



CO2 Roadmap Projects Penzberg - Sustainable Heating Strategy

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Roche at a glance

Who we are and what we do



128 years

founded in Basel in 1896



**A leader in
healthcare R&D**

with CHF 13 billion invested in
2024



3 Nobel Prizes and
44 Prix Galien

since 1974



CHF 60.5 billion*

in Roche Group sales in 2024



**46 Roche medicines
& 103 diagnostics****

on the WHO List of
Essential Medicines & Tests



>100,000

dedicated employees
worldwide



~26 million people

treated with our medicines
in 2024



~30 billion tests

conducted with our
Diagnostics products in 2024

*Unless otherwise stated, all figures are at constant exchange rates (CER; average rates 2024)

** Medicines and tests that have either been developed or acquired by Roche

Our six Sustainability Priorities

We aspire to be in the top quartile across all our priorities

Access to Innovation



Maximise access to our innovative medicines and diagnostics solutions



Advance health impact for all patients

People



Foster an inclusive work environment where people can thrive

Environment



Achieve Net Zero emissions



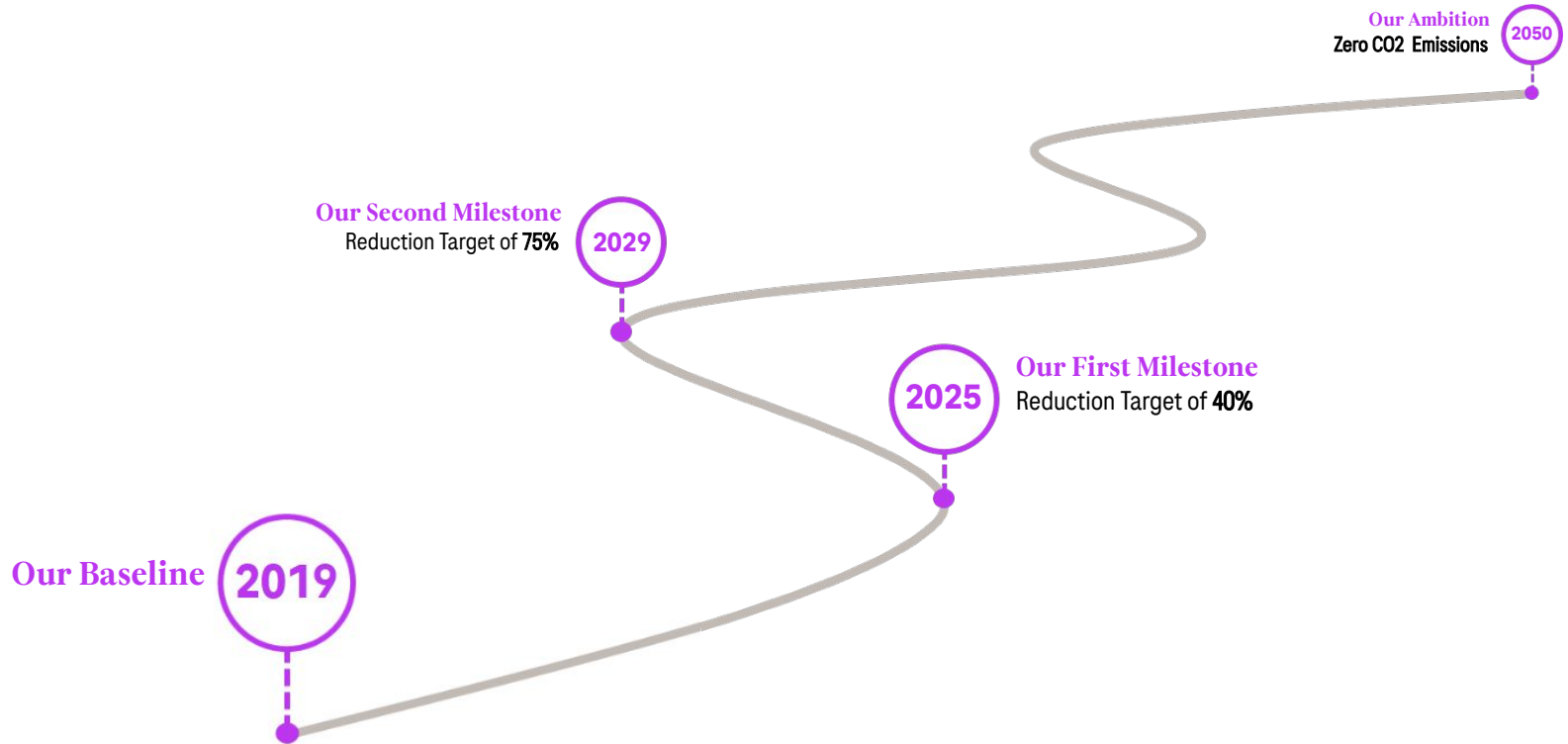
Minimise the environmental footprint of our products



