

A technical drawing of a mechanical part, likely a turbine or engine component, rendered in light blue lines on a dark background. The drawing includes various dimensions and labels such as 'A-A263', '53248', and '16172871'.

DUURZAAMHEID
**ENERGY CONVERSION
SOLUTIONS**

ATLAS COPCO
Margot Gutscoven

SMART ENERGY
ACADEMY 2023

flux50

Atlas Copco

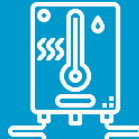


ENERGY CONVERSION PORTFOLIO

ENERGY
RECOVERY



HEAT PUMP



STEAM
COMPRESSOR



EXPANDERS



**COMING
(SOON)...**

ORGANIC
RANKINE
CYCLE (ORC)



CHILLERS

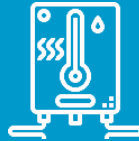


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Energy recovery

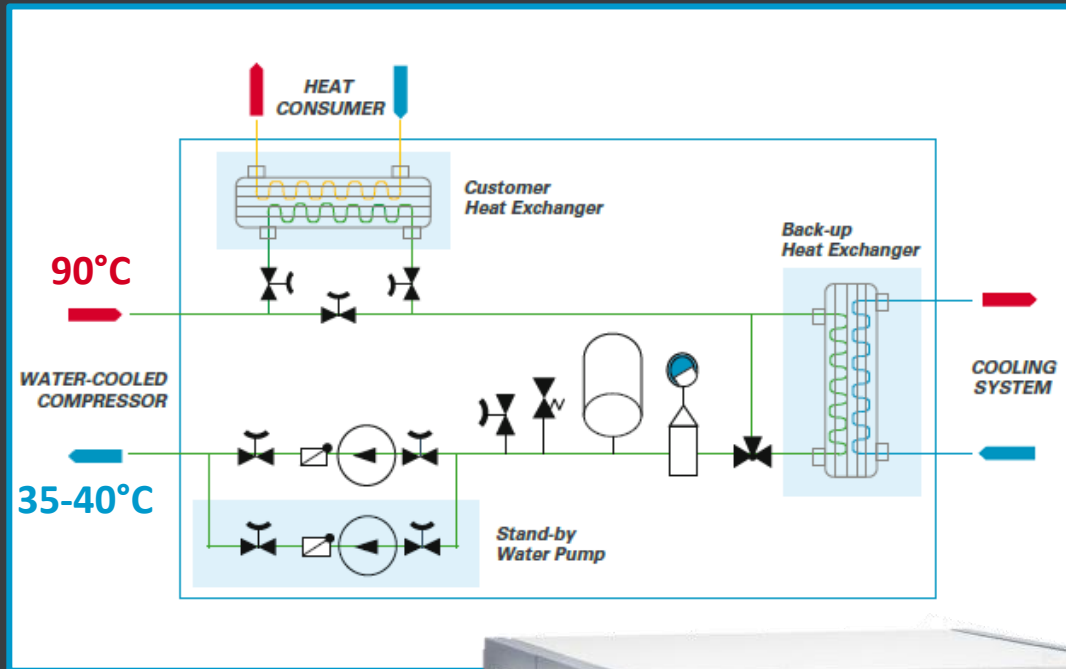


VERWARM UW WATER, BESPAAR ENERGIE, VERMINDER UW ECOLOGISCHE VOETAFDRIJK



Ø6.6

ATLAS COPCO ER90-900 UNIT



*Save energy with
oil-free water-cooled
compressors*

Energy recovery solutions (ER 90-900)

