

Maratha Vidya Prasarak Samaj's
KARMAVEER SHANTARAMBAPU KONDAJI WAVARE
ARTS, SCIENCE AND COMMERCE COLLEGE,
UTTAM NAGAR, CIDCO, NASHIK- 08 (MAHARASHTRA)

NAAC Accredited "A" grade with CGPA 3.20

Internal Quality Assurance Cell(IQAC)

Energy Audit Report
(2020-21)



Report By



SOLASTA

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Date: 15/06/2021

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Preface

Data collection for energy audit of the **MVP'S KSKW Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik-08** was approved by team for the period of July 2020 to June 2021.

Energy audit survey was completed by the firm **SOLASTA Energy Solutions , Services & Maintenance** with the help of faculty members of Physics Department. Data was collected for each classroom, laboratory, office, library and of the campus at previous years and updated year by year. The work is completed by considering how many tubes, fan, A.C.'s, electronic instruments, etc. installed in every room. While preparing the energy audit report, we have referred energy audit report of previous year (2019-20). New load/changes in load if any, and its participation in total electricity consumption was taken in consideration.

We really appreciate the effort put by MVP'S management for creating awareness of Energy Audit, Use of renewable energy such as solar energy and its roll in energy saving amongst all of us. We really appreciate Hon. Management of the college for encouraging us by providing this opportunity to do the energy audit and participate in the energy saving program. Through this, we have been cleared the vision of Institution towards the Green campus and save our nature. We really appreciate for various efforts taken by the college.



Main Building

Acknowledgement

We are very much thankful to **Principal Dr. Smt. J. D. Sonkhaskar** for motivating us and giving us the opportunity for energy audit. We would like to express our thanks to Head of Department Physics **Dr. Smt. P.G. Loke**, and special thanks for **Eng. Mr. Sudeep D. Pagare** of BVoc electrical Departments and all respected staff, faculty members and students who have taken part in this audit survey etc. of MVP'S KSKW Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik-08. We tried our best to present this energy report as per requirements of college and our expertise work.

Energy Audit Committee

Sr.No.	Names	Designation
1	Dr. Smt. J. D. Sonkhaskar	Chairperson
2	Dr. S. K. kushare	Vice Principal
3	Dr. D. N. Pawar	IQAC Co-Ordinator
4	Dr. A. B. Gawande	Energy Audit Co-Ordinator
5	Eng. S. D. Pagare	Member



Annex Building

Summary

The objective of the audit was to study the energy consumption pattern of the college, identify the areas where potential for energy/cost saving exists and prepare proposals for energy/cost saving along with investment and payback periods.

The salient observations and recommendations are given below:

1. MVP'S KSKW Arts, Science And Commerce College, Uttamnagar, CIDCO, Nashik uses energy in the following forms:

- a. **From MSEDCCL**
- b. **Electricity SOLAR Grid connected solar plant (15.3kw)**
- c. **High Speed Diesel Generator (HSDG)**

Electrical energy is used for various applications, like: Computers, Lighting, Air-Conditioning, Fans, Laboratory Equipment, Printers, Xerox machines, CCTV, UPS, LCD Projector, Router system, Flood light, Pumping motor, Exhaust fan. etc.

2. The average cost of energy is around Rs. **10289 / Month.**
3. After the measurement and analysis, we propose herewith following aspect regarding the efficient use of energy:

Abbreviations

AHU	Air handling unit
APFC	Automatic Power Factor Controller
DG	Diesel generator
ECP	Energy Conservation Proposal
GCV	Gross Calorific Value
HVAC	Heating, Ventilation and Air Conditioning
HSDG	High speed diesel Generator
PF	Power Factor
SEC	Specific Energy Consumption
TR	Tons of Refrigeration
UOM	Unit of Measurement
MAHADISCO	Maharashtra State Electricity Distribution Company

Chapter: 1

Introduction to Energy Audit

- **General:**

The MVP'S KSKW Arts, Science and Commerce College, Uttamnagar, CIDCO, Nashik entrusted the work of conducting a walk through Energy Audit of campus with the main objectives as given below:

- ✓ To study the present pattern of energy consumption
- ✓ To identify potential areas for energy optimization
- ✓ To recommend energy conservation proposals with cost benefit analysis.

