

WARM GREETINGS!!!

Dear Sir / Madam,

ENERGY AUDIT DIVISION

TRANSUN ENERGY SOLUTIONS W.L.L IS HIGHLY SPECIALIZED IN ENERGY AUDIT APART FROM SOLAR PROJECTS DIVISION.

Energy Audit Expertise:

We are having more than 35 Years of Experience in Energy Audit and We are Rendering our Services with a Team of Experienced and **BEE (Bureau of Energy Efficiency, Govt. of India)**, Accredited Energy Auditors(AEA) , Certified Energy Auditors.(CEA)

Audit Team : Consists of Electrical and Mechanical Engineers :

With Specializations in Energy management and audit. They are Highly Qualified with Doctorate (Ph.D), Retired Scientist from Dept. of ATOMIC ENERGY-Govt. of India and Retired from NPC-India.

Audit Experience / Our Credentials :

Audited more than **500 Projects** in the Various Sectors such as Refineries, Oil & Gas, Power Plants, Petrochemical, Textile, Mines. Ports. Pharma, Tyre, Cement, Steel - Aluminum Industries, Automobile , Light and Heavy engineering Industries. Hotels, Hospitals, IT Parks, Commercial Buildings etc.

International Assignments :

Audit and training services Provided in Various Countries (Bangkok, Thailand, Iran, Japan, Ghana, Taiwan, Nepal, Tehran, Fiji, Tokyo, Egypt, USA- Washington, Pittsburgh, Los Angeles, San Francisco etc.).

TRANSUN Management :

TRANSUN is Managed by a Group of Entrepreneurs who are Experienced in Managing various Industrial Energy Projects such as Solar Power Projects, Energy Auditing, Construction, Trading etc.

We Explore the Opportunities to Cut down the Cost of ENERGY CONSUMPTION by Leveraging the Globally benchmarked practices of the Industry. We focus on Achieving Project Completion within the Stipulated Time and Cost.

We are Always committed to keep up the ethical values of business by Maintaining the Principles of Honesty, Integrity and Respect.

For **TRANSUN ENERGY SOLUTIONS WLL.**

Dr. P. DHARMALINGAM (Chief of Energy Audit Team & Executive Director)

Ph.D. (Doctorate), B.TECH, PGDEM, MS, DIM, ACE, BEE, Former Director in NPC, India.

Accredited Energy Auditor, Certified Energy Auditor,

Lead Auditor- ISO 50001-EnMS (CMVP), USA, ISO 14064, GHG Lead Verifier.

Mobile: +973 3367 7088 / 3355 0770, Email : energyauditing@transunenergy-me.com, Web : transunenergy-me.com

			
Dr. P. DHARMALINGAM. (Ph.D.), EXECUTIVE DIRECTOR IN TRANSUN WLL Doctorate in Energy Audit & Mgmt. B.TECH, PGDEM , MS, DIM Accredited & Certified Energy Auditor, BEE (Bureau of Energy Efficiency), Govt. of India Trainer in Green Buildings Initiatives Former Director at NPC, India, Qualified Lead Auditor -ISO 50001- EnMS Certified Measurement & Verification Professional @ (CMVP),USA Leading Energy Auditing Consultants and an Eminent Faculty Member in various Universities in Various Countries.	Mr. J. MOHANAN PILLAI, DIRECTOR IN TRANSUN WLL M.Sc, F.I.E (Electrical), SCIENTIST (Retired) from ATOMIC ENERGY, Govt. of India. CHARTERED Engineer, CEA, Certified Energy Auditor, Certified Energy Manager, 39 Years in the Energy Field, Certified & Qualified in Solar System Designing, Installation, Project Engineering & Mgmt. Certified Energy Auditor with experience in the field of Industrial Energy Auditing. Chartered Engineer (Electrical Engineering) from The Institution of Engineers India.	Mr. T.SANKARANARAYANAN DIRECTOR IN TRANSUN WLL BEE ACCREDITED ENERGY AUDITOR – AEA 0107 BEE CERTIFIED ENERGY AUDITOR - 689 - EA 1576 (Professional Licenses) Certified & Accredited Energy Auditor with 35 years of experience in Energy Efficiency, Energy Conservation, Energy Management Strategy, Energy Auditing. Post graduation in Energy Mgmt. Former Regional Director at NPC, Mumbai.	Mr. VIJAYABALAN.A B.E, A.M. Aesl (Aeronautical Engineer), (CEO & VICE PRESIDENT of TRANSUN W.L.L) FOUNDER & CEO of TRANSUN INDIA Pvt. Ltd., India. Estd. 2010 HEAD OF SOLAR PROJECTS : Executed 1.25 Megawatts Solar Project for M/S Techmaaxx WLL (for a School at Saar in Bahrain) ENERGY AUDITOR SOLAR CONSULTANT & DESIGNER Executed more than 3500 Solar Projects in India & Abroad Consultant & Advisor to M/s. Renewable Energy Co.UK Ltd. (1085494)