Atlas Copco



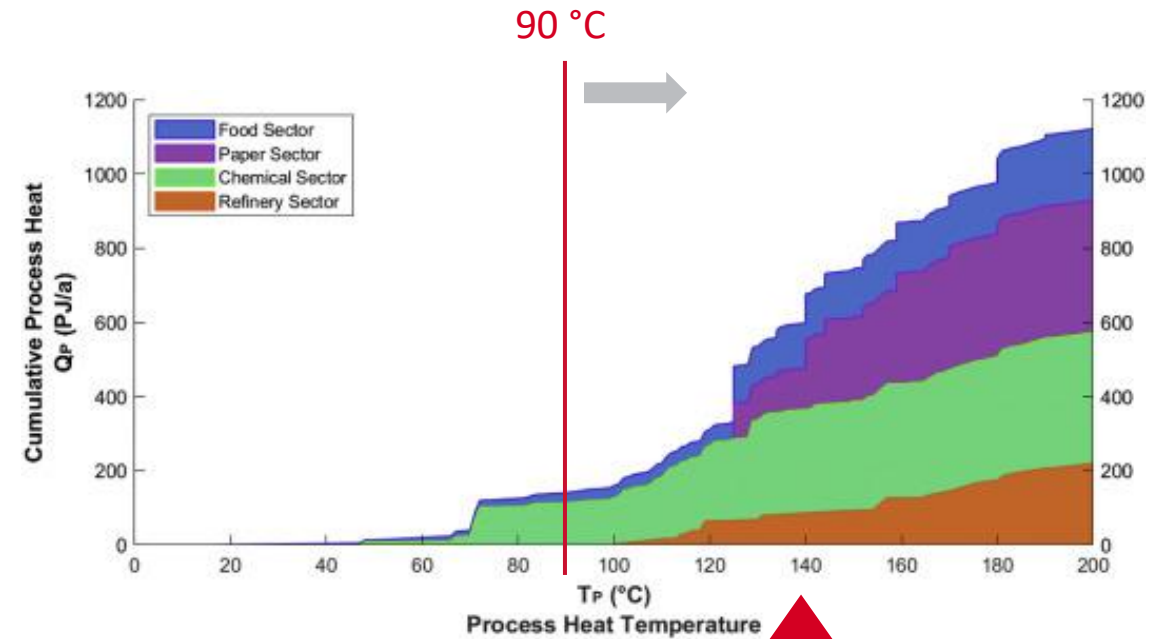
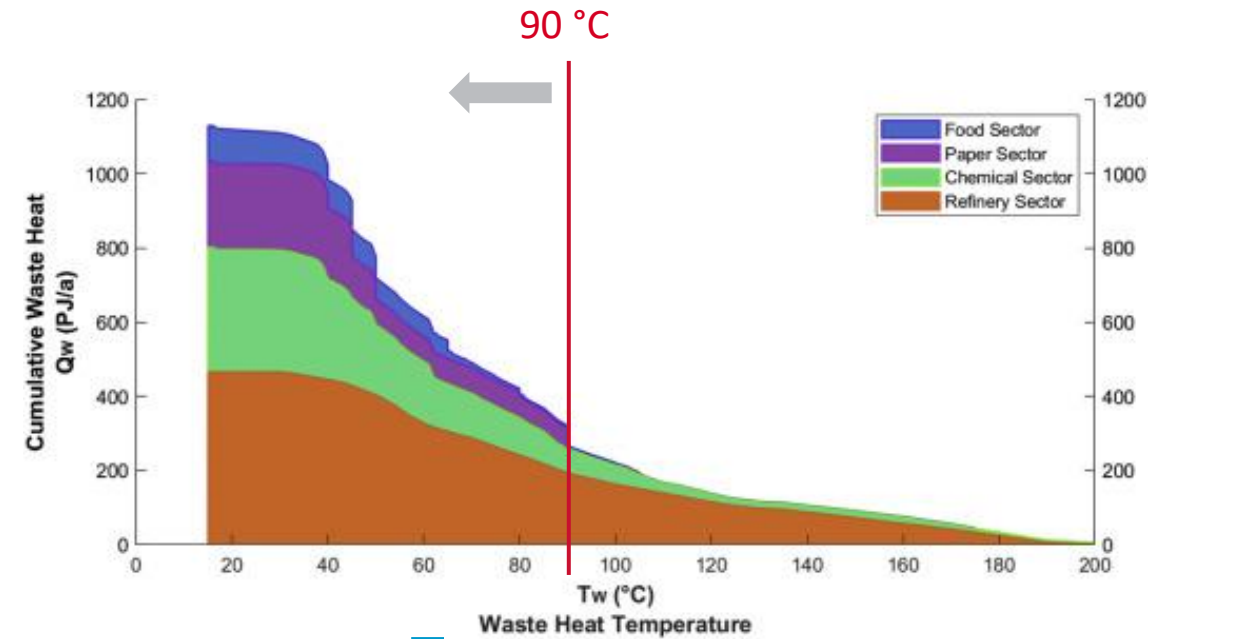
- Afhankelijk van de omstandigheden ter plaatse kun je ongeveer 89% van de elektrische inputenergie terugwinnen als verwarmd water
- Warm water kan worden teruggewonnen tot 90°C

