapest and most practical solution to this problem of energy crisis. It is indeed true that energy conservation is the only way of life. On 14th December (World Energy Day) all should pledge to use less energy.

KEY WORD :

Kyoto Protocol, BEE, Environment, Global warming, Energy, Conservation.

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CONSERVATION OF ENERGY- THE ONLY WAY FORWARD

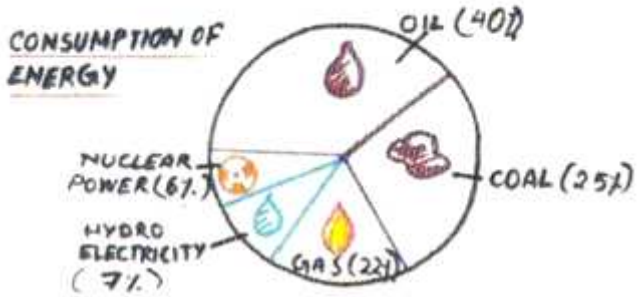
Third Prize winner:

Ekta Saikia,
Class – VII,
Maharshi Vidyamandir Public School,
Guwahati

Energy is defined as the ability to do work. It means any form of energy derived from electrical energy, water energy, fossil fuel or biomass connected to the grid.

- Section 2 (h) of Energy Conservation Act, 2001.

About 20% of worlds energy is generated from coal and 60% generated from oil and natural gas.



The use of fossil fuels as the primary source of energy releases GHG (Green House Gases) such as CO2 that has increased the GHG level. This has raised Earth's temperature causing Green House affect which results in Global Warming.

While efforts are being made to have other sources of energy, there is a big gap between demand and supply of energy. Efficient and economic utilization of energy will certainly help us to fill this gap.

"Energy can neither be created nor destroyed." However, it can be transformed from one form to the other.

This phrase gains more importance in light of the fact that fossil fuels, that we most conveniently use are limited. It is estimated that we will finish up all coal and petroleum in the next 75 years. So, instead of using these non-renewable sources, we must use renewable sources of energy such as solar energy, wind, water etc.

Judicious and economic use of energy by stopping the use of non-renewable sources and switching to renewable sources is called 'Energy Conservation'. It is the quickest, cheapest and practical method of saving energy. It is found that there is a major scope of saving energy in electricity distribution and consumer's installation. We must conserve energy as world's consumption and demand of energy is increasing rapidly. India's demand for commercial energy is estimated to increase 250% than today's need.

While using energy, a lot of energy is wasted. It is estimated that there exists a potential of saving 30% energy of our daily use. In our State, daily consumption of electricity in peak hours is 800 MW. So, the amount of energy saved will be 200 MW. This is a considerable amount.

When we conserve energy, we conserve precious fuels such as oil, gas, coal that is used for generating electricity by generating companies. Once expensive and luxurious products which help in energy conservation are now inexpensive and easily available. Such a product is Compact Fluorescent Lamp. It uses less than 70 to 80 percent energy used by incandescent lamps and is easily affordable. Use of such products will reduce consumption of energy.

People should travel either in public buses provided by the Government or travel with their families. Students should use school buses. This helps to reduce the use of petrol and diesel and is also less air polluting.

In general people, the use of energy is for lighting houses and running various household products. They should build their houses in such a way that a proper use of sunlight is done. This will help in conserving electricity and will also save money.

Energy Conservation Act, 2001: The Energy Conservation Act, 2001 was enacted by the Government to create awareness among the people regarding energy conservation and it come into power in 1.3.2001.

Energy is supposed to become unconventional in the 21st Century. Any type of energy should be economically used, be it renewable or non-renewable. Energy should not be wasted or ever used.

Thus, we conclude that it is high time for us to start conserving energy as it is the only way ahead of us which will help us to achieve a prosperous life. So, we all must conserve energy for the benefit of self and nation.

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• **State level painting competition:**

State level painting competitions were organized by Powergrid in Assam with active participation of SDA, Assam in organizing the same, as a part of National Painting Competition for school children by BEE for creating awareness of energy efficiency.

It is very encouraging to see that there was phenomenal rise in the number participants in the competition each year in Assam, e.g. 4000 students participated in the first year (2005) and this number shoot up to 49,198 in 2008.

• **National Level Painting Competition on Energy Conservation, 2008:**

Numbers of students participated in the National Painting Competition for school children by BEE for creating awareness of energy efficiency and many participants hailing from Assam bagged prizes.

Prize winning paintings by students from Assam:

Prachurya Baruah won *Second Prize of Rs.50,000/-*

Parigyan Tamuli *Won Second Prize of Rs.50,000/-*

Amarjeet Sarma won *Third Prize of Rs.25,000/-*

• **Energy Audit in Industrial sector:**

Energy Audits were carried out in some installations in 2007-08 by following Energy Auditors.

1. JasRaj Encon System, Dibrugarh:

i) Hindusthan Coca Cola Beverage Pvt. Ltd., Jorhat (419 KVA)
ii) Amchong Tea Estate, Guwahati (247 KW)

2. Mrinmoy Baruah, Guwahati:

i) Sanjeevani Hospital, Maligaon, Guwahati (181 KW)
ii) Emami Limited, Amingaon, Guwahati (550 KW)
iii) Assent Chemical Industries, Jagiroad (150 KW).

3. PCRA:

i) Hatigarh Tea Estate, Udalguri, Dist. Darrang, Assam. (962 KVA)
ii) Kellydine Tea Estate, Missa, Dist: Nagaon, Assam. (1019 KVA)
iii) Hotel Brahmaputra Ashok, Guwahati. (513 KVA)

• Standards and Labeling:

As presently there are no manufacturers of refrigerators, air conditioners, fluorescent lamps in the State, only the distribution transformer manufacturers in the State have been informed about the BEE's S & L programme and have been advised to take steps accordingly.

• NPC Guwahati was awarded the contract for providing consultancy service on demo projects on the following as per the Action Plan:

• **<u>Technical assistance, demo projects on:</u>**

Govt. buildings/establishments.
Water pumping & Sewage pumping stations.
Municipality street lighting & traffic lighting system.

• **<u>CDM projects on:</u>**

Coal, Oil, Gas, Hydropower, Renewable Energy, Transport, Industry, Agriculture and Aforestation & land restoration.

5. PROFILE OF ENERGY INTENSIVE BUILDINGS:

- **Profile of the Energy Intensive Buildings:**

- **List of buildings having more than 500KW load in Assam**

(As per survey conducted by NPC)

Name of the Building / Establishment	**Rajib Gandhi Sports Complex**
Address	C/ O Chief Executive Officer, Guwahati Municipal Development Authority, Guwahati, Assam
Connected load	1000KW
Average Energy Consumption	10789 KWH

Name of the Building / Establishment	**Indian Institute of Technology, Guwahati**
Address	C/ O Director, Indian Institute of Technology, North Guwahati, Assam
Connected load	4000KW
Average Energy Consumption	1031891 KWH

Name of the Building / Establishment	**Assam Engineering College**
Address	C/ O Principal, Assam Engineering College, Jalukbari, Guwahati, Assam
Connected load	518KW
Average Energy Consumption	78647.28 KWH

Name of the Building / Establishment	**Doordarsan Kendra, Guwahati**
Address	C/ O Superintending Engineer, Doordarsan Kendra Radha Gobinda Baruah Road, Guwahati, Assam
Connected load	1421KW
Average Energy Consumption	79673. 67 KWH

