#climatepositive by 2035

MVV Umwelt GmbH

MVV Energie AG
at a glance

128
Fully consolidated **companies**

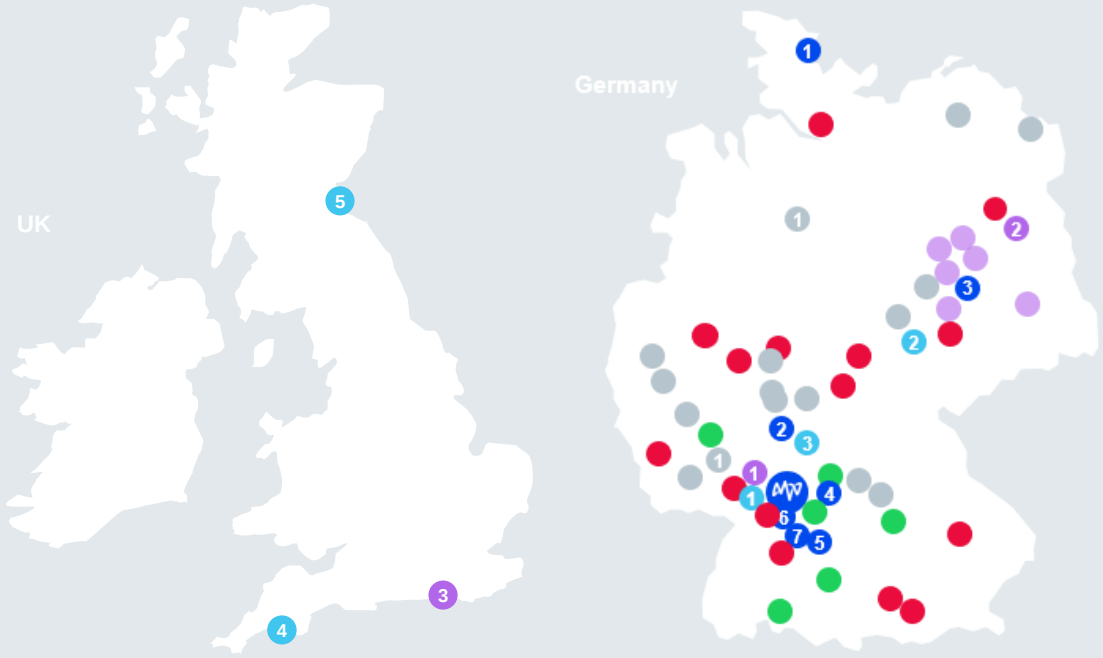
Presence predominantly in
Germany
and
UK

26
at equity companies

Largest **locations**
Mannheim
Kiel **Wörrstadt**
Offenbach
Plymouth
Dundee

6,649
Employees (at 30 September 2024)

MVV Energie AG
Our locations



MVV Energie AG

Biomass
1. Mannheim
2. Königs Wusterhausen
3. Ridham Dock

Energy from waste
1. Mannheim
2. TREA Leuna
3. Offenbach
4. Plymouth
5. Dundee

Wind farms
PV parks
Biomethane/ bio-waste digestion
Services

Municipal utility companies
1. Stadtwerke Kiel
2. EVO
3. Köthen Energie
4. Stadtwerke Buchen
5. Stadtwerke Sinsheim
6. Stadtwerke Schwetzingen
7. Stadtwerke Walldorf

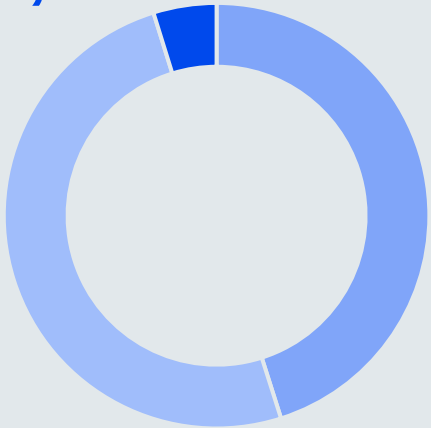
Renewable energies project development
1. Juwi

