

ShaanGu



®

STEAM TURBINES

Group profile

Czech company, founded in 1991

Since 1997, the company has been manufacturing turbines of its own design.

We have manufactured and commissioned approximately 100 turbines worldwide.



Group profile

First EPC project NILE SUGAR, Egypt in 2008.

Was established Boiler division in 2009

So far, 66 boilers have been manufactured and commissioning.

2019 We became part of the ShaanGu Group

In 2021, the company celebrated 30 years in the market.

The company's annual turnover last year was € 42 373.



Group profile

The company currently employs approximately 300 employees.

These include a highly qualified professional team:

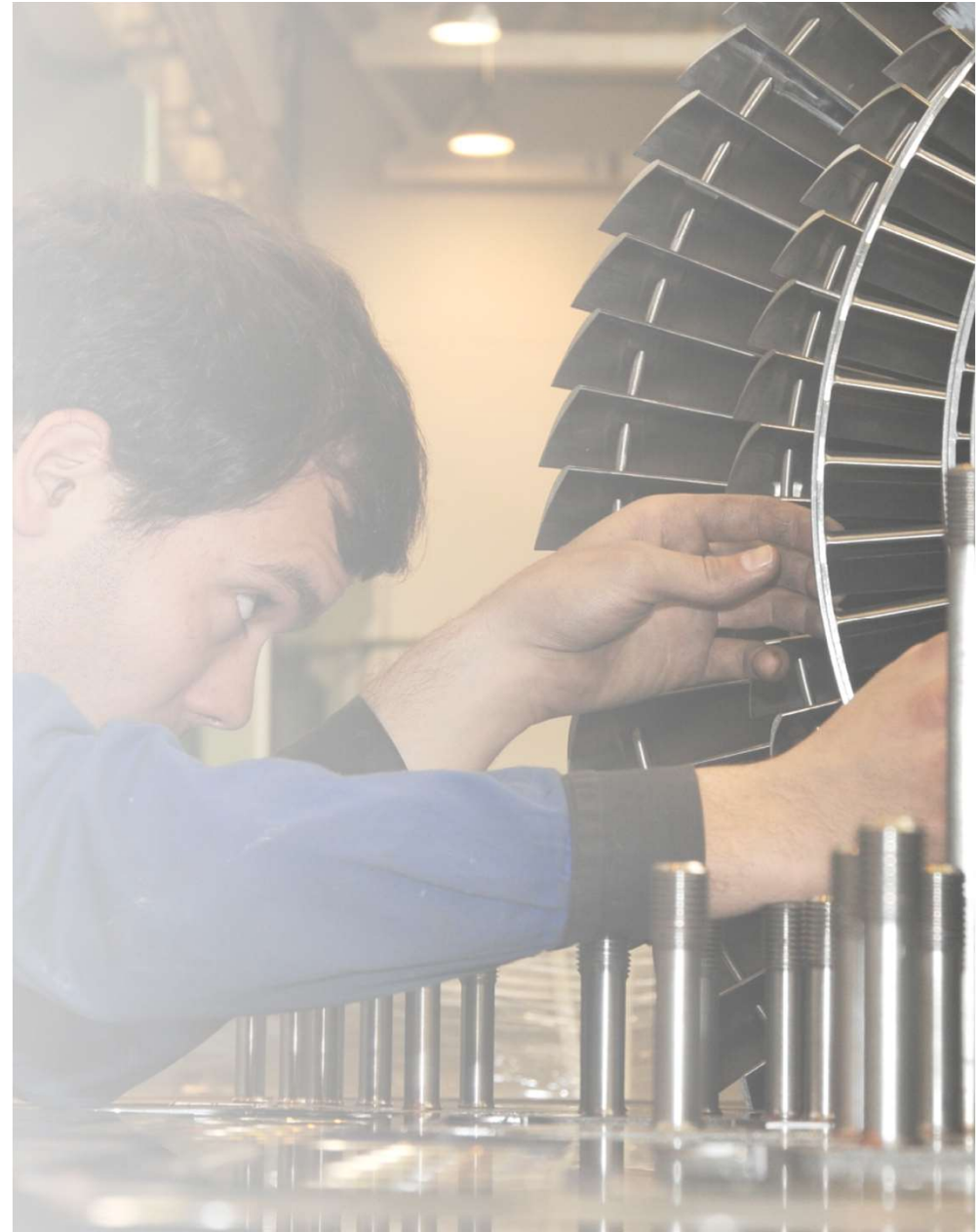