Protect biodiversity and water resources

Diagnostics CO2 Roadmap

Our Goals in Concrete Values



CO2 Roadmap Projects Penzberg

This is Penzberg



Penzberg Fact Sheet:

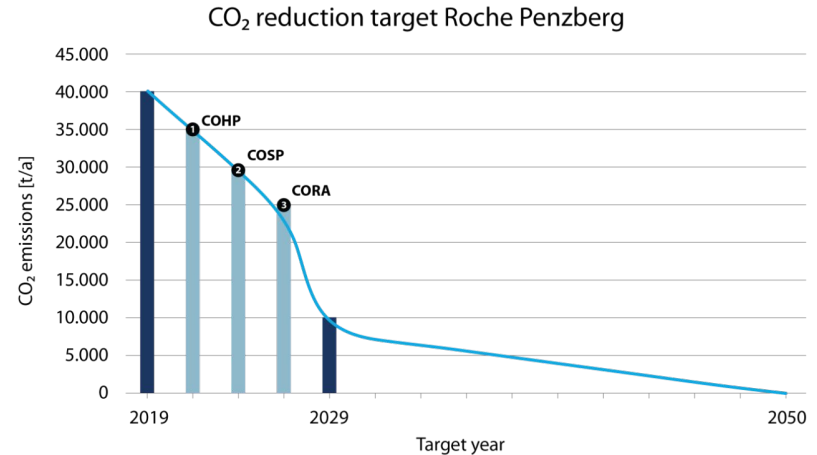
- Approx. 600.000 sqm
- Approx. 189 bldgs.
- Zugspitze views from some roof tops

SEHP - Sustainable Energy Heat Source Penzberg

Baseline/Starting Point of SEHP Investigations

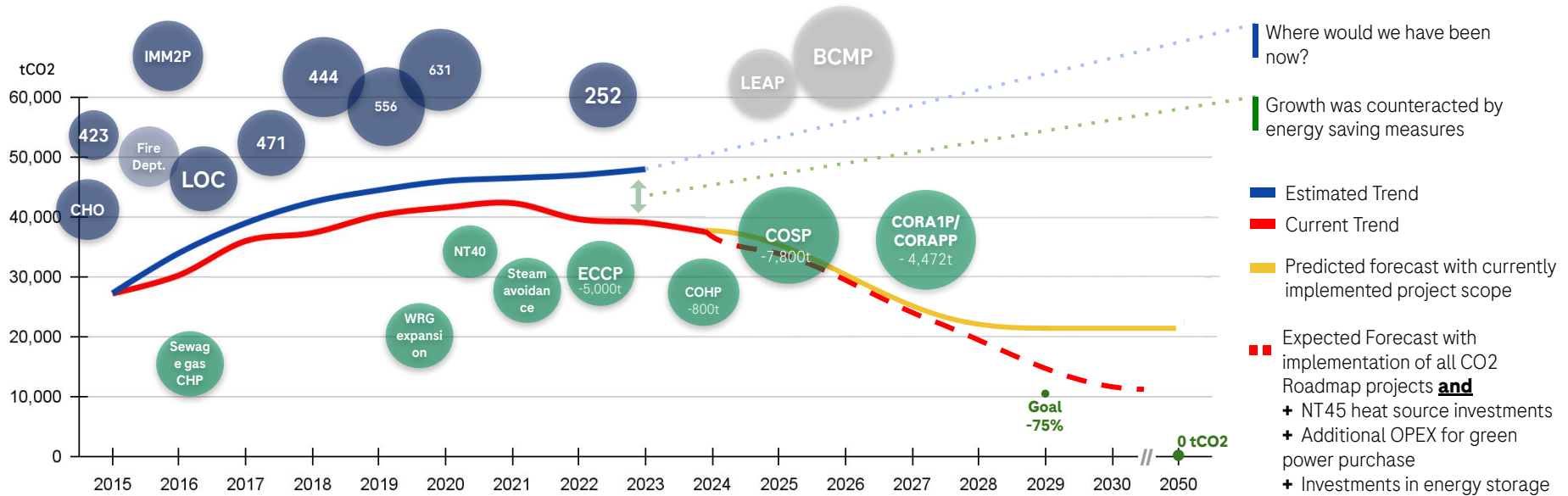
Approved measures for CO₂ reduction:

- **COHP – 800t reduction:** Implementation of low temperature heating network with waste heat utilisation from cooling
- **COSP – 7.800t reduction:** Construction of biomass boiler for steam production
- **CORA1P & CORAPP – 4.472t reduction:** Substitution of steam humidification by high-pressure water humidification (incl. set point modification and air flow reduction)



CO₂-Emissionen PZ - 2015 until now

Site expansions vs CO₂ savings



- Site expansions
- CO₂ savings



Energy demand **increase** due to site expansion **challenges CO₂ reduction**

SEHP - Sustainable Energy Heat Source Penzberg

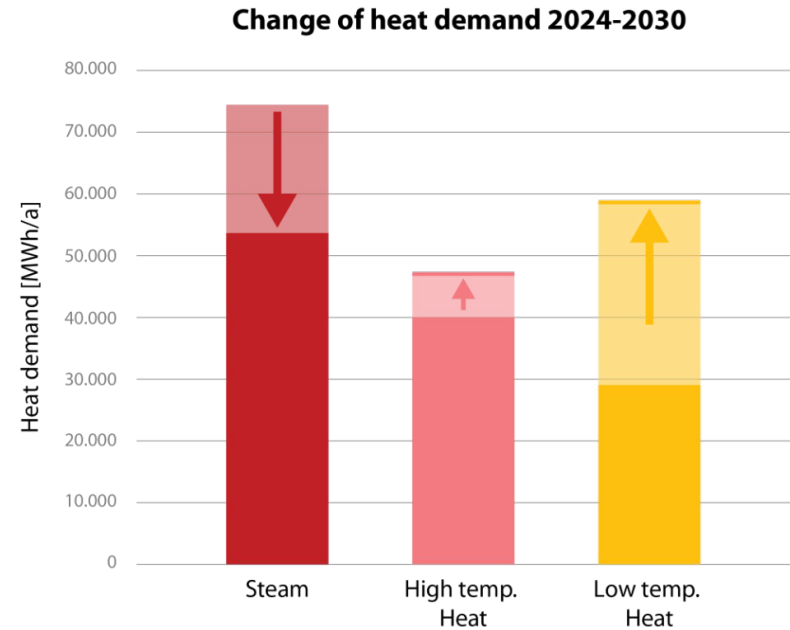
Heat Demand Development and Prognosis

Several developments on Site lead to a change in heat demand:

- Demand for steam sharply decreases due to the
 - Implementation of the CORA projects
 - Peak demand of high temperature and low temperature heat won't be supplied with steam anymore
- Low and high temperature heat demand increases due to:
 - Heat substitution of CORA projects
 - New developments on the site, which will be heated with low temperature heat

Summary:

- **Overall steam demand is reduced**
- **Demand peaks shift from steam to low and high temperature heat**



