

VIBE

Catalog

For the oils and fats industry

Who has already achieved
significant energy savings?



VIBE Catalog

The VIBE Catalog is an integral part of the VIBE Toolkit.

- The Navigator lists *which* measures that can lead to significant energy savings.
- The Catalog indicates *where* a measure has already been implemented and which suppliers can provide the technology.

This allows for the exchange of practical experience, which can help you make informed decisions. Always check www.vibe2030.nl for the latest version of the VIBE Catalog for your industry.

If you notice that any references and/or key suppliers are missing, please contact the VIBE team or register as supplier at www.vibe2030.nl/leverancier.



Aemetis MVR upgrade

Client:	Aemetis Advanced Fuels Keyes, Inc.	Industry:	Bioethanol
Location:	Keyes, California, United States	Commissioning:	Target: end-2026

Objective: Cut fossil-energy use and carbon intensity at the 65-million-gallon-per-year ethanol refinery.

Solution: Use high-efficiency electric turbofans to recompress alcohol vapour so recovered heat replaces fresh steam in distillation and evaporation.

Results: ~80% less natural gas; estimated \$32m annual operating cash-flow gain; lower ethanol carbon intensity.

Funding: \$40m project value; ~\$19.7m in tax credits and grants.



[More information](#)

Sulzer Chemtech

Industry: Process separation systems

Core business:

- Distillation, evaporation, crystallisation, membrane and complete-process systems.
- VoltaSplit MVR, DistilCare vacuum distillation and EvapCare film evaporation.
- Strong fit for solvent recovery, biofuels and edible-oil processing.

References: European oils-and-fats case: >99% solvent recovery while concentrating phospholipids from 6% to >45%.

Contact information: **sulzer.com** **Address:** Winterthur, Switzerland



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[More information](#)

Cargill Baupte MVR upgrade

Client:	Cargill	Industry:	Food ingredients
Location:	Baupte, France	Commissioning:	Operating since end-2025

Objective:	Reduce energy demand and direct emissions by replacing natural-gas steam in texturizer production.
Solution:	Capture process vapour with electrically driven MVR, recompress it and reuse it as the primary heat source.
Results:	Site CO ₂ emissions reduced 45%—about 13,700 tonnes per year.
Funding:	Approx. €25m investment.



[More information](#)

Pannonia Bio MVR

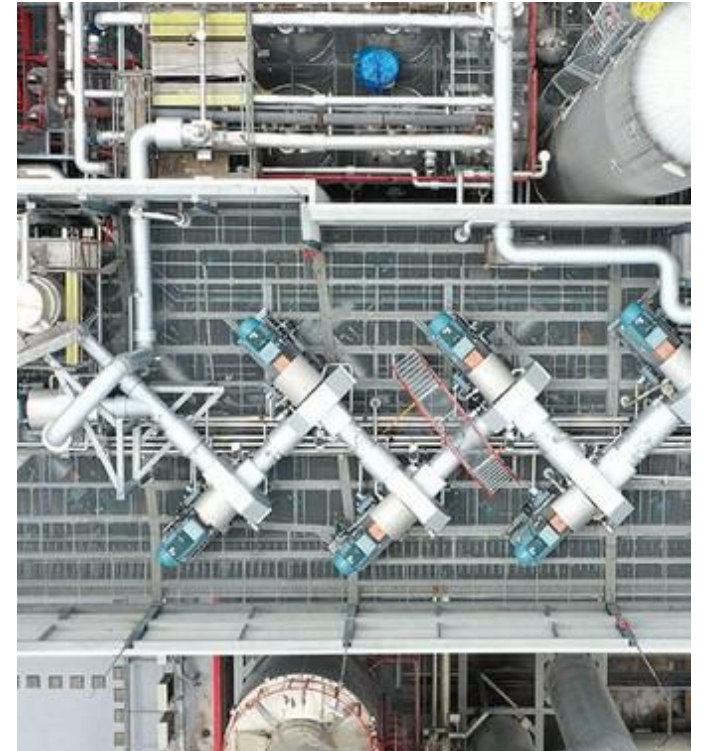
Client:	Pannonia Bio	Industry:	Bioethanol
Location:	Dunaföldvár, Hungary	Commissioning:	Operational reference

Objective: Reduce energy use across two ethanol lines, targeting 33 MW gas savings and over 40 t/h steam savings.

Solution: Apply Piller MVR technology to recover low-grade process heat; reported COP is approximately 4.6.

Results: Industrial-scale proof point for drying-intensive processes; IChemE Energy Award winner.

Funding: Not publicly specified.



[More information](#)

Hokkaido bioethanol heat recovery

Client:	Hokkaido Bioethanol Co., Ltd.	Industry:	Bioethanol
Location:	Shimizu, Hokkaido, Japan	Commissioning:	Operational reference

Objective: Reduce heavy-oil boiler demand in distillation, which represented about 60% of plant steam use.

Solution: Five steam-generating heat pumps recover condenser heat at 65°C and supply 110–120°C process steam.

Results: 65% heat recovery; 40% lower primary energy; 54% lower cost; 43% lower process CO₂.

