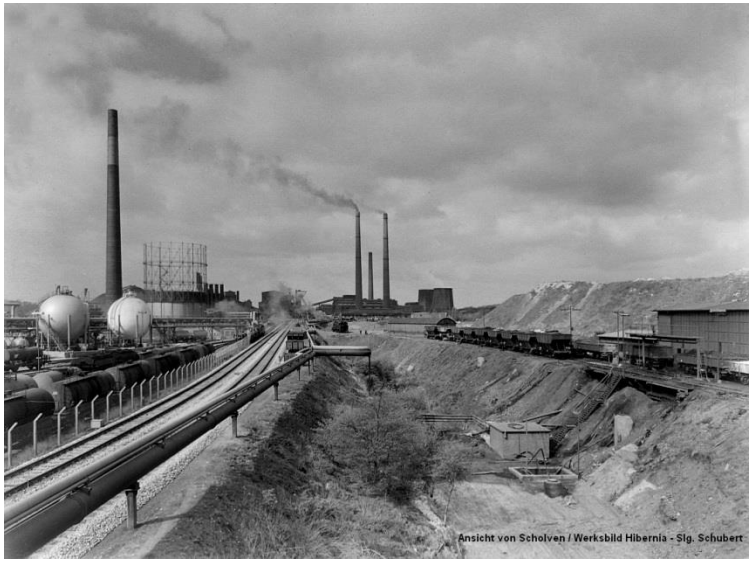
Power Plant Group West 1 - Scholven

Status date: 28.11.2017

A long tradition of energy generation Scholven since 1908



July 1908 — Sinking of the coal mine pit Scholven

1912 — A 240 KW turbo generator is commissioned to supply Scholven pit with auxiliary power

until 1930 — Increasing the output to 160 MW and supply of the nearby chemical industry with power and steam

1944/1945 — Numerous bomb raids cause severe damage to the power plant

1948-1951 — Post World War II reconstruction is largely completed

Scholven – site history

1968-1971
Commissioning of units B-E
(4 x 345 MW = 1.380 MW coal)

1970
Hibernia AG changes to
VEBA Kraftwerke Ruhr AG

1974/1975
Commissioning of units
G+H (2 x 714 MW oil)

1979
Commissioning of unit F
(676 MW coal)

1985
New district heating unit Buer (138 MWeq)
(installed capacity in total now 3,622 MW)

Scholven – site history

VEBA Kraftwerke Ruhr AG becomes PreussenElektra, later E.ON

Complete dismantling of units G and H

Installed capacity: 828 MW, production of steam and compressed air to surrounding industry

