Case Study: **Fans & Blowers**

SENERGY Consultants (P) Ltd

Background:

While conducting energy audit for a glass industry; the performance of the many of the fans (bottom cooling as well as process) was observed to be quite poor.

Operating Scenario:

The performance of individual fan was computed by noting down all the operating parameters including

- Actual flow rate with a help of vane type anemometer (vane type or Hot wire as the case may be) or with the Pitot tube.
- Power drawn by the pump motor with the help of clamp on type power meter (Three phase balanced type or power analyzer as the case may be)
- Suction pressure with the help of digital manometer
- Discharge pressure with the help of digital manometer
- Pulley ratio as well as Speed of the motor as well pulley with the help of tachometer (Contact type or Non-contact type as the case may be)

The efficiency of motor, temperature as well as density of the air / gas was also noted down.

It was observed that many of the fans were operating below the rated efficiency and delivering poor flow rate.

Energy Conservation Measures:

The above concerns and issues were addressed by taking the following measures.

- While inspecting the fan internals, it was observed that may of the impellers were eroded; which were replaced as an immediate measure
- The belts of few of the pulley drives were observed to be damaged; which were immediately replaced
- The suction was observed to be throttled for few of the fans. The pulleys for these fans were resized to minimize the losses as an immediate step
- The fans were provided with a variable speed based controller as a long term measure

Outcome:

- The energy consumption of these fans reduced by around 20%; leading to 2.5% saving in the overall energy costs.

Helping You to Conserve Resources

3, Aastha II, Opposite Lakme Ltd, B K S Devashi Road, Govandi East, Mumbai 400 088, India.
Phone: ++91 22 2555 3297
Email: senergy@vsnl.com **Website: http://www.senergy-india.com**