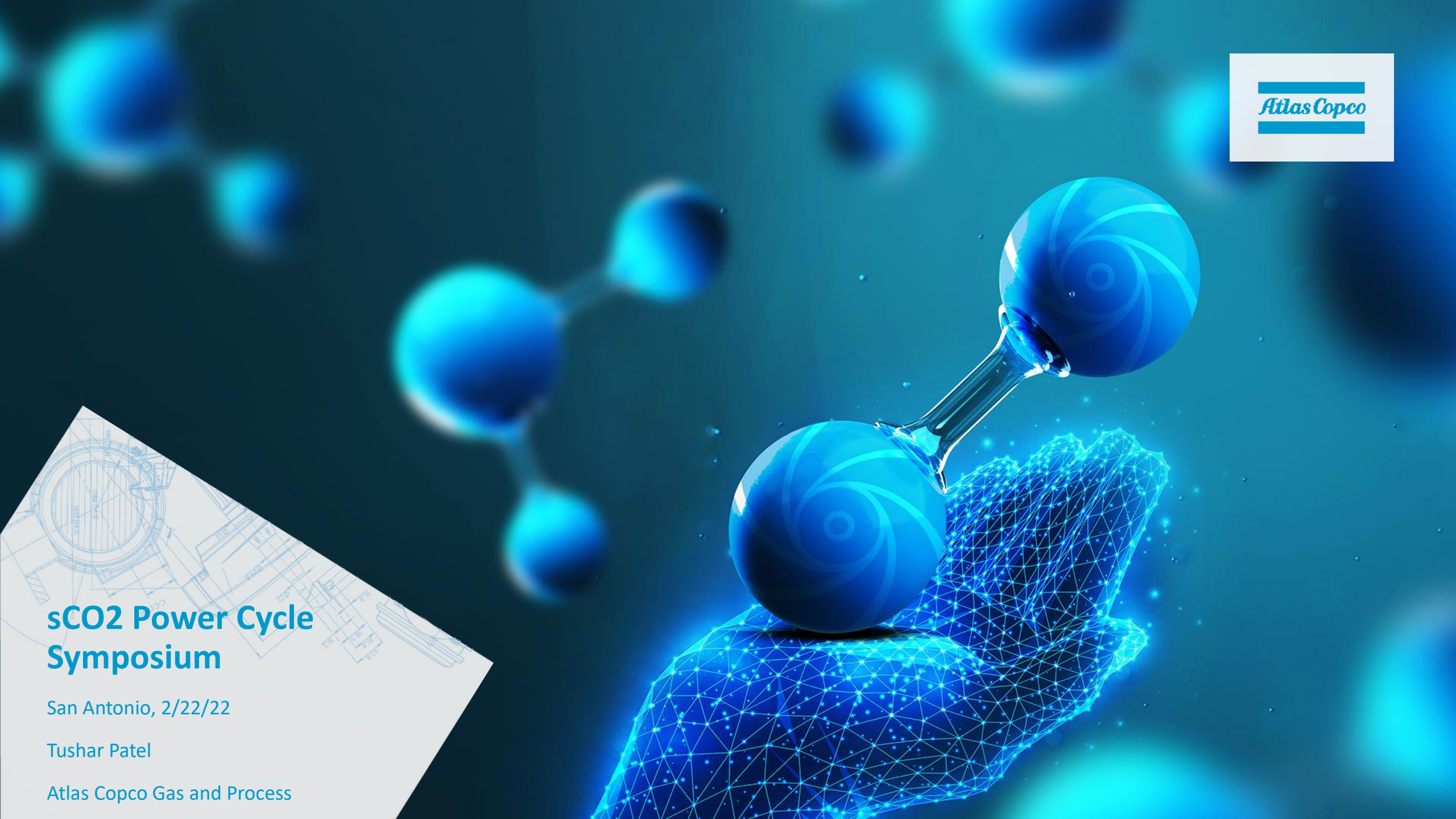


sCO2 Power Cycle Symposium

San Antonio, 2/22/22

Tushar Patel

Atlas Copco Gas and Process

A decentralized Group

BOARD OF DIRECTORS

PRESIDENT AND CEO

GROUP MANAGEMENT

COMPRESSOR TECHNIQUE

- Compressor Technique Service
- Industrial Air
- Oil-free Air
- Professional Air
- Gas and Process
- Medical Gas Solutions
- Airtec

