



# HEATVENTORS

The Intelligent Thermal Battery

Green Energy Storage

Heatventors Kft.

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Co-funded by the  
European Union



# Challenges

- Heating&cooling 50% of energy consumption
- Energy efficiency
- 2 860 000 000 MWh / year waste heat in EU
- Decarbonisation
- How to store?





# Solution

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- Thermal Battery with control system
- Phase change material
- High energy density



# Benefits

- Efficiency increase
- Energy saving 20-50%, 5 years payback
- Waste heat recovery
- Renewable energy storage
- Space saving
- Operational safety
- Technical support





# Structure

## Storage

- Special heat exchanger
- Insulation: max 2% loss

## PCM

- environment friendly, plant-based
- non corrosive
- over 10.000 cycles lifespan (25+ years)

## Control system

- Charge - discharge when most efficient
- Collects data
- Connection to building management systems



# Operating conditions

- - 30 + 120 degree Celsius
- Liquid medium
- One battery - one temperature
- No maintenance needed
- Electricity need (valves, pump, control)





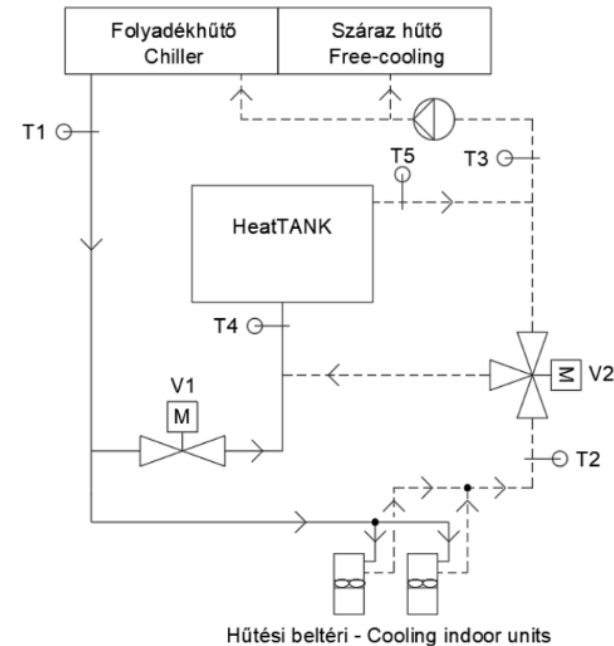
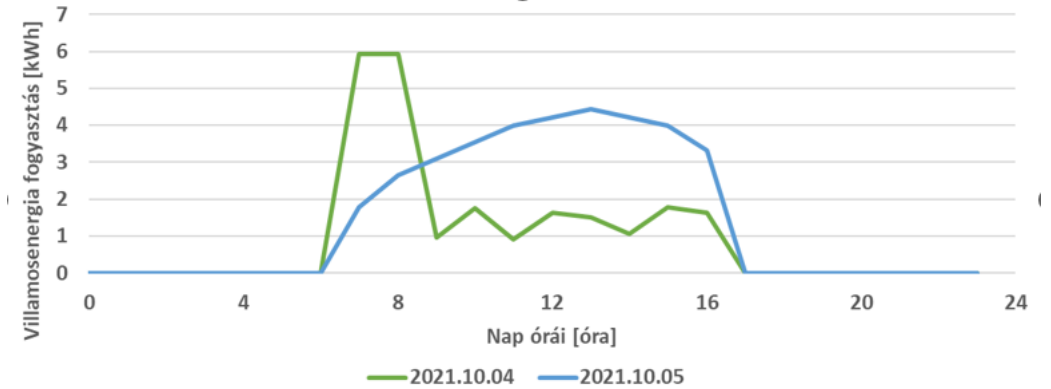
# Features

- Modular, no capacity limit
- Modules: 30 kWh, 60 kWh, 1,2 MWh
- 60 kWh, 2 m<sup>3</sup>, 1 m<sup>2</sup>
- On wheels, fits in elevators
- Outside- inside