Atlas Copco

Afvalwarmte v/s proceswarmte temperaturen

AFVALWARMTE

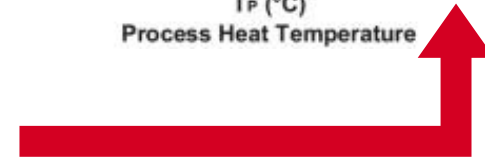
PROCESWARMTE



Warmtepomp

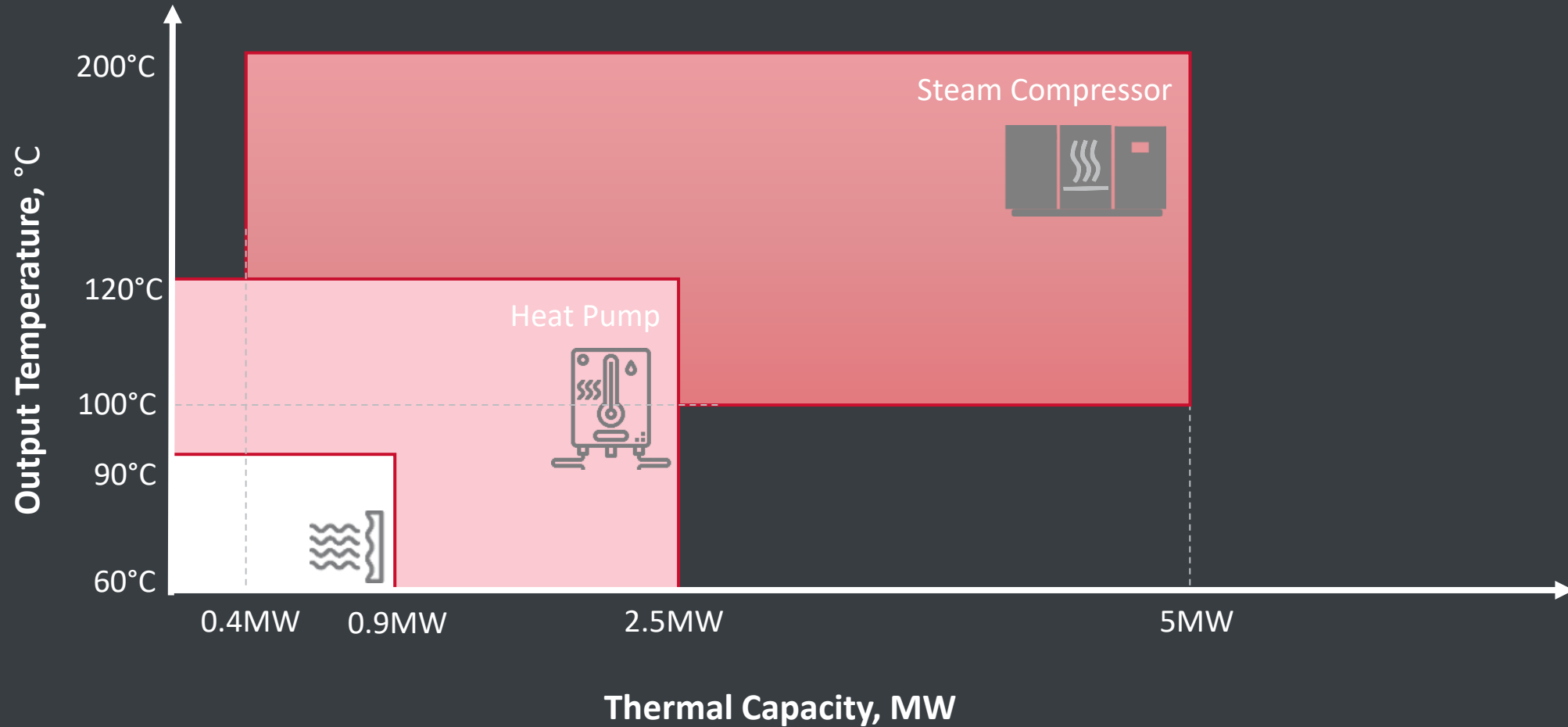


Stoom Compressor



Bron: Renewable and Sustainable Energy Reviews "An estimation of the European industrial Heat Pump Potential" – A. Marina, S. Spoelstra, H.A. Zondag, A.K. Wemmers