VACUUM TECHNIQUE

- Vacuum Technique Service
- Semiconductor Service
- Semiconductor
- Semiconductor Chamber Solutions
- Scientific Vacuum
- Industrial Vacuum

INDUSTRIAL TECHNIQUE

- Industrial Technique Service
- MVI Tools and Assembly Systems
- General Industry Tools and Assembly Systems
- Chicago Pneumatic Tools
- Industrial Assembly Solutions
- Machine Vision Solutions

POWER TECHNIQUE

- Power Technique Service
- Specialty Rental
- Portable Air
- Power and Flow

Atlas Copco

The Gas and Process division’s global structure

Headquarters Gas and Process Division in Cologne

Sales, Application and Production Center Europe

Atlas Copco Energas GmbH

Sales, Application and Production Centers USA

Atlas Copco Comptec LLC
Atlas Copco Mafi-Trench LLC

Sales, Application and Production Center China

Atlas Copco (Shanghai) Process Equipment Co., Ltd.

Sales, Application and Production Center India

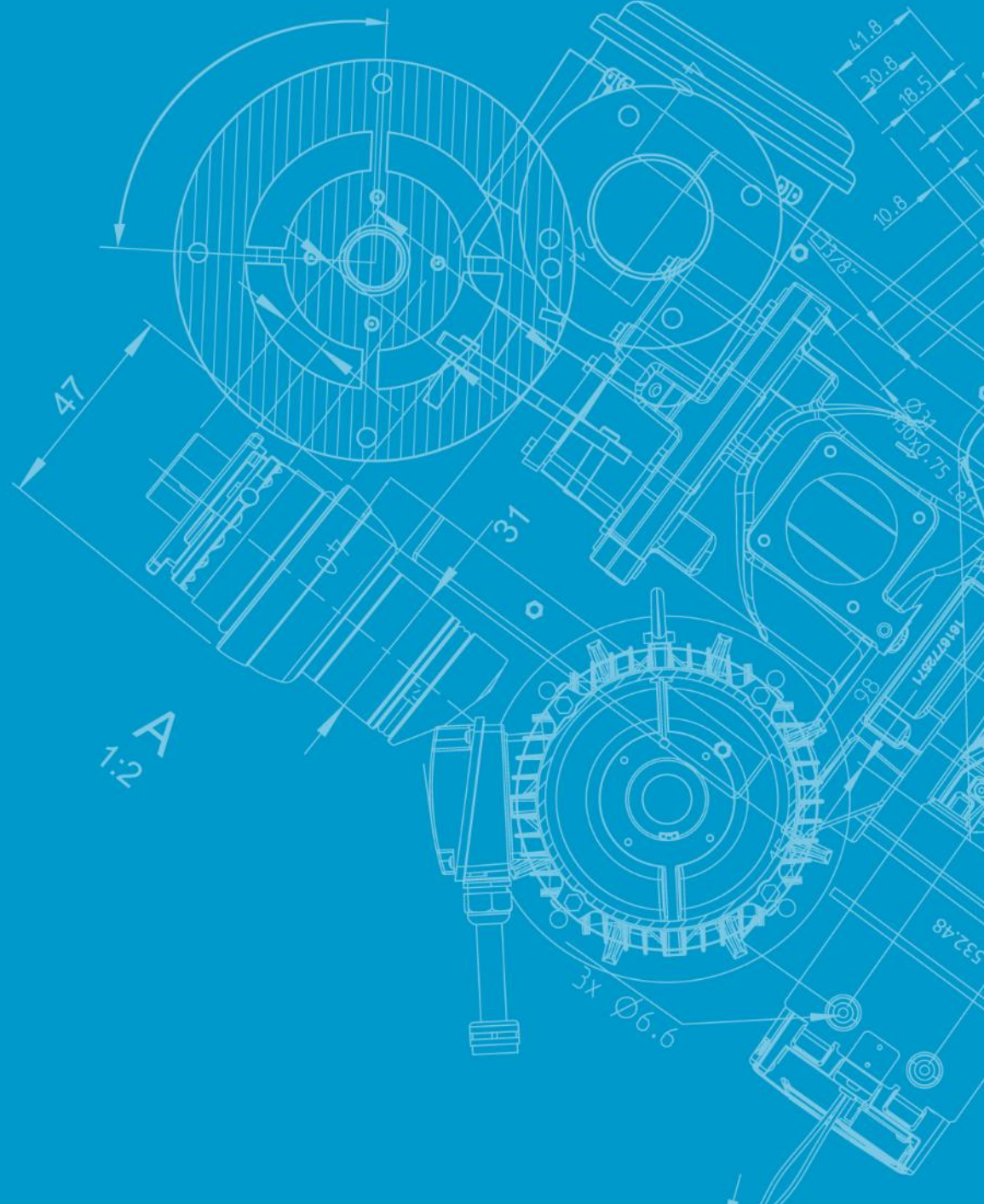
Atlas Copco Gas and Process Application

Sales, Application and Production Center, Canada

CPC Pumps International Canada

sCO_2 Power Cycles

The Journey – From Prototype to Commercialization



sCO_2 and CO_2 Compression

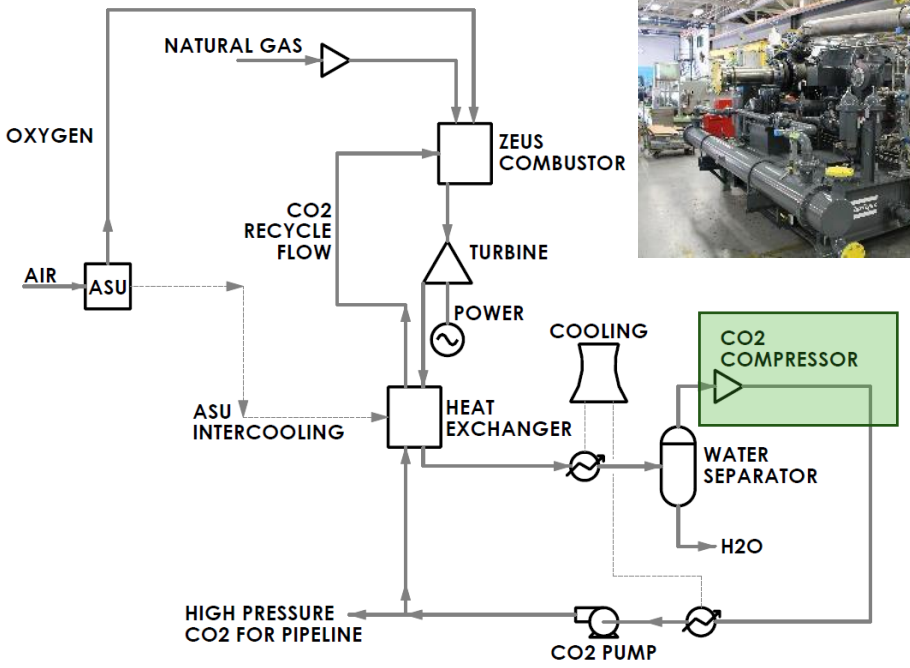
Important References

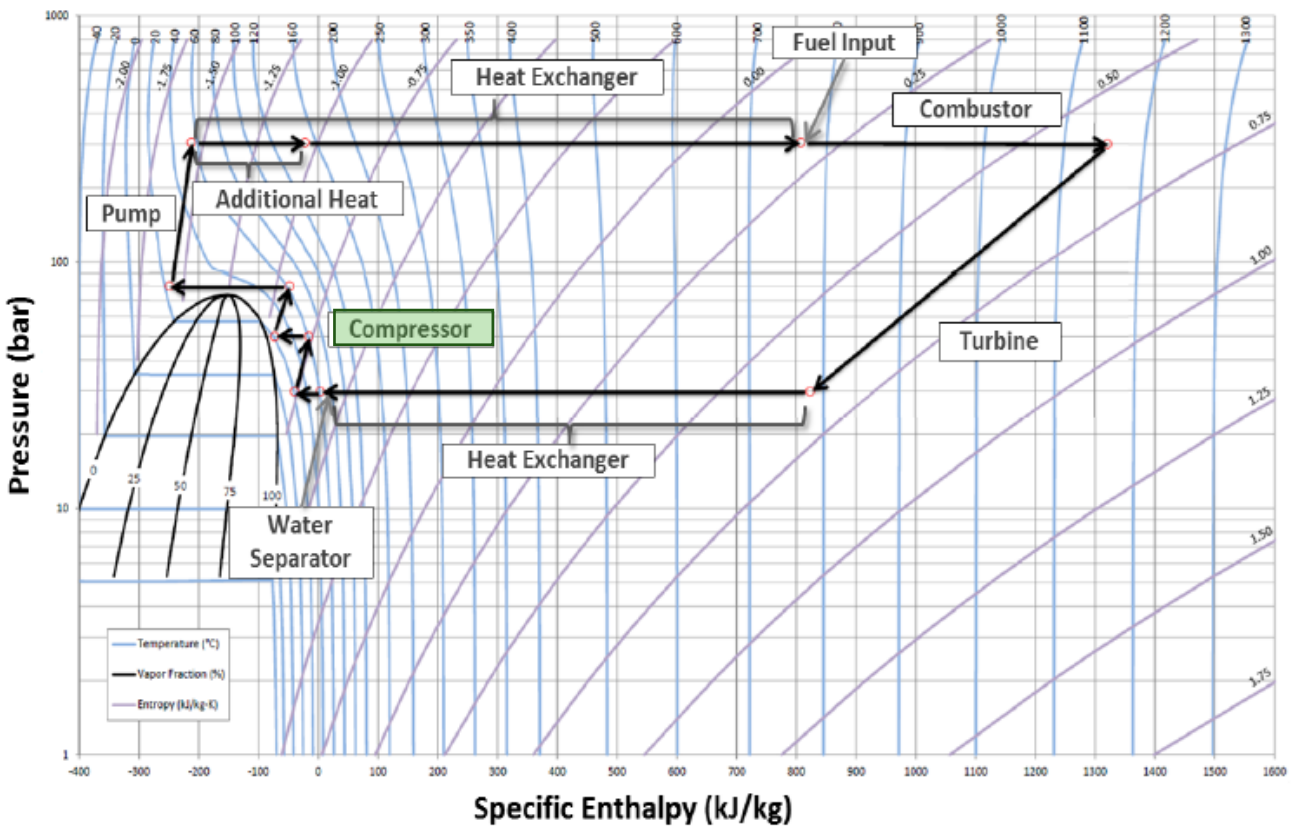
sCO_2 (Compander)
Delivery 2019, **delivered**