- **Scope of Work, Methodology and Approach:**

Scope of work and methodology were as per the proposal. While undertaking data collection, analysis, due care was always taken to avoid abnormal situations so as to generate normal/representative pattern of energy consumption at the facility.

- **Approach to Energy Audit:**

We focused our attention on energy management and optimization of energy efficiency of the systems, sub systems and equipments. The key to such performance evaluation lies in the sound knowledge of performance of equipments and system as a whole.

- **Energy Audit:**

The objective of Energy Audit is to balance the total energy inputs with its use and to identify the energy conservation opportunities in the stream. Energy Audit also gives focused attention to energy cost and cost involved in achieving higher performance with technical and financial analysis. The best alternative is selected on financial analysis basis.

Energy Audit Methodology: Energy Audit Study is divided into following steps:

- 1. Historical Data Analysis:**

The historical data analysis involves establishment of energy consumption pattern to the established base line data on energy consumption and its variation with change in production volumes.

- 2. Actual data analysis:**

This step involves actual trials measurement. It also involves input to output analysis to establish actual operating equipment efficiency and finding out losses in the system.

- 3. Identification and evaluation of Energy Conservation Opportunities:**

This step involves evaluation of energy conservation opportunities identified during the energy audit. It gives potential of energy saving and investment required to implement the proposed modifications with payback period.

Chapter: 2

About Institute

Sr. No.	Particulars	Details
1	Name of the Institute:	Maratha Vidya Prasarak Samaj's Karmaveer Shantarambapu Kondaji Wavare Arts ,Science and Commerce College,CIDCO
2	Address:	Uttamnagar, Nashik-422008 Maharashtra State, India
3	Affiliation:	Affiliated to Savitribai Phule, Pune University,Pune-07 ID No. PU/NS/ASC/047/1993
3	Year of Establishment:	June 1993
5	NAAC Accrediation:	NAAC REACCREDITED "A" GRADE with CGPA 3.20 (3rd Cycle)
6	Contact:	Phone : 0253-2391110, FAX : 0253-2372210 Email : cidcocollegenashik@rediffmail.com Website : www.cidcocollgenashik.ac.in
4	Courses Offered:	XI th and XII th Arts , Commerce & Science B. A./B.Com./B.Sc., B. Sc. (Computer Science) B. Voc: 1.Electrical Appliances Maintenance & Repairing (FY,SY,TY EAMAR) 2.Food Processing Technology (FY,SY,TY FPT) 3. Course in Yoga & Naturopathy (FY YAN) 4.Diploma Course in Yoga (Diploma YOG) 5.Diploma Course in Sustainable Agriculture (Diploma SUA) 6.Diploma course in Medical Laboratory Technology (Diploma MLT) 7.Diploma course in Sericulture (Diploma SER) 8.Diploma course in English for practical purposes (Diploma EPP) 9. Certificate course in web Designing. (Certificate WEB) M. Sc.: Physics,Chemistry,Computer Science,Geography M.Com, MA (Marathi), MA (Hindi), MA (English), MA (Economics), MA (Geography).

Chapter: 3

Energy Consumption Profile

3.1 Source of Energy:

MVP'S KSKW Arts Science and Commerce College, UTTAM NAGAR, CIDCO Nashik, uses Energy in following forms:

A. Electricity from MSEDCL :

MVP'S KSKW Arts Science and Commerce College receives Electricity from Nasik (U) Circle: 595 Of NASIK URBAN DN. 1. : 040 AMBAD S/DN. : 669 1

B. High Speed Diesel Generator 15 KW (HSDG) :

HSD is used as a fuel for Diesel Generator which is run whenever power supply from MSEDCL is not available.



Kirloskar Diesel Generator (15KVA)

C.Electricity SOLAR Grid connected solar plant (15.3kw):



**Solar - On Grid Inverter System
(15.3KW)**

3.2 Following are the major consumers of electricity in the facility:

- Computers
- Lighting
- Air-Conditioning systems
- Fans
- Laboratory Equipment
- Printers
- Xerox machines
- CCTV
- UPS
- LCD Projector
- Router system
- Flood light
- Pumping motor



I.T. Lab



Exam Section



B.Voc. Lab.



A.C. Computer Lab



NAAC Room



Principal Office



Office



YCMOU Office



Solar Street Lamp



7.5 KVA office UPS

Chapter: 4

Data Analysis

4.1. Study of Variation of Monthly Units consumption & Power Factor:

In this Chapter, we study the details of the 12 month Electricity Bills.

