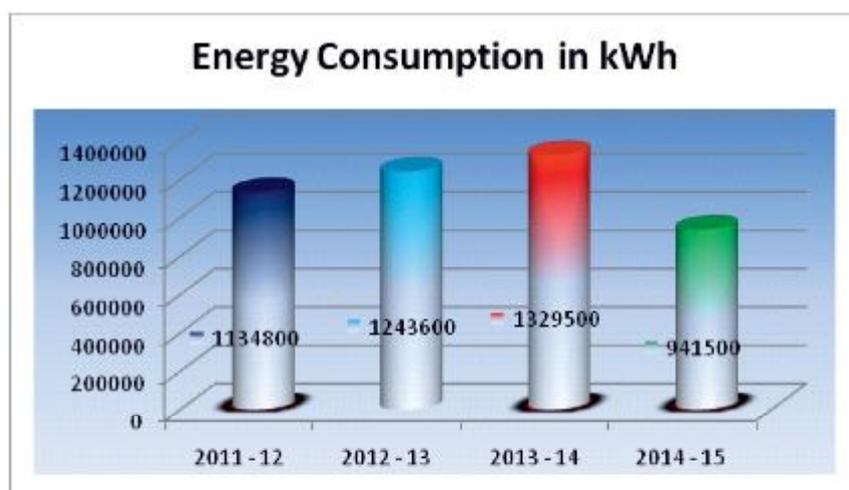


Energy Consumption



Energy conservation measures

University had initiated energy conservation measures to minimize the energy cost as well minimize the carbon emissions. These are the following initiatives:

1. Replacement of conventional ceiling fans with energy efficient fans

In educational building major loads in the class room and laboratories are fans, conventional fan used to consume 85 W, was replaced with 38 W with BEE certified fan.

Result: Energy saving of 40890 kWh per annum achieved

2. Replacement of conventional T12 tube lights with T5 tube lights and LED sets

In the computer science and engineering building major class rooms, convention halls, laboratories and corridors were having T12 tube lights for providing artificial lighting, all these lights were replaced by T5 tube sets or LED lights.

Result: With above implementation, energy saving of 43530 kWh per annum achieved.

3. Captive power generation using nonconventional energy resources

University had taken an initiative for green power in campus in financial year 2014-15, green power is a general term used to describe electricity and heat energy that are produced from renewable energy sources and produced by processes that are more environmental friendly. In campus, University have implemented 161.72 kWp of solar grid tied PV system and 68 kWp solar and wind hybrid system on roof top of computer science and engineering building resulting in 2, 89, 398 units of power generation.

**INDIAN RAILWAY INSTITUTE OF SIGNAL
ENGINEERING & TELECOMMUNICATIONS
(IRISET)
Secunderabad (Telangana)**

Institute Profile

Indian Railway Institute of Signal Engineering and Telecommunication (IRISET) was established in the year 1958 and **is the alma mater for the officials of the S&T department in the Indian Railways. It is situated in a 16 acres of the sprawling campus in Hyderabad, a bustling town for IT growth. It provides training to all levels of the officials in Railways.**

The IRISET has been envisioned with the aim of imparting the highest standards of training. This institute has a well equipped model rooms for displaying various types of signaling system in the Railways, starting from primitive era to the state of the art technologies in the world.

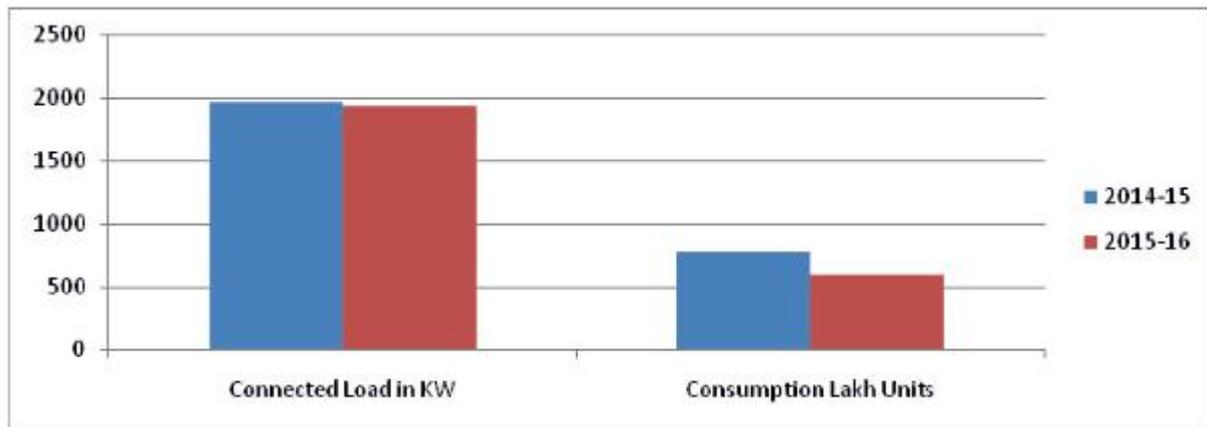
The entire building is surrounded by lush green patch to provide serene ambience which will also add to the energy conservation measures, EPI index of the building is 22.82 i.e. equivalent to 5 Star rating as per BEE norms