Name of the Building / Establishment	**Lohia Construction**
Address	C/ O Head, Sohum Sopee Guwahati Shillong Road Bhangagarh, Guwahati, Assam
Connected load	524 KW
Average Energy Consumption	112878 KWH

Name of the Building / Establishment	**India Trade Promotion**
Address	C/ O Deputy General Manager (Engineering) Pragati Maidan, National Highway, Assam
Connected load	879 KW
Average Energy Consumption	112428 KWH

Name of the Building / Establishment	**Prakesh Sanganeria & Tulsi Devi**
Address	Guwahati Shillong Road Bhangagarh, Guwahati, Assam
Connected load	835 KW
Average Energy Consumption	80285.83 KWH

Name of the Building / Establishment	**Dona Builder**
Address	Guwahati Shillong Road Bhangagarh, Guwahati, Assam
Connected load	725 KW
Average Energy Consumption	72430 KWH

Name of the Building / Establishment	**Tribeni Construction**
Address	Near Asian Place Guwahati Shillong Road Bhangagarh, Guwahati, Assam
Connected load	719 KW
Average Energy Consumption	35396.25 KWH

Name of the Building / Establishment	**Telephone Exchange**
Address	Sub Divisional Engineer Outdoor -II Panbazar, Near Cotton College Guwahati, Assam
Connected load	1031 KVA
Average Energy Consumption	270649.50 KWH

Name of the Building / Establishment	**Hotel Dynesty**
Address	Lakhtokia Road, Fancy Bazar, Guwahati, Assam
Connected load	959 KVA
Average Energy Consumption	95555 KWH

Name of the Building / Establishment	**Guwahati Neurological Research Centre**
Address	Dispur, Guwahati, Assam
Connected load	861 KVA
Average Energy Consumption	152850 KWH

Name of the Building / Establishment	**State Bank of India, Local Head Office**
Address	Dispur, Guwahati, Assam
Connected load	1882 KVA
Average Energy Consumption	124713.30 KWH

Name of the Building / Establishment	**NABARD, Assam Regional Office**
Address	Chief General Manger NABARD, Assam Regional Office Guwahati Shillong Road, Dispur, Assam
Connected load	610 KW
Average Energy Consumption	11638.50 KWH

Name of the Building / Establishment	**National Games Main Stadium, Sarusajai**
Address	Secretary National Games Main Stadium, Sarusajai, Dispur, Assam
Connected load	2000 KW
Average Energy Consumption	25136.13 KWH

Name of the Building / Establishment	**Medical College Complex, Operation & Casualty**
Address	Superintendent Guwahati Medical College Hospital, Bhangagarh, Guwahati, Assam
Connected load	941KVA
Average Energy Consumption	59713.33 KWH

- **List of Designated Consumers in Assam with annual energy consumption:**

1. Namrup Thermal Power Station, Namrup	1,80,162.6 MTOE
2. Lakwa Thermal Power Station, Lakwa,	1,87,869.69 MTOE
3. Kathalguri Thermal Power Station,	82,658.4 MTOE
4. Brahmaputra Valley Fertilizers Corporation Ltd, Namrup,	4,36,074 MTOE
5. Hindusthan Paper Corporation Ltd, Jagiroad, Nagaon,	44,885 MTOE
6. Hindusthan Paper Corporation Ltd, Panchgram.	76,200.5 MTOE

- **Profile of the Major Energy intensive Industries, SMEs Sector, etc.:**

The Ministry of Power, Govt. of India through its gazette notification dated 12th March, 2007 had identified the following sectors with threshold limit of Energy consumption in Metric Tonne of Oil Equivalent (MTOE) per year mentioned against them to be the designated consumers.

1.	Thermal Power Stations	:	30,000 MTOE
2.	Fertilizer	:	30,000 MTOE
3.	Cement	:	30,000 MTOE
4.	Iron & Steel	:	30,000 MTOE
5.	Chlor-Alkali	:	12,000 MTOE
6.	Aluminium	:	7,500 MTOE
7.	Railways	:	30,000 MTOE
8.	Textile	:	3,000 MTOE
9.	Pulp & Paper	:	30,000 MTOE

• Annual Energy Savings in buildings & industrial sectors reported:

• Approximate Energy savings calculated for the year 2007-08, based on inputs received from various organizations in Assam.

Calculation showing quantum of energy savings in different sectors as per available records.

State: ASSAM

1. NF Railways:

- 14,921 fluorescent lamps changed, @ 20W saving : 2387 KWh/ day
- 39 numbers pump automation : 80 KWh/ day
- *Solar panels* at 73 Level Crossings, @ 60W/ LC : *105 KWh/ day* (Not taken in computation. Ref. footnote *)
- Total energy saving per year : 9,00,455 KWh/year.

2. Govt. Buildings (data provided by PWD):

- 35 KW trimmed at Raj Bhawan : 350 KWh/ day
- 45 KW trimmed at Capital Complex : 450 KWh/ day
- 528 units/ day trimmed in street lights : 528 KWh/ day
- Total energy saving : 4,84,720 KWh/year

3. HPC, Nagaon Paper Mills:

- Electrical savings achieved per annum by implementing EC measures as reported : 18.144 Million KWh =1,81,44,000 KWh/Yr.

4. HPC, Cachar paper Mill:

- Electrical savings achieved per annum by implementing EC measures, as reported : 4,53,974 KWh/Yr.

5. Oil India Limited, Duliajan:

-Electrical savings achieved per annum by Implementing EC measures as reported : 55,40,000 KWh/yr.
(-Savings in HSD, Natural gas, Crude oil, Condensate recovery stated to be 65247.6 KL, eqv. to 637.47×10^6 KWh

6. Numaligarh Refinery Limited, Golaghat District, Assam, by adopting various Energy Efficiency measures, achieved a saving of energy : 47418 MKcal /Yr.
Resulting in annual monetary saving of Rs. 18.32 Crores.

• Total Energy (Electricity) savings per year from above calculated to be: 2,55,23,149 KWh/yr

In Assam, more than 50% of electricity consumers are in the category of Domestic and Commercial sector. Taking in to account even a conservative approximation basing upon increased use/sale of energy efficient lamps and HVAC equipments in the State, the Energy saving in these sectors works up as below:

- Taking 30% of peak demand of 800 MW as worked upon continuous load under domestic & commercial sectors = 240 MW
- 20% saving due to use of CFLs & T-5s and other EE appliances: =48 MW.
- Energy saving per day @ 8 Hrs use = 3,84,000 KWh/day

- **Total Energy savings per year for domestic & commercial sector calculated to be: 14,01,60,000 Units/ year.**

Though actual figure of Domestic & Commercial sectors can be obtained only through wide scale in depth field survey, putting together the above conservative approximation even yield a figure of total savings achieved

Total Energy savings per year calculated to be = 16,56,83,149 Units

= Exceeding Rs.80 Crores/Yr

- *The solar & other non-conventional / renewable resources of energy sectors are not taken in quantification of avoided capacity addition / savings under the current deliverables, as those are already covered elsewhere under agenda of other Ministry / Department.*

6. OTHER INITIATIVES:

• Notifications issued by State Government for Energy Efficiency:

The Govt. of Assam issued Notification on 20th July, 2007 for Mandatory use of energy efficient lamps and appliances in all Govt. buildings/ institutions/Boards etc. and promotion of Energy Efficient building designs based on ECBC:

GOVERNMENT OF ASSAM
POWER(ELECT.)MINES & MINERALS DEPARTMENT

ORDERS BY THE GOVERNOR OF ASSAM

N O T I F I C A T I O N

Dated Dispur, the 20th July, 2007.