CO_2 (2 stage)
Delivery 2017, **demo plant**

CO_2 (8 stage)
Delivery 2015, **in operation**

sCO_2 Power Cycle, Oxy Combustion (NetPower) : Two-stage Compression

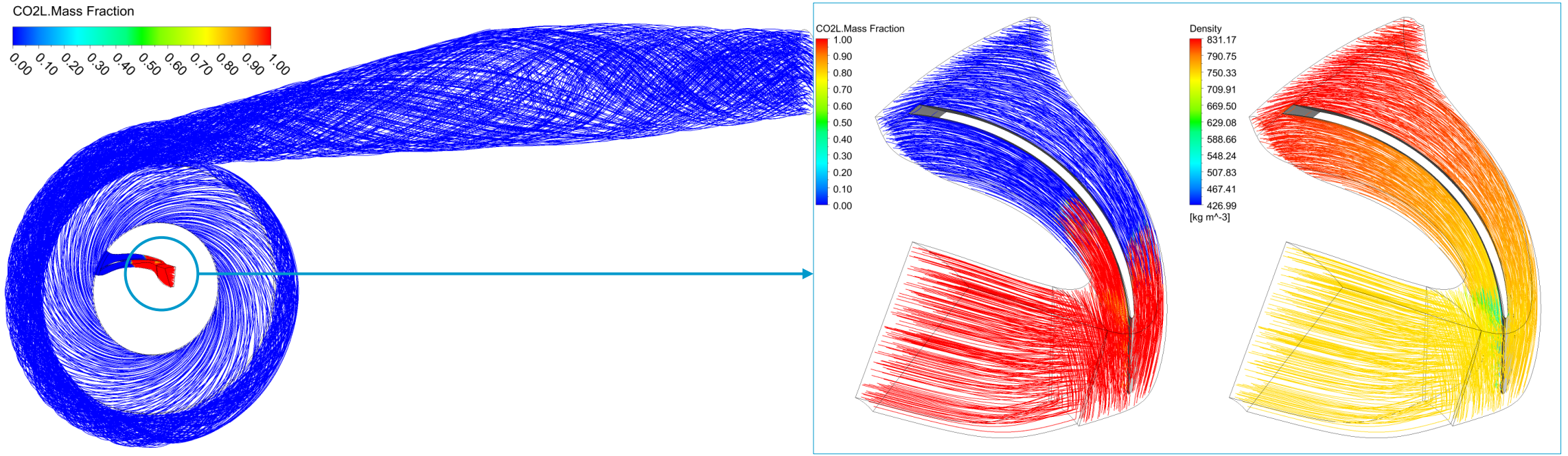




sCO_2 Compander

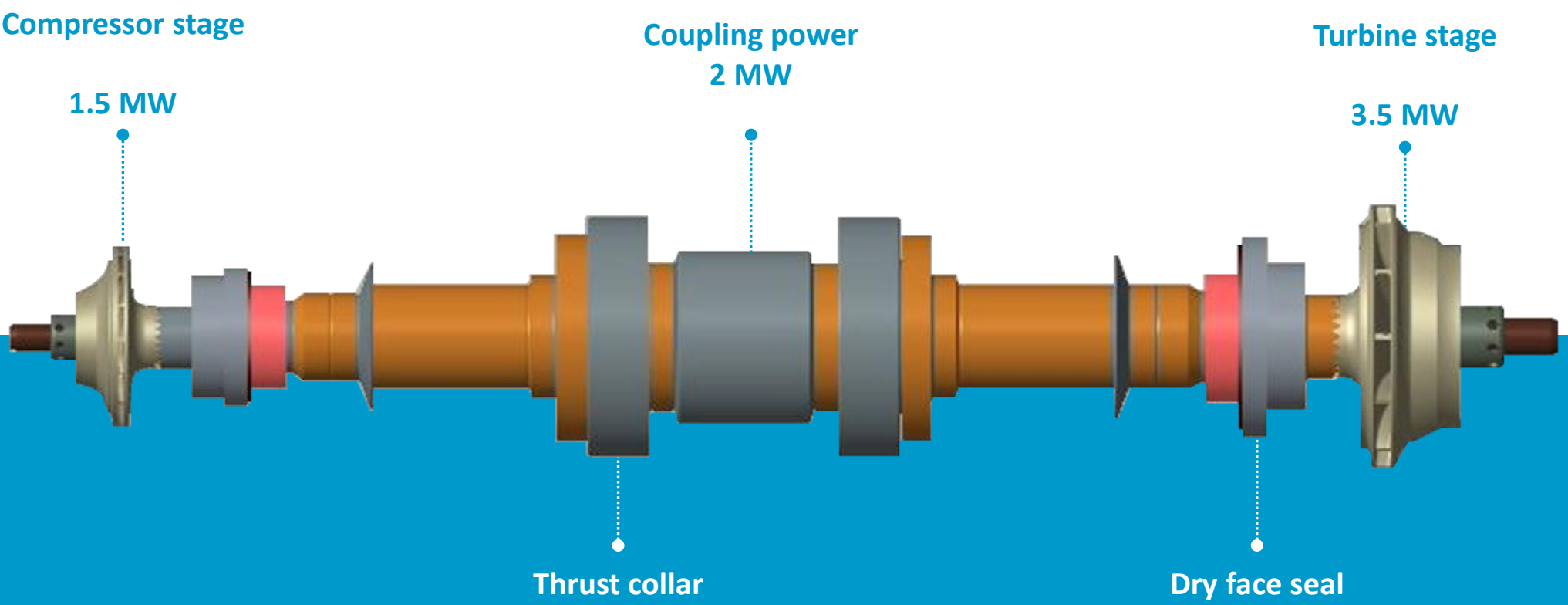
Stage performance prediction

- Atlas Copco Gas and Process developed a method with CFD for the traceable transition from liquid to supercritical in the impeller channel (accurate prediction of stage performance)
- Compressor stage test has been performed successfully