Juwi locations
a. o. Germany, Italy, Greece, USA

MVV Energie AG

Our shareholder structure and business figures

shareholder structure



4,8 % Free float

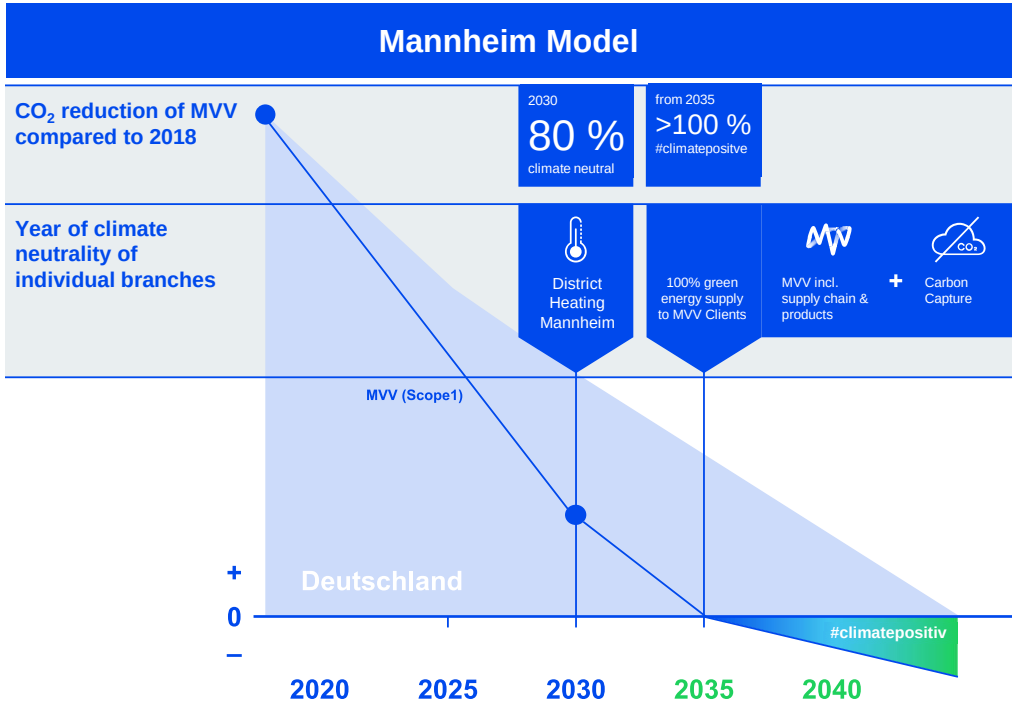
45,1 % First Sentier Investors

50,1 % City of Mannheim (indirect)

Business figures FY 2024

Turnover	7.194 Mio. EUR
Adjusted EBIT	426 Mio. EUR
Employees	6.649

Our future: #climatepositiv with the Mannheim Model



#climatepositiv until 2035

face the challenges with our Mannheim Model

By **2030** we will increase our electricity generation capacity from renewable energies to around 2,000 MW and convert our remaining fossil-based generation to green energy by 2035.

By **2035** we will provide products and services for the energy transition to all customer groups.

By **2035** we will be #climatepositiv

Global leader in climate protection and sustainability

Climate targets internationally recognised and certified

German Sustainability Award

- Winner in the energy generation and trading sector as a pioneer of the energy transition in Germany

SBTi

- MVV is the first German energy company, and one of the first worldwide, to receive certification that its climate targets and measures are net zero compatible

ISS ESG

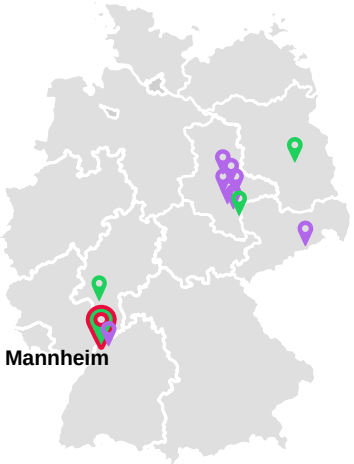
- Prime status since 2017
- MVV one of the world's most sustainable energy companies in ISS ESG rating

