Indian Rare Earths Ltd Kurichi

(IV) ENERGY CONSERVATION ACHIEVEMENTS DURING 2004-2005

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1. INSTALLATION OF ENERGY EFFICIENT TUBE LIGHTS (EET) – 100 NOS.

Background

Use of EET (28W) considered as an energy conservation opportunity in place of the conventional tube lights (40W+15W choke = 55W), while keeping the illumination level essentially constant.

Technical and Financial Analyses

100 EET where procured at a cost of Rs.0.78 lakhs and installed the simple payback period is seven months eminently and augustable from commercial point of view.

The lumen output of 1 No.EET is equivalent to 2 Nos. of conventional tube lights

The wattage of a conventional tube light is

a) Tube : 40W
b) Choke : 15 W

Total : 55 W

Wattage of a twin fitting (55x2) = 110W
Wattage of EET = 28W
Saving of power by Installation of a EET = 82 W
Energy saved by 100 tube light/year
(82x100x10x300) = 24600 units

Amount saved @ Rs.5.17/unit(24600x5.17) = Rs.1,27,182.00
Investment = Rs.0.78 lakhs
Simple pay back period $\frac{(0.78 \times 12)}{1.27}$ = 7 months

Impact of Implementation

By above, while maintaining the illumination level essentially at the earlier levels we are saving Rs.1.27 lakhs per year.

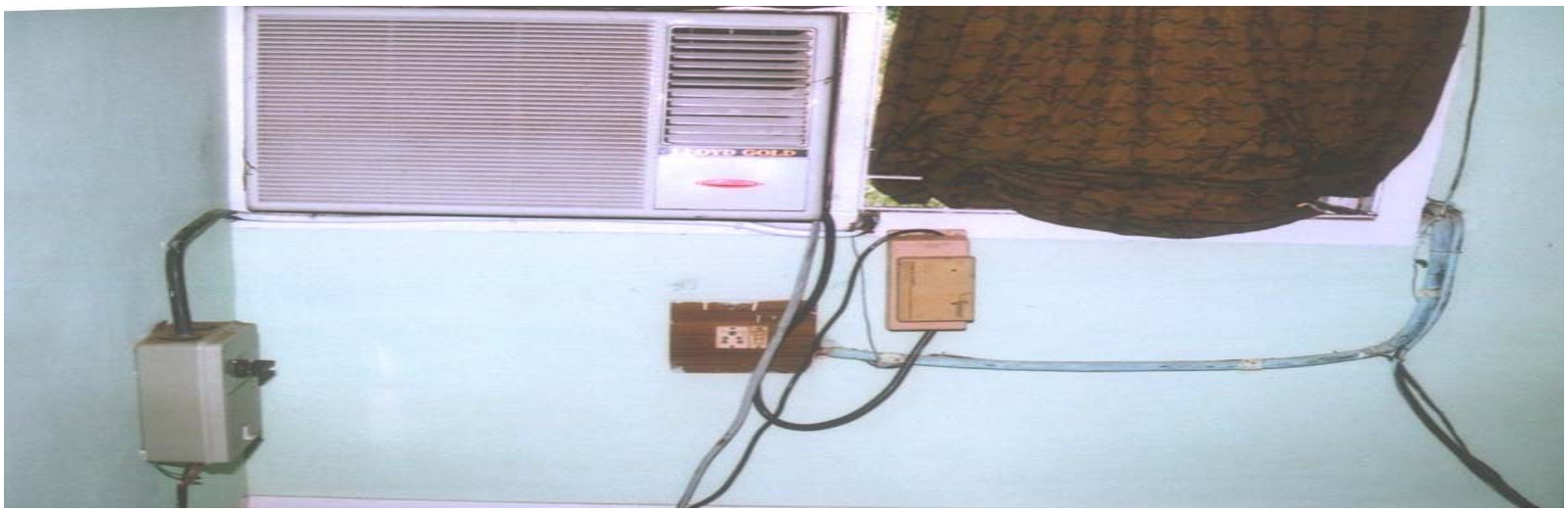
2. USE OF ENERGY SAVER FOR AIR CONDITIONER – 12 NOS.

Background

Energy Saver for Air Conditioners was conceived as an energy conservation opportunity for saving electricity.

Technical and Financial Analysis

12 Nos. of Energy Savers were procured at a cost of Rs.0.56 lakhs. The simple payback period is 23 months and considered augustable from commercial point of view.



Average load was calculated for the same period before and after the introduction of AC Saver based on the following formula.

Total consumption in units

Total No. of hours operated

Total saving of 0.2 Kw/AC was achieved

For 12 Nos. of ACs a total of 0.2 x 12 = 2.4 Kw

No. of hours operated per day = 8 hours

Therefore total units saved/year(2.4x8x360) = 5760 units

Amount saved @ Rs.5.17/unit (5760x5.17) = Rs.29,779.00

Investment = Rs.56,000.00

Simple pay back period $\frac{(56,000 \times 12)}{29779}$ = 23 months

Impact of Implementation

We are saving nearly Rs.0.30 lakhs per year by using the Energy Savers for Air Conditioners without affecting efficiency.

1. 1000 LPD SOLAR HEATER – 1 NO.

Background

Solar Water Heater is based on use of sun light for heating purposes in place of conventional energy sources and was conceived as on energy conservation opportunity for saving electricity.

Technical and Financial Analysis

Replacement of 3 Nos. 2 kW geysers : 6 kW*24 hrs/ day*365 days/ yr * Rs 5/ kWh = Rs 2.63 lac/ yr

In the Canteen, where electricity was used for heating and boiling of water a Solar Heater was installed at a cost of Rs.1.40 lakhs and without affecting heating efficiency the simple payback period is 2 years and 5 months.

Impact of Implementation By above, we are saving nearly Rs2.63 lac/ year towards electricity used in the canteen for heating and boiling of water.