OUR CONSULTANCY SERVICES FOR ENERGY AUDITING

❖ Detailed Energy Audit	❖ ISO 50001 Implementation	❖ Electrical Safety
❖ Electrical Energy Audit	❖ Carbon Foot Print study	❖ Green productivity❖ Water Audit
❖ Thermal Energy Audit	❖ Harmonics study	❖ Building Energy Audit

SERVICE PROVIDED TO VARIOUS COUNTRIES

Taiwan, Tailand, Iran, Japan, Nepal, Ghana, USA (Washington, Pittsburgh, Los Angeles and SanFrancisco) etc.

(For More Details Kindly Refer our Web)

SECTORS COVERED

❖ Aluminium Industries	❖ Mining	❖ Paper Mills	❖ Multi Speciality Hospitals
❖ Thermal power plants	❖ Dairy	❖ Refineries	❖ Luxury Hotels
❖ Steel Plants	❖ Sugar Plants	❖ Fertilisers	❖ Institution
❖ Foundries	❖ Food & beverage	❖ Railways	❖ Municipality
❖ Cement Factories	❖ Rubber & plastics	❖ Textile Production Factories	❖ Reserve Banks
❖ Engineering Industries (L & H)	❖ IT sector	❖ Chemical Factories	❖ MSMEs
❖ Educational Institutions	❖ Mines	❖ Onshore & Offshore Platforms	❖ Ports etc....

AUDIT COVERAGE AREAS

Electrical Energy Systems: Electrical Power Generation Systems, Distribution network study, Plant Electrical Utilities, Transformer, Motors, Capacitors, Electrical network, Fans and blowers, Pumping system, Compressed air system, HVAC, Cooling tower, Illumination, DG sets, Tariff structure, VFD Application and Energy Efficient Capacity Controls, Harmonic, Advanced controls and Electrical Safety.

Thermal Energy Systems: Fuels and Combustion, Industrial Boilers, Steam System, Furnaces (Fuel and Electric), Thermal Energy Equipment's (Boilers, Melting and Reheating furnaces), Waste Heat recovery Systems, Energy loss optimization in Thermal energy Distribution network, Fuel Substitution assessment, Performance of Dryers, Hot & Cold Distribution Lines Insulation review and Review of Standing Loss through Refractories. Assessment of Cogeneration and Tri-generation Potential, Gas & steam turbines, WHR and Heat Exchangers. Performance Assessment of Power Generation Equipment, Identification Waste, Heat Recovery Potential and Review of Heat Exchange Performance, Application of Energy Efficient Technologies and performance evaluation of Thermal system.

LIST OF MAJOR INTERNATIONAL CLIENTS

* Asian Productivity Organization (Tokyo) * **UNEP** (Bangkok) * **NEEP- GIZ** * **IPHRD**, Iran* **USAID-USA** ***JAICA** Japan,
NTPC - National Training & Productivity Centre- Fiji * **UNIDO** -Automobile industry cluster, MSME (Govt.) Sector
ASSIST - Air-conditioning and refrigeration manual for efficient operation and maintenance and Greenhouse gas reduction
UNDP - Steel rerolling mill Energy Efficiency etc.