EcoVadis

- Gold Status awarded
- MVV is among the top 5 % of the best-rated companies

MVV Umwelt GmbH

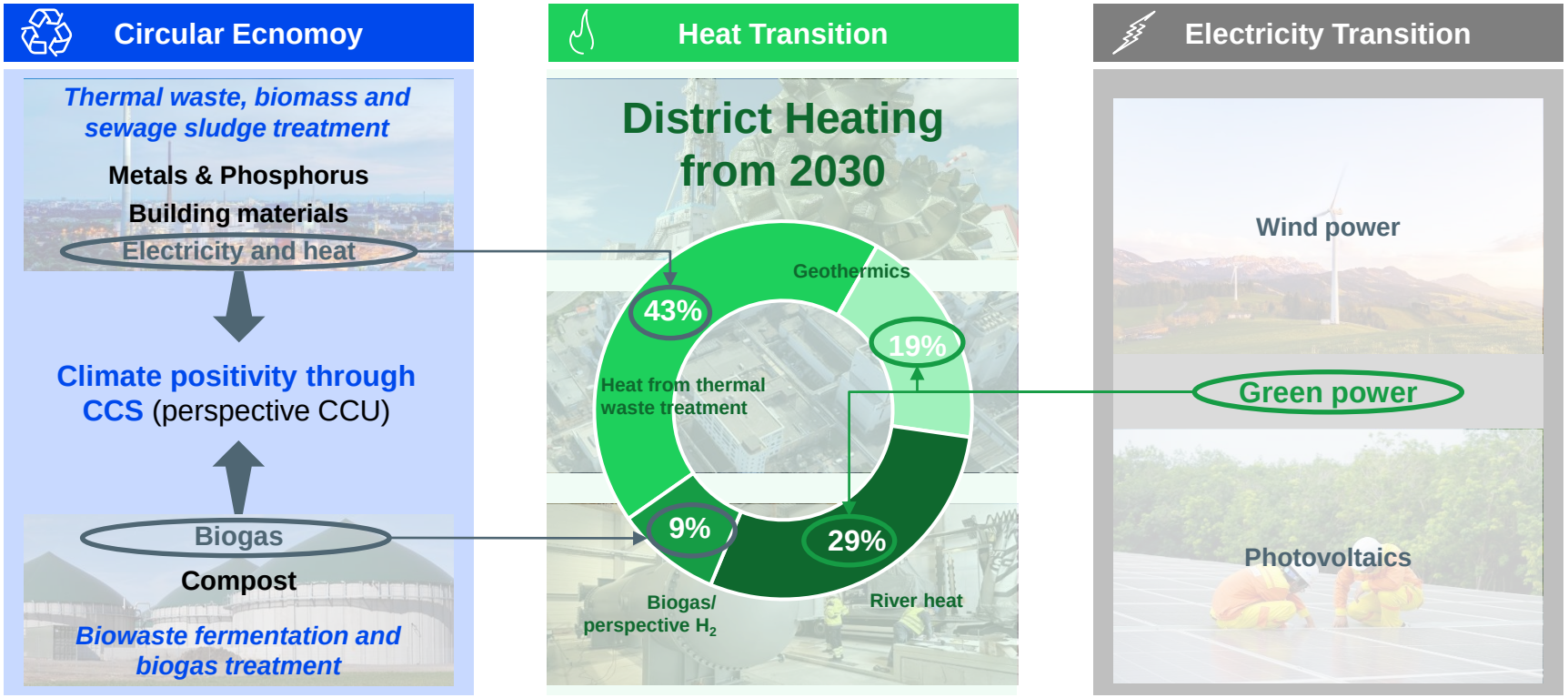
Key figures for MVV Umwelt and outlook for 2030



