Case Study: **Energy / Heat Recovery**

SENERGY Consultants (P) Ltd

Background:

While conducting energy audit for the fish processing industry; the energy loss through effluent water was observed to be abnormally high.

Operating Scenario:

The operating practices included

- The fish was delivered in trucks in baskets / tubs; which were laced with ice.
- The fish was separated from ice and taken up for processing; while the ice was removed and thrown in the effluent tank
- The fish was washed with chilled water (at 8 to 10 ^{0}C)
- The washing was a once through process and the wash water still quite cold (at 11 to 15 ^{0}C) was pumped in to the effluent tank
- The average water temperature of in the effluent tank was observed to be 10 to 12 ^{0}C

Energy Conservation Measures:

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

- The storage tank for cold water as well as ice was properly segregated from the other effluent.
- A suitable heat recovery system comprising of plate type heat exchanger with requisite pump and piping was installed to recover energy of cold water to pre-cool was water.
- The temperature of effluent water was raised from 10 to 26 ^{0}C; while cooling the incoming wash water from 30 ^{0}C to 14 ^{0}C.

Outcome:

- The energy consumption of the refrigeration compressor for wash water reduced by around 75%; leading to 15% saving in the overall energy costs.
- The additional capacity could be used to enhance the production by 10 to 15%.

Helping You to Conserve Resources

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