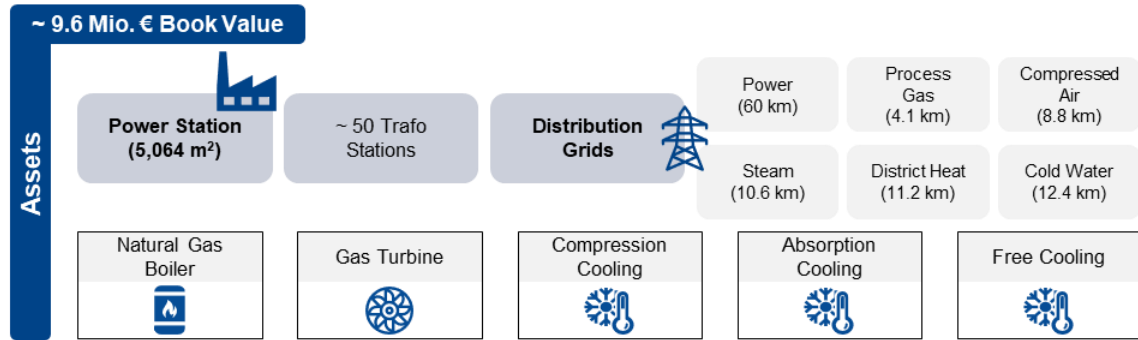
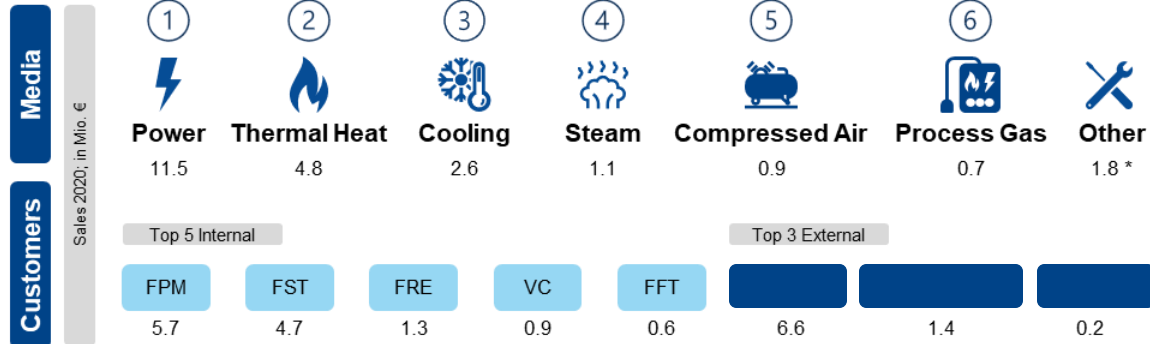