	Current key figures	Target 2030
EfW & BMPP	1.460 kt/a	1.595 kt/a
Biogas	290 GWh/a	> 350 GWh/a

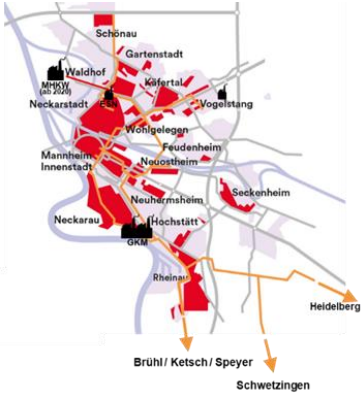
	Current UK key figures	UK-Target 2030
EfW & BMPP	685 kt/a	1.480 kt/a

#climatepositive through integrating waste treatment, green heating and electricity transition



The decarbonisiation of district heating in Mannheim

District heating supply in the metropolitan region



Friesenheim Island with thermal waste treatment plant and biomass power plant (BMKW)

Coal-fired power plant with river heat pump and district heating storage

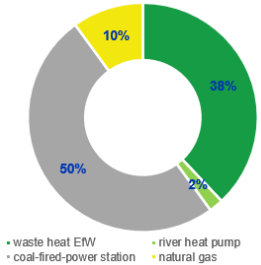
Key figures for the district heating network:

Customers (households):	165,000 (region)
Network length:	600 km
District heating supplied:	up to 2.3 TWh/a
Peak load:	up to 900 MWth
Households supplied: (in Mannheim)	60%

Key figures for district heating generators:

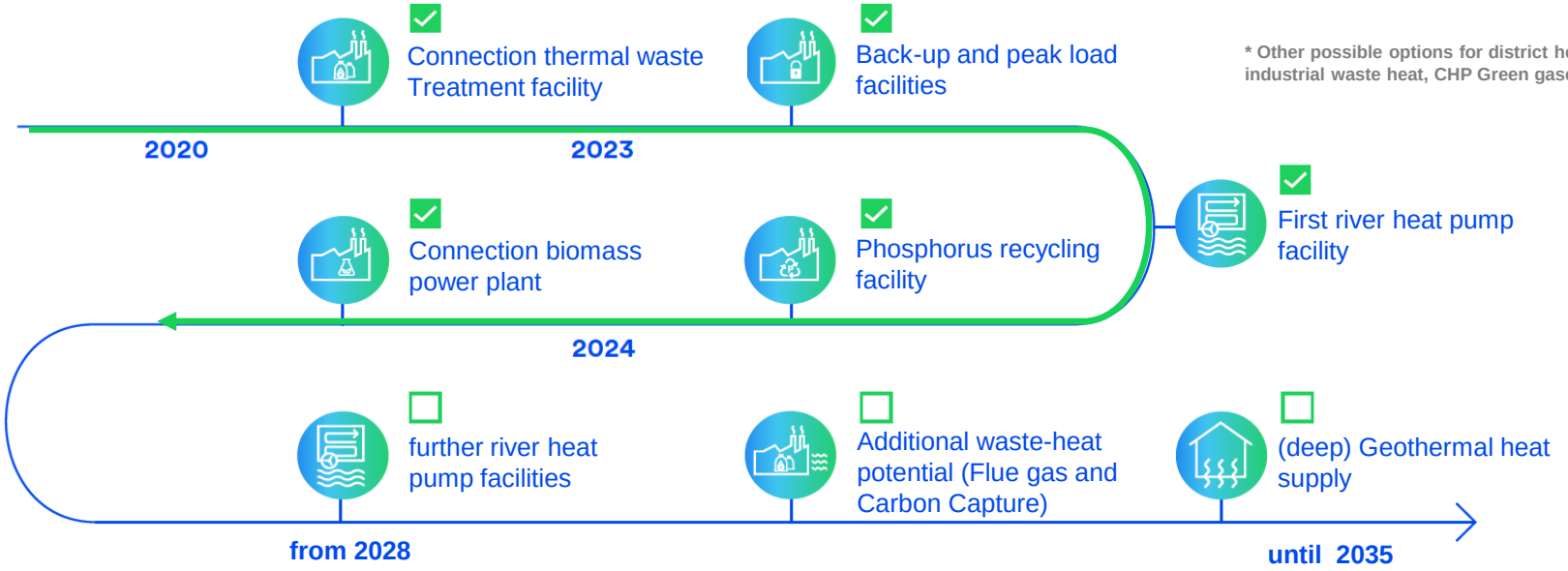
2 Coal fired Blocks	920 MWth
1 River heat pump	20 MWth
3 EFW boiler + 1 BMKW district heating centre :	140 MWth
Peak-load and Back-Up plants (gas / oil):	520 MWth
District heating storage	250 MWth