Research & Development Division

Engineering Division

Execution Division

Sales Division

and many of our other experts

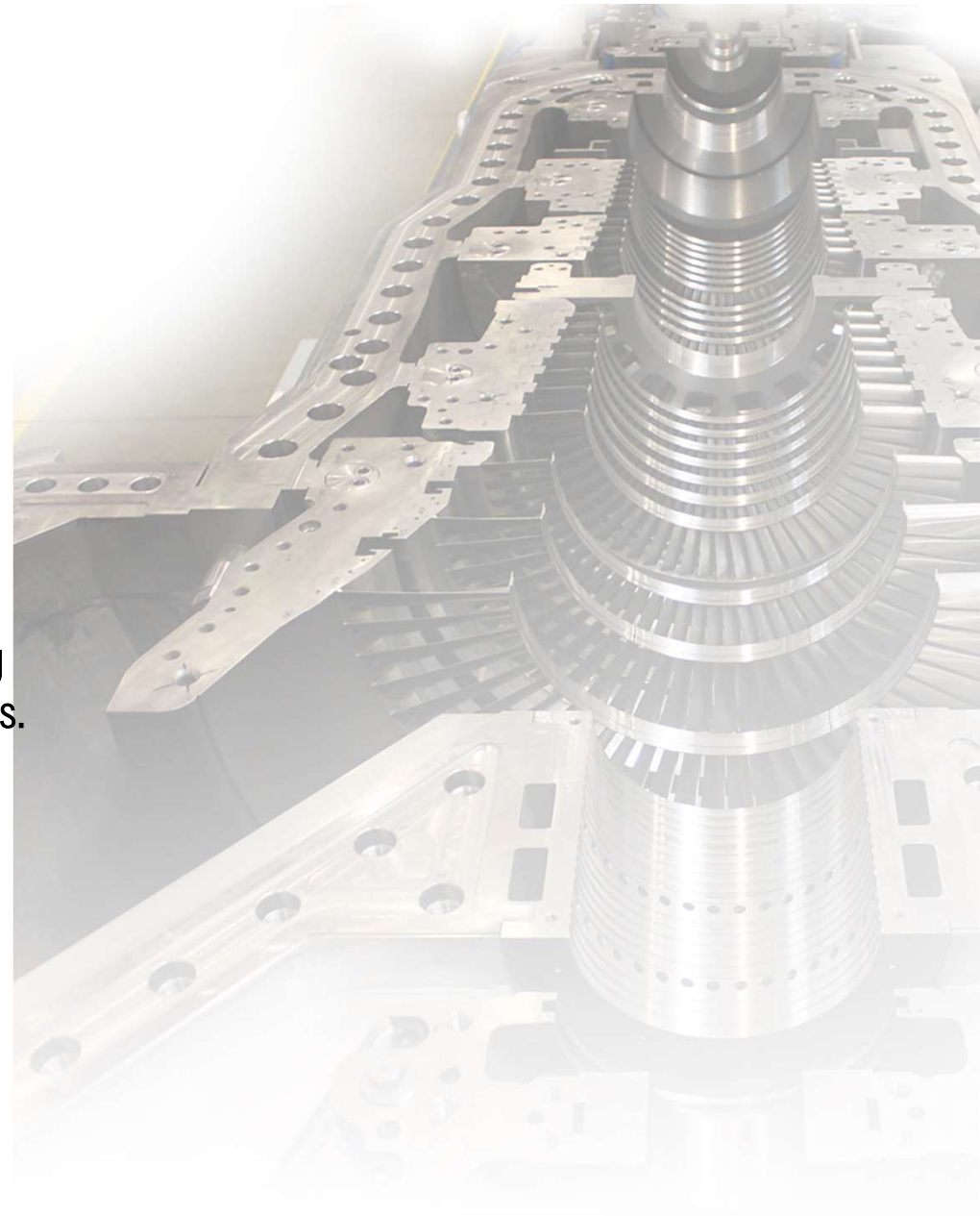


The advantages of our turbines

The parameters of EKOL steam turbines are optimised according to the needs of customers to give them the best possible operating results.

EKOL uses unified components, but performs design optimization for each project.

EKOL steam turbines are realized in a robust design, thus ensuring maximum operational reliability and minimising the cost of services.



Our other skills

Long-term experience in experimental wind tunnel measurements also in operating turbines.

Advanced analytical and numerical (FEM, CFD) analysis.

