

## **NORTH EASTERN RAILWAY** **Gorakhpur, (Uttar Pradesh)**

### *Zonal Railway Profile*

**NORTH EASTERN RAILWAY** (N.E.Railway )came into existence on 14<sup>th</sup> April 1952 by merging Tirhut and Assam Railway. Further N.E.Railway divided into two parts namely North Eastern Railway and North East Frontier Railway on 15<sup>th</sup> January 1958. After formation of East Central Railway Hajipur on Ist October 2002, its two division Sonpur and Samastipur has been merged with E.C.Railway.

Presently, N.E.Railway has three division they are Lucknow, Varanasi and Izatnagar. This railway has a total 3402.46 RKM and 486 stations.

N.E.Railway being passenger oriented railway is serving the agricultural and densely populated area of Uttar Pradesh, Uttaranchal and Western Bihar as an reliable railway transport media spread over the border of Nepal through out its length. The railway spends around Rs. 19.32 crores towards the cost of payment of electricity charges to State Power corporation and payment of Rs.322.66 crores towards the cost of fuel for diesel traction.





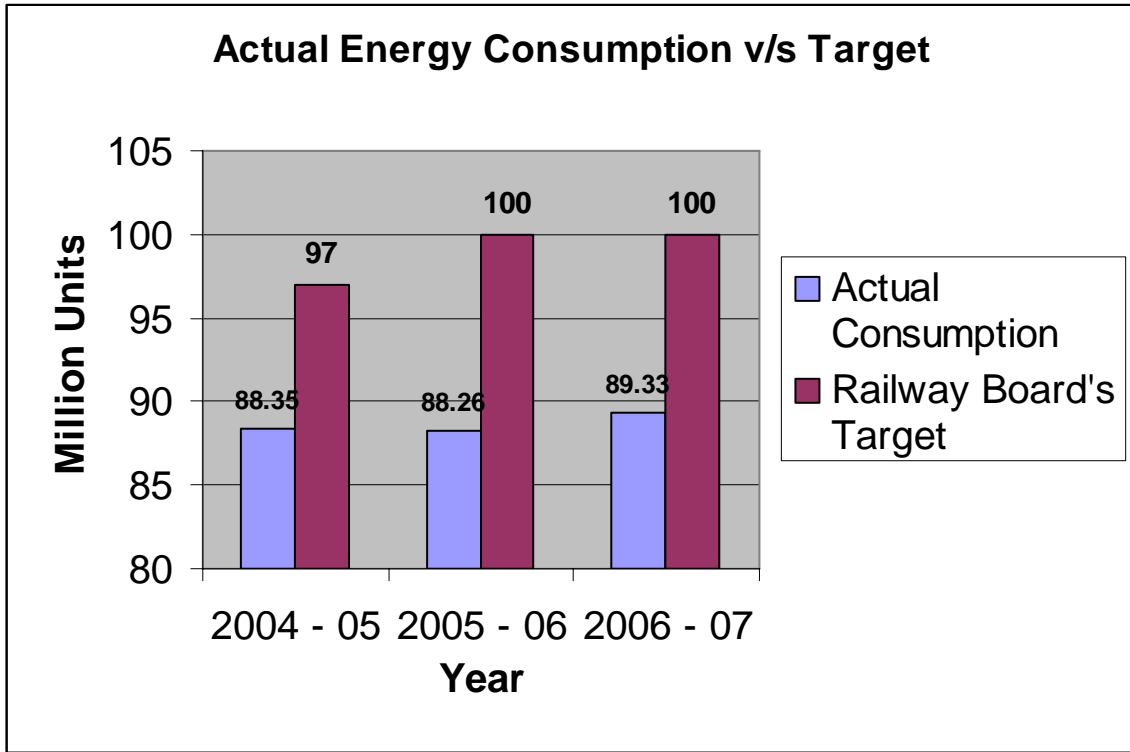