Funding: Not publicly specified.



[More information](#)

MVR for solvent extraction

Client:	New-build and retrofit plants	Industry:	Edible-oil extraction
Location:	Global supplier references	Commissioning:	Portfolio: up to 10,000 t/day

Objective: Minimise live-steam demand in soybean and rapeseed solvent-extraction lines.

Solution: Compress solvent-rich vapour from miscella evaporation and reuse it to heat the evaporator or column reboiler.

Results: Public references span 3,000–6,000 t/day; performance depends on heat balance and hazardous-area design.

Funding: Site-specific investment.



[More information](#)

Steamless oil refining

Client:	SD Guthrie International	Industry:	Oil refining
Location:	Zwijndrecht, Netherlands	Commissioning:	Project period: 2024–2027

Objective: Reduce Scope 1 emissions by eliminating or sharply reducing steam consumption.

Solution: Recover heat across refining and storage, apply it to tanks, and replace steam tracing with electric tracing.

Results: –64,601 GJ steam and –3.01m Nm³ gas per year; +2,466 MWh electricity; 4.63 kt CO₂ avoided.

Funding: €2,724,247 subsidy.



[More information](#)

EEMBAR acetone recovery

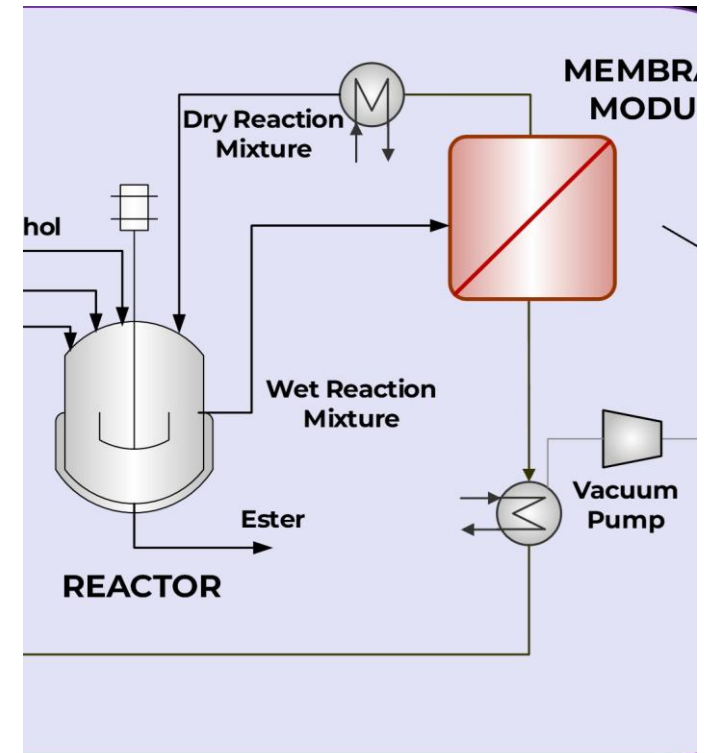
Client: Neste, SolSep, ISPT and VITO **Industry:** Edible oils
Location: Rotterdam, Netherlands **Commissioning:** Project period: 2015–2017

Objective: Cut the heat demand of solvent recovery in vegetable-oil extraction.

Solution: Use solvent-resistant membranes to recover about half of the acetone before final distillation.

Results: Lab proof-of-principle completed; up to 50% energy-saving potential versus full distillation.

Funding: €439,224 subsidy.



[More information](#)

NOH-40 gas-free sauce line

Client:	Oliehoorn B.V.	Industry:	Food processing
Location:	Netherlands	Commissioning:	Project period: 2024–2026

Objective:	Expand production while removing natural gas from the sauce-making process.
Solution:	Combine heat recovery, tube heat exchangers and a transcritical CO ₂ heat pump for process and cleaning heat.
Results:	Capacity rises from 4 to 6 t/h while process gas use is eliminated and CO ₂ and NO _x emissions fall.
Funding:	€1,024,160 subsidy.



[More information](#)

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Contact information: [sulzer.com](https://www.sulzer.com)

Address: Winterthur, Switzerland



GEA

Industry: Process and thermal systems



Core business:

- Turnkey evaporation, crystallisation, distillation, refrigeration and heat-pump systems.
- meVap MVR evaporation, RedAstrum and customised waste-heat recovery packages.
- Applications across food, dairy, chemicals, alcohol recovery and utility electrification.

References: Supplier confirms operating references; project details are generally confidential.

Contact information: gea.com
gea.com/MVR

Address: Düsseldorf, Germany

DeSmet

Industry: Oils, fats and biofuels

- Core business:**
- Oilseed preparation and extraction, oils-and-fats refining and biofuel plants.
 - Heat recovery, ice condensing, dry-vacuum pumps, heat-pump/MVC steam and electric boilers.
 - Partner for refinery electrification, steam reduction and waste-heat valorisation.

References: 1,000 TPD deodoriser case: <12-month payback, 19,000 t/year steam and 3,152 MWh/year saved.