We have a grant program TREND (017013)

Preparation and implementation of experimental tests in a wind tunnel

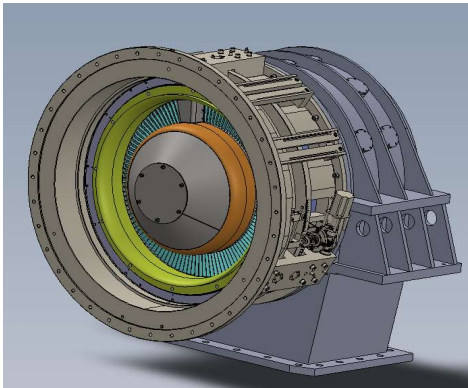
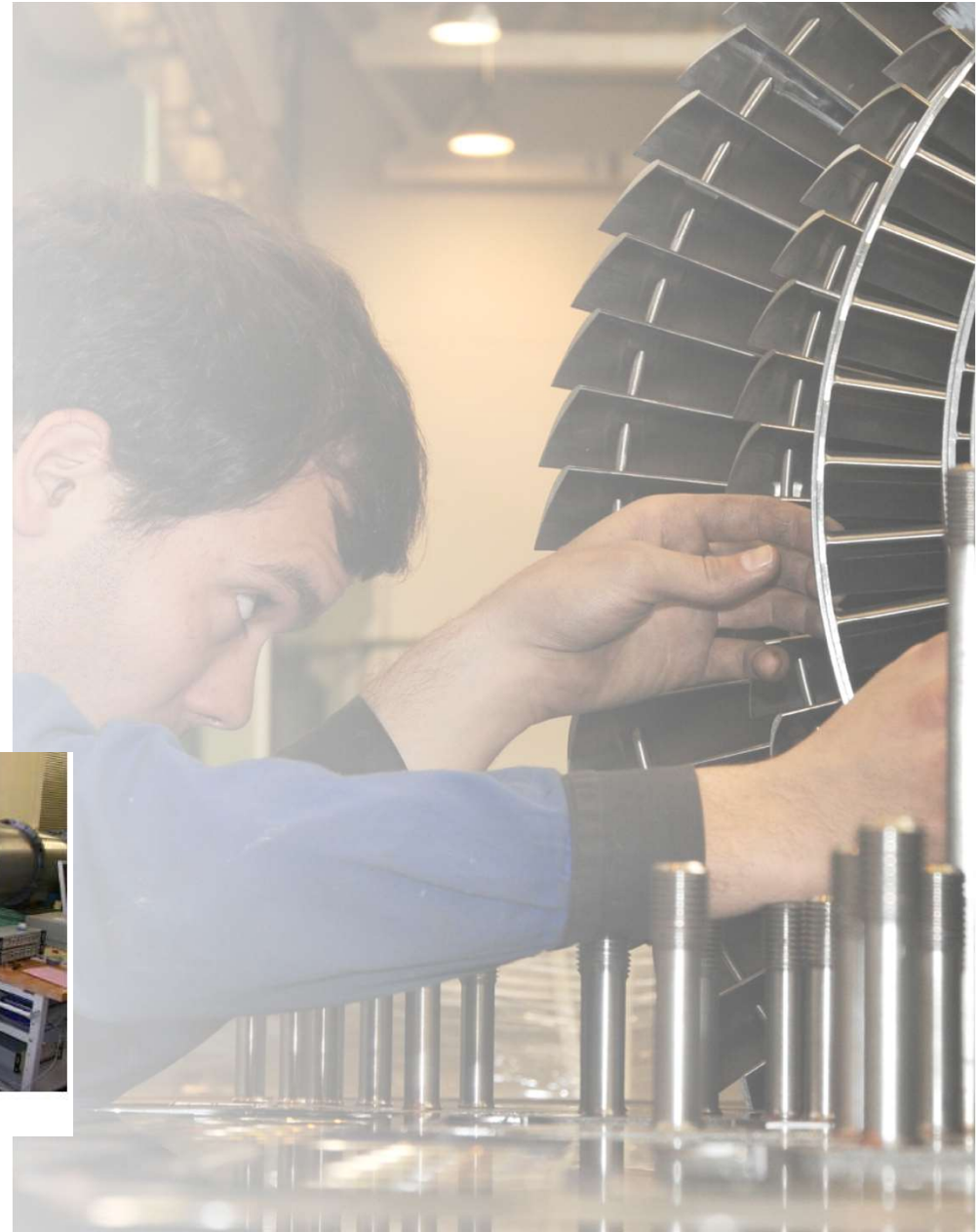


Fig. 4. Turbine test rig.