FREUDENBERG

Konzept zur Erreichung der CO₂-Neutralität des Industrieparks Weinheim

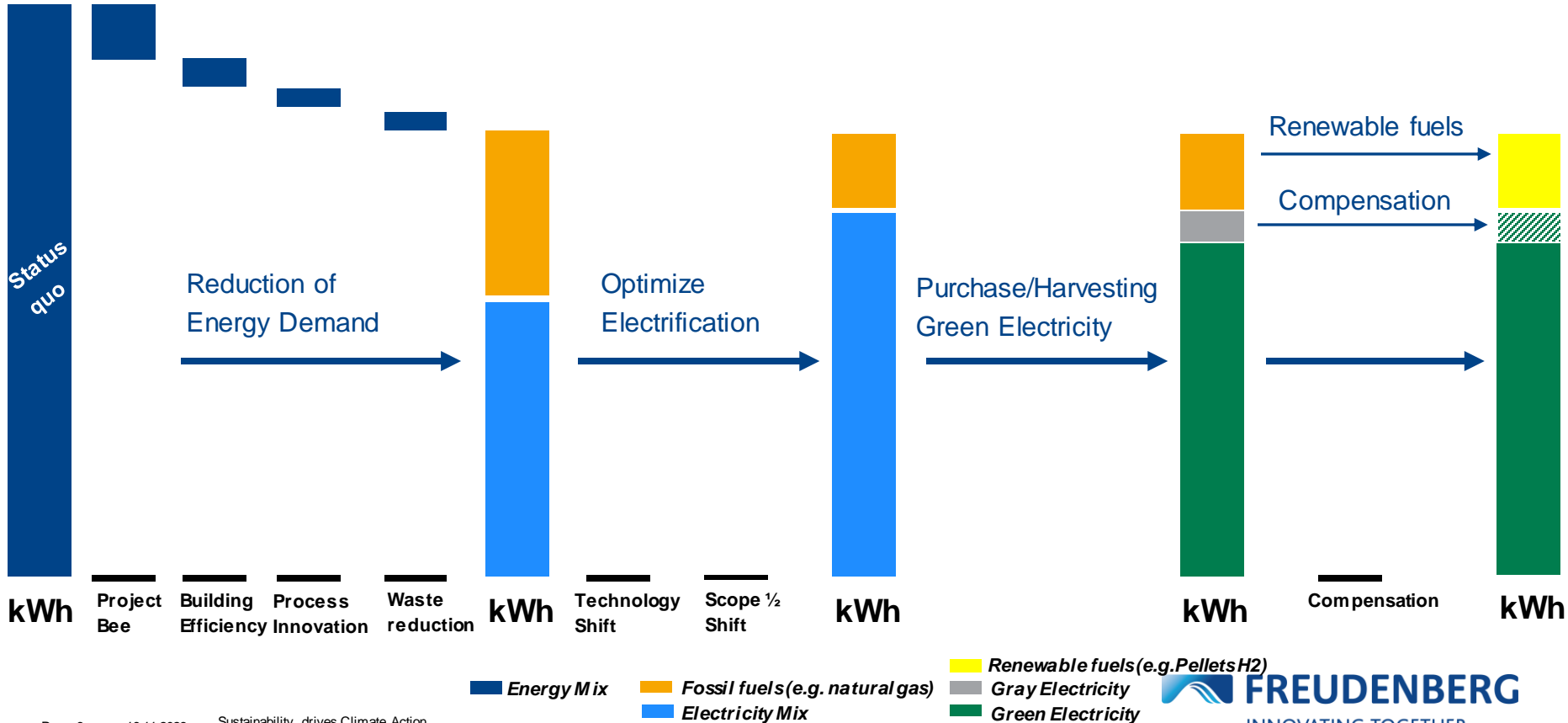
16.11.2023 Peter Ostermayr

Freudenberg Service KG – Übersicht