

## Case Study: Replacement of Old Inefficient motors with Premium Efficiency (IE3) Motors

### INDUSTRY / SECTOR: Textile / Spinning Mill

Year of Implementation	2018
Type of Investment	Medium; Zero Capital Investment by Customer
Annual Energy Savings (kwh)	244,094 units
Annual Cost Savings (INR)	1464563
Payback Period	2 years 5 months

### BACKGROUND

BANSWARA Syntex Ltd. is one of the largest single-mill set ups of fibre-dyed yarn in ASIA. It is a government-recognized **Four Star Export House** having IS/ISO 9001:2008 certification & IS/ISO 14001:2004 certification by the Bureau of Indian Standards.

Banswara approached Energy Efficiency Services Ltd. (EESL) to participate in its National Motor Replacement Program (NMRP) to replace its old motors with IE3 motors. In the 1<sup>st</sup> Phase itself, **125 nos.** motors were identified for replacement ranging from **3.7kW to 22kW, 4 Pole.**

### Energy Efficiency as a Service (EEaS) Model

Under NMRP, EESL offered Banswara to supply IE3 motors through its ESCO mode which would help to reduce the financial burden on the customer and simultaneously enjoy the savings from the first day of installation itself. Here, the entire investment was done EESL starting from motors procurement, negotiating extended warranty and supplying of motors to the particular site as desired by the customer. The repayment for the procured motors was decided mutually by EESL and customer to be in Equated Quarterly Installments (EQI) in a time span of 3 years.

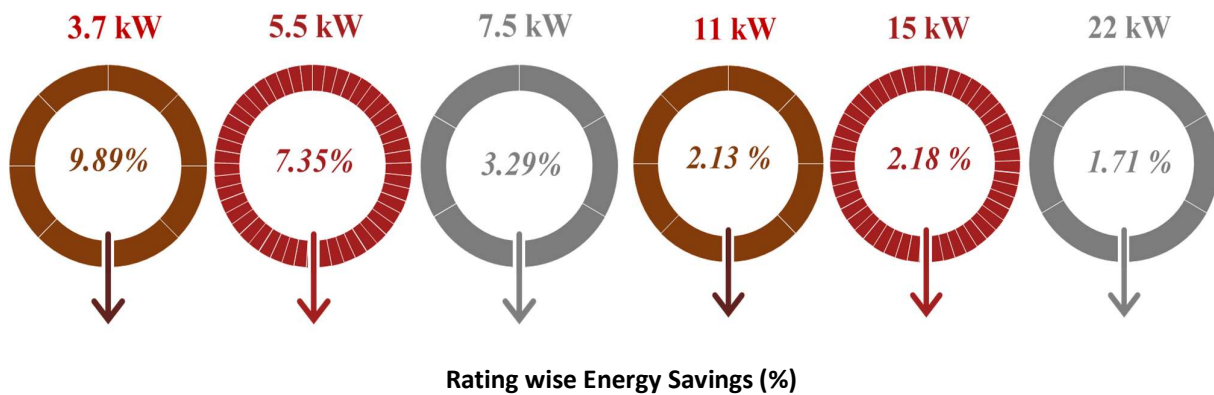
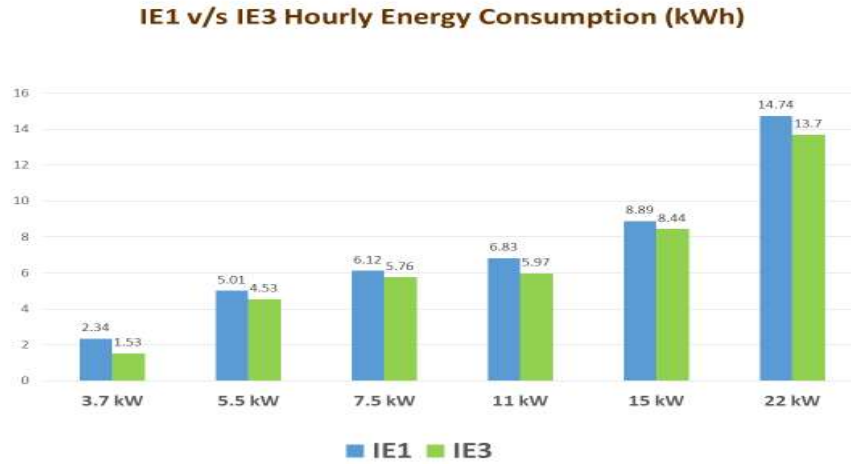
### PROCUREMENT & SUPPLY OF MOTORS

Inventory Collection was done through EESL's specially designed Online WEB Portal to facilitate customers in ease of sending enquiry and closing the order with EESL. The procurement of IE3 motors of reputed brands was done by EESL on behalf of customer through a fair & competitive bidding process. This could help in achieving lower market prices with extended warranty terms for the customer. The entire project was closely monitored by EESL from start to end including the complaint management system for the customer.

### IMPLEMENTATION

The required IE3 motors were supplied to the customer as per its delivery schedule. The old inefficient motors were replaced by IE3 motors and installed by the customer in a staggered manner so that the plant production was not hampered.

The replacement activity resulted in decent savings in each rating(kW) of motor and the results were monitored over a period of time to establish the energy & cost savings through installation of IE3 motors. The rating wise energy consumption & percentage savings are as under-



## CONCLUSION

The procurement of motors under the ESCO Mode, resulted in energy savings as well as provided financial support to the customer to invest in replacing the motors at a larger scale. This Shared Savings approach was effectively utilised in repaying the project cost which was around 20% of the savings received by the customer every quarter. Thus the customer could reap benefits of the program by enjoying cost savings of 15 Lakhs annually with an investment of 12 Lakhs annually. The total payback period for recovering the incremental cost of IE3 motors under this project was estimated around 2years 5months.



**Total Energy Savings in Units**

**66,866 kWh**



**Total Cost Savings at rate of ₹6 / unit**

**43.93 Lakhs**



**Cost of Investment for 125 nos. IE3 Motors for 3years**

**35.88 Lakhs**



**Simple Payback Period**

**2.4 years**