

Document for	Introduction of Energycon Group
Ref no.:	JEP/INTRO/2022-23/F01.
Revision:	F-01
Date:	
Client:	

Save your resources like

Fuel, Electricity, Material, Water, Machine by Proper  
Monitoring to Save our Planet



***JYOTI ENERGYCON PROJECTS***

SYMBOL OF EXCELLENCE

ENERGY & PRODUCTIVITY MANAGEMENT, AUDITING AND  
ENGINEERING CONSULTANCY

***SAVE ENERGY TO SAVE ENVIRONMENT***

***Energycon Group-Since-2002***

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**INTRODUCTION TO ENERGYCON GROUP:**

Indian industry is under tremendous pressure from global competition. Profit margins are vanishing as market forces decide selling prices, whereas, input prices are exponentially increasing. Cost cutting is the key to survival. Out of five M's of management viz. Men, Material, Machinery, Money and Methods, only methods have potential to provide high cost cutting with low investment. The challenge is now technological and the focus area has shifted to performance improvement. Innovative ideas must be successfully brought into manufacturing facilities and the rudimentary methods should be changed.

Our experience suggests that high saving potentials, 20% or above, can be achieved through focused efforts. Let us jointly meet the technological challenge with supremacy.

We have following pillars under the **Energycon Group (EG)**:

- 1. Jyoti Energycon Projects:** For execution of Energy, Waster, Solvent, Material conservation projects in proper format.
- 2. Energycon Consultants:** For Offering technical services like Energy, Process, Water audits and also training in energy, water, process management, etc..
- 3. Heatex Plants and Equipments:** We are fabricating equipments designed by us and suitable for clients requirements.
- 4. Steamco Services:** For steam Trap, PRV and PPPPU Pump servicing and Boiler, TFH and Refrigeration plant operation,
- 5. Madhusuman Enterprises:** Operation and Maintenance, Erection and Commissioning, etc.

**ABOUT ENERGYCON CONSULTANTS:**

First Pillar, **Energycon Group** is a consortium of technocrats with high quality experience and repute in various fields lead by a common mission of providing knowledge-based services in the field of **Energy Efficiency Management**. The company was established in Mumbai, the financial capital of India, in March-2002 to provide **Energy Efficiency Management** services. The company engineers are having experience of more then 300 technical studies/audits conducted in different sectors like Paper, Chemical, Textile, Bulk Drug & Pharmaceuticals, Automobiles, Engineering, Dairy and Ice-cream, Star Hotels etc..

The company has a well-defined methodology to conduct the Energy Audits with minimum cost and maximum benefits to the client. The service portfolio includes Comprehensive Energy Audit, Waste Heat Recovery, Water Audit, Cogeneration feasibility study, and Air Conditioning, Humidification plant design, and Project Management, to ensure that the projected savings are achieved.

**Chetan Rajguru** is the founder member of **Energycon Group**. He has worked with many Energy Consultants in India and outside India (like Thailand, Indonesia, Oman, Kenya and Uganda)

**Chetan Rajguru** has vast experience in developing energy efficiency programs in industry and has a good ability to analyze energy-related systems and develop innovative and practical solutions to industrial energy system problems. He has a wide exposure to various forms of energy systems.

**SERVICES OFFERED:**

**Project Management and ECO proposal Implementation:**

An Energy Audit report, or any other technical report, is not the end of energy conservation or project Management activity. Any technical evaluation is only snap shot study to take feel of energy conservation potential. It is, rather, beginning of a series of implementation projects. We provide project management and turnkey solutions for following activities.

- Process design and supply for distillation, reactor, scrubber, dryers, furnace, heat exchangers, etc.
- Refrigeration system design and supply.
- Steam, CW, CHW, Brine piping designing, supply & erection.
- Multiple effect evaporators design and supply.
- Boiler conversion from liquid fuel firing to Solid fuel firing system.
- Steam traps study and maintenance.
- Process and equipment design for capacity improvement.
- We offer facility management services for operation and maintenance.

**We offer following services:**

- Detailed measurement to re-evaluate energy conservation projects with long term measurements.
- Preparing detailed engineering system design.
- Preparing detailed specification for all equipments with bill of material.
- Project planning and Designing proper energy and equipment monitoring system.
- Preparing minimum required schematic or engineering drawings.
- Monitoring and inspection before and after implementation.
- Measurement and Verification before and after implementation.
- Establishment of energy, material conservation by proper monitoring.