der Energieerzeugung und Energieverteilung

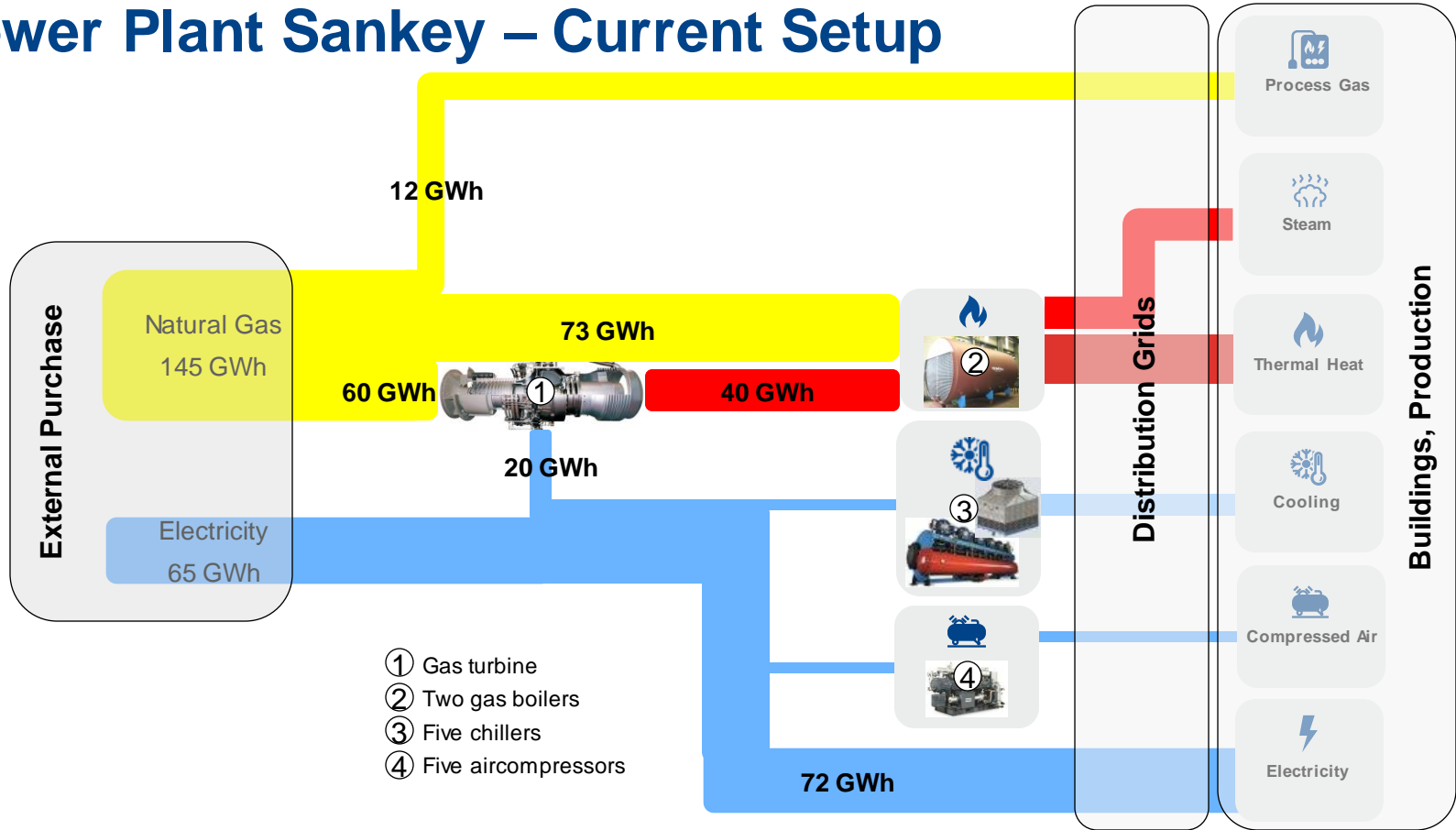


* Sprinkler, Customer Services (e.g. building Trafo Stations and Pipes), and Production Water

