Copeland™ Heat Pumps ushers in a new chapter in energy savings for Veermata Jijabai Technological Institute (VJTI)

Result

- Copeland Heat Pumps installed at VJTI Student Hostels delivered almost 72% energy savings vis-a-vis traditional water heating systems
- Benchmarked against an electric heater; Copeland Heat Pumps could save up to $3,000 per Hostel on an Annual Basis, with an ROI of less than 2 Years
- The COP of the Copeland Heat Pump was found to be 3.7 times more efficient than that of the geyser on an average

Customer

- Veermata Jijabai Technological Institute (VJTI), Mumbai founded in 1887, is one of the oldest and finest engineering institutions in India
- Annual intake of 3,000+ students with over 5 hostels for on-campus stay

Challenge

- VJTI was in the process of upgrading the institute's overall infrastructure - planning a greener and sustainable campus, reducing the overall carbon footprint
- Emerson proposed a Copeland™ Heat Pump solution, one that is capable of supplying over 5,000 LPD of hot water to meet the students' daily needs and deliver up to 75% energy savings vis-a-vis traditional heating systems
- The project was initially limited to a trial run at a 200 student hostel
- This helped the management to understand its installation and maintenance requirements, collect relevant data and compare it with the traditional electric water heater currently in use

Summary Of Results

Energy Savings

UPTO **72%**
ENERGY SAVINGS WITH EMERSON HEAT PUMP

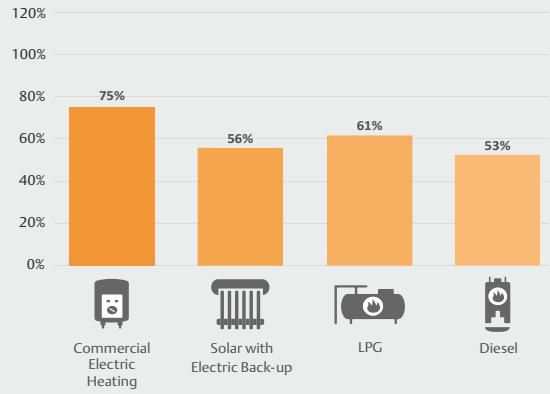
32,000+ kWHr
Savings Annually

OpEx Savings

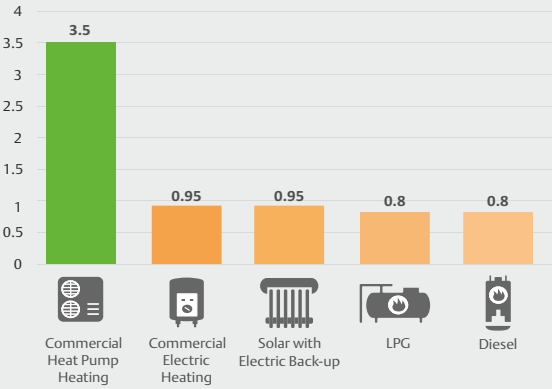
$3,000+ Savings
In Water Heating Bills
Per Hostel Per Year

ROI of Less Than
2 Years

Annual energy saving in %
Heat pumps vs other heating systems



Heating efficiency



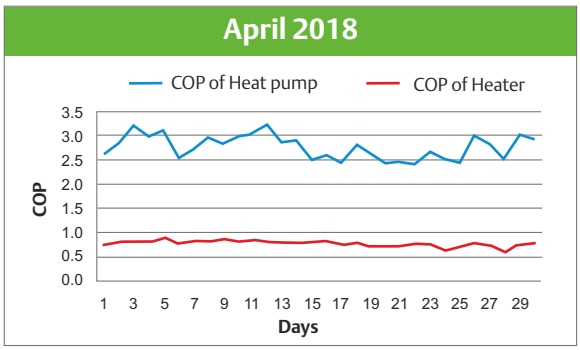
Note: Results shown from above analysis are designed for comparative purposes only. The assumptions and data used for the analysis may change depending on market conditions.

EMERSON™

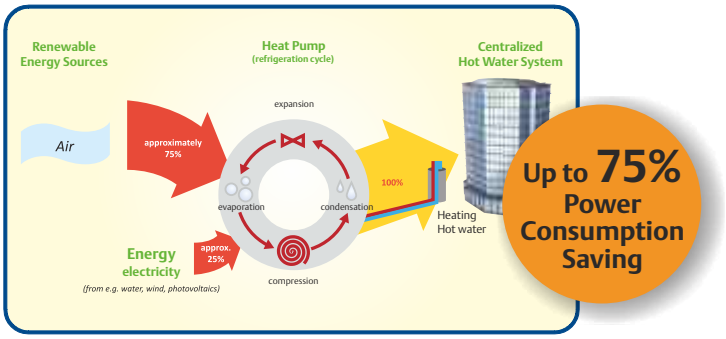
Solution

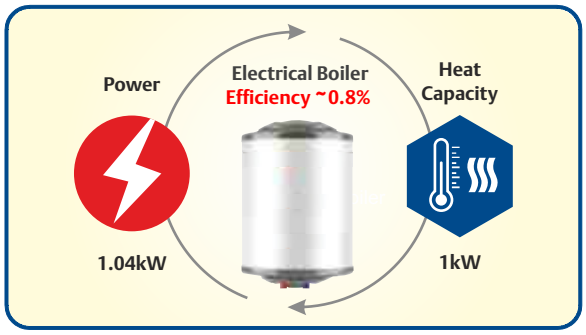
- Keeping in mind the parameters of energy efficiency, the need to save on space, and trouble-free operation, a Copeland Heat Pump of 300 LPH capacity in combination with a 5,000 liter tank was selected & installed
- Integrated data logging equipment evaluated the performance on various parameters such as power consumption, temperature, water consumption, etc.
- This performance was compared against a regular electric water heater of 3kW which was installed in an adjacent hostel wing
- A research extending over 3 months established that the Emerson Heat Pumps delivered energy savings of almost 72 % compared to traditional water heating systems
- Benchmarked against an electric heater, the COP of the Copeland Heat Pump was on an average 3.7 times that of the geyser
- The management and the student community were highly satisfied with the result and the significantly lower carbon footprint

Data Logging Reports



Energy performance of Heat Pump Vs Electric Water Heater for April 2018





Installation Details

Emerson Heat Pump

VJTI Hostel, Mumbai, 200 Students; Emerson 300LPH Heat Pump Storage; Tank Size: 5000L

Electric Heater

Electric Geyser: 3kW With 300L Storage; Tank Size: 5000L

How Copeland helped the university save on its energy and carbon footprint.

1. Analyze and Identify Possible Hostels with High Hot Water Usage/ Energy Bills
2. Select Hostels for Pilot Program
3. Site Visit for Solution
4. Heat Pump Solution & Electric Heater for Pilot Program
5. Create Data Logging Frameworks for Parameter Monitoring
6. Measure and Report Heat Pump Impact on Energy Savings
7. Develop Plan for Replicating Solution in other Buildings