**Process Management Audit Study:**

This study is the scan operation of process for effective production.

**What you can expect out of the Process Audit study?**

- Knowing bottle necks in the process.
- Knowing excessive material loss in the process.
- Energy balance at each stage of process.
- Conducting energy balance at each stage of process.
- Utility consumption at each stage of production.
- Electricity, Thermal Energy Norms and cost of energy at each stage of production.
- Designing of a system to reduce material loss, improve time cycle, to improve quality of production and to increase the capacity of production.

- List of energy and raw material and industrial solvents conservation proposals.

#### **Detailed Energy Auditing:**

This is a detailed diagnostic study to scan entire energy consuming facility and work out Energy Conservation Opportunities.

#### **What you can expect out of an Energy Audit study?**

- Knowing energy consumption pattern.
- Knowing department wise energy consumption with respect to production.
- Knowing tentative energy balance of entire facility.
- Knowing performance of major equipments depending on ABC analysis.
- Identification of energy loss in the system as well as in the equipment.
- Knowing energy conservation opportunities.
- Knowing, how to use waste energy for proper productivity.
- Setting up proper energy monitoring system.
- Knowing steps or action plan for implementation of energy conservation opportunities.

#### **Consultancy for implementation of ISO 50001:2011.**

ISO 50001 lunched in July 2011 for the format the energy management activity. We offer services to get done documentation required to implement ISO 50001:2011 for conducting energy management activity in a formatted way.

#### **Cogeneration, Trigeneration feasibility study and its project management:**

Cogeneration (Combined Heat and Power generation) is the most effective scheme for energy conservation. However, it is also the most capital intensive measure. It is imperative to do techno-economic analysis of all the possible options and arrive at the most attractive option considering the capital investment to energy savings ratio as well as facility infrastructure available. We conduct techno-commercial analysis of different cogeneration schemes for Gas turbines, Steam turbines, DG sets etc.

#### **Water Audit:**

Water, has become a precious resource and can no more be misused. Water Audit study is a qualitative and quantitative analysis of water consumption to identify areas for conservation of water.

- Knowing department wise water consumption with respect to production.
- Preparation of water system diagram.
- Knowing raw water balance of entire facility.
- Knowing effluent water balance of entire facility.
- Identification of water recycling or reusing opportunities.
- Knowing water conservation opportunities.
- Setting up proper water consumption monitoring system.

- Knowing steps or action plan for implementation of water and also energy conservation opportunities.

**Electrical Power Quality Audit:**

We conduct electrical power quality audit study to evaluate total harmonic distortion related to voltage as well as to current and we suggest corrective action to reduce it to acceptable limit.

**Utility and Process Piping Designing:**

Piping system design of steam, CW and refrigeration system for achieving expansion, de-bottle necking, increasing production with same infrastructure, energy conservation and for achieving desirable quality, etc.

**ENCON Team Development Program**

It is program of two years for ENCON-Team Development within the facility. It includes training of team for Energy Management. It also includes from setting up energy and equipment monitoring system in the premises to setting up preventive maintenance schedule for process and utility equipments. It also helps in proving achievements after implementing any project.

**Carbon Footprinting:**

We develop Carbon Footprinting for the facility to reduce and control the Carbon Dioxide (CO<sub>2e</sub>) emission and motivate suppliers, venders and customers for doing it.

**Boiler conversion from liquid fuel to solid fuel and its performance evaluation:**

We offer our services to evaluate boiler performance and supply /convert boiler on solid fuel firing.

**Steam Trap Audit Study and Repairing:**

We offer our **Steam Trap Audit Study and Repairing** services to study the steam traps and repair to directly save steam from its wastage.

**Chilled water and refrigeration system:**

We offer our **Chilled water and refrigeration system** study services to evaluate its performance and modify the system to reduce overall consumption by redesigning.

**Compressed air system study:**

We offer our **Compressed air system study** services to evaluate compressed air system performance and suggest improvements to reduce overall energy and compressed air consumption.

**Waste Heat Recovery:**

We offer our services to evaluate potential and supply system on turnkey basis for heat recovery from process, equipment and system.

**Air Conditioning Evaluation and Design:**

We offer services in air conditioning and ventilation system new design and existing system evaluation for its performance improvement.