IRISET Administrative Building

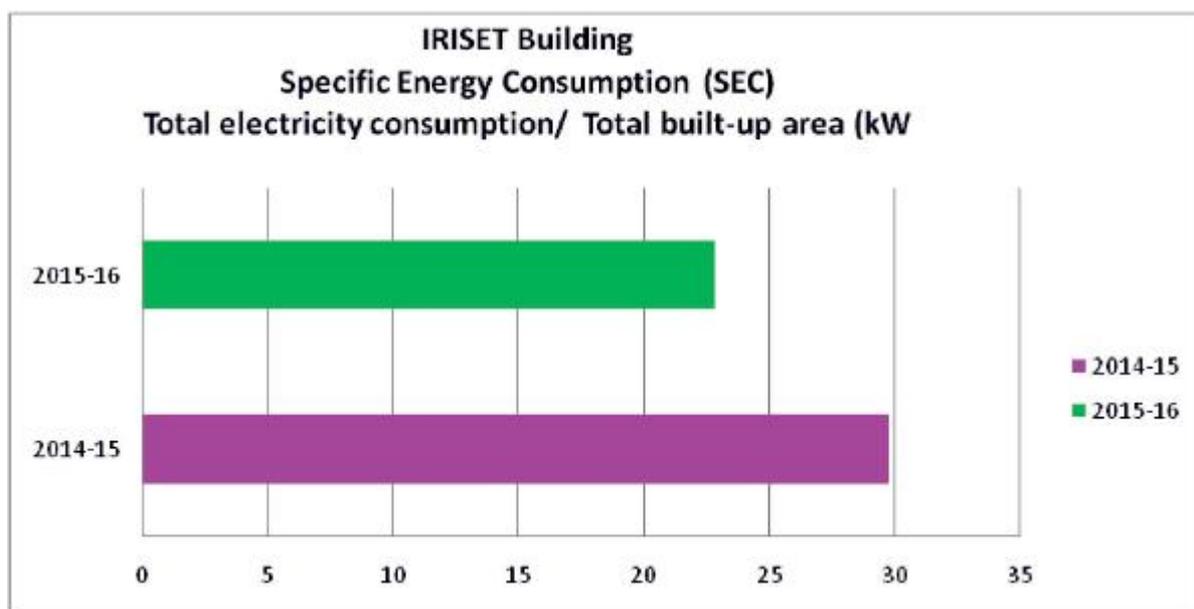
Energy Consumption

Sl. No	Year	Connected Load	Consumption Lakh Units	Savings in Lakh Units	Savings in Rs. Lakhs
1	2014-15	1972KW	7.80	-	-
2	2015-16	1943 KW	5.98	1.82	14.21
Total % savings in KWH				23.33%	



Specific Energy Consumption

Year	Total electricity consumption/ Total built-up area (kWh/m ²)	% Reduction over 2013-14
2014-15	29.77	—
2015-16	22.82	23.33