Applications



Incinerator Industrial



Power Generation



Nuclear Power Plant



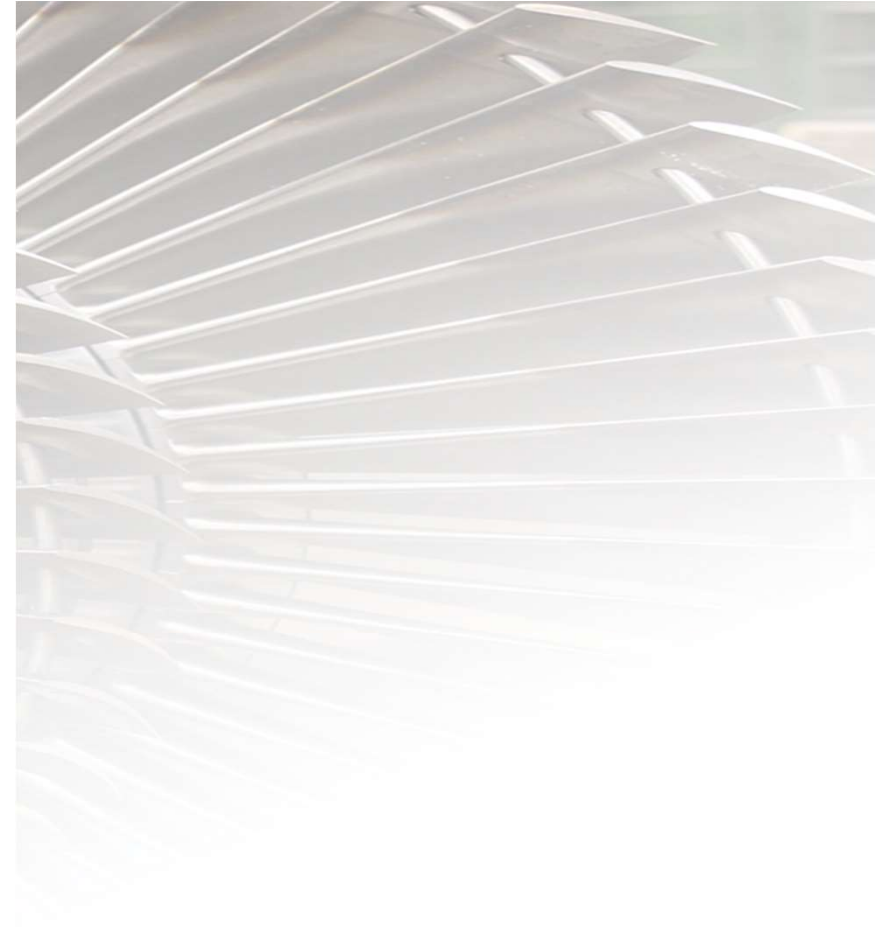
Coal chemical industry



Production Plant



Petroleum Industry



Where we supply



Efficient Energy

Our main strategy is to improve overall energy efficiency and thereby transform the existing energy sector.

We aim to achieve this by pursuing mutual development with all customers and partners by introducing the concept of „mutual creation, mutual sharing, mutual benefit" into each stage of projects (including design, financing, construction and operation).

To create intelligent green energy for human civilization

Certificate ISO

Quality management System (QMS)

in accordance with ČSN EN ISO 9001:2016

Environmental Management System (EMS)