Heating composition prediction FY 2025



District heating transition in Mannheim

Step by Step green heat

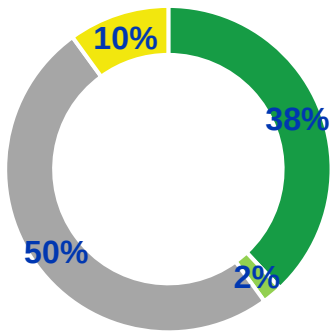


* Other possible options for district heating storage, industrial waste heat, CHP Green gases

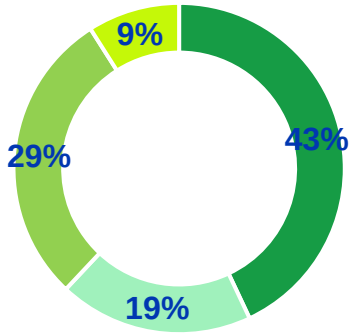
Heat production composition (GWh in %)

(indicative and according to the latest predictions; Composition depends on electricity market, commissioning date of installations and geothermic discoveries)

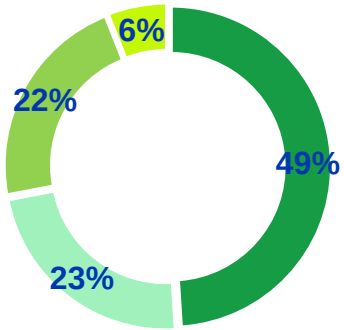
FJ 2025 (prediction)



FJ 2030



FJ 2035



coal-fired power station

Natural Gas

River heat pump

Waste heat thermal waste treating (waste, waste wood, Carbon Capture)

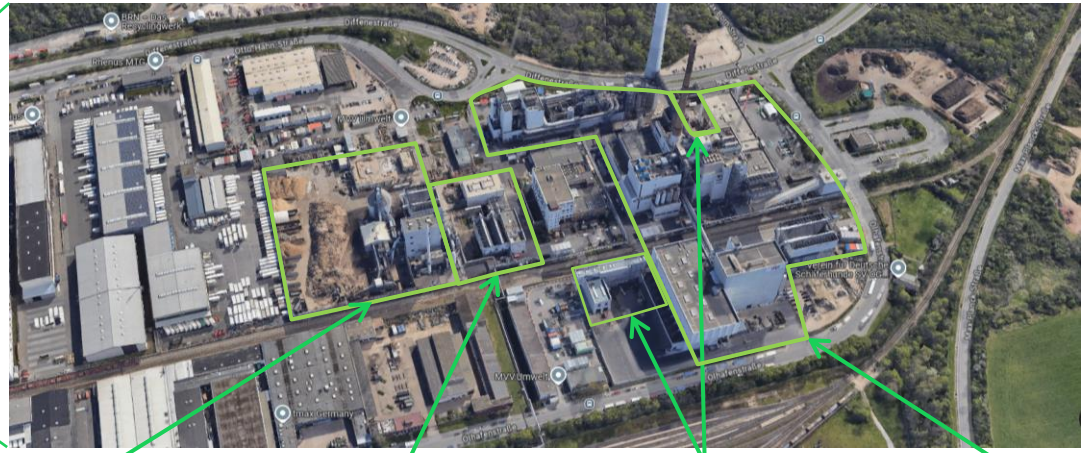
Biogas/H2

Geothermics

Projects for the decarbonisation of the district heating at the Thermal Waste Treatment Facility in Mannheim

