



Jubilant Life Sciences Ltd

Steam saving in EA plants by Heat recovery from hot streams to preheat cold

CASE STUDY

Summary

During project conceptualization overall savings of 18.35 million INR savings with pay back of 4.1 month from this project was envisaged due to reduction in steam norms. During detail cost benefit analysis management agreed to go for investment of around 6.34 million INR during Phase I implementation through use of efficient heat exchangers with annualized savings estimated at 13108 MT of steam.

Objective of Intervention

The objective of the project was to reduce steam norms from 2.852 MT/ MT to 2.716 MT/ MT of Ethyl acetate (EA) produced in all 5 EA plants at Nira with total production capacity of 280 TPD.

Type of Intervention and Location

Pinch methodology applied in Ethyl Acetate (EA) plant to minimize energy consumption in chemical process at Ethyl Acetate plants in Nira unit in Maharashtra

Description of Intervention

Through pinch analysis, hot spots for energy saving were identified. Post pareto analysis, out of 23 heat exchangers, 9 heat exchangers were prioritized for implementation in Phase I with an estimated annualized savings of 18.35 million INR. All these 9 heat exchangers (GEA Flex Hex type) were installed around reaction column, product purification column and alcohol recovery column. These heat exchangers helped to recover heat from hot streams to preheat cold streams like column feed, refluxes etc. thus reducing overall process heat requirement. Duet to removal of heat load from process steam, heat load on utility (e.g. cooling tower, chilling unit etc.) was also reduced.



Intangible or Tangible Benefit

In addition to direct economic benefit due to reduction in specific steam consumption, other indirect benefits were also harnessed out of this project implemented in EA plant. These are reduction in fresh water consumption in cooling tower, treated water consumption earlier needed for additional steam generation, water treatment chemical consumption, GHG and other gas emission (e.g. Sox, NOx etc.) due to reduction in reduced steam equivalent fuel consumption.

About Jubilant Life Sciences Ltd

Jubilant Life Sciences Limited (JLSL) is a globally integrated pharmaceutical and life sciences company. Our portfolio includes Pharmaceuticals (Active Pharmaceutical Ingredients, Solid Dosage Formulations, Radiopharmaceuticals, Allergy Therapy Products, Contract Manufacturing of Sterile Injectables, Drug Discovery Solutions and India Branded Pharmaceuticals) and Life Science Ingredients (Life Science Chemicals, Nutrition Products and Advance Intermediates & Specialty Ingredients). We have 7 manufacturing facilities in India and 3 in North America. Over the years, the Company has leveraged its state-of-the-art R&D facility to grow, diversify and scale higher. The Company has a team of 900 highly qualified R&D professionals working at Jubilant Life Sciences and its subsidiaries in India and abroad. Also, Jubilant has a customer base spread across 100 countries