# Office + laboratory

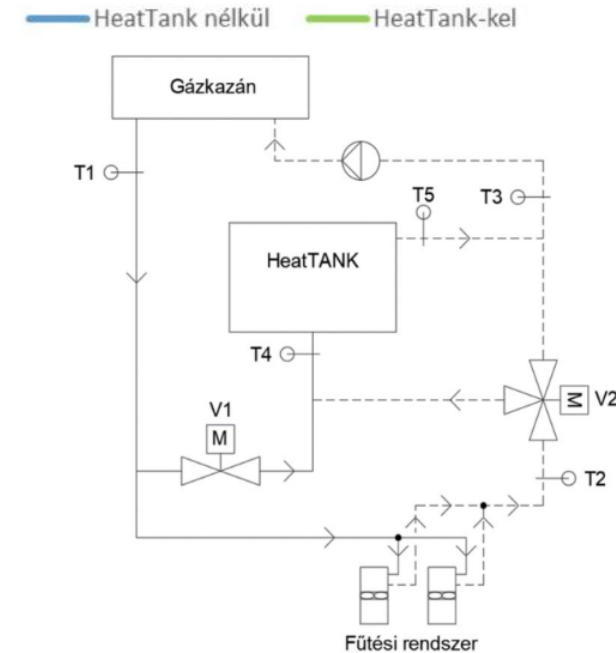
- Energy producer: chiller
- Purpose: energy saving in a **cooling system**
- Comfort + technology
- Cooling need: 132 kW
- Storage capacity: 60 kWh
- Phase change temperature 9-9.5 °C
- Consumption: 90.000 kWh/ év
- Saving :cca 30%





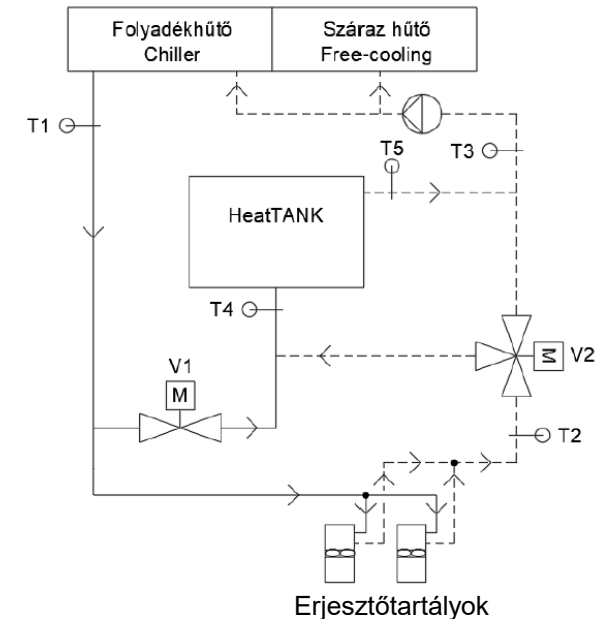
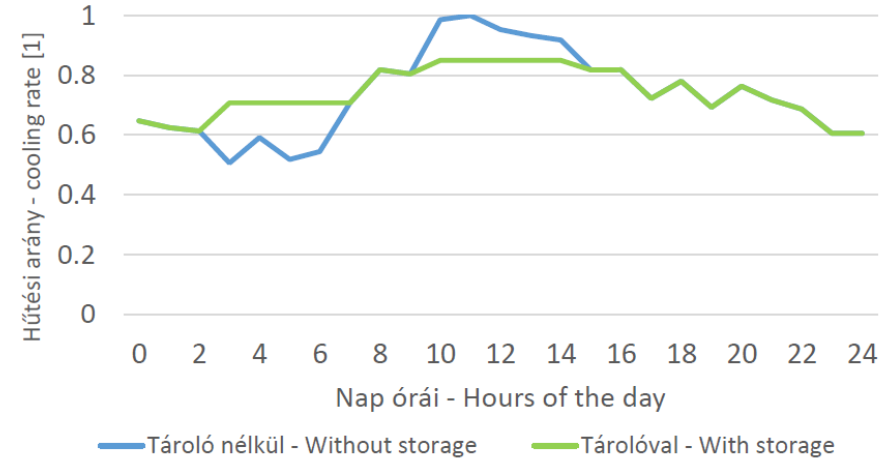
# Hotel