TABLE 1: Variation in Units Consumption & Power Factor (PF):

Sr. No.	Month	No. Units kWh	Power Factor (P.F.)
1.	June 21	2393	0.86
2.	May 21	1411	0.67
3.	April 21	1135	0.66
4.	Mar 21	1016	0.75
5.	Feb 21	9755	0.76
6.	Jan 21	2	0.37
7.	Dec 20	0	0.0
8.	Nov 20	0	0.0
9.	Oct 20	0	0.0
10.	Sept 20	0	0.0
11.	Aug 20	0	0.0
12.	July 20	2472	0.9
	Total Units	18184	Average: 0.41

4.2 Conclusion : Variation of PF

Whenever the average power factor over a billing cycle or a month, whichever is lower, of a High Tension consumer is below 90%, Penal charges shall be levied to the consumer at the rate of 2% (2 percent) of the amount of monthly energy bill (excluding of Demand Charges, FOCA, Electricity Duty and Regulatory Liability Charge etc.)

For power factor of 0.99, the effective incentive will amount to 5% (five percent) reduction in the energy bill and for unity power factor; the effective incentive will amount to 7% (seven percent) reduction in the energy bill

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4.3 Study of Month wise Electricity Bill Variation:

TABLE 2: Variation in Electricity Bill:

Sr. No.	Month	Electricity Bill Amount (Rs.)
1	June 21	3149
2	May 21	21631
3	April 21	18270
4	Mar 21	16603
5	Feb 21	114019
6	Jan 21	5919
7	Dec 20	3982
8	Nov 20	3982
9	Oct 20	3982
10	Sept 20	3982
11	Aug 20	-104225
12	July 20	32179
	Total Annual Bill=	123473
	Average Monthly Bill=	10289

Conclusion : Monthly Electricity Bill Variation has been identified.

4.4 Study of Month wise Maximum Demand Variation:

TABLE:3 Month wise Maximum Demand Variation:

Sr. No.	Month	Bill Demand (kVA/Month)
1	June 21	14.58
2	May 21	8.44
3	April 21	7.70
4	Mar 21	9.94
5	Feb 21	12.34
6	Jan 21	0
7	Dec 20	0
8	Nov 20	0
9	Oct 20	0
10	Sept 20	0
11	Aug 20	0
12	July 20	0

4.5 General Observations based on Electricity Bill:

1. For College Campus the Contract Demand (CD) is 28 kVA and minimum billing Demand is 50% of the Contract Demand (i.e. 14 kVA) or the 75% of previous Maximum Demand recorded whichever is higher.
2. Since, the MD recorded is more than 14kVA. I.e. 14.600 kVA for month June 21. The average electricity cost is Rs. 6.80 considering the last twelve months. (Excluding TOD charges, MD and PF charges)
3. Average monthly Power Factor (P.F.) is maintained near **0.41**
4. Average Monthly bill is Rs. 10289 /-
5. Maximum Demand Recorded is 14.600 kVA
6. Power factor should be monitored and need to maintain close to unity on priority.

Chapter: 5

5.1 Actual Measurements and its Analysis

Seminar Hall



Annex Porch



Sr. No.	Name of Appliance	Power Rating (Watt)	Quantity	Power Consumption (Watt)	Usage per Day Hr.	Power Consumption/day (Watt)
A	B	C	D	$E = C \times D$	F	$G = E \times F$
1	FTL	40	416	16640	6	99840
2	Fan	80	192	15360	6	92160
3	PC	60	90	5400	6	32400
4	Printer: Standby mode: 30-50w/	printing mode:300- 500w	34	10200	2	20400
5	LED 18 W	18	8	144	6	864
	LED 22 W	22	6	132	6	792
6	CFL	20	4	80	6	480
7	Xerox machine	650	4	2600	2	5200
8	Fax machine	30	1	30	2	60
9	AC	3500	7	24500	4	98000
10	LED Tube	20	10	200	6	1200
11	CCTV	10	32	320	24	7680
12	UPS	2-5KVA, 51 batteries of 80 Amp-hr	5	12500	6	75000
13	Water Cooler	2.8kwh/day	1	2800	1	2800