1998-2000

2001/2003

Shutdown of units G and H

2010

from 01.01.2015

31.12.2014

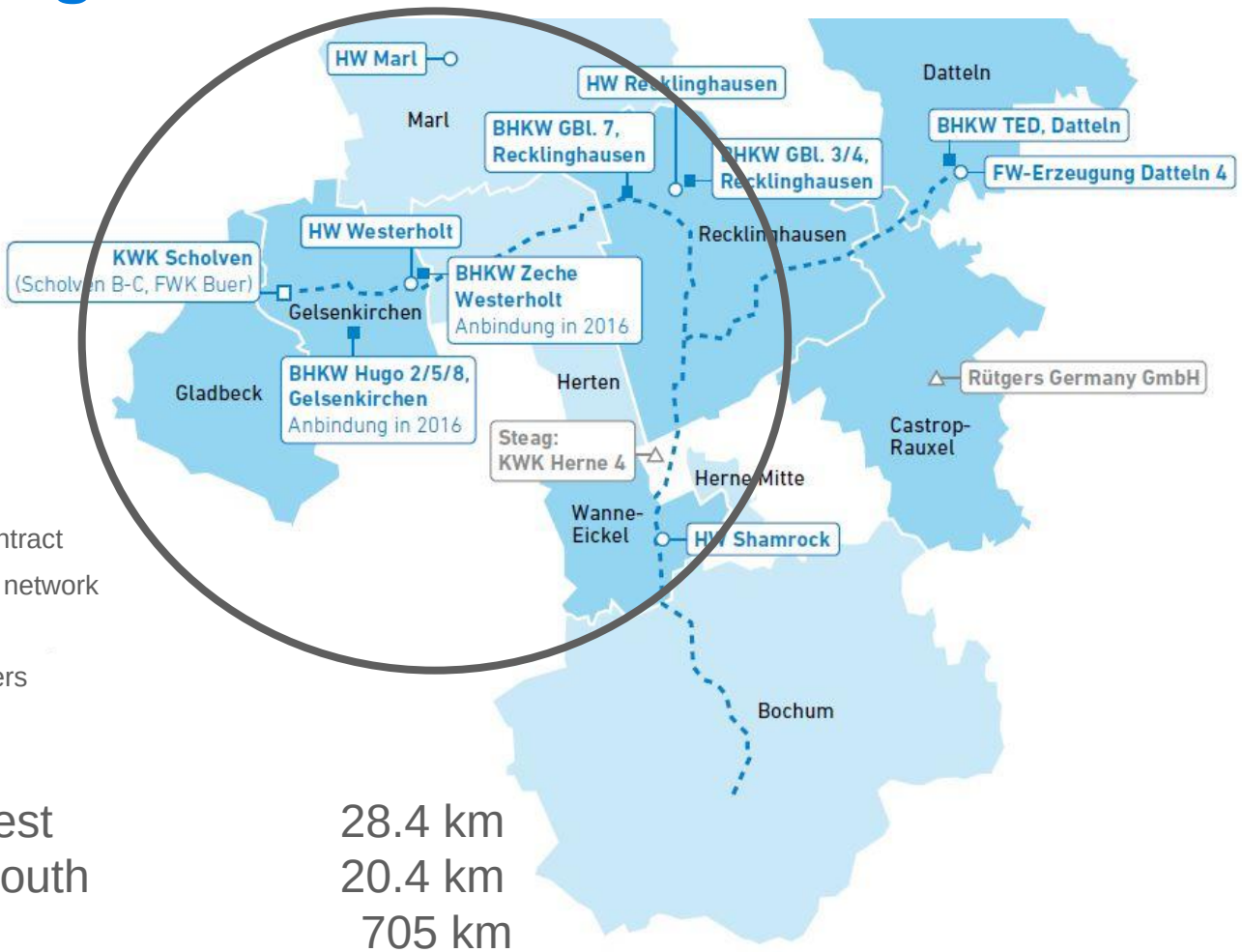
Shutdown units D, E and F

2016

E-ON Kraftwerke GmbH changes to UNIPER

Power Plant Group West 1 today

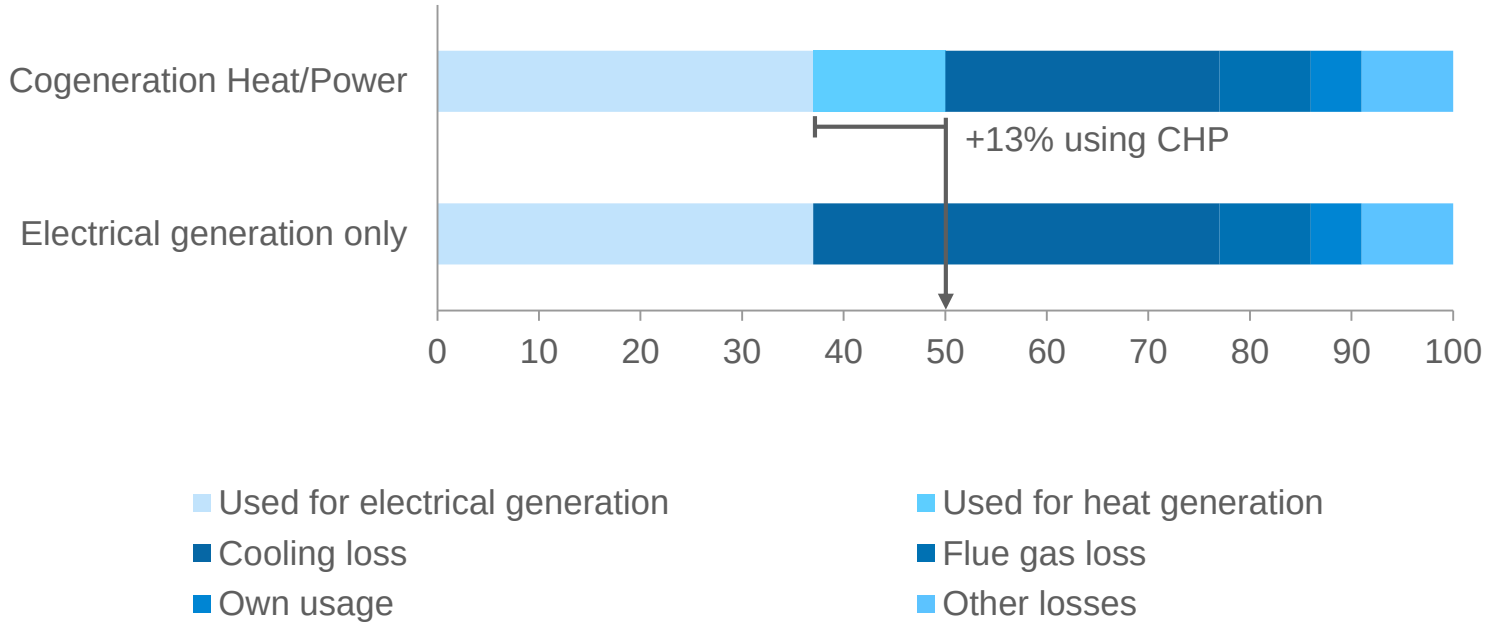
Scholven supplies a large interconnected district heating network…