OUR TRAINING SERVICES

In the ever-changing energy industry, knowledge management is the key to efficient, reliable and profitable operations. Keeping up-to-date with the latest developments is a huge challenge with new technologies and regulations constantly emerging. Apart from workshops we conduct customized in-house training to your company's specific needs. These can be tailored versions of existing courses, or completely new.

TYPE OF TRAINING

❖ Customized In-Company Training ❖ Energy awareness for all employees. ❖ Open enrolment courses and workshops

TRAINING METHODOLOGY

Training methodology includes lectures, videos, animations, question & answer sessions, quiz and interactive worked examples. Relevant case studies will be provided to illustrate the application of each tool in an operations environment.

ENERGY COST REDUCTION

Energy cost reduction is the need of the hour, for each Industry. "Energy efficiency" is proven economic drivers that can help industries to reduce their energy waste while reduce 'Greenhouse Gas' emissions. Energy cost on account of Electricity, Fuel oil, Coal, Gas, Water and Steam is an area where very effective & quick results can be achieved by energy auditing. Many of the Energy Audits Identified Cost Savings Potential in the Order of 20-25% even in the well Managed Industries and Commercial Sectors. The Actual Cost Savings will be Known after Detailed Energy Audit of Individual Facilities.

Clean Energy Systems: Renewable Energy, solar, wind, bio-energy, Waste minimization, Clean Technology.

Energy Management: ISO 50001, CMVP, Techno Economic Evaluation of EE Technologies, PAT, M&V, LEED & Green Building Initiative.

OUR STRENGTHS

- ❖ Accredited Energy Auditor Professionals
- ❖ Advanced Energy Audit Instruments to carryout energy audit
- ❖ Our recommendation and solutions are practical, implementable and cost economics.
- ❖ Quick & Quality services
- ❖ In-company training to operators & supervisors level and managers & executives level

LIST OF TRAINING PROGRAMME OFFERED

ENERGY MANAGEMENT

❖ Industrial Energy Audit & Management	❖ FBC Boiler and Cogeneration
❖ Electrical Energy Audit & Conservation	❖ Energy Conservation in Furnaces
❖ Electrical Safety Audit	❖ Boiler & cooling water treatment
❖ Energy Savings in Pumps Fans and Air compressors	❖ Process Integration and Pinch Technology
❖ Energy Conservation in HVAC system	❖ ISO 50001 Energy Management systems
❖ Energy Conservation in Cooling Towers	❖ Operation & Maintenance of Thermal Power Plant
❖ Energy Conservation in D.G Sets	❖ Waste Heat recovery & Heat exchangers
❖ Energy Conservation in Boiler & Steam System	❖ Energy Conservation in Commercial Buildings

ENVIRONMENT MANAGEMENT

- ❖ Waste minimization ❖ Efficient operation of Effluent Treatment plant

GREEN PRODUCTIVITY

- ❖ Lean Management and productivity ❖ 5S and Kaizen ❖ Lean, Clean and Green Management ❖ LEED & Green Building Initiative