NO.PEL.81/2002/Pt/158 : In exercise of the powers conferred by the Section 18 of the Energy Conservation Act, 2001 (52 of 2001), the Governor of Assam hereby issues the following directions for efficient use of energy and its conservation in the State of Assam, namely :-

1. Mandatory use of Energy Efficient lamps and applinnces in Government buildings/Institutions/Boards/Corporations.

   1. Use of incandescent lamps in all new government buildings/ institutions/Boards/Corporations/Autonomous bodies is banned with immediate effect. In existing buildings, defective incandescent lamps should be replaced with energy effcient lamps, such as compact fluorescent, slim tube lamps, LED lamps etc.

   2. All other electrical equipments such as Air Conditioners, Refrigerators, water pumps etc. shall conform to respective BIS standard and also conform to the Energy Efficiency standards set by the Bureau of Energy Efficiency with respective energy efficiency labels on these.

   3. Power utilities will affect necessary modifications in the load demand notices within two months time from the date of issue of this order to promote use of energy efficient lamps instead of conventionnl light bulbs while releasing/sanctioning new connections/loads.

2. Promotion of Energy Efficient Buildings designs based on the ECBC.

   1. All new buildings constructed in the Government sector will incorporate energy efficient building design concepts as per the Energy Conservation Building Codes (ECBC).

   2. The PWD and Urban Development department shall ensure incorporation of energy efficient building design concepts in all buildings to be constructed in future in the Government/ Government Aided sector and comply with the provisions of the ECBC.

   3. The PWD and Urban Development department will designate a nodal officer for co-ordination and monitoring of these measures who will report the progress to the Chief Electrical Inspector-Cum-Adviser, Government of Assam, the designated agency under the Energy Conservation Act, 2001.

   Provided that all new buildings or building complexes having connected load of 500KW or greater or a contract demand of 600KVA or greater having conditioned area of 1000sq. mt. or more should be constructed following the provisions of the Energy Conservation Building Codes (ECBC) published by the Government of India to ensure energy efficiency.

   This order comes into force with immediate effect.

Sd/- J.P.MEENA
Commissioner & Secretary to the Govt. of Assam,Power(Elect.)etc.Deptt. Dispur,Guwahati-781006.

Memo No.PEL.81/2002/Pt/158-A. Dated Dispur, the 24th July,2007.

Copy to :-

1. The Chief Secretary to the Govt.of Assam.
2. All Commissioner & Secretaries.
3. All Heads of Departments.
4. All Deputy Commissioners.
5. The Publisher, Assam Gazette.
6. The Director General, BEE, New Delhi.

By order etc.,

Under Secretary to the Govt.of Assam, Power (Elect.) Department

• State Energy Conservation Fund:

As required under Section 16(1) of the EC Act, actions have already been initiated to constitute the Fund called "State Energy Conservation Fund" and framing of Rules under Section 16(4) of EC Act for administering the said fund for the purposes of promotion of efficient use of energy and its conservation within the State. The matter is under process and expected to be finalized soon.

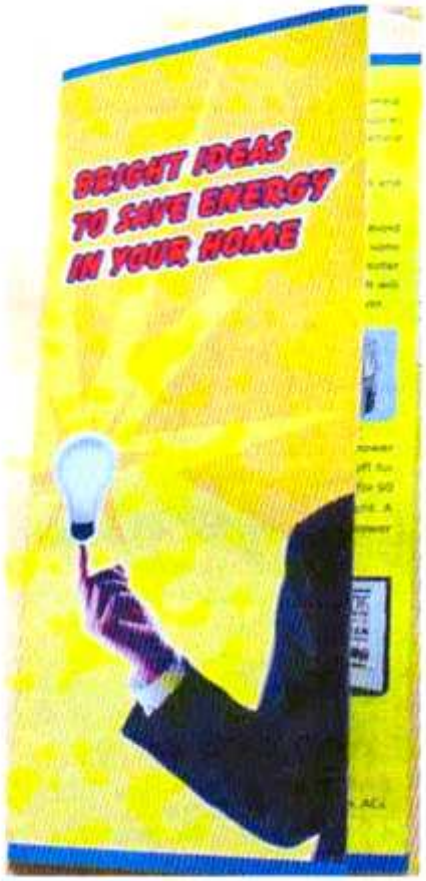
All grants and loans made by the State Government or Central Government or any other organization or individual shall be credited to the fund for the purpose of the Act. The fund shall be applied for meeting the expenses incurred for implementing the provisions of the EC Act.

• PUBLICITY/ AWARENESS PROGRAMS:

Publicity materials like brochures, folders, leaflets, banners, stickers on energy efficiency and conservation made based on promotional materials receive from BEE for distribution among energy users/public for spreading energy conservation messages. Audio jingles on EC message broadcasted through FM radio channels. Large hoardings displaying energy conservation messages placed in prominent places of Guwahati city and other towns in Assam. Tips on energy conservation published in local newspapers for the benefit of public. Banners on BEE Star label placed in some offices of the DISCOMS for creating public awareness.

Some of the Promotional Materials released by SDA, Assam:

Promotional Folder

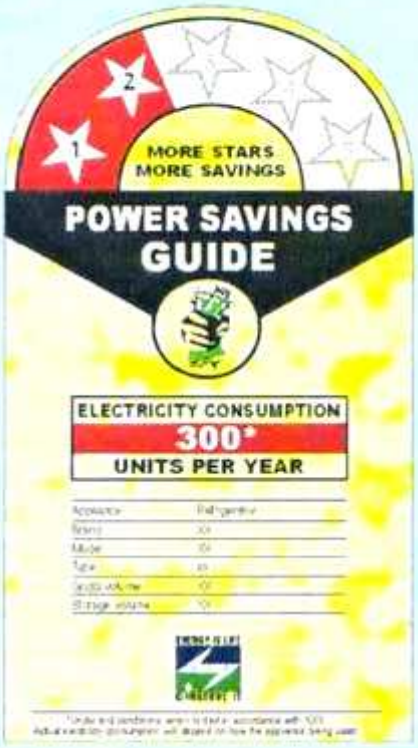


Promotional Folder

Promotional Stickers

বৈদ্যুতিক সামগ্রী ক্রয় কৰোতে তৰাচিহ্নিত বিইই (BEE)ৰ লেবেল চাই লৰ

অধিক তৰা, অধিক সঞ্চয়



শক্তি সঞ্চয় সূচক লেবেলৰ বিশ্লেষণ ঃ

- ৰঙা আশত থকা তৰাচিহ্নই ৰেফ্রিজাৰেটৰ বা এ চিটোৰ 'তুলনামূলক শক্তি সঞ্চয়ৰ মান বুজায়।
- সকলো এ চিৰ কমেও এটা তৰাচিহ্নিত শক্তি সঞ্চয়সূচক থাকিব লাগিব। 'পাঁচ তাৰকাযুক্ত' এ চিটোৰ কৰ্মক্ষমতা বা দক্ষতা আটাইতকৈ বেছি আৰু ই উপভোক্তাৰ বাবে আটাইতকৈ বেছি বিদ্যুৎ শক্তি সংৰক্ষণ কৰিব।
- ডাঙৰ কোঠাৰ বাবে অধিক শীতল / ঠাণ্ডা কৰিব পৰা এ চিৰ প্ৰয়োজন।
- এই লেবেলত থকা তথ্যসমূহ উৎপাদনত ব্যৱহাৰ হোৱা প্ৰযুক্তি বিদ্যাৰ ওপৰত নিৰ্ভৰশী।
- যদি এটা এক তৰাচিহ্নিত এ চিৰ বাৰ্ষিক বিদ্যুৎ ব্যয়ৰ বিল ৮,৫০০ টকা হয়, তেন্তে ক্ষেত্ৰত পাঁচ তৰাচিহ্নিত এটা এচিৰ ব্যৱহাৰে আপোনাৰ ব্যয়ৰ পৰা বছৰি ২,১০০ টকা পৰ্যন্ত বাহি কৰিব পাৰে।
- পাঁচটা তৰাচিহ্নিত এ চি আপোনাৰ আৰু আপোনাৰ পাৰ্শ্বিকতাৰ বাবে অনুকূল।
- এক কিলোৱাট বিদ্যুৎ আৰু এক কিলোৱাটৰ এ চিয়ে কৰিব পৰা শীতলীকৰণ/কিলোৱাট অনুপাতক 'শক্তি সঞ্চয়ৰ মান' বুলি কোৱা হয়।
- প্ৰস্তুতকাৰকৰ নাম আৰু মডেলৰ বিতং বিবৰণ
- অধিক তৰাচিহ্ন, অধিক শক্তি মিতব্যয়ী।

বিদ্যুৎ শক্তিৰ সংৰক্ষণ কৰক আপোনাৰ সঞ্চয় সুৰক্ষিত কৰক

Published by the Chief Electrical Inspector-cum-Adviser, Govt. of Assam
(State Designated Agency under Energy Conservation Act, 2001)
www.bee-india.nic.in www.asda.gov.in

Promotional Leaflet

Promotional Banner

অধিক শক্তি সংৰক্ষণৰ বাবে বি ই ই (BEE) তাৰকাযুক্ত লেবেল থকা ৰেফ্ৰিজাৰেটৰ ব্যৱহাৰ কৰক

ৰেফ্ৰিজাৰেটৰৰ বিইই (BEE) লেবেল :

আপোনাৰ ৰেফ্ৰিজাৰেটৰটো আগোনাৰ ঘৰৰ আটাইতকৈ ব্যয়বহুল বৈদ্যুতিক সামগ্ৰী। কিন্তু সিগহত কিছু বছৰৰ ভিতৰত ৰেফ্ৰিজাৰেটৰবোৰৰ কাৰ্য্য দক্ষতা যথেষ্ট বৃদ্ধি পাইছে। বৰ্তমান বজাৰত কিমিবীয়ল গোৱা অধিক কম ক্ষমতা বা কাৰ্যদক্ষতা সম্পন্ন ৰেফ্ৰিজাৰেটৰবোৰৰ বিদ্যুৎ মিতব্যয়িতা নিমক দিনে বাঢ়ি আছে। সাধাৰণতে এটা ৰেফ্ৰিজাৰেটৰ ১৫ ৰ পৰা ২০ বছৰলৈকে ব্যৱহাৰৰ উপযুক্ত হৈ থাকে। এই সময়চোৱাৰ ভিতৰত ৰেফ্ৰিজাৰেটৰত হোৱা বিদ্যুৎ শক্তিৰ ব্যয়ৰ পৰিমাণ ৰেফ্ৰিজাৰেটৰৰ দামতকৈ বহু ডাঙৰ বেছি হয়। সেয়েহে কিছু বেছি দাম দি হ'লেও বিদ্যুৎ মিতব্যয়ী ৰেফ্ৰিজাৰেটৰ ক্ৰয় কৰাই শ্ৰেয়।

› নতুন ৰেফ্ৰিজাৰেটৰ কিনোতে বজাৰত গোৱা আটাইতকৈ বেছি শক্তি মিতব্যয়ী ৰেফ্ৰিজাৰেটৰ কিনা অধিক লাভজনক। উন্নতমানৰ বিদ্যুৎ মিতব্যয়ী সামগ্ৰীবোৰৰ তালিকা বুবো এণ্ড এনাৰ্জী এফিচিয়েন্সি (বিইই BEE) ৰ ৱেবছাইট www.bee-india.nic.in অথবা www.asda.gov.in ত পাব। সৰু আকৃতিৰ ৰেফ্ৰিজাৰেটৰে ডাঙৰ আকৃতিৰ ৰেফ্ৰিজাৰেটৰতকৈ কম বিদ্যুৎ শক্তি ব্যয় কৰে। সাধাৰণতে ৰেফ্ৰিজাৰেটৰটো যিমানেই ডাঙৰ হয় সিমানেই শক্তিৰ ব্যয় বৃদ্ধি পাই। সেয়েহে প্ৰয়োজনাতীত অধিক ডাঙৰ ৰেফ্ৰিজাৰেটৰ কিনাটো অনুচিত।

› ঘনহাৰে দুটা সৰু আকৃতিৰ ৰেফ্ৰিজাৰেটৰতকৈ এটা ডাঙৰ আকৃতিৰ ৰেফ্ৰিজাৰেটৰে কম শক্তি ব্যয় কৰে। গুণবত বা হলাহ বৰফ জমা হোৱা সুবিধা থকা ৰেফ্ৰিজাৰেটৰতকৈ গুডৰা গুচৰীতে বৰফ জমা হোৱা ৰেফ্ৰিজাৰেটৰোৰ ১২ শতাংশ বেছি কাৰ্যক্ষম।

› ৰেফ্ৰিজাৰেটৰৰ দুৱাৰৰ বাহিৰৰ পৰা বৰফ বা হাওঁ পানী পাব পৰা ধৰণৰ নিজে নিজে বৰফ হোৱা আদি সুবিধা থকা ৰেফ্ৰিজাৰেটৰবোৰৰ মূলাও বেছি। ঘনহাৰে এনে ৰেফ্ৰিজাৰেটৰৰ বিদ্যুতৰ খৰচো বেছি হৈ সকলো মেৰামতি ফৰিৰ লগাও হ'ব পাৰে। সেয়েহে এনে ৰেফ্ৰিজাৰেটৰ ক্ৰয় নকৰাই ভাল।

› অধিক মূল্য দি হ'লেও কম বিদ্যুৎ ব্যয় হোৱা উচ্চমানৰ ৰেফ্ৰিজাৰেটৰ কিনাটো অধিক লাভজনক। শক্তি সংৰক্ষণ সূচকৰ পাঁচটা তৰাচিহ্নিত ৰেফ্ৰিজাৰেটৰৰ মূল্য দুটা তৰাচিহ্নিত ৰেফ্ৰিজাৰেটৰতকৈ বেছি। কিন্তু এনে ৰেফ্ৰিজাৰেটৰৰ বিদ্যুৎ ব্যয় কম হোৱা বাবে পাঁচটা তৰাচিহ্নৰ ৰেফ্ৰিজাৰেটৰ এটাৰ মূলা বিদ্যুৎ শক্তিৰ ৰাহিৰ দ্বাৰা চাৰিবছৰতে অধিক লাভবান হৈ হয়।

› পুৰণা ৰেফ্ৰিজাৰেটৰ সলনি কৰক : এনে ৰেফ্ৰিজাৰেটৰবোৰে অধিক ব্যয়বহুল। মনত ৰাখিব, পুৰণা ৰেফ্ৰিজাৰেটৰটো অতিৰিক্ত ৰেফ্ৰিজাৰেটৰ হিচাপেও কেতিয়াও ব্যৱহাৰ নকৰিব।