Contact information: desmet.com

Address: Global operations



www.smartshortcourses.com

desmet

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Piller Blowers & Compressors

Industry: MVR compressors

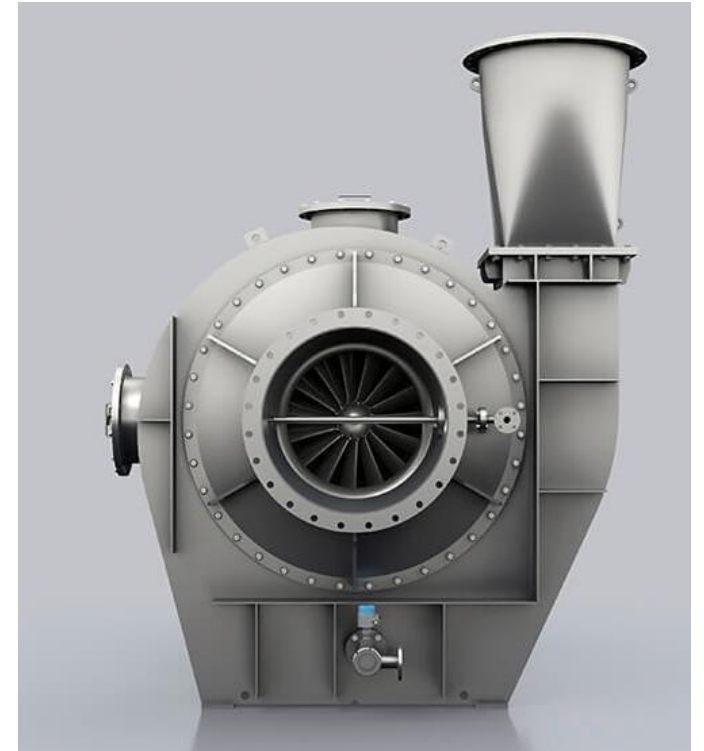
Core business:

- Blowers and compressors for mechanical vapour recompression and steam regeneration.
- VapoLine and VapoMaxX cover single- and multi-stage compression.
- Direct equipment fit for evaporation, stripping, solvent recovery and steam reuse.

References: 5,000+ MVR blowers installed; ~600 units manufactured annually; published bioethanol references.

Contact information: piller.com

Address: Moringen, Germany



Olvondo Technology

Industry: Industrial heat pumps

- Core business:**
- High-temperature heat pumps based on a reversed Stirling cycle.
 - HighLift upgrades low-temperature waste heat to process heat or steam up to 200°C.
 - Suitable for drying, evaporation, distillation and steam duties.

References: Demonstrated with FrieslandCampina Maasdam; additional validation work cited with AstraZeneca.

Contact information: olvondotech.no

Address: Holmestrand, Norway



Atlas Copco

Industry: Compression and heat pumps

Core business:

- MVR packages, oil-free turbocompressors and large heat-pump compression equipment.
- Roots-type MVR and geared centrifugal compressors for steam recompression.
- Fits evaporation, concentration, solvent recovery and large-scale heat upgrading.

References: Dutch pilot upgraded steam from 3 to 12.5 barg; supplier lists ethanol, methanol and acetone cases.

Contact information: atlas-copco.com

Address: Stockholm, Sweden



Everllence

Industry: Large-scale heat pumps

Core business:

- Large-scale turbomachinery and heat-pump systems for hot water and process steam.
- Transcritical CO₂ HPU and vapour-compression packages, with process-steam options.
- Best suited to large sites with continuous heat loads and central utility networks.

References: Scout Motors project uses two 12.5 MW heat-pump compressors; portfolio reaches 100 MWth.

Contact information: everllence.com

Address: Augsburg, Germany



Johnson Controls / Sabroe

Industry: Refrigeration and heat pumps

Core business:

- Industrial refrigeration and packaged heat pumps under the Sabroe brand.
- HyePAC, HitemHP and DualPAC cover hybrid, hydrocarbon and ammonia solutions.
- Strong fit where cooling and heating coexist, including cleaning and process-water duties.

References: HitemHP: 100–1,000 kW up to 125°C; DualPAC: 400–3,000 kW.

Contact information: johnsoncontrols.com

Address: Cork, Ireland



Mayekawa (MYCOM)

Industry: Refrigeration and heat pumps

Core business:

- Industrial refrigeration, compressors, heat pumps and integrated thermal systems.
- unimo CO₂ heat pumps deliver hot water up to 90°C with simultaneous cooling and heating.
- Best for utility loops, cleaning, process water and refrigeration heat recovery.

References: Site-wide energy-system references in food, beverage and process industries.

Contact information: [mayekawa.com](https://www.mayekawa.com)

Address: Tokyo, Japan

HEATEN

Industry: High-temperature heat pumps

- Core business:**
- Modular industrial heat pumps using proprietary piston-compressor technology.
 - HeatBooster lifts 10–150°C sources to 90–200°C hot water or process steam.
 - Modules provide 1–10 MWth and systems can scale beyond 50 MWth.

References: 1 MWth HeatBooster selected for process heat at the Dornoch whisky distillery.

Contact information: heaten.com

Address: Remscheid, Germany