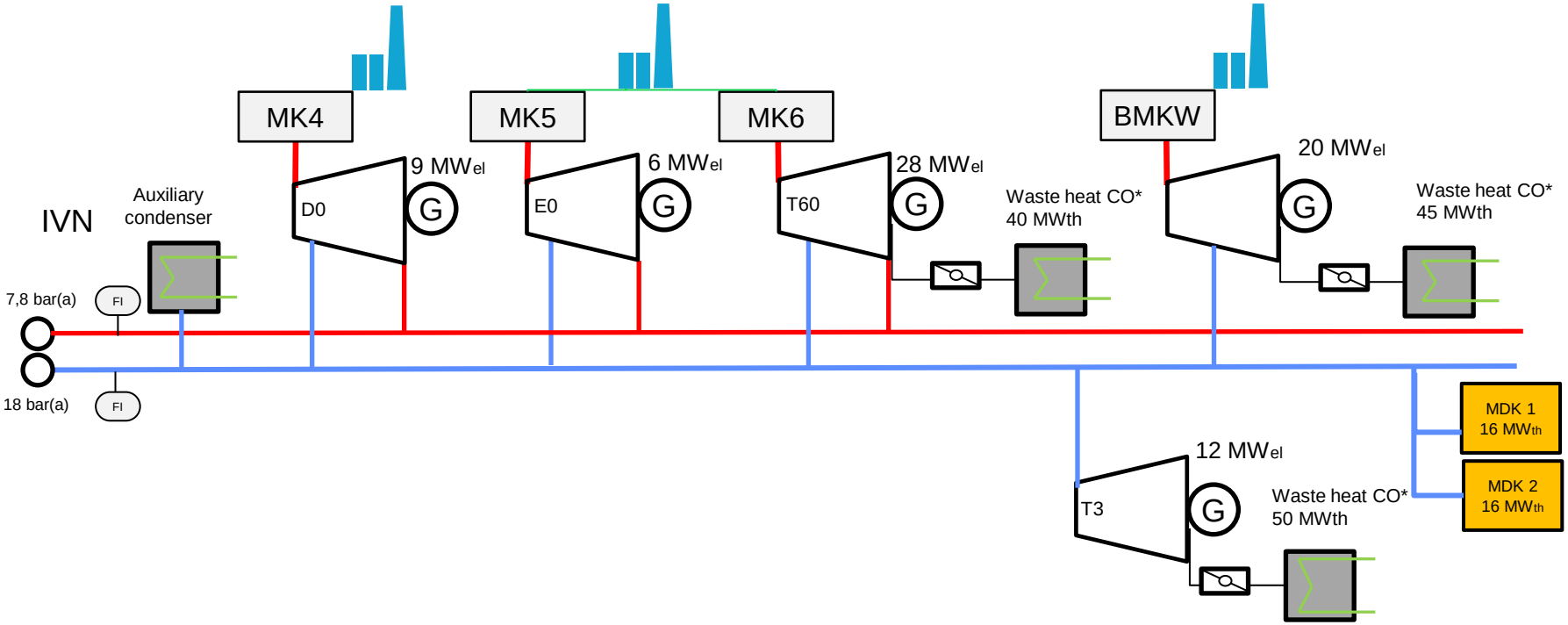
Energy from Waste plant Mannheim Friesenheimer Insel