Energy Conservation Measures Implemented in 2015-16

S. No	Items	Images
1.	Replacement of 39 Nos. of Conventional Ceiling fans with star rated ceiling fan leading to saving of 800 Units amounting to Rs.6,600/- per annum	
2.	Replacement of 55 Nos. of Conventional fan regulators with Electronic fan regulators leading to saving of 1200 Units amounting to Rs.9,300/- per annum	
3.	Replacement of 600 Nos. of T-12 40W fittings with T-5 28W fitting leading to saving of 32400 Units amounting to Rs.2,53,000/- per annum	
4.	Provision of 30 Nos. of Timers for Water Coolers leading to saving of 10800 Units amounting to Rs.84,300/- per annum	
5.	Replacement of 02 Nos. of 1.5 TR Window AC unit with 1.5TR Star rated split AC unit leading to saving of 1200 Units amounting to Rs.9,000/- per annum	
6.	Replacement of 02 Nos. of 1.5 TR Conventional split AC unit with 1.5TR Star rated split AC unit leading to saving of 800 Units amounting to Rs.6,000/-	
7.	Reducing of copper pipe line length by Shifting of condenser motor nearest to AC unit leading to saving of 2900 Units amounting to Rs.22,500/-	
8.	Provision of 05 Nos. of Nature switch for Compound Lights leading to saving of 400 Units amounting to Rs.3,400/-	
9.	Provision of 5000 LPD Solar Water Heater leading to saving of 57600 Units amounting to Rs.4,49,900/-	
10.	Energy savers for AC units leading to saving of 5400 Units amounting to Rs.42,200/-	

11.	Switching OFF of AC units during lunch hours and after Office hours leading to saving of 47100 Units amounting to Rs.3,68,000/-	
12.	LED Name board leading to saving of 1300 Units amounting to Rs.10,300/	
13.	Provision of 15 Nos. of Sensor based lights in corridors leading to saving of 300 Units amounting to Rs.2,200/	
14.	Replacement of 10 Nos. of T-5, 14W with LED 6W lights in Hostel leading to saving of 200 Units amounting to Rs.1,700/	
15.	Replacement of 21 Nos. of T-5, 28W lights with T-5, 14W in corridors leading to saving of 800 Units amounting to Rs.5,900/	
16.	Replacement of 56 Nos. of T-5, 28W lights with 15W LED down light leading to saving of 2000 Units amounting to Rs.15,700/	
17.	Provision of 5 Nos. of Occupancy sensors for AC units leading to saving of 3600 Units amounting to Rs.28,100/	
18.	Provision of 01No. Of Solar Air Cooler in Gate lodge leading to saving of 900 Units amounting to Rs.6,700/	
19.	Replacement of 05 Nos. of 120W Induction lights with 50W LED leading to saving of 800 Units amounting to Rs.6,600/	
20.	Cleaning of Filters for AC units leading to saving of 700 Units amounting to Rs.5,800/	
21.	Replacement of 44 Nos. of Indication 100W IC Lamps with 1W LED in Labs leading to saving of 8400 Units amounting to Rs.65,300/	
22.	Replacement of 01 no of T-5, 28W Street Lights with Solar lights leading to saving of 100 Units amounting to Rs.800/	

23.	Thermal Insulation for Condenser pipe line leading to saving of 600 Units amounting to Rs.4,700/	
24.	Insulation black film for Air conditioned Lab leading to saving of 100 Units amounting to Rs.900/	
25.	Huts for Condenser unit leading to saving of 1200 Units amounting to Rs.9,400/	
26.	Changing of direction of Condenser unit to avoid direct exposure is leading to saving of 500 Units amounting to Rs.3,900/	

Other Energy Conservation Measures at IRISSET

- **LED Name Board:** Provided LED Name Board for IRISSET



- **5000 LPD Solar Water Heater :** Provided 5000 LPD Solar Water Heater



- **Solar Street Lights:** A Part of this Campus has been provided with Solar Lights



Fig: Solar Street Lights at IRISSET

- **LED Lights in Class Rooms:** LED Lights have been provided in class rooms corridors, Labs, hostel etc.



- **Sensor based lights in corridors:** Provided 10W Sensor based lights in corridors



Fig: 10W sensor based LED

- **Energy Savers for AC units:** Provided 09 Nos. of Energy Savers for AC units at Lekha Bhavan



Fig: Energy Saver for AC Units

- **Sensors in Toilets and Record Room:** Provided Motion sensors for all Toilets.

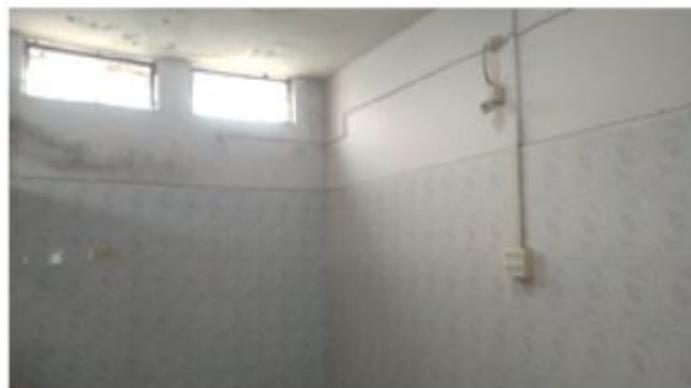


Fig: Sensor in Toilets

- **Nature Switch for Street Lights:** All the street lights provided with nature switch



Fig: Nature Switch for Street Lights

- **Stickering of AC units:** All AC units provided with stickers to create awareness about operating temperatures of AC units.