**ACHIEVEMENT IN TERMS OF ENERGY SAVINGS:**

Our experience says that in any type of industry like chemical, pharmaceutical (bulk drugs and formulation), textile, paper, battery, food, hospitals, hotels, commercial buildings, food and cold storages, engineering, cement, petrochemical, refinery industry, etc. have minimum of 10% energy saving potential with on an average of 1 to 2 years of return on investment.

**LIST OF SOME IMPORTANT INSTRUMENTS USED DURING MEASUREMENTS**

1. **Digital Power Analyzer** and **Electrical Power Quality Analyzer** for measurement of actual power consumption kW, pf Amp. Voltage, etc..
2. **Ultrasonic liquid flow meter:** Measurement of liquid flow.
3. **Thermal Imaging Camera:** For Thermographi Purpose.
4. **Compressed Air Leak Detection:** Compressed Aair Leak detection Inside the plant,
5. **Anemometer:** measurement of air velocity for evaluating air flow.
6. **Swing Psychometer:** Humidity evaluation.
7. **Pitot tube:** Measurement of air velocity in closed duct.
8. **Humidity Meter:** Humidity evaluation.
9. **Digital Temperature indicator:** Measurement of material as well as for surface temperature measurement.
10. **Infrared digital temperature indicator:** Surface temperature measurement.
11. **Lux Meter:** Lighting Intensity measurement.
12. **PH meter:** Measurement of PH of water.
13. **TDS meter:** Measurement of TDS of water.
14. **Flue Gas Analyzer:** for flue gas analysis.

**ENERGYCON GROUP CAN EXECUTE PROJECTS ON TURNKEY BASIS OR OFFER OUR CONSULTANCY SERVICES FOR FOLLOWING PROJECTS:**

1. Operation and maintenance of total utility.
2. Production process management and optimization
3. Process rerouting for cycle time and cost optimization
4. Solar Power Plant (Upto 4.0 MW), Solar PV system, Solar Steam Generator, etc.
5. Energy Efficiency Improvement in HVAC system
6. Energy and Equipment Remote Monitoring
7. Supply of Heat Pumps,
8. Compressed air system optimization and leak detection,
9. Transformer System Optimisation
10. Power Factor and Related Capacitor Management
11. Lighting system improvement
12. Power Factor Improvement and Management
13. Electrical system optimization
14. Boiler Flue Gas Optimization
15. Condensate recovery system
16. Flash steam recovery
17. Fuel Fired Furnace Optimization
18. Thermic fluid system optimization
19. Air handling System optimization
20. Steam trap system optimization by proper Maintenance
21. Cooling tower optimization,
22. Drying system optimization
23. Pumping system optimization
24. Blower optimization
25. Multiple effect evaporation system optimization
26. Boiler/Thermic Fluid heater/Furnace Fuel conversion
27. Zero discharge system in effluent treatment plant
28. Use of control system for process and energy management
29. Scrubbing system optimization
30. Waste heat recovery



**PRESTIGIOUS PARTIAL LIST OF CLIENTS IN INDIA SERVED BY ENERGYCON GROUP:**

**Chemical Sector:**

1. Jubilant Generics Ltd., Nanjangud, Mysore, KS.
2. Jubilant Life Sciences Ltd., Ambarnath, Supply of Condenser.
3. Heranba Industries Limited, Vapi, Refrigeration Plants optimization,
4. Agrocel Industries Limited, Bhuj, Energy Audit Study,
5. Essel Pro-Pack Ltd., Goa, Supply of Air Cooler.
6. Shiva Pharma Specility Chemicals Limited, Energy Audit Study,
7. Gujarat Insecticides Ltd., Ankaleshwar, WHR System, EA Study.
8. Sudarshan Chemical Industries Ltd., Roha.(Electrical EA Study)
9. Kanoria Chemicals and Industries Ltd., Ankleshwar. (DEA Study 3Times)
10. Transmetal Ltd., Vadodara. (Process Audit Study-3 Plants)
11. Clariant Ltd., Balcum. (Ref. Plant Study & Implementation)
12. Cabot India Ltd., Thane (Electrical EA Study)
13. Deepak Nitrite Ltd., Roha, Hyderabad U-I, U-II and U-III. (DEA)
14. Deepak Nitrite Ltd., Nandesari, Vadodara, Process Audit Study.
15. Ralies India Ltd., Ankaleshwar. (DEA-3 Times), Lote PA and EA Study
16. Excel Industries Ltd., Roha & Lote. (Pumping System Study)
17. Excel Crop Care Ltd., Bhavnagar.(Electrical EA+ Process Audit)
18. Tata Chemicals Ltd., Ranavav, GS.(Electrical EA)
19. Star Chemical Ltd., Pawne, New Mumbai. (DEA)
20. Technova Imaging system Ltd., Taloja (DEA-2 Times)

