



**INSTITUTE OF AERONAUTICAL ENGINEERING**  
(Autonomous)  
Dundigal - 500 043, Hyderabad, Telangana

**ANNEXURE-25**

# **ENERGY POLICY**



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**(Autonomous)**

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## **1. PREAMBLE:**

Energy plays important role in the development of nation as well organization. Energy requirement is linked with GDP development. Out of various costs, energy cost is one of the major costs. Energy intensity is energy requirement per GDP. Energy intensity of our country is 3.7 times of Japan, 1.55 times of USA. 1.47 times of Asia and 1.5 times of world average. Energy intensity indicates development stage of country and efficiency of energy. Our country is not energy secure country and energy requirement is met through import of coal and petroleum product. Around 70% of countries energy requirement is met through electricity generation using thermal power plants.

Use of fossil fuels leads to environmental pollution energy conservation 2001 was enacted to improve energy efficiency and reduce energy intensity for sustainable development it is necessary to provide focus on energy. Environment and Ecology Energy Management (EEEM) is judicious and effective use of energy without curtailing requirement to maximize profit and minimize environmental degradation. There is substantial potential to conserve energy by implementation of energy management in all sectors of economy.

Energy conservation awareness at all level is important to involve all stakeholders in energy management program. Engineering institutes can play significant role in creating awareness about energy management among all engineering students, schools, society and guide industry in the area of energy management. Energy audit is one of the important tools to identify energy conservation. Potential energy audit would give positive orientation about energy cost reduction. Energy audit is translation of energy conservation into realities taking into the consideration of techno commercial aspects.

## **2. OBJECTIVES OF ENERGY MANAGEMENT:**

- Improvement in energy efficiency to reduce energy consumption and cost
- Eliminate wastages by use of good housekeeping practices
- Minimize environmental degradation

## **3. ENERGY MANAGEMENT PRINCIPLES:**

Various energy management principles are:

- ❖ Procure energy at lowest cost
- ❖ Use energy at highest possible efficiency
- ❖ Use low investment technologies
- ❖ Reduce, reuse and recycle.
- ❖ Fuel substitution
- ❖ Use of renewable energy

#### 4. ENERGY MANAGEMENT STRUCTURE:

There is energy management centre at Institute level headed by, Mr. K Lingaswamy. Each department has representatives and they are belongs to part of energy management centre.

The Following are the representatives of energy management centre.

S. No	Name of the Representative	Department
1	Dr. D Govardhan	AERO
2	Dr. Y Mohana Roopa	CSE
3	Dr. M Purushotham Reddy	CSE (AI&ML)
4	Dr. A Karthik	ECE
5	Dr. B D Y Sunil	MECH
6	Dr. R Ramya Swetha	CIVIL

#### 5. USE OF ENERGY AND ITS TYPES:

S.No	Type of Energy	Energy usage
1	Electrical energy	<ul style="list-style-type: none"><li>• Indoor and outdoor illumination</li><li>• Air conditioning</li><li>• Water Pumping.</li><li>• Computers and peripherals</li><li>• Laboratory Equipment 's</li><li>• Work shop Equipment's</li></ul>
2	Solar energy	In addition to the raw power, solar power plant of 160 Kw is installed. Grid interfacing facilities are provided.
3	Biogas	cooking in the canteen

#### 6. ELECTRICAL SUPPLY SYSTEM:

Electrical power to campus is through 11KV HT supply line. The required voltage to institute (415KVA) is achieved through 315KVA step down a transformer. The 415KVA supply is distributed to various sections of the institute through underground cable. The underground network is adequately protector against local pressures, mechanical and any other damages. The solar energy and electrical raw power are interfacing through bidirectional switch, whenever raw power is not sufficient to meet the demand of the institute. The power generation from solar is uploaded to grid daily if it is excess.

#### 7. BACKUP POWER SUPPLY:

Institute is equipped with diesel generator as 1)180KVA 2)125KVA 3)125KVA 4) 62.5 KVA. In addition to the backup facilities, all the departments and laboratories, ICT facilities in class rooms, common facilities are connected to UPS system. Institute having 500 KVA installed UPS backup facility.

## **8. REACTIVE POWER MANAGEMENT:**

Reactive power management is carried out by using detuned real time power factor control panel at substation level with the capacity of 150 KVAR.

## **ENERGY POLICY**

Institute of Aeronautical Engineering is one of the leading engineering institutions offering engineering education at UG and PG level. Institute plays an important role in development of economy by providing quality engineering professionals

### **Our Mission is:**

- Minimize energy consumption by use of energy efficient equipment's and maximum use of day light, natural ventilation and Energy substitution
- Maximize use of renewable energy.
- Create awareness about energy conservation.

### **This we plan to achieve:**

- Manage efficiently utilisation of Energy resources by use of cleaner and more efficient technologies.
- Train faculties, students, Industry professionals to make institute the pace setter in area of Energy conservation.
- Promote awareness related with Energy conservation among various sections of society
- Enrich our experience on Energy conservation by exchange of ideas with other organizations
- Encourage faculty members to obtain certification as a certified Energy Auditors and Managers.
- Carry out regular internal energy audit to identify energy conservation opportunities
- Provide Expertise to industry and other organisations in the area of Energymanagement by offering Energy Audit Services

### **Energy management Action Plan:**

#### **Improvement in Energy efficiency:**

- Use of star labelled Equipment's such as Refrigerator, Air conditioners.
- Replacement of Conventional T8 36-40-watt florescent lamps by T8 18W LED tube.
- Replacement of 150HPSV street light fixtures by 72 W LED Street Light Fixtures.
- Use of TFT computer monitors
- Replacement of conventional ceiling fans by BLDC ceiling Fans

#### **Elimination of Energy wastages:**

- Maximum use of natural day light for indoor illumination.
- Use of natural ventilation.
- Use of timer switches to street light control
- Use of timer switches in class room
- Good Housekeeping practices.
- Fine tuning of temperature setting of Air conditioners and Water coolers

#### **Energy Substitution:**

- Use of solar water Heaters in place of Electric Geysers
- Maximum Use of Renewable Energy: Grid interactive Solar PV systems at Roof tops

#### **Energy Cost Optimisation:**

- Maximum demand optimisation by adequate reactive power management.
- PF incentive by maintenance of Power factor above 0.99.
- Use of detuned RTPFC to eliminate risk of resonance.
- TOD tariff benefits by operating flexible load during off Peak Period.
- Use of dual trigger RTPFC panel to optimize DG fuel consumption

#### **Training and awareness programmes:**

- Conducting awareness program for staff, students and society.
- Active involvement of UG /PG students in awareness program in schools.
- Conduct faculty development program to faculties from various Engineering Colleges
- Conduct competence enhancement program for industry professional in the area of Energy management.
- Conduct workshops on Grid interactive solar PV systems and Renewable Energy.
- Organise seminar and poster presentation in the area of renewable Energy and Environmental Protection.
- Encourage students to undertake UG projects in the area of Energy Management