- **Solar Air Cooler:** Provided 01 No. of Solar Air Cooler in gate lodge.



Fig: Solar Air Cooler

ELECTRIC TRACTION TRAINING CENTRE
South Central Railway, Vijayawada
(Andhra Pradesh)

Institute Profile

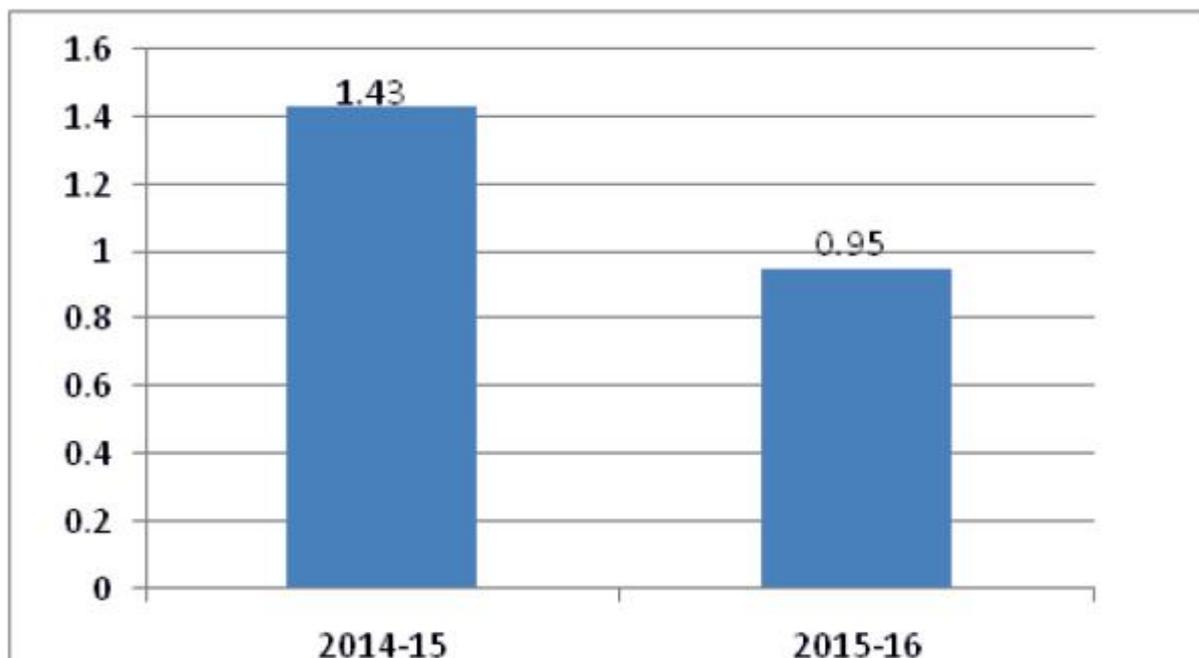
Electric Traction Training Centre (ETTC)/Vijayawada has started functioning in the present new building from 01-09-2013. It is headed by a Principal (Junior Scale Officer) under the administrative control of Sr.DEE/OP/BZA.

Institute is having 18 Instructors (01 TRD, 02 TRS & 15 Running) for imparting training. The various trainings are initial, refresher, promotional and special courses to Running, TRS, and EMU & TRD staff of S. C. Railway and occasionally to staff of other Railways at their request. Training on 3 phase locomotives was commenced from Jan'07.