Freudenberg Way to CO₂-Neutrality



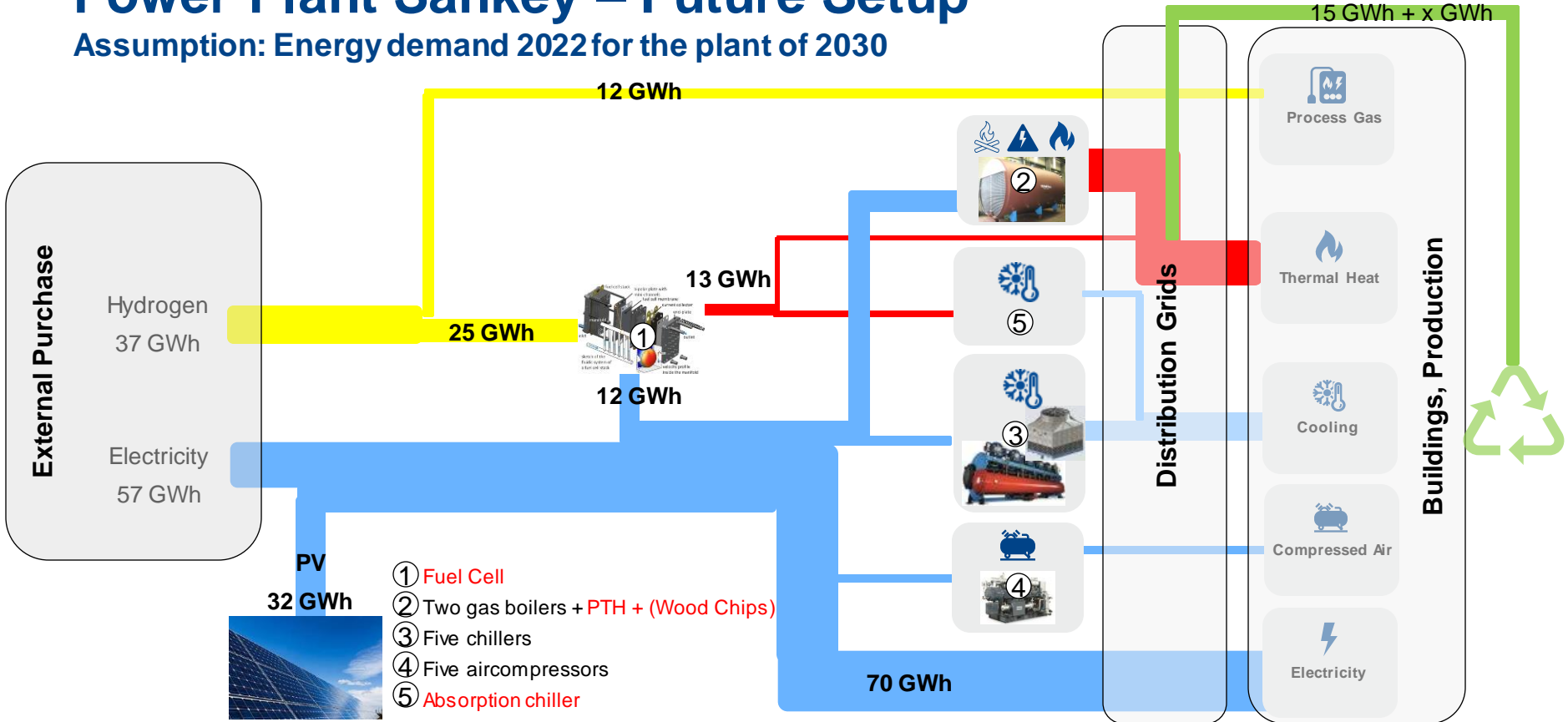
Power Plant Sankey – Current Setup



- ① Gas turbine
- ② Two gas boilers
- ③ Five chillers
- ④ Five aircompressors

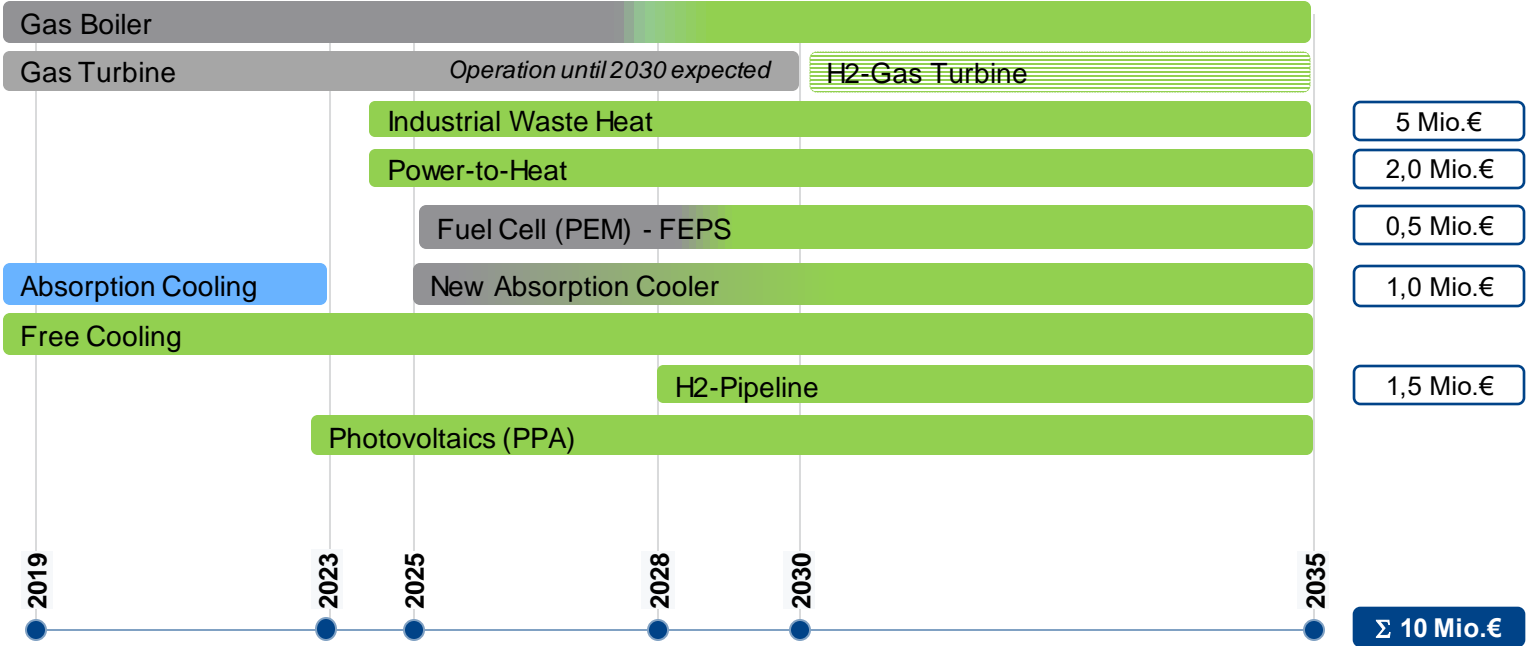
