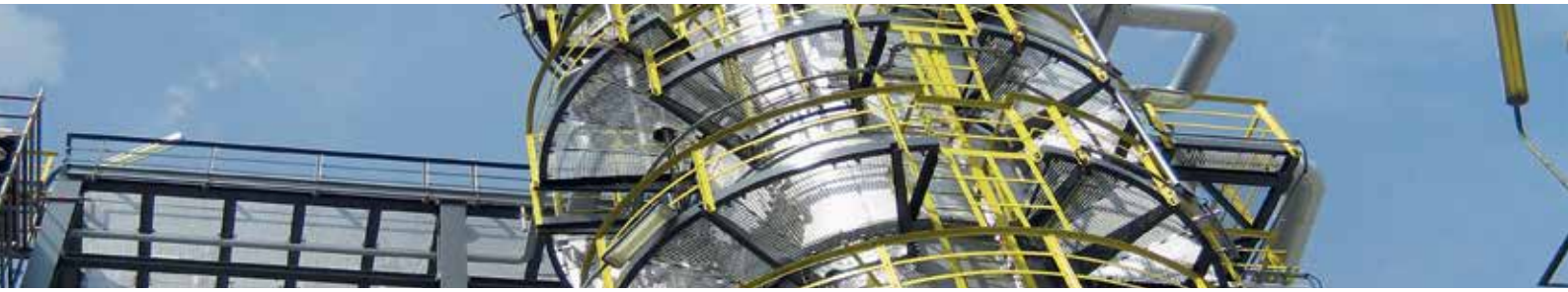


ENERGETIC OPTIMIZATION

Energetic optimization maximizes effectiveness of chemical, refinery and power plant processes.

Reducing energy costs increases profitability of an industrial plant and is an essential contribution to ecology. Energetic process optimization is considered by EDL Anlagenbau Gesellschaft mbH as early as at the first process development stages.

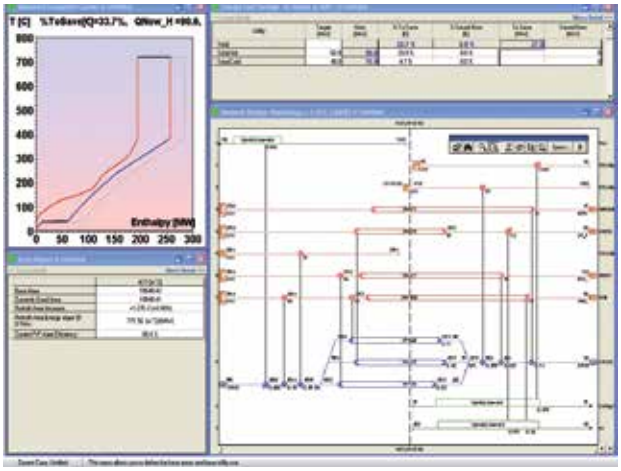
PINCH METHOD

The PINCH technique is used to determine the theoretically available heat recovery potential and allows for designing optimum heat exchanger configurations.

Based on the analysis of cold and hot mass flows of the system a heat exchanger system is selected that leads to minimum overall costs and to maximum utilization of available heat with minimum temperature difference (PINCH).

EDL uses leading software for the PINCH method. Calculations for revamps and new plant designs are done – also under consideration of equipment and utilities cost – using the SUPERTARGET program.

Furthermore, HEXTRAN software is available to prepare new plant concepts.



Composite curve and heat exchanger network as shown in SUPERTARGET.

APPLICATION AND ADVANTAGES

- Determination of the optimum technical and cost-effective heat exchanger configuration, e.g. in pre-heating systems of distillation units, thus reducing capital and energy cost
- Determination of optimum column concepts to reduce calorific and coolant requirements
- Utilization of low-temperature waste heat based on ‘Total Site Heat Integration’, e.g. for feed water pre-heating, combustion air pre-heating, thus reducing the fuel consumption (natural gas) and decreasing CO_2 emissions

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PÖRNER GRUPPE

INNOVATIVE TECHNICAL SOLUTIONS

Innovative constructional solutions of heat exchangers are reviewed within the scope of plant design using software programmes such as HTRI and Pro/II and applied in consultation with our clients. In our considerations we include e.g.:

- advanced shell-and-tube heat exchanger geometry with improved heat transfer properties such as UOP HIGHFLUX tubes, WIELAND finned tubes, twisted tapes, twisted tubes, finned tubes or helical baffles
- heat pump systems of columns

BENEFITS

- high-efficient plant operation due to integrated heat pump technology
- low space requirements compared to conventional technical solutions

Whether energetic analysis using the PINCH technique or design of innovative heat exchangers or preparation of concepts for sophisticated overall process solutions based on heat pump technologies, whether study, basic or detail engineering – a team of experienced engineers is available in any case.

C_3 splitter at PCK Schwedt, Germany, with vapour compression, reboiler/condenser, equipped with UOP HIGHFLUX tubes

REFERENCES

Plant	Client	Location / Country	Year
Pre-heating system of AWT 8 plant	Ukrainian refinery	Ukraine	2012
Pre-heating system of AWT 6 plant	Russian refinery	Russia	2012
Refurbishment of a recycle heater, installation of twisted tubes	TOTAL Raffinerie	Leuna / Germany	2010 / 2011
Optimization of a soot oil heater, installation of finned tubes	TOTAL Raffinerie	Leuna / Germany	2009 / 2010
C_3 splitter with vapour compression, reboiler/condenser, equipped with UOP HIGHFLUX tubes	PCK Raffinerie	Schwedt / Germany	2007

We look forward to presenting our capabilities to you in a personal meeting.

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