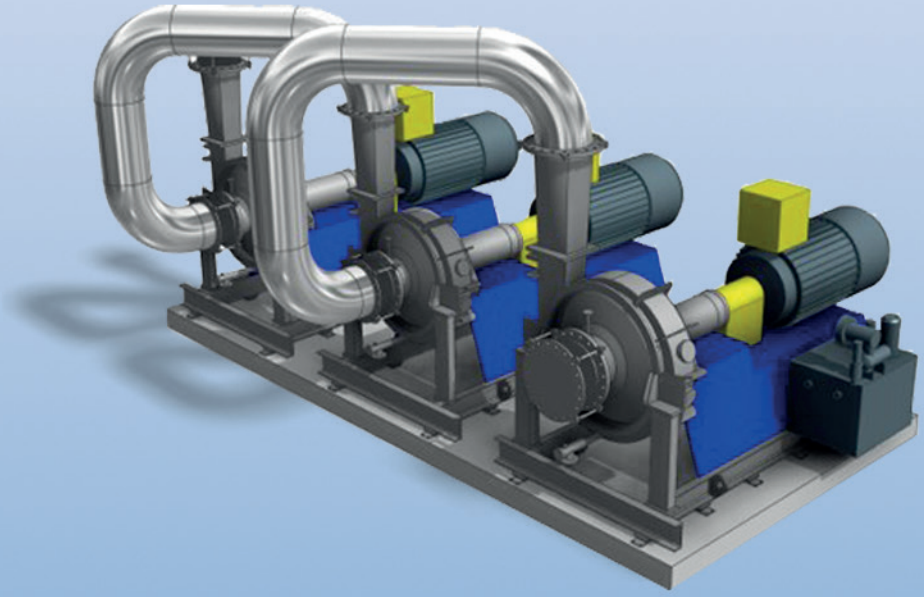
EPCON®
EVAPORATION TECHNOLOGY
A company in the Vilokan Group

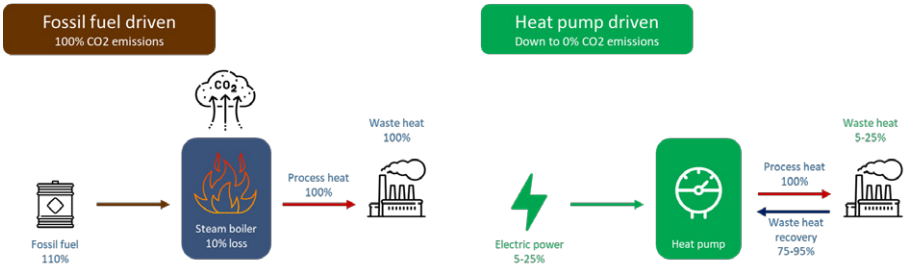


INDUSTRIAL MVR HEAT PUMP

WATER AS WORKING MEDIUM

EPCON MVR-HP

Energy recovery with MVR-HP give our clients new opportunities to reduce energy cost in a wide range of applications. MVR (Mechanical Vapor Recompression) is a well-known technology for EPCON used in our evaporators since mid-1980s.
EPCON MVR-HP can be used either by integration into existing boiling processes or lifting waste heat and district heating energy to a more applicable temperature level for industrial processes.
With water as working medium, in combination with direct, indirect or closed heat pump system and multistage compression, you achieve a very efficient HP design with the highest COP in addition to an outstanding environmental and safety profile, reducing the need for fossil driven boilers.
As system integrator, EPCON combines own design and components with equipment from prequalified sub-suppliers to obtain tailor made and optimized systems based on extensive experience and expertise in thermal processes.



Characteristics of MVR-HP

- Energy sources: Process vapor, hot water/-liquid, hot/humid air/gas
- Energy source return temperature: >50°C
- Energy supply temp. from 60°C up to 210°C
- Steam can be supplied as energy output
- Heat output: 200 kW to >100 MW
- COP (Coefficient Of Performance): ~4 to >20
- Multistage compression featuring flexible design and high COP
- Indirect or closed system with water as working medium
- Direct system with water, alcohols or other solvents

The EPCON MVR-HP often provides our clients energy savings of 80–95%

Applications

Suitable applications and energy sources for MVR-HP are listed below. Depending on the heat source temperature, the MVR-HP can in some cases be connected in cascade with conventional HP.

- Evaporators
- Multiple effect evaporators
- TVR evaporators
- Distillation processes
- Reactors
- Boilers
- Waste heat
- District heating
- Humid air or flue gas

The EPCON approach

General prerequisites

- Project is relevant and within EPCON MVR-HP product range. EPCON is in position to be the equipment supplier for full scale realization. Foreseen that client have the liquid/vapor properties for their process streams.

Feasibility study

- EPCON scope: visit at site, pre-work and report. Review of potential applications, including focus of the optimum design and minimum temperature lift of MVR-HP. Rough energy and cost calculations. Prioritizing and/or exclusions of applications.

Pre-study

- EPCON scope: visit at site, pre-engineering sufficient for total project cost estimate calculation and budget offer for EPCON scope of supply. Basic process calculations, basic P&ID and main dimension of equipment.

Project delivery, commissioning and aftersales

- EPCON scope: pre-fabrication and production from pre-qualified sub-suppliers, mounting and commissioning at site. 24h aftersales available with agreement, online remote control, spare part packages and participation in planned maintenance.

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Fossegrenda 42, 7038 Trondheim, Norway
Phone: (+47) 73 99 04 50 E-mail: companymail@epcon.org
Sales: sales@epcon.org
www.epcon.org