

# Software PinCH

10 steps to energy efficiency and profitability in industry



# Your challenge

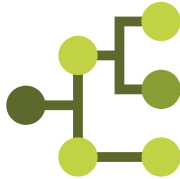
## Saving Energy and Costs

- Do you want to reduce your thermal energy costs, but the **saving potential** is unclear?
- Do you need a software to optimize your **whole industrial process**?
- Do you need capabilities to analyze **time dependent processes**?
- Do you wonder what **opportunities** are available to achieve the energy and cost saving potential?
- Do you need support for **integrating energy conversion units (ECUs)** properly into your process?

# Our solution

## PinCH Software for Pinch Analysis

PinCH supports you in **optimizing systematically** a broad spectrum of industrial processes.

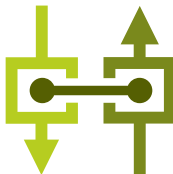


PinCH determines the **absolute energy and cost saving potential.**



PinCH provides a quick and flexible evaluation of **various designs and scenarios.**

PinCH is **unique in handling** both direct heat recovery and heat storage analysis.



PinCH enables the **proper integration** of ECUs and thermal energy storage systems.

# Characterize your process

## Understand and quantify your thermal energy needs (steps 1-5)

- Obtain a thermal energy fingerprint of your plant design
- Visualize your heating and cooling requirements with time dependent behaviour
- Establish your process schedule and economic data framework





### Define Process Requirements

- Gather process data
- Set the system boundary
- Determine the heating and cooling requirements

### Configure Equipment

- Configure shared equipment to reduce storage design complexity
- Use equipment to define multiple operating cases
- Share equipment to optimize heat exchanger area reuse

### Apply Schedule

- Configure process time dependence
- Model continuous and time dependent processes
- Visualize the process requirements schedule

### Prepare Targeting Calculations

- Configure analysis scenarios
- Set up different configurations based on processes, utilities, schedules, economic data

### Calculate Energy & Cost Targets

- Analyze the energy demand and cost targets
- Apply supertargeting to optimize direct heat recovery in time dependent processes
- Systematically integrate thermal energy storage systems

### Design Heat Exchanger and Storage Networks (HEN/HESN)

- Create MER and Relaxed HENs for direct heat recovery
- Optimize HENs for time dependant processes
- Visualize a thermal energy storage network



### Enter Stream Data

- Define the utilities
- Assign special fluids to calculate automatically key properties
- Import stream data



### Define Processes

- Create processes based on distinct groupings of streams
- Prepare individual and total site analysis scenarios



### Set Economic Data

- Assign cost parameters (heat exchanger, storage tank, storage media)
- Apply flexible economic functions



### Analyze Energy Targets

- Preanalyze the energy targets of the total site
- Reduce process complexity
- Determine targets for thermal energy storage systems



### Integrate Energy Conversion Units (ECU)

- Optimize the utility system
- Properly integrate ECUs into your process: heat pump, combined heat and power, mechanical vapor recompression, thermal vapor recompression, organic Rankine cycle



# Optimize your process

## Set targets and find optimization opportunities (steps 6-10)

- Determine the best economic use of thermal energy within your process
- Transform the savings potential into flexible yet practical designs
- Prioritize the solutions according to their energetic and economic benefit

**«Pinch analysis gives us the certainty that we have found the best possible solution for our needs.»**

**Stefan Gertsch**, Project Manager Technology at HACO AG

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For further information, please visit [www.pinch.ch](http://www.pinch.ch) and get started with a trial version.

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 **energieschweiz**