কাৰৰ ৰঙিত দেখুবাৰ নহে বহা বহুৰ আগত থকা তৰাচিহ্ন হেইটোই এটা ৰেফ্ৰিজাৰেটৰৰ কাৰ্যদক্ষতাৰ মান বুজায়। বহা আগত যিমানেই তৰাচিহ্ন থাকে ৰেফ্ৰিজাৰেটৰটো সিমানেই অধিক কাৰ্যনিপুণ বা কৰ্মদক্ষ হয় আৰু বিদ্যুৎ ব্যয় কম কৰে। চিত্ৰত চাৰিটা তৰাচিহ্নিত ৰেফ্ৰিজাৰেটৰৰ লেবেল এটা দেখুওৱা হৈছে। ৰেফ্ৰিজাৰেটৰটোৰে গড় অনুপাতে বছৰত কিমান বিদ্যুৎ ব্যয় কৰে সেয়া তৰাচিহ্নিত লেবেলত এনেদৰে দেখুৱা থাকে। এইটো পৰীক্ষাগাৰত আদৰ্শ অবস্থাত গোৱা হিচাপ। সেনন্দিনা ব্যৱহাৰৰ ক্ষেত্ৰত ইয়াৰ কিছু তাৰতম্য হ'ব পাৰে।

ৰেফ্ৰিজাৰেটৰটোৰ বিষয়ে অন্যান্য তথ্য — ব্ৰেণ্ড, টাইপ, মডেল নম্বৰ, কোন বছৰত বনোৱা হৈছে আৰু অন্যান্য তলত দিয়া ধৰণে দেখুওৱা থাকে।

মূল আয়তন : ৰেফ্ৰিজাৰেটৰৰ ভিতৰৰ মূল আয়তন

মজুতকৰণ : মূল খাদ্য-সামগ্ৰী মজুত কৰিব পৰা আয়তন।

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বিদ্যুৎ শক্তিৰ অপচয় ৰোধ কৰক

তৰাচিহ্নিত বিইই ৰ লেবেল চাই বৈদ্যুতিক সামগ্ৰী ক্ৰয় কৰক

The Chief Electrical Inspector-cum-Adviser, Govt. of Assam
State Designated Agency under Energy Conservation Act, 2001

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অধিক শক্তি সংৰক্ষণৰ বাবে তৰাচিহ্নিত বিইই (BEE) ৰ লেবেল থকা চি এফ এল লাইট ব্যৱহাৰ কৰক

তৰাচিহ্নিত বিইই (BEE) ৰ লেবেল থকা আধুনিক চি এফ এল লাইটৰ ব্যৱহাৰে দিয়ে অধিক আৰামদায়ক পোহৰ, অধিক সঞ্চয় ঃ প্ৰকৃত আৰামদায়ক আৰু স্বচ্ছ পোহৰ পাবলৈ হ'লে আপোনাৰ লাইট বা পোহৰৰ উৎস নিৰ্ভুল ভাবে নিৰীক্ষণ কৰক। যদি আপুনি অধিক শক্তি ব্যয় কৰা সাধাৰণ বাল্ব কিনে, ইয়াৰ বাবে হোৱা অধিক শক্তি ব্যয়ৰ কাৰণে আপুনি সদায়ে অনুসূচনা কৰি থাকিব লাগিব। আচল চাবিকাঠি হৈছে শক্তিৰ সংৰক্ষণ। আপোনাৰ কষ্টোপার্জিত ধনেৰে উৎকৃষ্ট, উচ্চ দক্ষতা সম্পন্ন চি এফ এলহে কিনক। চি এফ এল কিনাৰ আগেয়ে বিইইৰ তৰাচিহ্নিত লেবেল চাই লওক।

শক্তি সংৰক্ষণ আইন ২০০১ অনুসৰি ভাৰত চৰকাৰৰ শক্তি মন্ত্ৰালয়ৰ অধীনত ব্যুৰো অফ এনাৰ্জী এফিচিয়েন্সিয়ে 'ৰাষ্ট্ৰীয় শক্তি লেবেল' (National Energy Labelling) আঁচনি আৰম্ভ কৰিছে। এনে লেবেলৰ পৰা আপোনাৰ চি এফ এলটো কিমান দক্ষ বা কৰ্মক্ষম আপুনি জানিব পাৰিব। আনকথাত বিইই লেবেলত থকা তৰাচিহ্নিত চি এফ এল কিনিলে আপুনি অধিক শক্তি সংৰক্ষণ কৰিব পাৰিব। অৰ্থাৎ অধিক মিতব্যয়ী বা আপোনাৰ সঞ্চয় সুৰক্ষিত। সেয়েহে বিইইৰ তৰাচিহ্নিত লেবেলযুক্ত চি এফ এল ব্যৱহাৰ কৰি অধিক লাভবান হওক।

বিদ্যুৎ ব্যয় কমোৱাৰ সম্পৰ্কে অধিক জানিব খুজিলে ইণ্টাৰনেটত **www.bee-india.nic.in** অথবা **www.asda.gov.in** চাওক। বিইই লেবেলত থকা শক্তি মিতব্যয়ী সূচক চাওক। চি এফ এলৰ ক্ষেত্ৰত আপুনি তৰাচিহ্নিত বিইইৰ লেবেল চাই সেই চি এফ এলে কিমান বিদ্যুৎ শক্তি ব্যয় কৰিব তাৰ হিচাপ উলিয়াই ল'ব পাৰে।

এনে বিদ্যুৎ ব্যয়ৰ হিচাপ আপুনি ইণ্টাৰনেটৰ পৰাও পাব পাৰে। ইয়াৰ বাবে ৱেবচাইট **www.bee-india.nic.in** অথবা **www.asda.gov.in** চাওক। এই ৱেবচাইটত থকা হিচাপৰ পৰা এটা চি এফ এল কিমান বিদ্যুৎ শক্তি ব্যয় কৰে, তাৰ কাৰ্যক্ষমতাত কিমান শক্তি ৰাহি কৰিব আৰিৰ হিচাপ উলিয়াব পাৰিব। গ্ৰাহকসকলে এই ৱেবচাইটত বিভিন্ন ব্ৰেণ্ড আৰু মডেলৰ চি এফ এল কিনাৰ বিষয়ে অধিক প্ৰয়োজনীয় তথ্য পাব।

শক্তি সঞ্চয়সূচক লেবেল বিশ্লেষণ ঃ

- সেউজীয়া আশত থকা তৰাচিহ্নই চি এফ এলটোৰ তুলনামূলক শক্তি সঞ্চয়ৰ মান বুজায়।
- সকলো চি এফ এলৰ কমেও এটা তৰাচিহ্নিত শক্তি সঞ্চয়ৰ সূচক থাকিব লাগিব। অধিক তৰাচিহ্নিত চি এফ এলটোৰ কৰ্মক্ষমতা বা দক্ষতা আটাইতকৈ বেছি আৰু ই উপভোক্তাৰ বাবে আটাইতকৈ বেছি বিদ্যুৎ শক্তি সংৰক্ষণ কৰিব।
- ডাঙৰ কোঠাৰ বাবে অধিক পোহৰ কৰিব পৰা চি এফ এলৰ প্ৰয়োজন।
- এই লেবেলত থকা তথ্যসমূহ উৎপাদনত ব্যৱহাৰ হোৱা প্ৰযুক্তিবিদ্যাৰ ওপৰত নিৰ্ভৰশীল।
- সাধাৰণ বাল্বৰ পৰিবৰ্ত্তে চি এফ এলৰ ব্যৱহাৰে আপোনাৰ বিদ্যুৎ বিলৰ ধনৰ ৰাশি ৭০ % হ্ৰাস কৰিব পাৰে
- অধিক তৰাচিহ্নিত চি এফ এল আপোনাৰ আৰু আপোনাৰ পাৰিপাৰ্শ্বিকতাৰ বাবেও অনুকূল।
- অধিক তৰাচিহ্ন, অধিক শক্তি মিতব্যয়ী।