ENERGY CONSUMPTION

DESCRIPTION	UNITS	2014-15	2015-16
Total Units purchased per annum	Lakh KWh	1.38	0.92
Self Generated per annum	Lakh KWh	0.05	0.03
Total Energy Consumption per annum	Lakh KWh	1.43	0.95



Implementation of Energy conservation measures in Electric Traction Training Centre

S. No	Items	Images
1.	Provision of LED 4'18W fittings in place of T5 28W fittings 25 Nos to save 1,091 units per annum amounting to Rs.9,400/-	
2.	Provision of 12 Nos of LED 30W fittings in place of 150W MH fittings leading to save 5,890 Units per annum amounting to Rs.56,400/-	
3.	Provision of Star rated AC plant in place of Non-star rated AC plant leading to save 2,182 Units per annum amounting to Rs. 18,800/-	
4.	Provision of 20 Nos of LED 2'15W fittings in place of T5 28W fittings leading to save 1,091 Units per annum amounting to Rs.9,400/-	

5.	Removal of redundant fittings leading to save 4,000 Units per annum amounting to Rs.37,600/-	
6.	Temperature setting of AC units at 24° C thereby saving 12000 Units per annum amounting to RS.1,12,800/-	
7.	Working of Simulator regulated for two hours / day leading to save 12,000 Units per annum amounting to Rs.1,12,800/-	
8.	Working of AC units regulated for two hours / day leading to save 10,000 Units per annum amounting to Rs.94,000/-	

Energy Conservation Policies

- Implementing the 20 point action plan items circulated by the Rly.Board and to monitor its outcome.
- Reducing specific energy consumption by continuous energy efficient measures and minimizing energy wastages.
- Conducting energy audits on regular basis to identify the areas having potential of saving of electrical energy and to minimize the energy losses.
- Creating awareness among the employees at all levels in energy conservation initiatives by continuous counseling with tips and organizing seminars.
- Replacing over aged high power consuming electrical equipment with energy efficient / three star and above rated equipment.
- Replacing 150W MH fittings with 40W LED flood light fittings.
- Taking maximum advantage of natural light during day time.
- Exploring Non-Conventional Energy sources- like solar street lights for open area.
- Standardize & adopt use of appropriate energy efficient design/innovative technology.
- Maintaining power factor at 1.0 by providing suitable power capacitors.
- Removing of redundant fittings.
- Setting of thermostat of AC units at 24° C.
- Regulating working hours of high power consuming equipment like simulator, AC units, etc.,
- Setting up of daily, monthly and annual energy consumption targets and monitoring the same at each step duly involving field staff to achieve the targets.

**GITA VIDYA MANDIR GIRLS COLLEGE
Sonipat (Haryana)**

Institute Profile

Founded by Shri Sanatan Dharm Sabha, Gita Vidya Mandir Girls College Sonipat (GVMGC) has emerged as one of the premier institutes of Haryana, imparting value based education to girls in the faculties of Science, Arts, Commerce and Management studies. It has carved a niche for itself in the State for its sincere, committed, all out efforts to produce confident , competent, responsible and responsive young girls who are firmly grounded to their cultural and traditional roots. Re-Accredited in 2014 with 'A' grade by 'NAAC' and conferred the coveted status of college with ' Potential for Excellence' GVMGC, pioneer centre of higher studies for women is celebrating 29 years of glorious journey in its pursuit of excellence.

Affiliated to M.D. University, Rohtak GVMGC is committed to envisage and provide an ideal platform for quality and value based education to girls for exploring their best potential, empowering them with a sense of winning attitude so that each girl is competent enough to make her life successful and fruitful.



MISSION

GVMGC upholds its mission to Educate, Empower, Emancipate Eves of Today`in the realisation of its vision of escalating the process of empowerment through higher and vocational education to girls, adding value to their lives.

The college offers a plethora of courses -12 UG and 6 PG programmes affiliated to M.D. University, Rohtak, of which 5 UG and 6 PG programmes are self financed.

Innovations and Best Practices

- The institution has made several innovations which help to smooth out the Functioning of the institution. These innovations are academic, administrative and infrastructural.
- Along with these innovations Environment Consciousness also prevails amongst the faculty and the students. Keeping in view the present scenario of polluted environment it becomes the prime duty of the Institution to impart environment awareness and also adopt practical measures to keep the campus eco-friendly.
- 'Pollute less and produce more' is practised by the institution.
- Some of the measures taken up by the institution are water-harvesting, energy conservation, land scaping, tree-plantation, and waste-Management. To maintain the balance in the ecosystem.
- This phenomenal growth and development of the college could not have been possible without the supportive management.

Energy Conservation in G.V.M.G.C

- To accelerate energy efficiency and for conservation of energy, 60kwp solar power plant was installed.
- LED lights numbering to the extent 1350 of 20, 25 & 40 watts were installed in the college campus to bring down energy cost.
- Solar installation made rewarding with surplus energy being supplied to the grid with the help of Net Metering.
- Green audit conducted regularly.
- Conducted workshop for students to help them adopt energy-efficient technologies to conserve energy and help boost Indian Economy.