### **GM OFFICE , GORAKHPUR**

#### ***Energy Consumption in N.E.Railway***

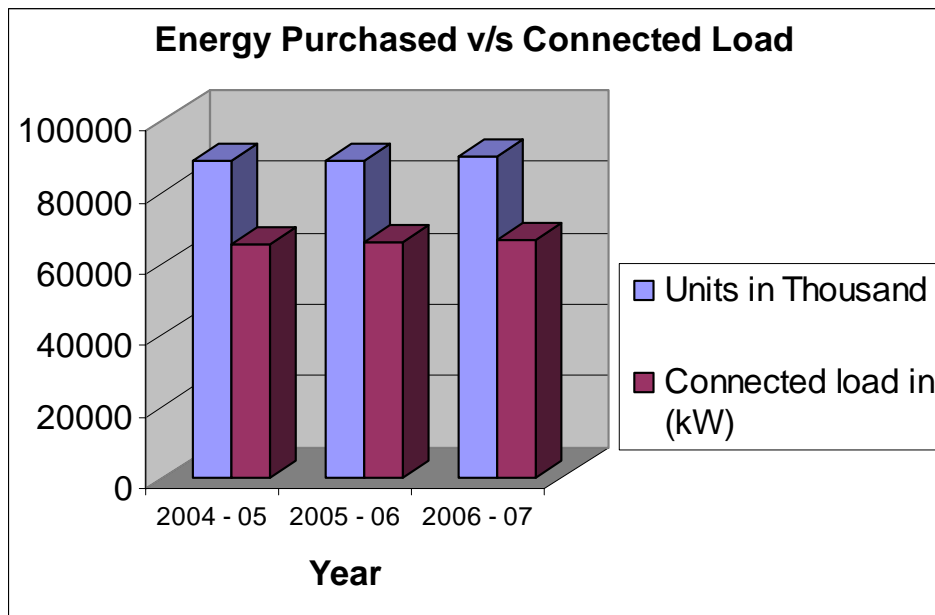
For meeting the energy requirement for Non traction purposes the power is purchased from Uttaranchal Power Corporation, UP Power Corporation and Bihar State Electricity Board. The total contracted demand of N.E. Railway is 20 MVA. The average tariff rate of these electricity supply corporation/Board varies from Rs. 3.00 to Rs. 3.90 per unit. The details of energy consumption of N.E.Railway for the 3 years are as under:

#### **1 Non Traction**

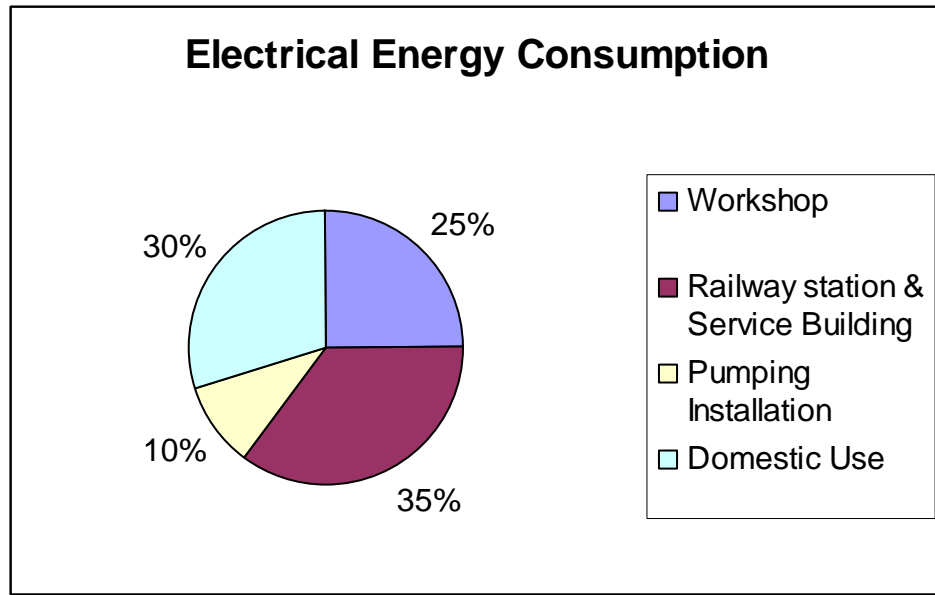
S.No.	Energy Consumed (in Million Unit unit)			Cost of Energy (in Rs. Lakhs)		
	2004-05	2005-06	2006-07	2004-05	2005-06	2006-07
1.	88.35	88.26	89.33	2980	2822	2983



S.No.	Energy Purchased (in thousand unit)			Connected Load in KW		
	2004-05	2005-06	2006-07	2004-05	2005-06	2006-07
1.	88350	88260	89330	64946	65668	66205



Electricity consumption in workshops.	25%
Electricity consumed in Railway Station and service Buildings.	35%
Pumping Installation.	10%
Domestic Use.	30%