14	RO System	3-7 kWhr/m3	3	9000	1	9000
15	LCD Projector	282	19	5358	2	10716
16	Internet Box with wifi router W/Hr	850	4	3400	6	20400
17	Charging socket	23	4	92	2	184
18	Weather station	100w/day	1	100	1	100
19	P.A.System	560	1	560	1	560
20	Exhaust fan	60	3	180	6	1080
21	Electric bell	5	3	15	1	15
22	Refrigerator	2kwhr/day	4	8000	1	8000
23	Flood light	400	5	2000	11	22000
24	Incubator	1500	1	1500	6	9000
25	Research Microscope	100	1	100	6	600
26	Vacuum cleaner	1400	1	1400	2	2800
27	Hot air oven	1000-1400	1	1400	2	2800
28	Centrifugal machine	125	1	125	2	250
29	Lab Equip. for practical	300	10	3000	3	9000
30	Pumping motor	1.0 HP	1	746	2	1492
31	DG Gen set	15KVA	1	AS PER USE		AS PER USE
32	Grid connected solar plant	15.36kw	1	15.36kw	12	15.36kw
It is expected to generate 60 units/day, 1800 units per month Aprox. through Solar Rooftop On grid System 15.3kWp.						

**** This is total load consumption considered approximately. Actual load consumption might be different according to actual use of power for particular time period.***

5.2 Department wise load Consumption:

A) Old Building:

Sr. No.	Premises	Existing Load During (2019-20) in Watt	Additional Load during (2020-21) in Watt	Remark (Name Of Appliances)
1	Principal Office	39752	300	Printer
2	Administration Office:	28284	400	Digital Copier
3	Passage:	2604	Nil	
4	IQAC Office:	3784	Nil	
5	Store Room:	18060	Nil	
6	Staff Room:	8332	Nil	
7	Department OF IT,Comp.Centre,PG Lab(Physics),Battery Room Etc.:	32972	Nil	
8	Chemistry Lab:	4440	183	Rotory Evaporator
9	Y.C.M.O.U.:	3220	Nil	
10	Department Of Botony/Zoology:	4800	Nil	
11	First Floor Staircase:	1480	Nil	
12	Dept.Of Commerce,Class Room(11,12,13,14,15,16,17,18,19,20) Physics Lab 2,Second Floor Staircase:	36468	Nil	
13	Class Room (22,23,24,25,26,27,28,29):	10530	Nil	
14	Dept., Of Geography,NSS,Staff Quarters:	15120	Nil	
B)	NEW BUILDING			
15	Basement: Seminar Hall, Library, Network Resource Centre, Staff and Girls Reading Room, NSS, Porch, Staircase:	54868	Nil	
16	Dept.Of Physics And Electronics, Staff Room:	8400	Nil	
17	Dept. Of Computer Science:	66764	Nil	
18	Dept., Of Hindi Sociology,Politics,First Floor,Exam Section,Chemistry,Psychology,economics	26364	Nil	
19	Class Room (8,9,10,11,16,17,18,19), Staircase II, Dept. of Botany, Zoology, Marathi, Maths, English, Geography, Microbiology, Third Floor Staircase:	178306	Nil	
20	Open Auditorium, Gymnasium, open Premises:	7200	Nil	

5.3 Additional Load During (2020 - 21):

Sr. No.	Name of Appliance	Power Rating (Watt)	Quantity	Power Consumption (Watt)	Usage per Day Hr.	Power Consumption/day (Watt)
A	B	C	D	E = C X D	F	G = E X F
1	Printer	300	1	300	8	2400
2	Rotary Vacume Evaporator	400	1	400	8	3200
3	Digital Copier	183	1	183	8	1464
					Total:	7064 Watts

**** This is total load consumption considered approximately. Actual load consumption might be different according to actual use of power for particular time period.***

5.4 PF Incentive/ Penalty :

As per the MSEDCL tariff, whenever average power factor in a month, is less/more than 0.95, incentives/penalty are offered which we need to have take into consideration:

Similarly there is scope for further improvement of power factor at particular case. Because Power factor is affected . If we more focus on average power factor of 0.95, we will get the incentives instead of penalty.

Check for **power factor correction/improvement panel using capacitor bank Or APFC panel feasibility** with experts opinion.