- Heating plant
- Heating plant (auxiliary/peak)
- Mine gas CHP
- External heat source under contract
- Interconnected district heating network
- Directly supplied areas
- Areas supplied by sales partners

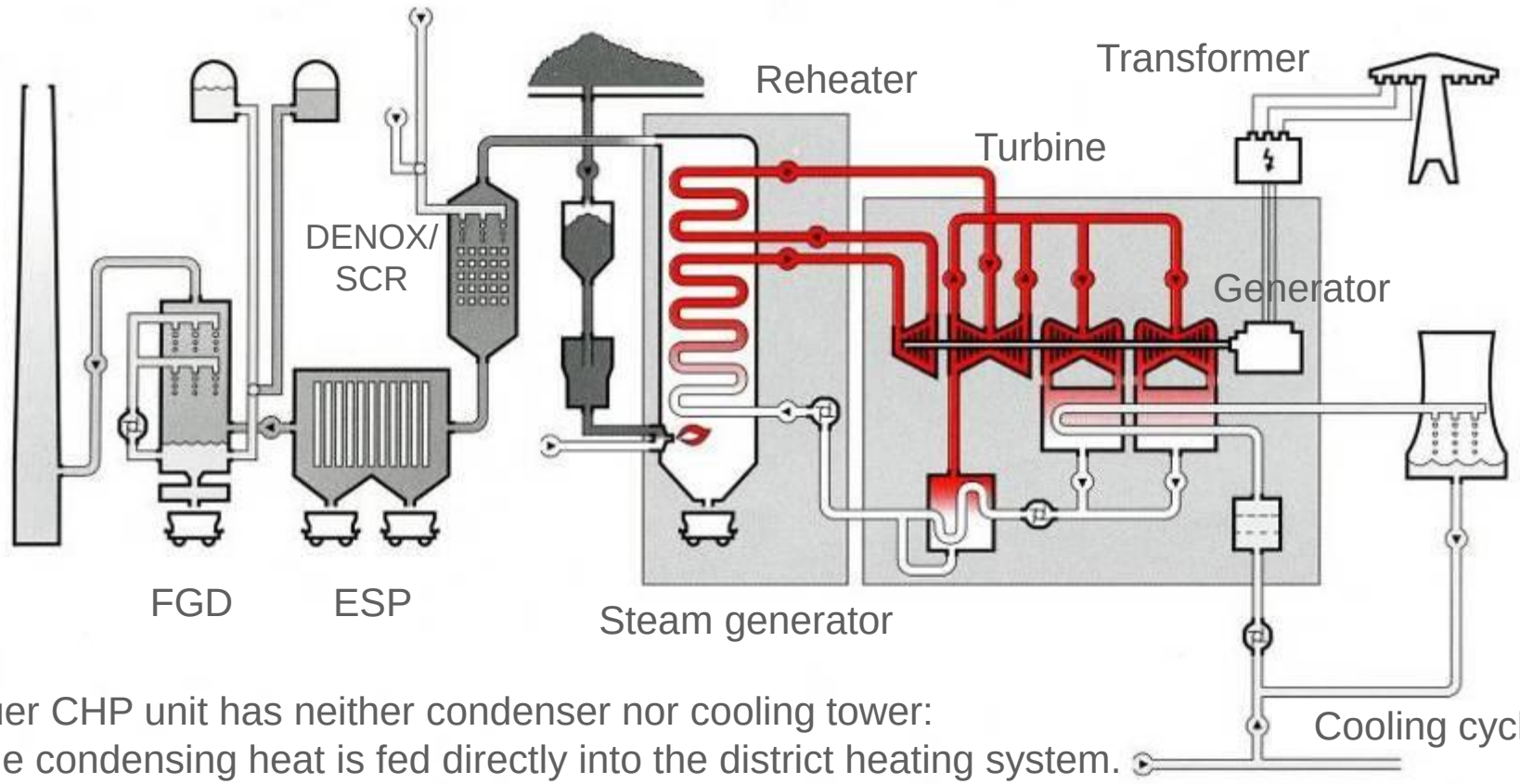
Distance East to West	28.4 km
Distance North to South	20.4 km
Length of pipeline	705 km

Scholven makes the most out of coal: cost effective and environmental friendly cogeneration of heat and power



- Scholven power plant generates heat for more than 100,000 regional households.
- Neighbouring industries are supplied with electrical energy, steam and process heat.
- Buer CHP-plant is optimized for heat production. Result: fuel efficiency of more than 90%.
- Together with the district heat generation of units B und C the usage auf coal is 50% in relation to the plant as a whole. This is much better compared to electrical generation only.

Functional diagram of a coal fired power plant



Buer CHP unit has neither condenser nor cooling tower:
The condensing heat is fed directly into the district heating system.