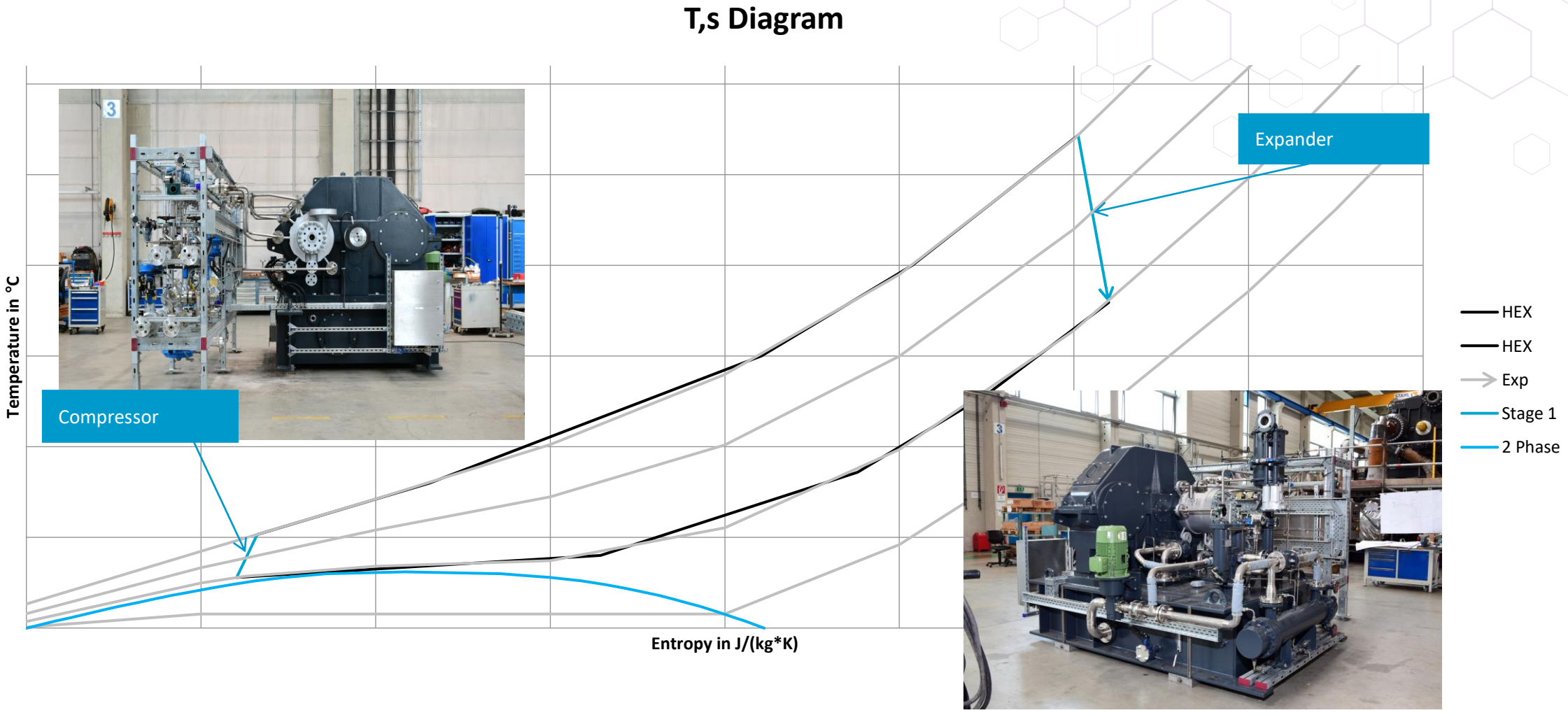


sCO_2 Compander

Pinion speed is 38,040 rpm



sCO_2 Power Cycle, Heat Recovery from Gas Turbine Exhaust: Compander



Nov 2021

Atlas Copco