Application envelope



**FOOD &
BEVERAGE**



CHEMICAL



PAPER



PLASTICS



TEXTILE



**AUTO-
MOBILE**



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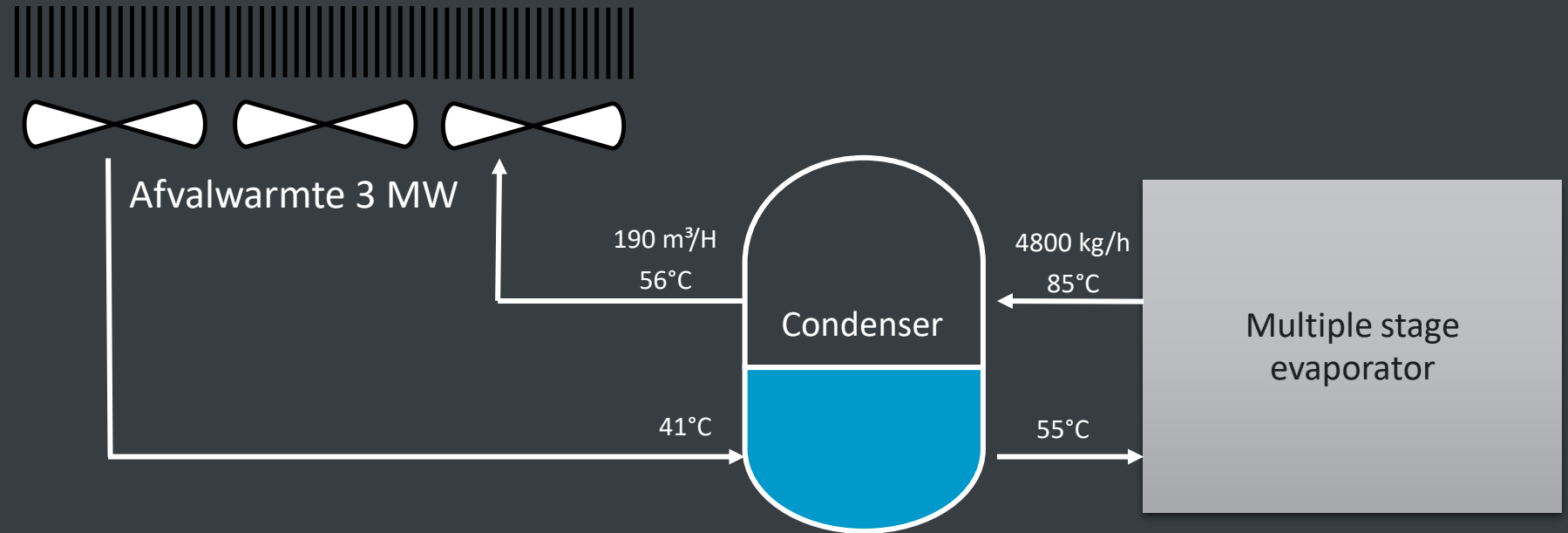