Power Plant Sankey – Future Setup

Assumption: Energy demand 2022 for the plant of 2030

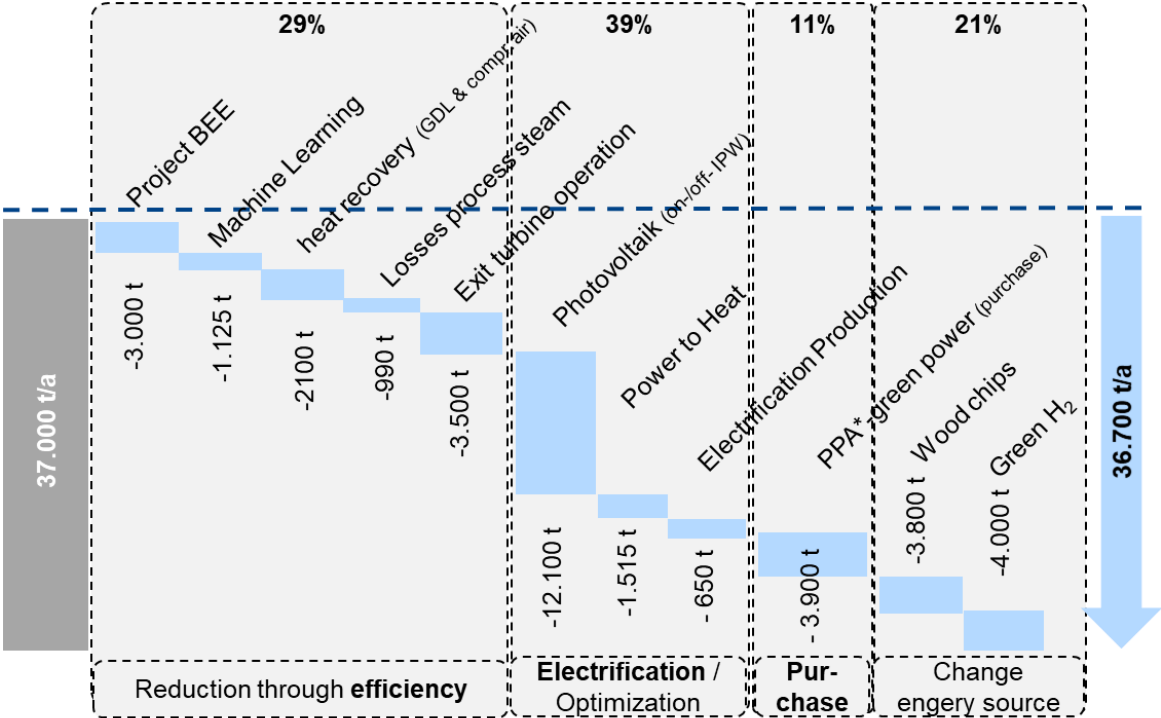


- ① Fuel Cell
- ② Two gas boilers + PTH + (Wood Chips)
- ③ Five chillers
- ④ Five aircompressors
- ⑤ Absorption chiller