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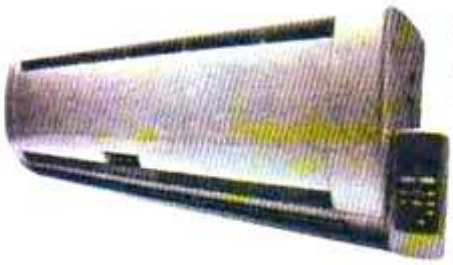
অধিক শক্তি সংৰক্ষণৰ বাবে তৰাচিহ্নিত বিইই (BEE) ৰ লেবেল থকা এ'চি ব্যৱহাৰ কৰক

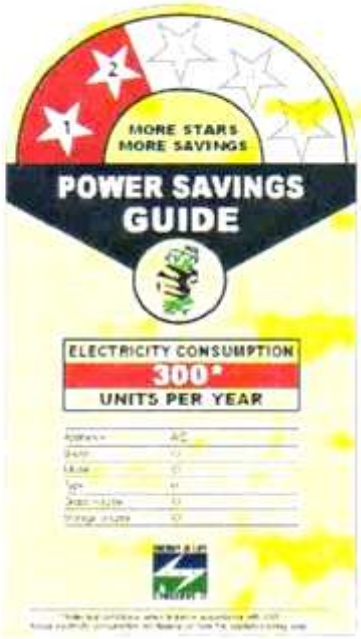


তৰাচিহ্নিত বিইই (BEE) ৰ লেবেল থকা বাতানুকূল যন্ত্ৰ বা এয়াৰ কণ্ডিচনাৰ (এ'চি)ৰ ব্যৱহাৰে দিয়ে অধিক আৰাম, অধিক সঞ্চয় ঃ প্ৰকৃত আৰাম আৰু আনন্দ পাবলৈ হ'লে আপোনাৰ এ'চিটো নিৰ্ভুল ভাবে নিৰ্বাচন কৰক। যদি আপুনি অতিমাত্ৰা শক্তি খৰচ কৰা এ'চি কিনে, ইয়াৰ বাবে তেৱোঁ অধিক শক্তি ব্যয়ৰ কাৰণে আপুনি সদায়ে অনুসূচনা কৰি থাকিব লাগিব। আচল চাবিকাঠি হৈছে শক্তিৰ সংৰক্ষণ। আপোনাৰ কষ্টোপার্জিত ধনেৰে উৎকৃষ্ট, উচ্চ দক্ষতা সম্পন্ন এ'চিহে কিনক। এ'চি কিনাৰ আগেয়ে বিইইৰ তৰাচিহ্নিত লেবেল চাই লওক।

শক্তি সংৰক্ষণ আইন ২০০১ অনুসৰি ভাৰত চৰকাৰৰ শক্তি মন্ত্ৰণালয়ৰ অধীনত ব্যুৰো অফ এনাৰ্জী এফিচিয়েন্সিয়ে 'ৰাষ্ট্ৰীয় শক্তি লেবেল' (National Energy Lebelling) আঁচনি আৰম্ভ কৰিছে। এনে লেবেলৰ পৰা আপোনাৰ এ'চিটো কিমান দক্ষ বা কৰ্মক্ষম আপুনি জানিব পাৰিব। আনকথাত বিইই লেবেলত থকা তৰাচিহ্নিত এচি কিনিলে আপুনি অধিক শক্তি সংৰক্ষণ কৰিব পাৰিব। অৰ্থাৎ অধিক মিতব্যয়ী বা আপোনাৰ সঞ্চয় সুৰক্ষিত। সেয়েহে বিইইৰ তৰাচিহ্নিত লেবেলযুক্ত এ'চি ব্যবহাৰ কৰি অধিক লাভবান হওক।

বিদ্যুৎ ব্যয় কমোবাৰ সম্পৰ্কে অধিক জানিব খুজিলে ইনটাৰনেটত **www.bee-india.nic.in** অথবা **www.asda.gov.in** চাওক। বিইই লেবেলত থকা শক্তি মিতব্যয়ী সূচক চাওক। এয়াৰকণ্ডিচনাৰ বা এ'চিৰ ক্ষেত্ৰত আপুনি তৰাচিহ্নিত বিইইৰ লেবেল চাই সেই এ'চিয়ে কিমান বিদ্যুৎ শক্তি ব্যয় কৰিব তাৰ হিচাপ উলিয়াই ল'ব পাৰে।

এনে বিদ্যুৎ ব্যয়ৰ হিচাপ আপুনি ইনটাৰনেটৰ পৰাও পাব পাৰে। ইয়াৰ বাবে ৱেবচাইট **www.bee-india.nic.in** অথবা **www.asda.gov.in** চাওক। এই ৱেবচাইটত থকা হিচাপৰ পৰা এটা এ'চিয়ে কিমান বিদ্যুৎ শক্তি ব্যয় কৰে, তাৰ কাৰ্যকালত কিমান শক্তি বাহি কৰিব আদিব হিচাপ উলিয়াব পাৰিব। গ্ৰাহকসকলে এই ৱেবচাইটত বিভিন্ন ব্ৰেণ্ড আৰু মডেলৰ এচি কিনাৰ বিষয়ে অধিক প্ৰয়োজনীয় তথ্য পাব।



শক্তি সঞ্চয়সূচক লেবেল বিশ্লেষণ ঃ

- বঙা অংশত থকা তৰাচিহ্নই এচিটোৰ তুলনামূলক শক্তি সঞ্চয়ৰ মান বুজায়।
- সকলো এ'চিৰ কমেও এটা তৰাচিহ্নিত শক্তি সঞ্চয়ৰ সূচক থাকিব লাগিব। পাঁচ তৰাচিহ্নিত এ'চিটোৰ কৰ্মক্ষমতা বা দক্ষতা আটাইতকৈ বেছি আৰু ই উপভোক্তাৰ বাবে আটাইতকৈ বেছি বিদ্যুৎ শক্তি সংৰক্ষণ কৰিব।
- ডাঙৰ কোঠাৰ বাবে অধিক শীতল কৰিব পৰা এচিৰ প্ৰয়োজন।
- এই লেবেলত থকা তথ্যসমূহ উৎপাদনত ব্যবহাৰ হোৱা প্ৰযুক্তি বিদ্যাৰ ওপৰত নিৰ্ভৰশীল।
- যদি এটা এক তৰাচিহ্নিত এ'চিৰ বাৰ্ষিক বিদ্যুৎ ব্যয়ৰ বিল ৮,৫০০ টকা হয়, তেনেক্ষেত্ৰত এটা পাঁচ তৰাচিহ্নিত এ'চিয়ে আপোনাৰ ব্যয়ৰ পৰা বছৰি ২,১০০ টকা পৰ্যন্ত বাহি কৰিব পাৰে।
- পাঁচ তৰাচিহ্নিত এ'চি আপোনাৰ আৰু আপোনাৰ পাৰিপাৰ্শ্বিকতাৰ বাবে অনুকূল।
- এক কিলোৱাট বিদ্যুৎ আৰু এক কিলোৱাটৰ এ'চিয়ে কৰিব পৰা শীতলীকৰণ / কিলোৱাট অনুপাতক 'শক্তি সঞ্চয়ৰ মান' বুলি কোৱা হয়।
- প্ৰস্তুতকাৰকৰ নাম আৰু মডেলৰ বিস্তৃত বিবৰণ
- অধিক তৰাচিহ্ন, অধিক শক্তি মিতব্যয়ী।

