

## Energy Conservation Measure implemented in 2006-2007

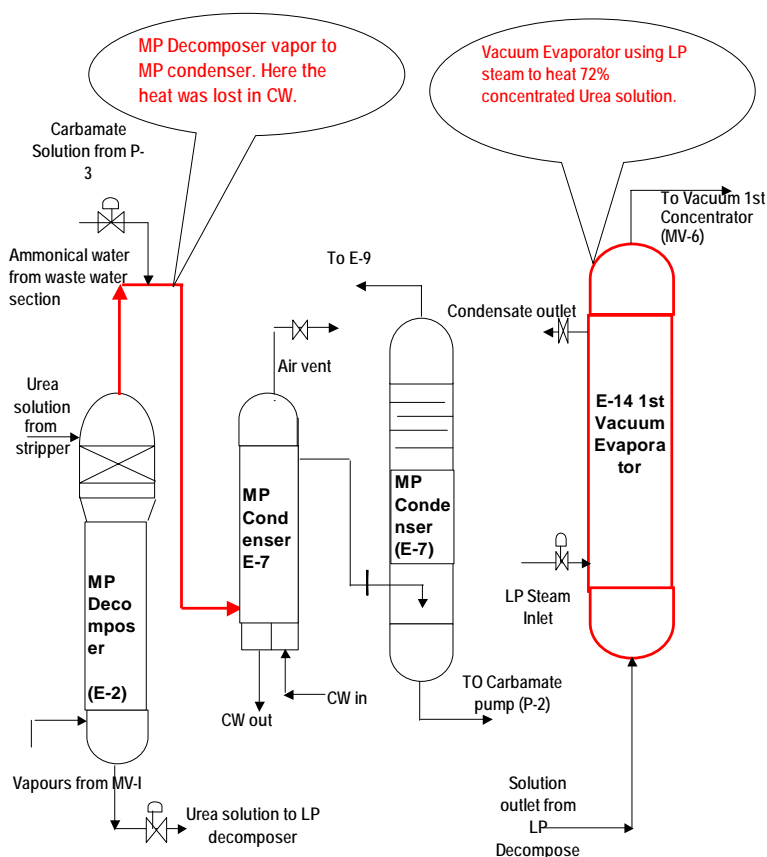
ID to be filled by BEE	<b>Title of the measure</b> <b>Heat Recovery from MP Decomposer vapours in Urea Plant by installation of Pre-concentrator.</b>	Sector: <b>FERTILIZERS</b>
Year to be filled by BEE		Technology: M/s CASALE.

### Description of the energy conservation measure:

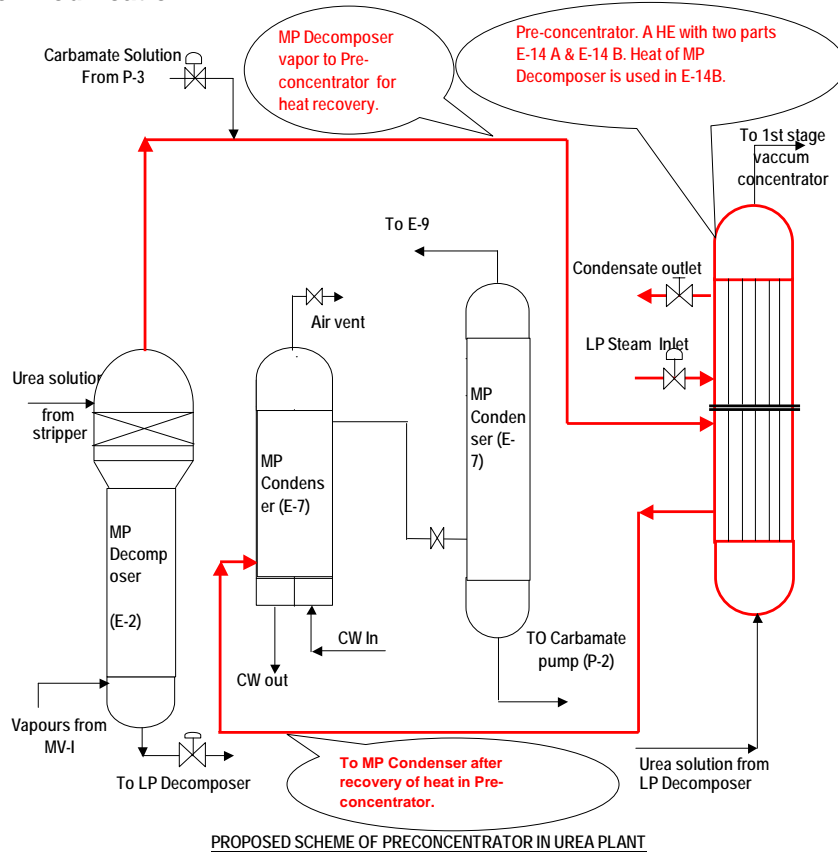
In Urea Plant the vapour from MP Decomposer was earlier cooled from 120°C to 75°C & condensed in MP condenser before recycling back to the reactor. In the process the useful heat of condensation of 9.396 Gcal/h was being lost in Cooling Water.

By installation of Pre-concentrator, it has been possible to recover 60% of the useful heat. The vacuum concentrator, as per CASALE design, has been installed in 21 stream of Urea Plant. Pre-concentrator is an additional vacuum stage utilizing heat of condensation of Carbamate vapours coming from Medium Pressure. In this scheme, the first vacuum concentrator has been replaced with modified Heat Exchanger in which, in the upper part, heat of condensation of Carbamate vapour coming from the MP decomposer is used for heating Urea solution & in the lower part, Low Pressure steam is being used. LP steam saving to the tune of 210 kg/MT steam, against guaranteed saving of 195 kg/MT Urea, has been achieved. Moreover, Prill quality of urea has also improved.

### Drawing before modification



### Drawing after modification



Agency that executed the project (with complete address and email):

Total investment, Rs.: 450.00 Lakhs

Year of implementation: 2006-07

First year energy cost savings (annual): Rs.: 1480 Lakhs

First year other savings, Rs.:

On annual basis	kWh 000'	Coal (Tons)	Gas Nm <sup>3</sup>	Oil (kL)	Naphtha (kL)
Energy consumption before	-	-	-	-	-
Energy consumption after	-	-	-	-	-
Savings due to the project	-	-	-	-	6996.88
Energy tariff, Rs/ kL	-	-	-	-	21149.67 (for the year 2006-07)

The saving in energy due to the implementation of above project is 52507.36Gcal/Annum. In view of NG limitation from M/s GAIL, we had been forced to use Naphtha. Hence, above energy saving has been shown in terms of equivalent Naphtha.

<p>Company complete address:</p> <p>National Fertilizers Limited, Vijaipur, Dist: GUNA (M.P) Pin code: 473111</p> <p>Contact person who could be contacted for more information: Name: S.N. Sinha Design.: Sr. Mgr. (PE) (Energy Manager &amp; Certified Energy Auditor) Tel. No.: 07544273080</p>	<p>We authorize Bureau to use this information for dissemination</p> <p>Signature</p> <p>Date</p>
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