Timeline



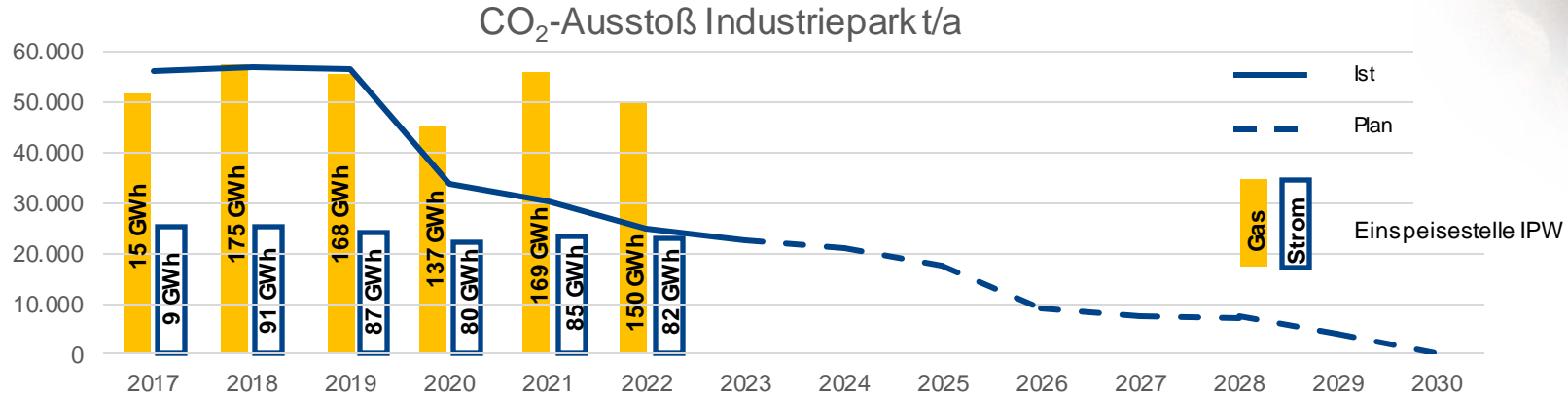
Electrification and change in energy source are the main approaches to a green site



*PPA: Power-Purchase-Agreement

Reduzierung des CO₂- Ausstoßes im IPW

Halbierung des CO₂- Ausstoßes seit 2019 – Zero Carbon Footprint angestrebt bis 2030



Ziele 2022/23

- ✓ • Reduktion Erdgas um ca. 20%*
- ✓ • Installation Notkessel (Öl)
- (✓) • Konzept Notstromversorgung
-> in Bearbeitung

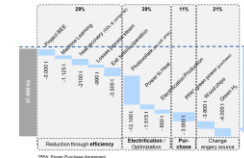
*bezogen auf den Jahresbezug i. H. v. 145 GWh

Bisher CO₂ Reduzierung durch

- Lockdown 2020
- Grünstrom PPAs
- Reduzierung Gasverbrauch
- Effizienzsteigerung

Weitere CO₂ Reduzierung gemäß „Make“ Konzept *

- Wärmerückgewinnung
- Weitere Bee Maßnahmen
- PV, Brennstoffzellen, PTH
- Weitere Grünstrom PPA
- Ab 2030 Nutzung von grünem H₂



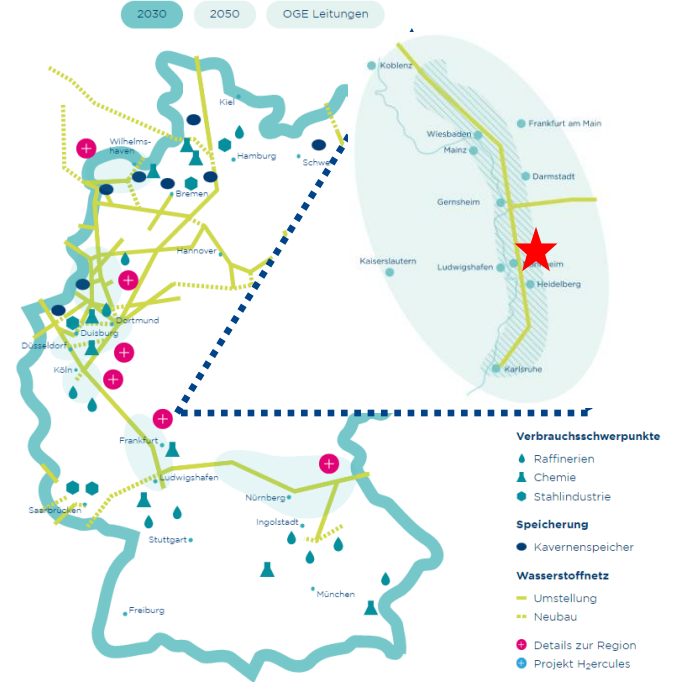
Case Study:

H₂ercules pipeline will offer secure supply with Hydrogen

Expected available capacity for region Rhein-Neckar:

- Up to 2028 about **2.000 GWh**
- Up to 2030 about **4.000 GWh**
- Up to 2040 about **25.000 GWh**

Freudenberg is within the consumption cluster for hydrogen supply via pipeline



Freudenberg Service KG

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