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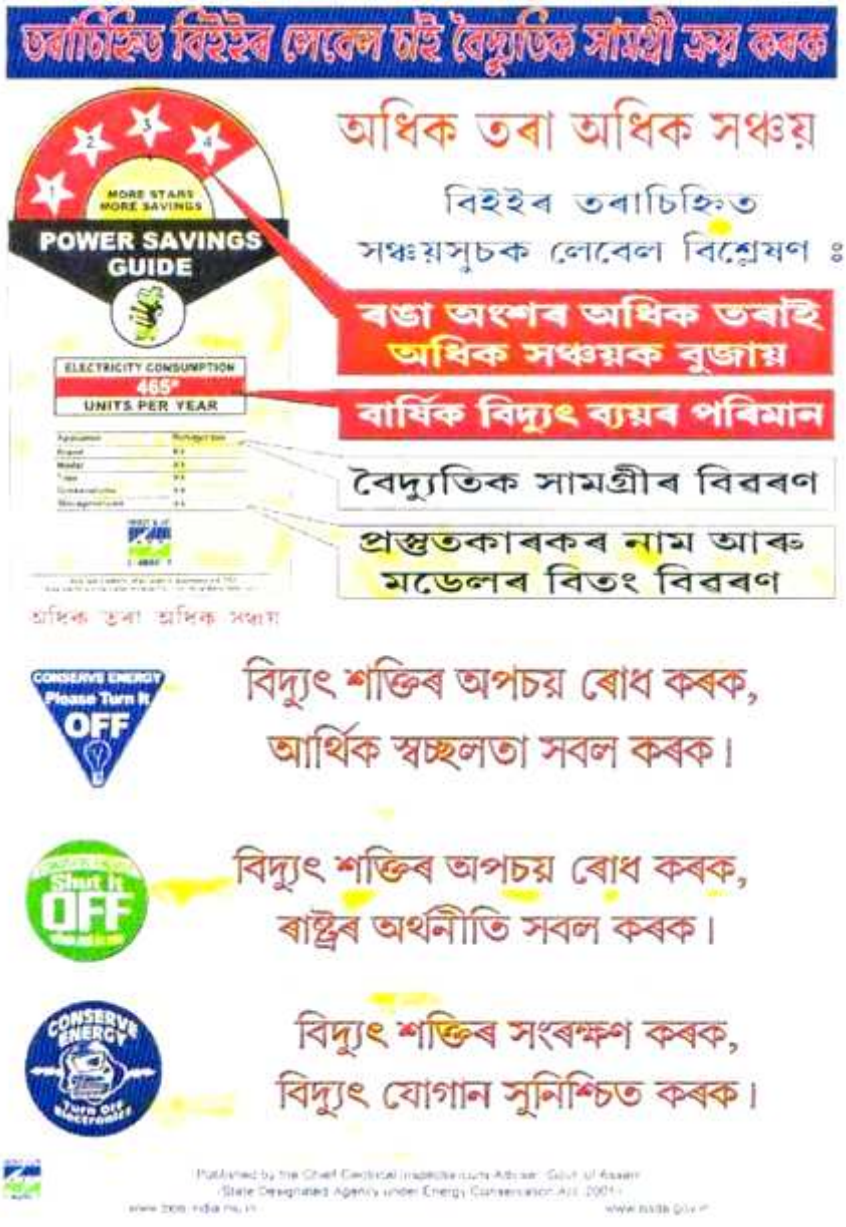
Promotional Leaflet

Promotional Banner



Promotional Leaflet

Promotional Leaflet

Promotional Banner

Promotional Hoardings

Promotional Hoarding

Newspaper advertisement

বিদ্যুতৰ অপচয় ৰোধ কৰক

প্ৰয়োজন নহ'লে বৈদ্যুতিক সামগ্ৰী বন্ধ ৰাখক

ইংৰাজী নন্দ বৰ্ষ ২০০৯, শক্তি সংৰক্ষণৰ সংকল্প

JANUARY

SUN				
MON	5	12	19	
TUE	6	13	20	27
WED		14		28
THU	1	8	15	22 29
FRI	2	9	16	23 30
SAT	3	10	17	24 31

FEBRUARY

SUN	1	8	15	22
MON	2		16	23
TUE	3	10	17	
WED	4	11	18	25
THU	5	12	19	26
FRI		13		27
SAT	7	14	21	28

MARCH

SUN	1	8	15		29
MON	2	9	16	23	30
TUE	3	10	17	24	31
WED	4		18	25	
THU	5	12	19		
FRI	6	13	20	27	
SAT		14	21	28	

APRIL

SUN		12	19	26
MON	6	13	20	27
TUE	7	14		28
WED	1 8	15	22	29
THU	2	16	23	30
FRI	3 10	17	24	
SAT	4 11	18		

MAY

SUN	31	3	10	17	
MON		4	11	18	25
TUE			12	19	26
WED		6	13		27
THU		7	14	21	28
FRI	1	8	15	22	29
SAT	2		16	23	30

JUNE

SUN			14	21	28
MON	1	8	15		29
TUE	2	9	16	23	30
WED		10	17	24	
THU	4	11	18	25	
FRI	5	12		26	
SAT	6	13	20	27	

তৰাচিহ্নিত বিইহৰ লেবেল চাই বৈদ্যুতিক সামগ্ৰী ক্ৰয় কৰক

JULY

SUN		5	12	19	26
MON		6	13	20	27
TUE			14	21	28
WED	1	8	15		29
THU	2	9	16	23	30
FRI		10	17	24	31
SAT	4	11		25	

AUGUST

SUN	30	2	9		23
MON		3	10	17	24
TUE		4	11	18	25
WED			12	19	26
THU		6	13		27
FRI		7	14	21	28
SAT		8	15	22	29

SEPTEMBER

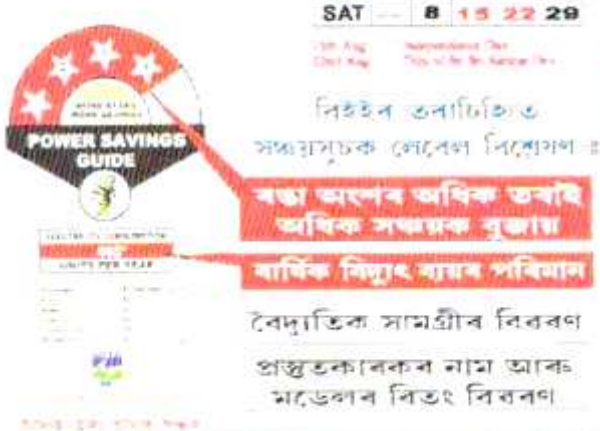
SUN		6	13	20	27
MON		7	14	21	28
TUE	1	8		22	29
WED	2	9	16	23	
THU	3	10	17	24	
FRI		11		25	
SAT	5	12	19	26	

OCTOBER

SUN			11		25
MON		5	12	19	26
TUE		6	13	20	27
WED		7		21	28
THU	1	8	15	22	
FRI	2	9	16	23	30
SAT	3	10	17	24	31

POWER SAVINGS GUIDE

অধিক তৰা অধিক সঞ্চয়



NOVEMBER

SUN	1	8	15	22	29
MON		9		23	30
TUE	3	10	17	24	
WED	4	11	18	25	
THU	5		19	26	
FRI	6	13	20	27	
SAT	7	14	21		

DECEMBER

SUN		6	13	20	27
MON		7	14	21	
TUE	1	8	15	22	29
WED		9		23	30
THU	3	10	17	24	
FRI	4	11	18	25	
SAT	5		19	26	

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Promotional Poster

VISIBLE RESULTS:

- In Assam electricity users in the Domestic and Commercial sector is more than 50% of total consumers. A good scope of Energy Efficiency exists in the said category.

