

## Successful Implementation – Energy Conservation Measure

<b>Measure</b>
Elimination of cooling tower by using in-house fresh water tank.
<b>Equipment</b>
Only Piping required.
<b>Industry / Sector</b>
Pulp & Paper
<b>Year of Implementation</b>
2000
<b>Cost Benefit Analysis</b>
<input type="checkbox"/> Type of Measure : Installation of necessary pipeline.
<input type="checkbox"/> Annual energy Savings : 80000 KWH/Year
<input type="checkbox"/> Actual cost savings : Rs.4,00,000/- per year.
<input type="checkbox"/> Actual investment : Rs. 65,000/-
<input type="checkbox"/> Payback : 0.17 Year
<b>Implementation Highlights</b>

### Summary

Pulp and paper mills a use of water for process requirements. This water is normally collected in a storage tank, and pumped to different applications within plant. In this case, collected water has been supplied to DG sets, and warm water form DG house was supplied to process, thereby eliminating need to install a cooling tower completely.

**Background** Pulp and paper mills use a lot of water. Groundwater is collected in a storage tank, from where it is supplied to process application. To completely eliminate the power consumption in cooling towers, cooling tower pump was installed at the fresh water tank. This pump supplies water to DG sets, running continuously, and the warm water after cooling the DG sets, is used for process applications. Thus, there is no power requirement for cooling tower fan, no makeup water requirement and no cooling tower slimicides requirement.

**Principle** When warm water can be used easily in a process, we can eliminate or reduce the load of cooling tower.

#### Details of techno-economics:

Particulars	Actual energy savings
Contract Demand	<b>10KW</b>
Earlier MD	<b>10KW</b>
MD after installation of controller	<b>NIL</b>
Demand savings per month @ Rs. 150/ kVA	<b>Rs.1500/</b>
Annual Cost savings, Rs. Lakh	<b>Rs.400000/</b>
Cost of implementation, Rs. Lakh	<b>Rs.65000/</b>
Simple payback period, Year	<b>0.17</b>

**Implementation issues** When the above system was implemented, power consumption for cooling tower exhaust fan was reduced to zero. Since cooling tower became useless, it could be removed from site, providing more space. Additionally, chemical requirement, makeup water requirement and need to blow down high solid containing water was eliminated.

It is strongly recommended for the mills having a high water requirement should consider using their fresh water tank in place of cooling tower.

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