LIST OF INDUSTRIAL CLIENTS

EXECUTED ENERGY AUDIT AND CONSERVATION PROJECTS

Mangalore Refineries & Petrochemicals Ltd, Mangalore	Cochin Refineries Ltd, Cochin	Aavin Dairies, Chennai
Chennai petroleum corporation, Chennai	Raj petro Chennai	Neyveli Lignite Corporation Ltd
Tamil Nadu petro chemical, Chennai	J. K. Pharmachem, Cuddalore	Railways workshops-Trichy
Ballarpur Industries Ltd, (Caustic Soda plant), Karwar	Asian Paints Ltd, Cuddalore	Thumkur Dairy
SPIC heavy Chemicals, Chennai	Servall paper mills	Godrej Industries Ltd
Larsen & Toubro Infotech (Building), Chennai	Premier Mills, Hosur	BOC India Ltd, Chennai
Carborundum Universal Ltd, Chennai	United Bleachers, Coimbatore	Residency Towers , Chennai
Seamless Steel Tube Plant, BHEL Trichy	FACT Udyogmandal	Ramakrishna Steels,
BHEL Auxiliaries plant, Ranipet	Falcon Tyres, Mysore	Caterpillar India, Chennai
Lakshmi Machine Works, Coimbatore	Caterpillar India	HAPP Trichy
Coimbatore Sterlite Copper, Tuticorin	Brakes India, Sholinghur	BSES Kerala Power Ltd
Hindustan Unilever Limited (building), Chennai	Salem Steel Plant, Salem	HAL Diesel Power Plant
EID Parry India Ltd., Sugar Factories	Ordinance Factory, Trichy	IFFCO
Cairn Energy oil drilling rig, Rajamundhry,	Asiatic Oxygen ,Ranipet	Bharath Petroleum Corporation Ltd
Empee Distilleries and Breweries, Chennai	Reserve Bank of India, Chennai	AND SO MANY.....

**ENERGY EFFICIENCY TRAINING FOR EGYPT DELEGATION
(ENGINEERS FROM ELECTRICITY DEPARTMENT – 5 DAYS PROGRAMME)**



INDIAN CORPORATE CLIENTS

Organised Energy Audit and Practical Training program for the Below Mentioned Corporates

BEE - Bureau of energy Efficiency	PCRA –Petroleum conservation & research association
NTPC- National thermal power corporation	IOF-Indian ordinance factories
NALCO- National Aluminium Corporation	IOCL- Indian oil corporation Ltd
GAIL- Gas authority of India	Reliance-Reliance industries
ONGC- Oil and Natural Gas Corporation	EESL- Energy efficiency services Ltd

LIST OF FEW HOTELS & COMMERCIAL BUILDGS PROVIDED CONSULTANCY & CONDUCTED ENERGY AUDIT

01. Hotel Residency Towers	15. Golden House P Ltd (Office complex)
02. Hotel Hablis	16. Reserve bank of India Buildings, Chennai
03. Hotel Metropolitan	17. Reserve bank of India Buildings, Bangalore
04. Hotel Savera	18. Reserve bank of India Buildings, Mumbai
05. Dell Research Centre, Unit 4 Bangalore	19. Reserve bank of India Buildings, Kolkata
06. Dell Research Centre, Unit 5 Bangalore	20. Reserve bank of India Buildings, Trivandrum
07. Tidal Park, Chennai	21. Reserve bank of India Buildings, Hyderabad
08. HDFC Office Buildings	22. State Bank of India Buildings
09. Polarises software buildings	23. Sikkim Menial Institute of Technology
10. Pon Malligai Hospitals, Chennai	24. SRM Institute of Technology, Chennai
11. Pon Malligai Hospitals, Thanjaore	25. National Productivity Council Buildings
12. MIOT Hospital, Chennai	26. Energy Management Centre, Kerala
13. Paramour Railways Hospitals	27. IREEN Institute, Nasik
14. Shopping Malls	AND A LOTS MORE.....

ACTIVITIES, SERVICES & SUPPLY OFFERED

ENERGY AUDITING, CONSULTANCY & TRAINING

ENERGY AUDITING & ANALYSIS	CONSULTANCY & EXECUTION OF ENERGY AUDITING
SOLAR EPC CONTRACTOR	CONSULTANCY & MANAGEMENT FOR SOLAR
SOLAR EV CHARGING STATION	SOLAR CAR PORTS, SOLAR STREET LIGHT
SOLAR PUMPS, SOLAR A/C	WIND SOLAR HYBRID POWER PLANTS
SOLAR ENERGY ANALYSIS	TRAINING & SKILL DEVELOPMENT
CONSTRUCTION & TRADING	ON GRID / OFF-GRID / HYBRID SOLUTIONS

Energy Audit in Chemical additives Industry



Energy Audit in Heavy Engineering industry

Energy Audit Methodology

1. Plant visit and physical observation of operating practices and critical observations.
2. Discussion with Plant utility personals and management.
3. Study of various plant utilities-Field measurement with energy audit instruments.
4. Design and operating data collection of mechanical, electrical, thermal and production equipment's
5. Comparison of operating data with design data.
6. Motor load measurements and survey with power analyzer.
7. Illumination survey, Insulation survey, Thermography survey
8. Identification of Energy Conservation (ENCON) measures.
9. Economic feasibility analysis for identified measures.
10. Documentation, Recommendations and Presentation to the management.