- More and more people inclined towards using energy efficiency lamps, such as CFL lamps in domestic and commercial sector in urban areas is an indication of increased awareness among public.

BEE star labeled appliances:

Increase in sale of BEE star labeled air conditioners and refrigerators is a positive indication towards energy efficiency.

A sample local survey revealed that more than 93% BEE Star labeled Refrigerators and Air conditioners were sold in Assam during the period from April/08 to Sept/08.

Effects of the efforts:

Though the Energy Conservation Act is in the initial stage of implementation in the State, the rising trend is indeed very encouraging that reflects growing awareness on Energy efficiency and its Conservation among people.

Most of street lights in Guwahati have been fitted with timer device by PWD, Assam to reduce energy wastages.

Commercial establishments- Shopping Malls using CFL & T5 lamps

Growing popularity of CFL among street vendors

Panwalla using CFL & T-5

TIPS FOR SAVING ENERGY:

Home lighting system:

1. One of the best energy-saving devices is the light switch. Switch off the light and fans in unoccupied rooms.
2. Change over to energy efficient slim tube lights from power consuming incandescent lamps
3. Fluorescent tube lights and CFL (Compact Fluorescent Lamps) convert electricity to visible light upto 5 times more efficiently than ordinary bulbs and thus saves about 70% of electricity for the same lighting level.
4. Ninety percent of energy consumed by an ordinary bulb is wasted as heat rather than visible light.
5. A 15Watt CFL lamp produces the same amount of light as a 60Watt incandescent bulb.

Room Air-conditioners:

1. Use ceiling fans or table fans as first line of defense against summer heat. Ceiling fans, for instance, cost about 30 paise an hour to operate-much less than air-conditioner (Rs. 8-10 per hour).
2. You can reduce air-conditioning energy use as much as 40 percent by shading your home's windows and walls. Plant trees and shrubs to keep the days hottest sun off your house.

Refrigerators :

1. Be sure that the refrigerator is kept away from all sources of heat, including direct sunlight, oven and cooking range.
2. Refrigerator motors and compressors generate heat. So allow enough space for continuous airflow around refrigerator. If the heat can't escape, the refrigerator's cooling system will work harder and use more electricity.
3. A full refrigerator is a fine thing, but be sure to allow adequate air circulation inside.
4. Allow hot and warm foods to cool and cover them well before putting them in the refrigerator.
5. Make sure that refrigerators' rubber door seals are clean and tight.

Heaters & Oven:

1. By reducing temperature setting of water heaters from 60 degree to 50 degree C, one could save over 18 percent of energy used at higher setting.
2. Microwave ovens save energy by reducing cooking time. In fact, one can save up to 50 percent on your cooking energy costs by using a microwave oven instead of regular oven, especially for small quantity of food.
3. Microwave cooks from the outside edge towards the center of the dish, so if we are cooking more than one item, place larger and thicker items on the outside.

READY RECKONER:

Power Consumption by Electrical appliances in day to day use:

MONTHLY ENERGY CONSUMPTION

APPLIANCES of regular use	Rating (Watts)	*Average usage* ***in hours*** *per day*						
		1	**2**	**4**	**6**	**8**	**10**	**12**
		ESTIMATED UNITS CONSUMED IN 30 DAYS						
TUBE LIGHT (*Ordinary Choke*)	52	2	3	6	9	12	16	19
TUBE LIGHT (Electronic Choke)	36	1	2	4	6	9	11	13
TUBE LIGHT (T5)	28	0.9	1.8	3.6	4.4	8	9.8	11.6
INCANDESCENT LIGHT BULB	100	3	6	12	18	24	30	36
CFL	5	0.2	0.3	0.6	0.9	1.2	1.5	1.8
CFL	9	0.3	0.5	1	1.5	2.3	2.8	3.3
CFL	11	0.4	0.7	1.3	2	2.7	3.5	4
CFL	18	0.5	1	2	3	4.5	5.5	6.5
CEILING FAN / TABLE FAN	40	1	2	5	7	10	12	14
CEILING FAN	75	2	5	9	14	18	23	27
PEDESTAL FAN	100	3	6	12	18	24	30	36
EXHAUST FAN : DOMESTIC	250	8	15	30	45	60	75	90
FRIDGE 165 LTRS	100	2 units / day on continuous running						
FRIDGE 310 LTRS	400	3 units / day on continuous running						
RADIO / TAPE	50	2	3	6	9	12	15	18
COLOR TV	80	2	5	10	14	19	24	29
VCP / VCR / CD / VCD	30	1	2	4	5	7	9	11
COMPUTER	300	9	18	36	54	72	90	108
MONITOR	70	2	4	.8	13	17	21	25
PRINTER	25	1	2	3	5	6	8	9
FAX / TELEX	250	8	15	30	45	60	75	90
WATER PUMP 0.5 HP	375	11	23	45	68	90	113	135
ROOM A/C 1 TON	1400	42	84	168	252	336	420	504
ROOM A/C 1.5 TON	2100	63	126	252	378	504	630	756
AIR COOLER SMALL	250	8	15	30	45	60	75	90
AIR COOLER BIG	400	12	24	48	72	96	120	144

APPLIANCES of intermittent use	Rating (Watts)	*Average usage* ***in minutes*** *per day*						
		10	**20**	**30**	**40**	**50**	**60**	**120**
		ESTIMATED UNITS CONSUMED IN 30 DAYS						
ELECTRIC IRON (Normal domestic)	750	4	8	11	15	19	23	45
ELECTRIC IRON (Heavy duty/Dhobi)	1000	5	10	15	20	25	30	60
COOKER	1200	6	12	18	24	30	36	72
TOASTER	750	4	8	11	15	19	23	45
MIXER BIG	400	2	4	6	8	10	12	24
MIXER SMALL	250	1	3	4	5	6	8	15
GEYSER 1	2000	10	20	30	40	50	60	120
GEYSER 2	3000	15	30	45	60	75	90	180
HEATER STORAGE TYPE	1000	5	10	15	20	25	30	60
IMMERSION ROD	1500	8	15	23	30	38	45	90
ELECTRIC KETTLE / STOVE	1000	5	10	15	20	25	30	60
ELECTRIC OVEN 1	350	2	4	5	7	9	11	21
ELECTRIC OVEN 2	500	3	5	8	10	13	15	30
WASHING MACHINE SEMI AUTO	230	1	2	3	5	6	7	14
WASHING MACHINE FULLY AUTO	320	2	3	5	6	8	10	19
VACUUM CLEANER	600	3	6	9	12	15	18	36
SEWING M/C CLOTH	100	1	1	2	2	3	3	6

(The above figures are very helpful in working out energy consumptions, though those are gross general figures and hence may vary case to case. For accurate results, item specific figures with actual run/usage time should be used.)

*****

Conserve Energy for a Greener Tomorrow

ENERGY IS LIFE
BEE
CONSERVE IT

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