CHILLERS



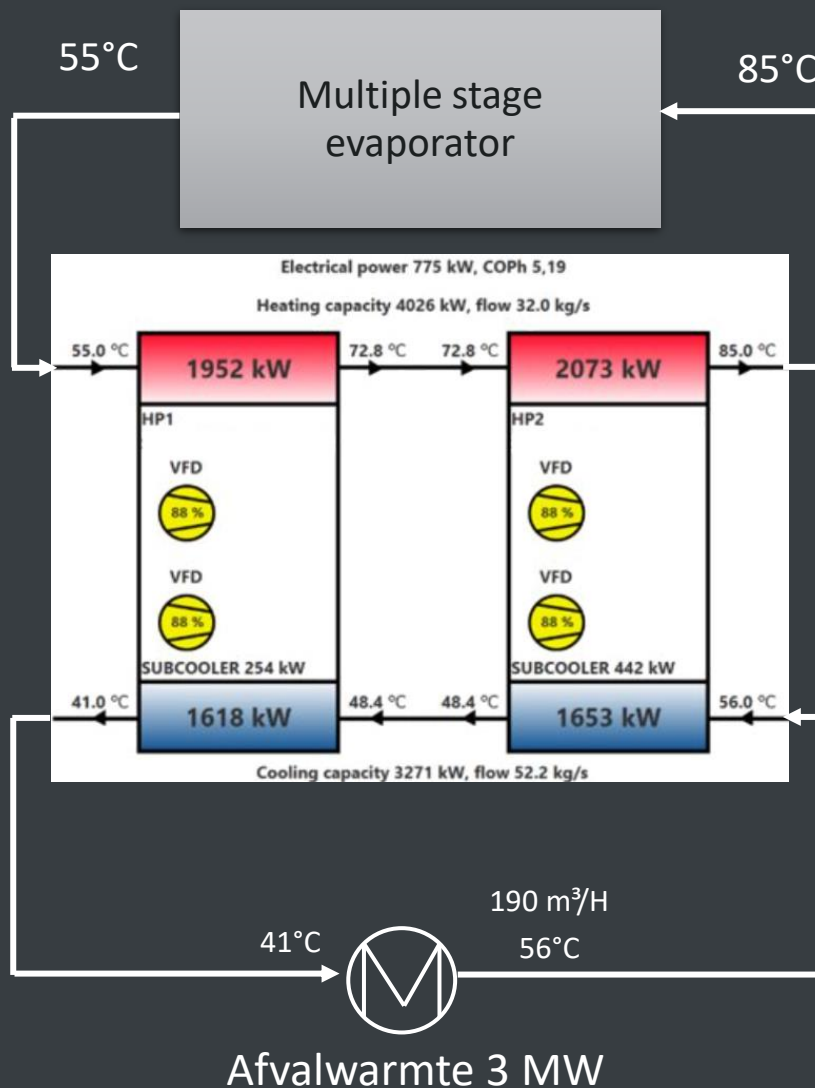
Praktijkvoorbeeld: Warmtepomp

FOOD &
BEVERAGE



Praktijkvoorbeeld: Warmtepomp

FOOD &
BEVERAGE

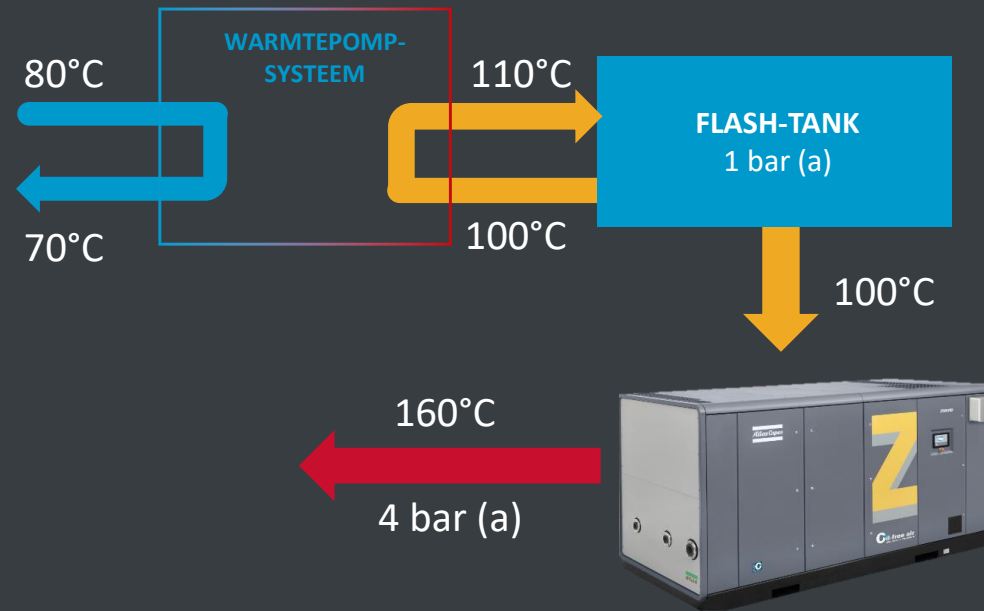


Terugverdientijd: < 1 jaar



CO₂-besparing: 10.145 t CO₂ / jaar

Praktijkvoorbeeld: Warmtepomp en waterdampcompressie

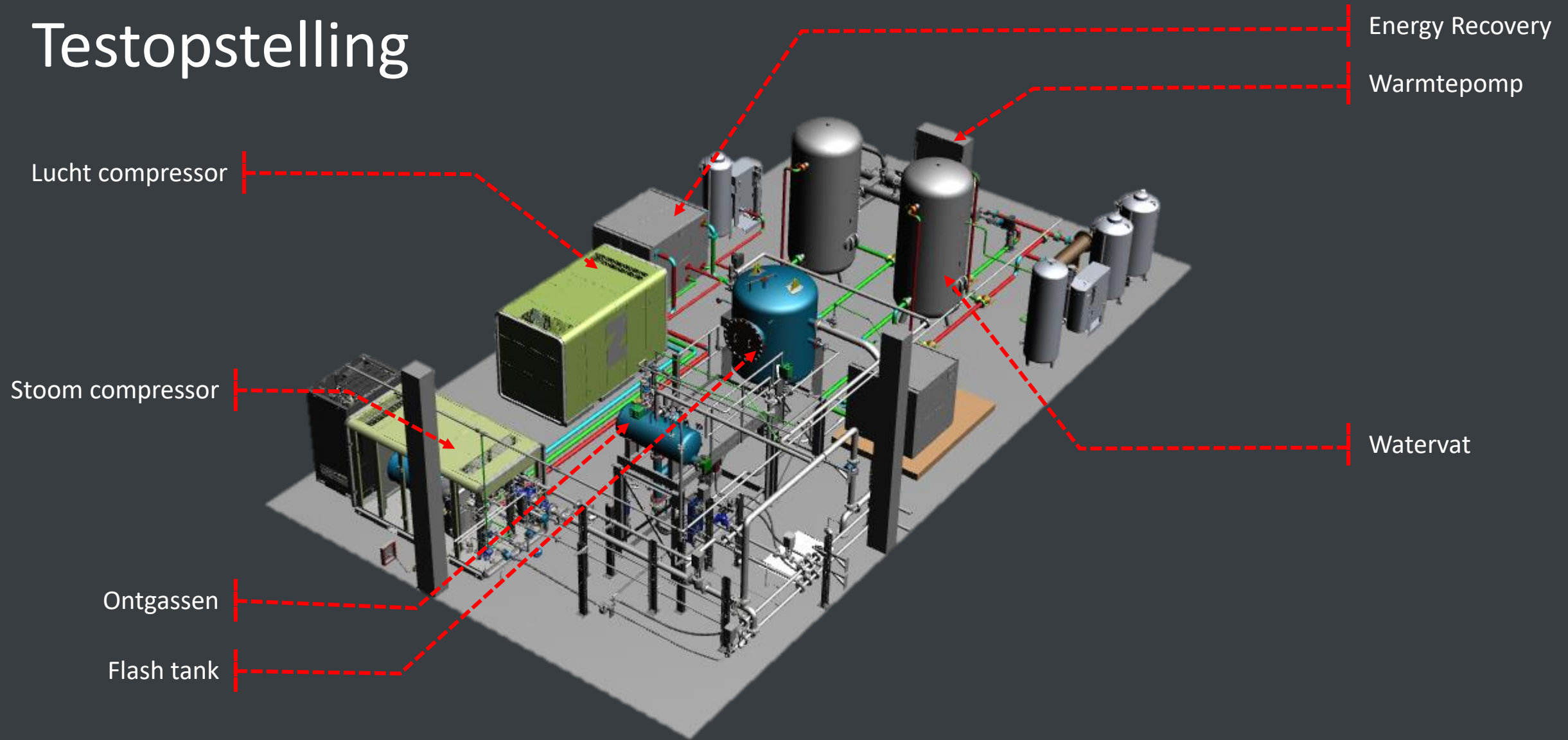


Terugverdientijd: 4 jaar



CO₂-besparing: 886 t CO₂ / jaar

Testopstelling

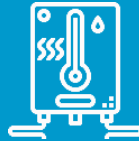


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CHILLERS



Praktijkvoorbeeld: Stoom Expander

Parameter	Waarde	Eenheid
Inlaatdruk	16	Bar(g)
Uitlaatdruk	2,5	Bar(g)
Temperatuur Inlaat	70	°C
Debiet	3.500	Nm ³ /h
Elektrisch vermogen	93	kW
Bedrijfsuren per jaar	8.000	h
Elektrische Energie per jaar	744.000	kWh



