

### Power -to-Heat

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### Sustainable Electrification of the Chemical Industry

## **Power-to-Heat**

## A business opportunity for you?

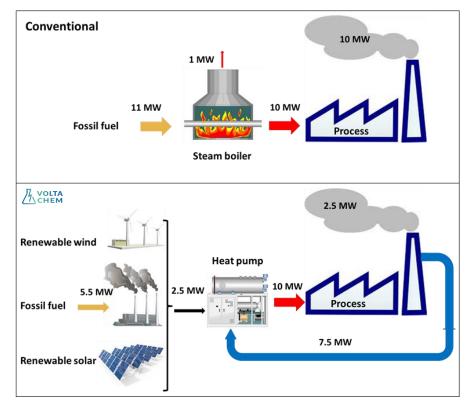






## Why Power-2-Heat?

- Use of electrical power to produce heat (steam) to drive industrial processes
- Electrical heat pump provides high efficiency by recovering waste heat
- Typical Coefficient of Performance (COP) of 4 means 4 units of heat for 1 unit of electricity
- Examples
   Waste heat (°C)
   80
   120
   90
   150
   120
   180



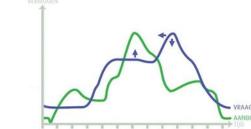


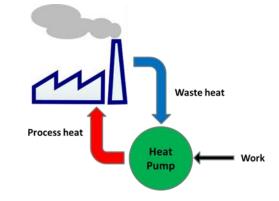
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# **Power-to-Heat technology options**

- Flexibility
  - Direct electrical heating
  - Heat/cold storage
  - Multifunctional/reversible equipment
- Electrification
  - (Direct electrical heating)
  - Mechanical vapour recompression
  - Electrical heat pumps

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## **Business opportunity**

### **Mechanical vapour recompression**

- Compression of low pressure vapour or steam (steam recompression) to higher temperature and pressure
- Applications:
  - Distillation processes
  - Evaporization/drying processes: milk powder, salt, sludge
  - Cooking processes; breweries
  - Upgrading surplus LP steam
  - Upgrading flash steam



Savings in energy costs

Payback time 1- 2.5 years



#### Mechanische damprecompressie

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## Power-to-Heat A business opportunity for you!

Contact us for:

- Process scans with experts
- Business case assesment
- Calls for participation



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