



1	ID: 42	Title of measure	Sector: Drugs & Pharmaceuticals Industry
2	Survey Year: 2007	Installation of energy efficient agitators	Technology : Agitators
3	Name of the Company	: Jubilant Organosys Limited ,Nanjangud, Mysore, Karnataka, INDIA	
4	Agency that executed the project	: GMMP faudler India Limited	
5	Year of Implementation	: 2005-06	
6	<p>Unit Profile: Jubilant Organosys Limited, a US\$ 0.38 billion company is an integrated pharmaceutical industry player with a wide range of products and services for global life sciences companies. The Company is one of the largest Custom Research and Manufacturing Services (CRAMS) and Drug Discovery and Development Services organizations in India. Jubilant has a presence in generic pharmaceuticals business in the US and supply dosage forms along with regulatory services to European generic companies. The turnover of the Nanjangud unit for the year 2006-07 is US\$ 36 million.</p>		
7	<p>Description of Energy Conservation Measure:- In the unit, earlier the mixing vessels and reactors were installed with conventional anchor design agitators. It was found that the hydrofoil agitators by virtue of their lower power numbers were better choice. Power number of agitators is given by : Power Number: $P_o = P / (P_m N^3 D^5)$, where P = power transmitted to the agitator (kW) P_m = density of the mixture (kg/m³) D = agitator diameter (m) N = agitator speed (rev / s) A study of the mixing pattern was done and efficient agitator was designed with help of GMMP faudler India limited and based on trial results high volume high power dedicated reactor agitators were replaced by hydrofoil agitators . This resulted in lower power requirement as well as better yields due to better mixing.</p>		
8	<p>Before Modification</p> 		<p>After Modification</p> 
9	Total investment :		57,500 US\$
10	First year energy cost savings :		53,000 US\$
11	First year additional savings beyond energy (i.e. water, raw materials etc.):		Nil
12	Annual electricity consumption before,	MWh	710
13	Annual electricity consumption after,	MWh	254
14	First year electricity savings,	MWh	455
15	First year tons of CO ₂ mitigated		455
16	Assumed sustainability, years		10
17	Expected tons of CO₂ mitigated throughout life cycle		4,550