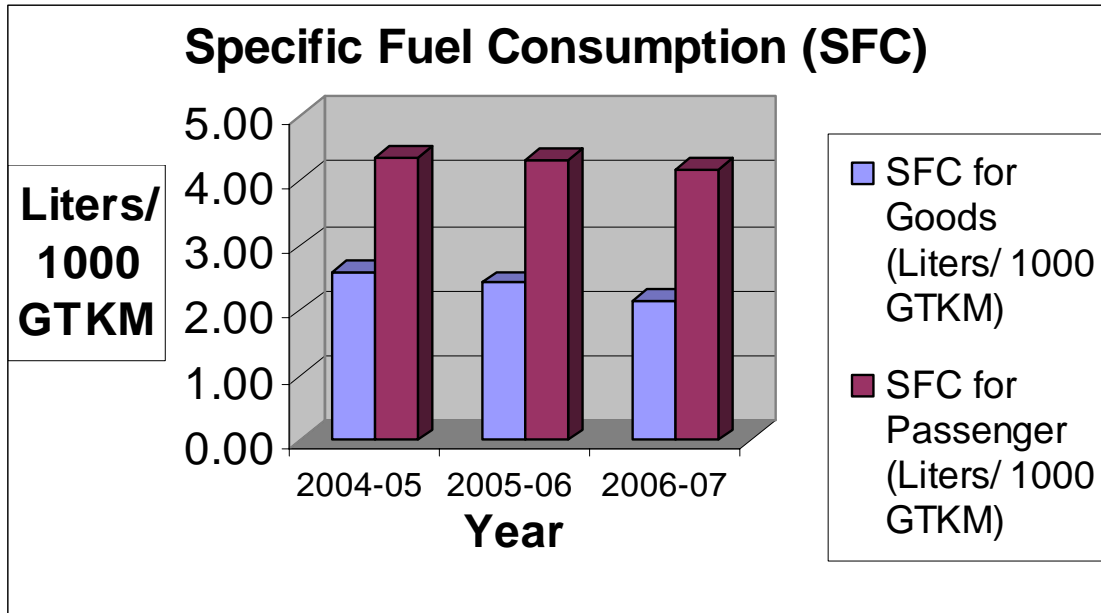


## 2. Diesel Traction

S.No.	Qty. purchased for traction (in KL)			Cost of Diesel (in Rs. Lakhs)		
	2004-05	2005-06	2006-07	2004-05	2005-06	2006-07
1.	117112	96723	114586	20161.07	26021.29	31776.57

## 3. Specific Fuel Consumption

Specific Fuel Consumption	2004-05	2005-06	2006-07
SFC for Goods (Liters/ 1000 GTKM)	2.60	2.42	2.15
SFC for Passenger (Liters/ 1000 GTKM)	4.35	4.32	4.18



***Energy Conservation measures adopted***

- Shifting of electric sub-stations near load centres to reduce power loss.
- Provision of energy saving devices in lighting circuit of offices and electrical machines in workshops.
- Provision of 110 nos. solar lanterns and 18 nos. solar panel fed home light at railway stations to serve as emergency light during commercial supply failure.
- Replacement of lower rating old overhead conductor by underground cable.
- Rationalization of electrical circuit of air conditioners and 2/3<sup>rd</sup> load in the offices to enable switching 'OFF' after 6 pm.
- Replacement of old higher wattage fan by energy efficient low wattage fans.
- Replacement of 40 W FL fittings by 28 W energy efficient T-5 fittings.
- Replacement of 20 HP centrifugal pumps by 12.5 HP energy efficient submersible pumps.
- Provision of automatic power factor, corrector panel and capacitor banks at sub-station and pumping installations.

- Replacement of 1.5 Ton window type air conditioners by ductable package and split type air conditioners.
- Replacement of 2 KW capacity heat convector by 1200 W halogen heater having step setting of 400, 800 and 1200 watt.
- Automation of 28 pumping installations.
- Provision of programmable timer system in street lights circuit.
- Replacement of GLS lamps by energy efficient compact fluorescent lamp (CFL) of capacity 11 W, 15 W and 20 W.
- Provision of electronic ballast and electronic type regulator.
- Improved loco maintenance.
- Improvement in driving technique of drivers for observing proper coasting and acceleration.
- Engineman ship of driver.
- Shutting down of locos.
- Plugging of pilferage/theft of HSD oil.
- Increased average load of trains.

### ***Energy Policy of N.E.Railway***

Following measures are planned for further reducing the energy consumption.

- Use of solar panels for illumination of 150 nos. level crossing gates.
- Switching OFF standby distribution transformers for reducing the energy losses.
- Replacement of incandescent lamps by energy efficient T-5 fittings and CFL.
- Use of energy efficient star rated luminaries and electrical appliances to conserve energy.
- Rewiring of 1000 staff quarters and 10 service buildings to reduce the power losses.
- Provision of APFC panel and capacitor banks at 5 sub-stations and pumping installations.
- Provision of energy saver in lighting circuit and electrical machines in workshop and diesel shed.
- Energy Audit of Gorakhpur and Izatnagar mechanical workshop.

- Provision of 100 nos. programmable timer in street light.
- Provision of LED based signage at Gorakhpur and Lucknow railway stations.
- Provision of Solar water heater in place of conventional geyser in running rooms.
- Use of green house concept to save energy in office building and hospitals at Lucknow and Varanasi

### ***Energy conservation commitment***

The energy management wing of the North Eastern Railway is committed towards implementation of energy conservation in each establishment. To ensure effective implementation of energy conservation measures, organization have been strengthened by nominating one SAG officer as Energy Manager of N.E.Railway. To encourage larger participation of staff in energy conservation a “Energy Conservation Shield” have been instituted to be awarded for the divisions having outstanding achievement in the field of energy conservation. Use of renewable energy sources is being taken up in a big way. Seminars are being organized in divisions and HQ to create awareness amongst staff/supervisors using electricity in their day to day activities. Further North Eastern Railway is committed to provide reliable and adequate illumination at Railway stations and offices at the optimum cost.