5.5 Prompt Payment variation Calculation:

TABLE 5: Prompt payment Variation:

Sr. No.	Month	Prompt Payment Discount	Discount Received Y/N?
1.	June 21	253	Y
2.	May 21	179	Y
3.	April 21	938	Y
4.	Mar 21	137.39	Y
5.	Feb 21	938.32	Y
6.	Jan 21	50.79	Y
7.	Dec 20	39.82	Y
8.	Nov 20	39.82	Y
9.	Oct 20	39.82	Y
10.	Sept 20	39.82	Y
11.	Aug 20	0	NA
12.	July 20	262.5	Y
1.TOTAL Discount received by prompt payment =INR 3990			
3. Late Payment Charges= INR 00.00			

5.6 College Campus Photos:

Library



Reading Room



Computer Lab



Staff Room



Physics Lab



Gymnasium



Chapter: 6

Study of Electrical Systems

6.1 Electrical Supply Details:

The electrical supply to MVP'S Arts Science and Commerce College, Uttam Nagar, CIDCO comes from MSEDCL supply at 11 kV, which is stepped down to 415 V by a transformer.

6.2 Study of Electrical Demand:

There is a single meters installed in the premises. The details of meters are as under

Energy Meter Details:

Sr. No.	Details of Electricity Demand	Tariff	LT-X B II (88)
	Meter No:	049015185111	
1	Sanctioned Load	30.00	kW
2	Contract Demand	28.00	kVA
3	Recorded Maximum Demand	18.00	kVA

Thus we observe that:

Total Sanctioned Load is **30 kW** while the recorded Maximum Demand is **14.600 kVA**.

6.3 Lighting System:

Observations and suggestions:

- It is found that FTL, Bulbs, CFLs are installed and replacing with LEDS
- light or electric gadget left ON when not needed which is wasting energy and money , causing pollution that is totally unnecessary ,we can surely avoid this.
- **Stand-by power can use up to 8% of a household's total electricity.**

For most homes a 10% reduction in electricity consumption can save 15000 a more a year off our electricity bill and nearly $\frac{3}{4}$ of a tone of CO₂ pollution. A 20% reduction on average consumption will save over Approximately 30,000 and over 1.5 tones of CO₂.

6.4 Don't forget to power down these things when not in use:

- Lights
- Projectors
- Air Conditions
- Exhaust and ceiling or table fan
- Printers and scanners
- Battery and phone chargers
- Computers
- TV
- PA Systems
- Pantry /Canteen gadgets such as blenders, kettles, toasters , Induction etc.

Chapter: 7

Study of Air Conditioners

In the facility for air conditioning there is no centralized system with AHU (air handling unit), mostly split air conditioners are installed.

7.1 Observations and suggestions:

1. Normal air conditioning temperature should be kept as high as possible (i.e. 24 Deg.cels.). By thumb rule, increase in 3 degrees in indoor air temperatures can save 1% of electricity.
2. The ventilation in area can be provided with installation of natural ventilation. Natural ventilation will also minimize the requirement of exhaust fans.

Carbon Di-Oxide Emission Initiative:

Following action has been taken based on previous Energy audit report:

Action Taken Report:

<u>Sr. No</u>	<u>Executive Recommendations Audit (2019-20)</u>	<u>Action Taken for Implementation & outcomes (2020-21)</u>
1	There has to be Institute level student community that keeps track of the energy consumption Parameters of the various departments, class rooms, halls, areas, energy meters, etc	Institute level student committee has been created to keep track of the energy
2	Energy auditing inside the campus has to be done on a regular basis and report should be made public to generate awareness.	Energy audit is done by certified energy auditor every year
3	Need to Create energy efficiency / renewable energy awareness among the college campus for i.e. solar, wind, Biogas energy. College should take initiative to arrange seminars, lectures, paper presentation competition among students and staff for general awareness.	College initiated appreciable activity for Energy Saving Awareness like use of LED and replacing old light sources with new LED. College has also initiated Energy saving awareness activity such as display message in lab, classrooms, premises. Etc.

Chapter: 8

Energy Conservation Proposals

8.1 Providing Energy Efficient Solution for the Air Conditioners:

The **energy saver circuits/ inverter Based Air Conditioners for the air conditioners, intelligently reduces the operating hours** of the compressors either by timing or temperature difference logic without affecting the human comfort. This can save around 15% to 30% of the electricity depending on the weather conditions and temperature settings.

There are total 7 split type air conditioners. It is Recommended that the old air conditioners can be replaced with new energy efficient BEE STAR labeled (3 Star and above) air conditioners whenever possible.