Besparingspotentieel: 74.400 €/jaar



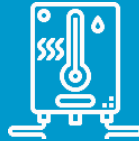
CO₂-besparing: 223 t CO₂ / jaar

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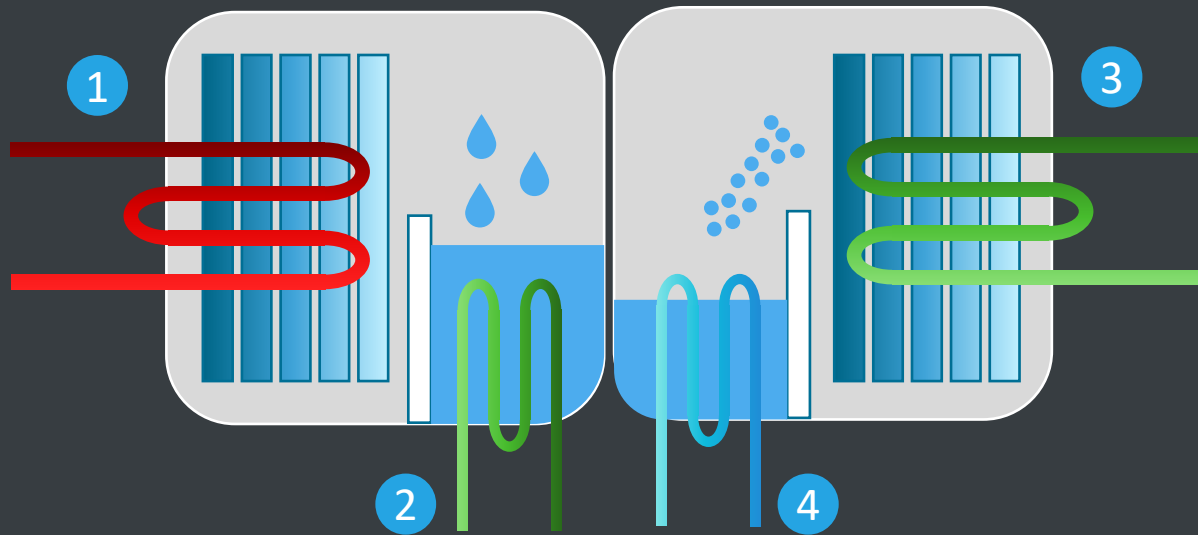
ORGANIC
RANKINE
CYCLE (ORC)



CHILLERS



Adsorption Chiller



Gebruik afvalwarmte
COP +/- 0,4



Milieuvriendelijk



Weinig onderhoud nodig
(Levensduur 25 jaar)



Lage operationele kosten



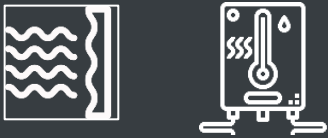
Stille werking

Pijlers voor energieconversie



ENERGY TO HEAT

Energy Recovery & Warmtepomp



ENERGY TO STEAM

Stoom Compressor



ENERGY TO ELECTRICITY

Expander,
Organic Rankine Cycle (ORC),



ENERGY TO COOL

Chillers



Output < 120°C

Input: 90° to 120° input
Stoom Output: 200°C at 14bar

Input: 90°C to 120°C

Adsorption input: 90°C



Teruggewonnenwarmte > 80%
van de compressorvermogen

Electricity output: 4% tot 9%
Van warmte input
Expander: Efficiency up to 75%

Cooling output: 60%
van warmte input



Atlas Copco

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+32 471 17 76 85

Website:

<https://www.atlascopco.com/nl-be/compressors/energy-conversion>

atlascopco.com