Building Energy Audit



Energy Auditing and Management Training



Corporate Training Services

LIST OF ENERGY MANAGEMENT COURSE MODULES

A-Electrical Utility

Module-1: ELECTRICAL DISTRIBUTION SYSTEM- TRANSFORMERS, PF, MD, CAPACITORS, LOSS REDUCTION
Module-2: ENERGY EFFICIENCY IN ELECTRIC MOTOR
Module-3: VFDs, HARMONICS & POWER QUALITY MANAGEMENT
Module-4: LIGHTING SYSTEM AND CONTROLS
Module-5: DG SET OPERATION AND MAINTENANCE

B-Mechanical Utility

Module-6: ENERGY EFFICIENCY IN PUMP AND PUMPING SYSTEM
Module-7: ENERGY EFFICIENCY IN FAN SYSTEM
Module-8: ENERGY EFFICIENCY IN COMPRESSED AIR SYSTEM
Module-9: ENERGY EFFICIENCY IN REFRIGERATION SYSTEM
Module-10: ENERGY EFFICIENCY IN AIR CONDITIONING SYSTEM
Module-11: ENERGY EFFICIENCY IN COOLING TOWER

C-Thermal Utility

Module-12: FUELS AND COMBUSTION (Oil & Gas)
Module-13: EFFICIENT OPERATION AND MAINTENANCE OF BOILER
Module-14: EFFICIENT USE OF STEAM AND STEAM TRAP
Module-15: BOILER & COOLING WATER TREATMENT
Module-16: HEAT EXCHANGERS & TRI-GENERATION

D-Energy Audit, Management and General Aspects

Module-17: CLIMATIC CHANGE AND NEED FOR ENERGY EFFICIENCY
Module-18: ENERGY AUDITING AND MANAGEMENT
Module-19: ISO-50001 EnMS CERTIFICATION
Module-20: GREEN BUILDINGS INITIATIVES, ECBC/LEED
Module-21: WATER AUDIT AND CONSERVATION
Module-22: WATER TREATMENT/ETP

E-Renewable Energy

Module-23: SOLAR THERMAL TECHNOLOGY & APPLICATION
Module-24: SOLAR POWER GENERATION TECHNOLOGY & APPLICATION
Module-25: BIO ENERGY TECHNOLOGY & APPLICATION

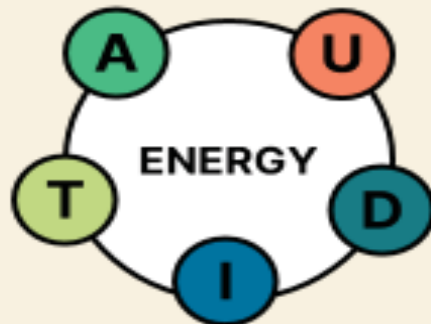
WHY TO GO FOR ENERGY AUDIT?

ANALYSIS

Analyse existing energy usage.

TOTAL SAVING

Saving on both tangible and intangible betterment of the system.



IMPLEMENTATION

Implementing the changes in the system

USAGE

Finding out optimized energy usage.

DECIDE

Decide on better alternatives



TRANSUN ENERGY INDIA
Pvt. Ltd. Chennai, India



EnSave Consultancy & Training Pvt. Ltd.,
Chennai, India. (ENERGY AUDITING)



Amazing & Transun Hi Tech Solutions
Pvt. Ltd., Trivandrum, Kerala, India.