- Energy producer: gas boiler
- Purpose: energy saving in a **heating system**
- Comfort
- Heating need: 95 kW
- Storage capacity: 30 kWh
- Phase change temperature: 57-58,5 °C
- Consumption: 118.000 kWh/year
- Saving cca 20%



# Vinery

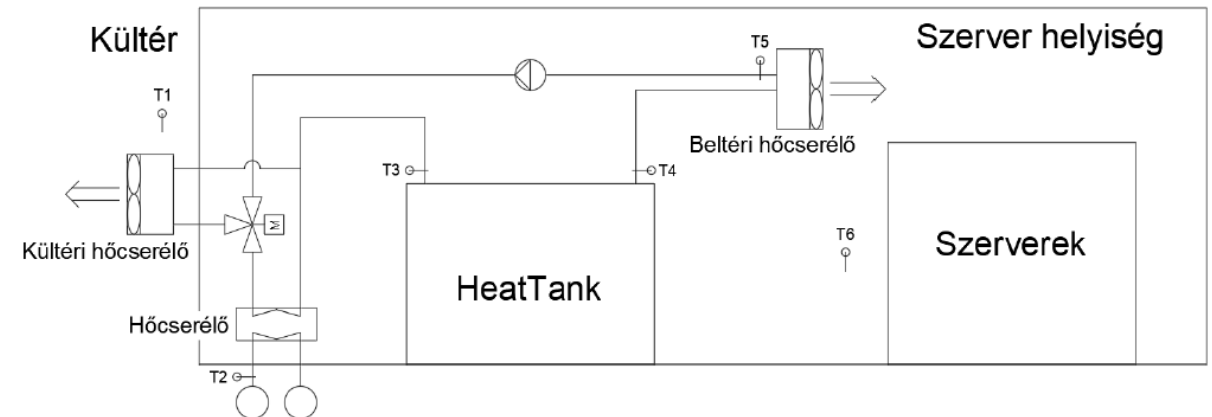
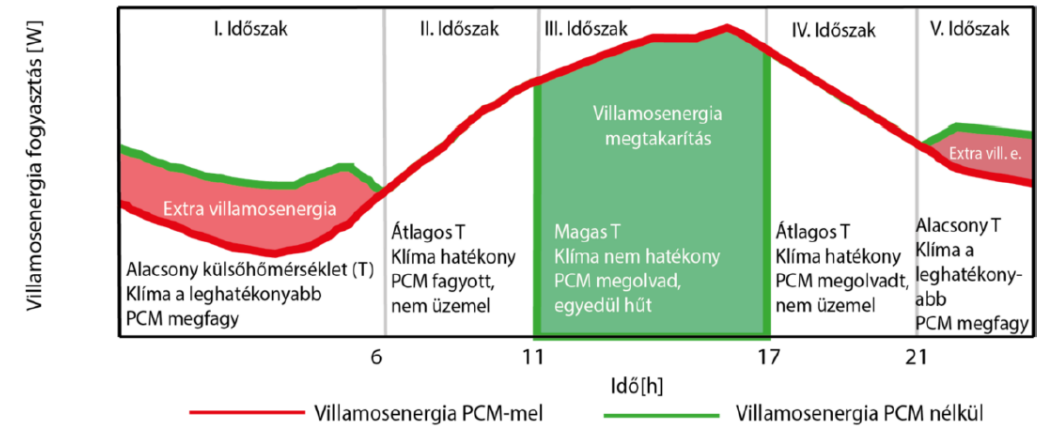
- Energy producer: chiller
- Purpose: Energysaving in a **cooling system**
- Technology
- Cooling need: 150 kW
- Storage capacity: 180 kWh (3\*60 kWh)
- Phase change temperature - 6 °C
- Consumption: 500.000 kWh/year
- Saving : cca 19%





# Data center

- System: split air conditioner + chiller + freecooling
- Purpose: Energysaving, operational safety
- Technology
- Cooling need: 12 kW
- Storage capacity: 60 kWh
- Phase change temperature 19-20.5 °C
- Consumption: 40.000 kWh/year
- Saving : cca 50%







Thank you!



**HEATVENTORS**