Mannheim City



Biomass power plant	District heating	Sewage sludge treatment	Energy from Waste facility
• 140.000 t/a Waste wood AI-AIV • Waste wood treatment • Firing: walking grate with spreader-suspension type firing • Flue gas cleaning: Dry sorption and SNCR	• Capacity: 140 MW therm. • Pumps: 3 * 2.300 t/h	• 140.000 t/a Sewage sludge treatment • Treatment in a rotary kiln and preparation for phosphorus recovery	• 650,000 t/a of mixed municipal waste, industrial and commercial waste • Firing: Forward moving grate, 3 lines (MK4, MK5, MK6) • Two-stage wet scrubbing + SCR + A-coke absorber • Combined heat and power generation

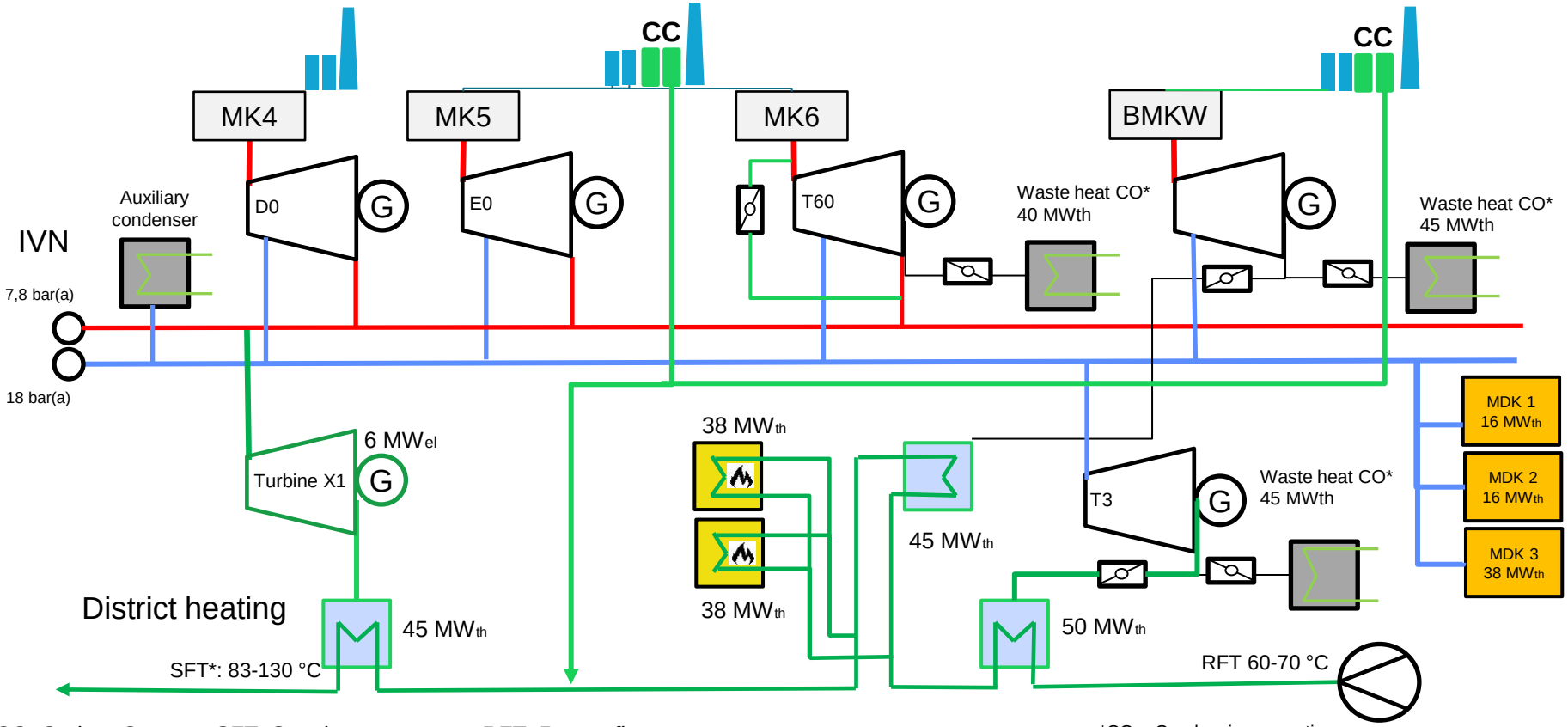
HKW Until 2020



*CO = Condensing operation

IVN: Industrial Steam supply North, MDK: Medium pressure steam boiler

Today - Development of District heating supply



CC: Carbon Capture, SFT: Supply temperature, RFT: Return flow temperatures,
IVN. Industrial Steam supply North, MDK: Medium pressure steam boiler