**Pharmaceutical Sector:**

1. Sandoz India Ltd., Turbhe and Mahad. (DEA+Water Audit)
2. Serum Institute of India Ltd., Pune (Water Audit)
3. Wockhardt Limited, AWB, 4 plants Water Audit study
4. Jubilant Generics Ltd., Nanjangud, Mysore, KS.
5. Jubilant Life Sciences Ltd., Ambarnath, Thane, MS.( Boiler O&M )
6. Lupin Ltd., Ankleshwar, Goa, Aurangabad, Dabasa. (EA Study)
7. Ronilo Pharma Ltd., Alkola. (DEA)
8. Lyka Labs Ltd., Tarapur. (DEA)
9. Zydus Cadila Ltd., Turbhe, Dabasa (Water Audit and EA Study)
10. Indo Pharma India Ltd., Turbhe (Electrical Safety &EA)

**Textile Sector:**

1. Sourer Textile limited, Karjan, Gujarat, EA Study,
2. NTC Textile mills, Chalisgaon, Dhule, etc. (DEA)
3. NTC Textile mills, Nanded, Aurangabad, etc. (DEA)

4. P. V. Textile, Ginganghat, Vardha. (DEA)
5. Indorama Ltd, Indor. (DEA)
6. Ghadge Patil Textile Mill Ltd., Kolhapur.(ECO Evaluation)

**Bakery Sector:**

1. Britannia Ltd., Mumbai, Gaziabad, Delhi, etc. (M&V)
2. Monjinies Bakery, Andheri, Mumbai. (DEA)
3. Modern Bakery, Andheri. (DEA)

**Salt Manufacturing Sector:**

1. Super Salt Ltd, Jambusar. (DEA)
2. Gujarat Heavy Chemical Ltd., Tutikudi, Tamilnadu.. (DEA)
3. Sprikal Salt Ltd., Tutikudi, Tamilnadu. (DEA)

**Petrochemical Sector:**

1. Hindustan Petrochemical Corporation Ltd., Mumbai (Elect. EA)
2. Lubrizol India Ltd. Turbhe, New Mumbai.(Pumping Sys. Study)

**Hotel Sector:**

1. Taj Heritage and Palace. Mumbai. (DEA)
2. Taj Wellington Mews, Mumbai (DEA)
3. Taj Landsend, Bandra. (DEA)
4. Holiday Inn, Nairobi-Kenya (DEA)
5. Hotel Equatoria (5 Star), Kampala-Uganda, etc. (DEA)
6. Hotel Nagina International, Mumbai. (DEA)
7. Kohinoor International, Airport, Mumbai. (DEA)

**Prestigious Clients served by us outside India:**

1. Polyplex Industries Ltd., Unit-01, Unit-02 and Unit-03, Thailand.
2. Unilever Ltd., Surbhaya, Indonesia. (DEA)
3. International marble Co. LLC., Ruwi, Oman. (DEA)
4. Holiday Inn, Nairobi-Kenya (DEA)
5. Sumaria Industries Ltd., Nairobi-Kenya. (DEA)
6. Burger Paint, Nairobi-Kenya. (DEA)
7. Triclover Industries Ltd., Nairobi-Kenya. (DEA)
8. Osho Chemicals Pvt. Ltd., Nairobi-Kenya. (DEA)
9. Britannia Food & Allied Industries Ltd., Kampala-Uganda. (DEA)
10. Kampala Pharmaceuticals Ltd., Kampala-Uganda. (DEA)
11. Hotel Equatoria (5 Star), Kampala-Uganda, etc. (DEA)
12. Carzen Flowers Ltd., Naivashya, Kenya (DEA).
13. Diamond Industries Ltd., Mombassa, Kenya (DEA)..
14. Kisumu Water Works, Kisumu, Kenya (DEA)..
15. Kisumu Sugar Industries Ltd., Kisumu, Kenya (DEA)..
16. Nyahururu Water Works, Nyahururu, Kenya (DEA).