Thermax's high-efficiency Chiller-Heater is a Lithium bromide based vapour absorption machine producing chilled and hot water for either cooling or heating as well as both simultaneously.

In these products 40% of heat required for generating hot water is recovered from low temperature chilled water, while the remaining 60% is recovered from external heat source. Thereby, 40% reduction in direct external heat source can be achieved for heating hot water as compared to conventional hot water generator. Additionally, refrigeration is also generated simultaneously.

As a result, not only does the fuel consumption for the heating reduce, but the heat rejection in the cooling tower also reduces.
Advantages of Thermax’s high efficiency chiller-heater

- Part of the Hot water heating duty is recovered from within the cooling cycle and hence 40% savings can be attained in external heat source consumption as compared to a conventional hot water generator.
- This VAM has inbuilt flexibility to operate either as a chiller or heater or both simultaneously.
- Since part of the chiller heat rejection is in hot water, cooling tower heat rejection is reduced. Thereby nearly 17% reduction on cooling water evaporative losses required for chilling can be attained.
- Further benefit of reduction in CO₂ emissions (carbon credits) can be attained due to lower energy consumption.
- Maximum heating capacity in simultaneous cooling and heating mode - 75-80% of the cooling load. That is, for every 100 kW of cooling, up to 75 kW of heating can be generated.
- In the absence of cooling load, 100% heating capacity can be produced after change over to heating mode.
- Also there is a reduction in the scope of utilities to be handled daily as single product is used in place of two systems.
- Additionally, vapour absorption machines attract higher rate of depreciation as an energy conservation device and hence the feasibility can be further improved due to tax savings.

Our Footprints

<table>
<thead>
<tr>
<th>Customer</th>
<th>Total Capacity</th>
<th>Application</th>
<th>Heat Source</th>
<th>CO₂ Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Umang Dairy, India</td>
<td>400 TR cooling and 1050 kW heating</td>
<td>Milk chilling</td>
<td>Steam</td>
<td>1551 tons/annum</td>
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<tr>
<td>Coca Cola, India</td>
<td>750 TR cooling and 625 kW heating</td>
<td>Beverage cooling</td>
<td>Steam</td>
<td>2966 tons/ annum</td>
</tr>
</tbody>
</table>

Customer: Fruit and Nutty, Nigeria
Total Capacity: 600 TR cooling and 1540 kW heating
Application: Cooling in chocolate making process and plant room cooling
Heat Source: Multi-energy (Exhaust gas and direct firing)
CO₂ Savings: 2361 tons/annum

Customer: KTV Health Foods, India
Total Capacity: 420 TR cooling and 1090 kW heating
Application: Edible oil processing
Heat Source: Steam
CO₂ Savings: 1635 tons/annum

Industries Served

- Food and Beverage
  - Narasus Coffee, India
  - TATA Global Beverage, India
- Brewery
  - United Breweries, India
  - United Spirits, India
- Dairy
  - Adinath Dairy, India
  - Heritage Foods, India
- Edible Oil
  - Emami Biotech, India
  - Kaleesuwari Refinery Pvt.Ltd., India

Thermax Ltd
D-13 MIDC Chinchwad, Pune 411 019, India
Tel.: +91-20-6612 2999  Fax: +91-20-27475907
Email: coolinginfo@thermaxglobal.com
Website: www.thermaxglobal.com

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- @thermaxcooling
- Thermax Cooling

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