TABLE 7 : Energy Efficiency Improvement:

Sr. No.	Recommendations	Annual Saving Potential (Rs.)	Estimated Investment (Rs.)	Pay Back period (Years)	Remarks (Feasibility)
1	Use of motion sensor in corridors, passage, Premises and toilets	6000	8000	1.33	Mid Term
2	Auto power factor correction panel	12878	20000	1.55	Mid Term
3	Solar Street Light, Solar Highmast, Solar Garden Light.		As per requirement		
	Total Amount	Rs. 18878 /-	Rs. 28000/-	1.48 Years	Short Term

- **Total Saving Potential is Rs. 18878 Aprox.**
- **The total energy cost with an overall payback period of 1.48 Years for technical and economical feasibility.**

CHAPTER: 9

Energy Saving Recommendations

General Recommendations:

- Care should be taken to keep lights in classroom off and keep ON whenever necessary.
- Try to get the benefit of TOD time slot(Refer Pt.6.4) i.e. -01.50 rate at night in addition to actual rate for per unit consumption for **electric motor pumping purpose during 2200 – 0600 Hrs.**
- Use Solar Street Light, Solar High mast , Solar Garden Light in Premises.

Executive Recommendations:

1. Form Institute level student community that keeps track of the energy consumption Parameters of the various departments, class rooms, halls, areas, meters, etc
2. Energy auditing inside the campus has to be done on a regular basis and report should be made public to generate awareness.
3. Arrange Seminars to Create energy efficiency/ renewable energy awareness among the college campus
i.e. solar, wind, Biogas energy. College should take initiative to arrange seminars, lectures, paper presentation competition among students and staff for general awareness.

Note:

Energy Bill for the months from Jan-20 onward is shown 0.00 , as it is debited from the Principal Arrears (Rs 4,60,201/-)

This Year 20-21 Principal Arrears of July 20 is Rs. -289606.14 and debited every month till June 21 is Rs. -171159.84 still Balance

10. References

- 1) "Energy Management, Audit and Conservation" by Barun Kumar De
- 2) "Guide to Energy Management" by Barney L
- 3) "Energy Audits: A Workbook for Energy Management in Buildings" by Tarik Al-Shemmeri
- 4) "Fundamentals of Energy Conservation and Audit" by Agarkar Santosh
Vyankatro and Mateti Naresh Kumar
- 5) "Industrial Energy Conservation (UNESCO Energy Engineering)" by Charles MGottschalk
- 6) Msedcl Energy Bills/ CPL



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SOLAR Rooftop Energy, Energy Auditing.

WORK COMPLETION REPORT

- Name of Work Project : Energy Audit of MVP'S KSKW Arts, Science and Commerce college, Uttamnagar, CIDCO, Nashik-08
- Work Order Number : 2020-21
- Work Period : From 03/06/2021 To 14/06/2021

This is to Certify that SOLASTA Energy Solutions , Services & Maintenance has successfully completed Energy audit at KSKW College, Uttam Nagar, CIDCO, Nashik-08. The work of energy audit is completed on 15/06/2021 for year 2020-21.

Thanking you and assuring you for our best service always.

Audit Report BY,

FOR SOLASTA,


Er. Anil S. Dube
BEE Certified Energy
Auditor
Regn.No.EA-4973


SOLASTA
Energy Solutions, Services & Maintenance
Mr. Pushendra P. Pagar
Proprietor



Page 1

Regn. No. EA-4973

No. 2487



National Productivity Council
(National Certifying Agency)
PROVISIONAL CERTIFICATE

This is to certify that Mr. / Ms. *Anil Siddhanarayan Dube*
son / daughter of Mr. *Siddhanarayan Dube*

has passed the National Certification Examination for Energy Auditors in 2006, conducted on behalf of the Bureau of Energy Efficiency, Ministry of Power, Government of India.

He / She is qualified as Certified Energy Manager as well as Certified Energy Auditor.

He / She shall be entitled to practice as Energy Auditor under the Energy Conservation Act 2001, subject to the fulfillment of qualifications for the Accredited Energy Auditor and issue of certificate of Accreditation by the Bureau of Energy Efficiency under the said Act.

This certificate is valid till the issuance of an official certificate by the Bureau of Energy Efficiency.

Place : Chennai, India

Date : 30th April 2007

Alpin Chidambaram
Controller of Examination