*CO = Condensing operation

HKW since 2020 – District heating supply phase one

Technical Parameter

Pumping capacity:	3 X 2.300 t/h
District heating capacity:	95 MW_{th}
Turbine:	6 MW_{El}

HKW today – District heating supply phase two

BM(H)KW-
- Exhaust vapour pressure: 3,5 bar
- Capacity: 45 MW_{th}
- Fuel: Waste wood

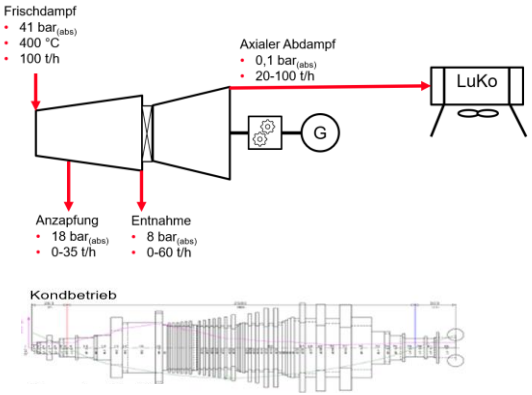

Footprint Turbine BMHKW

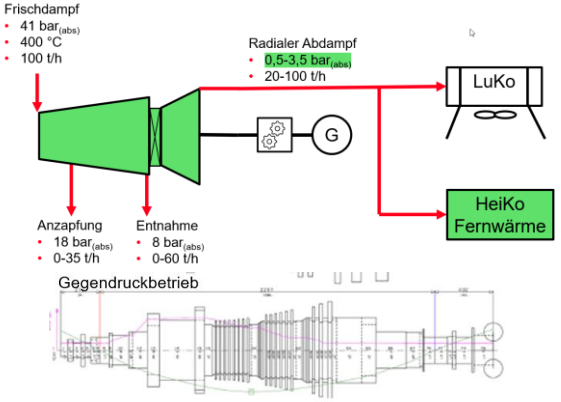
Heat exchanger WT3:
- Heating condenser
- Capacity: 45 MW_{th}

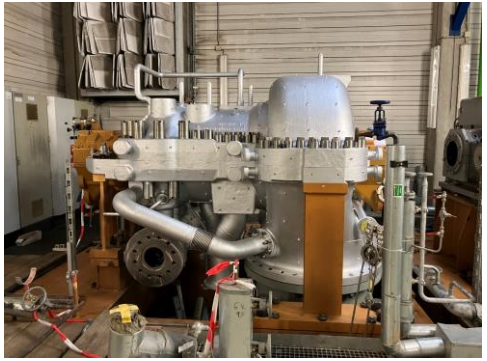

Heat exchanger 3


Full picture district heating facility, WT3 and BMHKW

Biomass CHP: Waste heat utilisation turbine exhaust steam







From climate-neutral to #climatepositiv
as one of the first energy companies in the world

We will **actively remove CO_2 from the atmosphere,** bind it permanently, use it or store it. In this way, we will not only offset our own unavoidable residual emissions but also achieve negative overall emissions and thus become **#climatepositiv by 2035.**

In this process, heat can be generated for district heating generation with heat pumps.

HKW until 2035 – Expansion of the district heating supply phase 3

District heating from EfW Carbon Capture
- Capacity: rd. 71 MW_{th}
- Operational: Oct. 2032

District heating from Biomass Power Plant Carbon Capture
- Capacity: rd. 17 MW_{th}
- Operational: Oct. 2029

Project development based on the experience of the operation of a Pilot CO_2 capturing and treatment facility in Mannheim

Thank you for your attention