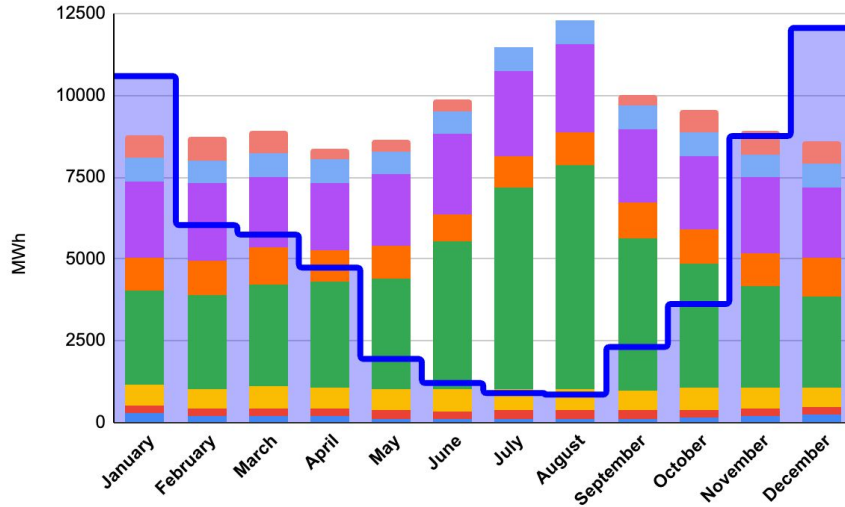
SEHP - Sustainable Energy Heat Penzberg

The 3 Identified Sustainable Energy Heat Supply Options



Heating availability 2030 vs. demand 2030

Lower temperature heat (45°C)



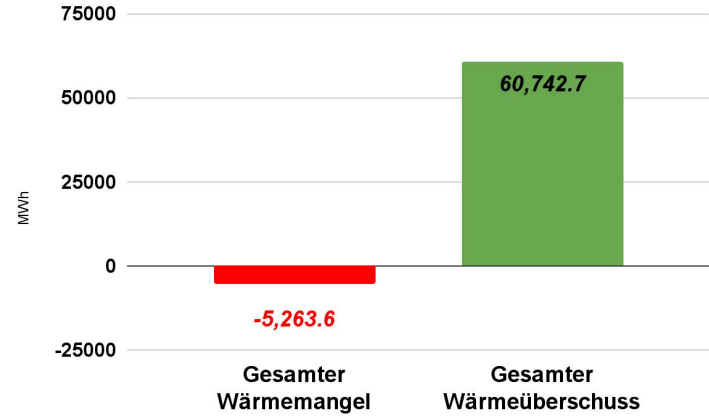
Bars: Heating availability of 45 °C

- CHPs
- Compression chillers
- Brine system
- Air compressors
- Steam boilers

- Cooling towers
- Waste water
- Wood chip boiler

Area: Heating demand 45 °C

- Demand in 2030 and beyond



Driving Sustainable Heat Solutions



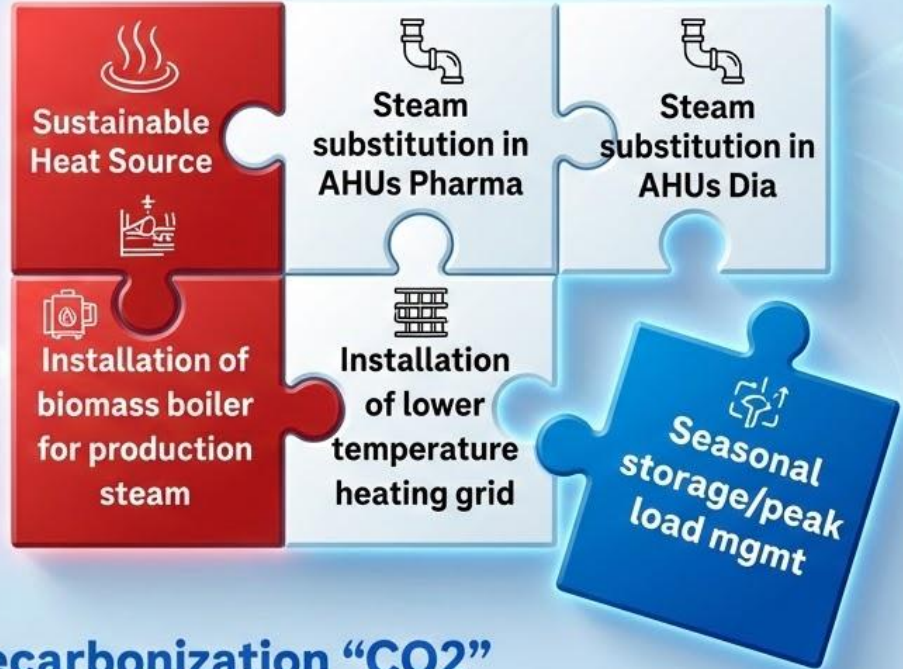
Waste heat recovery



Renewable/sustainable energy source



Seasonal storage and storage for peak load management



Completing the Picture: Decarbonization “CO2” Roadmap & Energy Resilience at Roche Penzberg

Doing now what patients need next