

# Marrying Innovative Financing and Heat Pumps

**Application – Pre-Treatment for plating Application**

**Customer – Auto Component Manufacturer**

**Fuel Replaced – Super Kerosene Oil (SKO)**

**Sector – Automotive**

## Background

A leading Auto components Manufacturer is a pioneer in environmental sustainability in India and is a winner of several awards on efficient usage of energy. The customer wanted to reduce fossil fuel consumption used in its pre-treatment plant and interested in replacing SKO boiler with Heat Pump.

However, due to budgetary constraints, the customer did not want to invest upfront and was exploring innovative financing models.

## Solution

On the technical side, after the thermal energy audit, Aspiration Energy proposed installation of 107 kW Heat Pumps. On the financing side, Aspiration Energy proposed to undertake the project under an ESCO model, wherein Aspiration Energy would own and operate the system, and the client would pay to Aspiration Energy based on the energy saved by the Heat Pumps.

## Installation

### Design:

107 kW water source heat pumps system was proposed to be installed to meet the process heat requirement. The system was designed to recover heat from the process return line.

### Integration:

The heating solution was provided to an application of pretreatment line - plating (8-tank) that required temperatures ranging from 60 °C to 80°C. Each tank needs to be maintained at different temperatures with different volumes.

The installed water source heat pump delivers heat to the plating line tanks and cooling load to the process return line by assisting the cooling tower operation. The installed system also has electric hot water generator for startup and backup heating.

## Installation picture



## Performance Comparison

DESCRIPTION	BEFORE	AFTER
Heating Solution	Thermic fluid boiler	Heat Pump
Energy Source	SKO	Electricity
Capacity	10L kCal	92090 kCal
Operating Costs	Rs.65 / litres	Rs.8 / kWh
Consumption / day	385 litres	900 kWh

## Benefits

### Technical



- Centralized Hot Water Generation with Standby and Backup System.
- Cold Water from source side is utilized to reduce the cooling tower operation.

### Financial



- Unique financial model offered (ESCO) with no investments from the client side.

### Environmental



- Emission of green house gases have been eliminated.

Heat Pump savings is based on their hours of utilization of Heat Pump. It may vary according to their unit of production.