in accordance with ČSN EN ISO 14001:2016

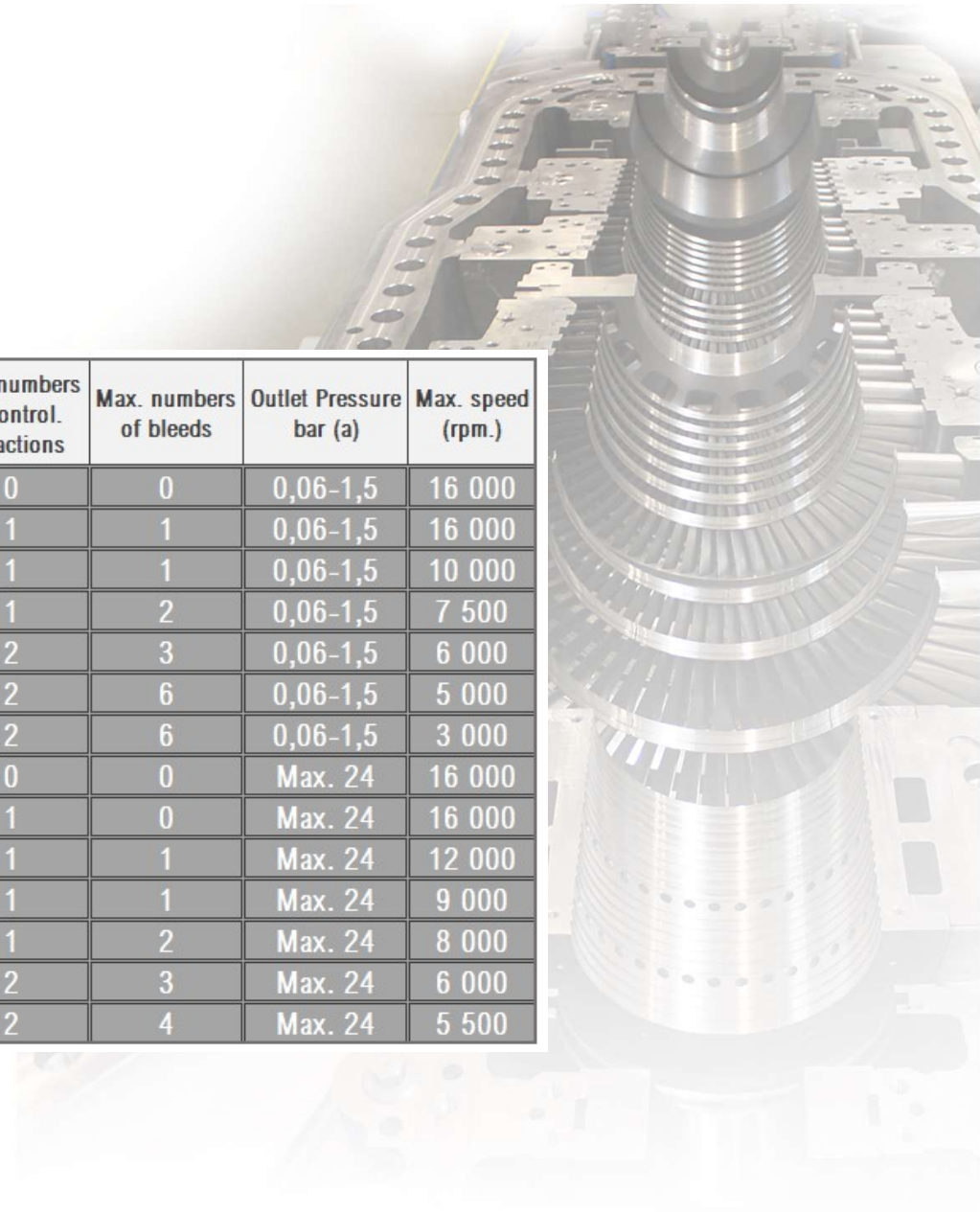
Occupational Health & Safety System (SMS)

in accordance with ČSN OHSAS 45001:2018



Parameters of steam turbines

Type	Size - marking	Max. Inlet Steam Parameters		Max. Power (MW)	Numbers of casing	Max. numbers of control. Extractions	Max. numbers of bleeds	Outlet Pressure bar (a)	Max. speed (rpm.)
CONDENSING	EST 10 C	45 bar;	450 °C	1,5	1	0	0	0,06-1,5	16 000
	EST 20 C	45 bar;	450 °C	3,5	1	1	1	0,06-1,5	16 000
	EST 30 C	68 bar;	485 °C	12	1	1	1	0,06-1,5	10 000
	EST 40 C	90 bar;	535 °C	25	1	1	2	0,06-1,5	7 500
	EST 50 C	110 bar;	535 °C	40	1	2	3	0,06-1,5	6 000
	EST 60 C	135 bar;	540 °C	66	1	2	6	0,06-1,5	5 000
	EST 70 C	135 bar;	540 °C	70	2	2	6	0,06-1,5	3 000
BACK PRESSURE	EST 10 B	45 bar;	450 °C	1,5	1	0	0	Max. 24	16 000
	EST 20 B	45 bar;	450 °C	3,5	1	1	0	Max. 24	16 000
	EST 30 B	68 bar;	485 °C	12	1	1	1	Max. 24	12 000
	EST 40 B	90 bar;	535 °C	25	1	1	1	Max. 24	9 000
	EST 50 B	110 bar;	535 °C	40	1	1	2	Max. 24	8 000
	EST 60 B	135 bar;	540 °C	66	1	2	3	Max. 24	6 000
	EST 70 B	135 bar;	540 °C	70	2	2	4	Max. 24	5 500



EKOL steam turbine references

HEATING PLANTS

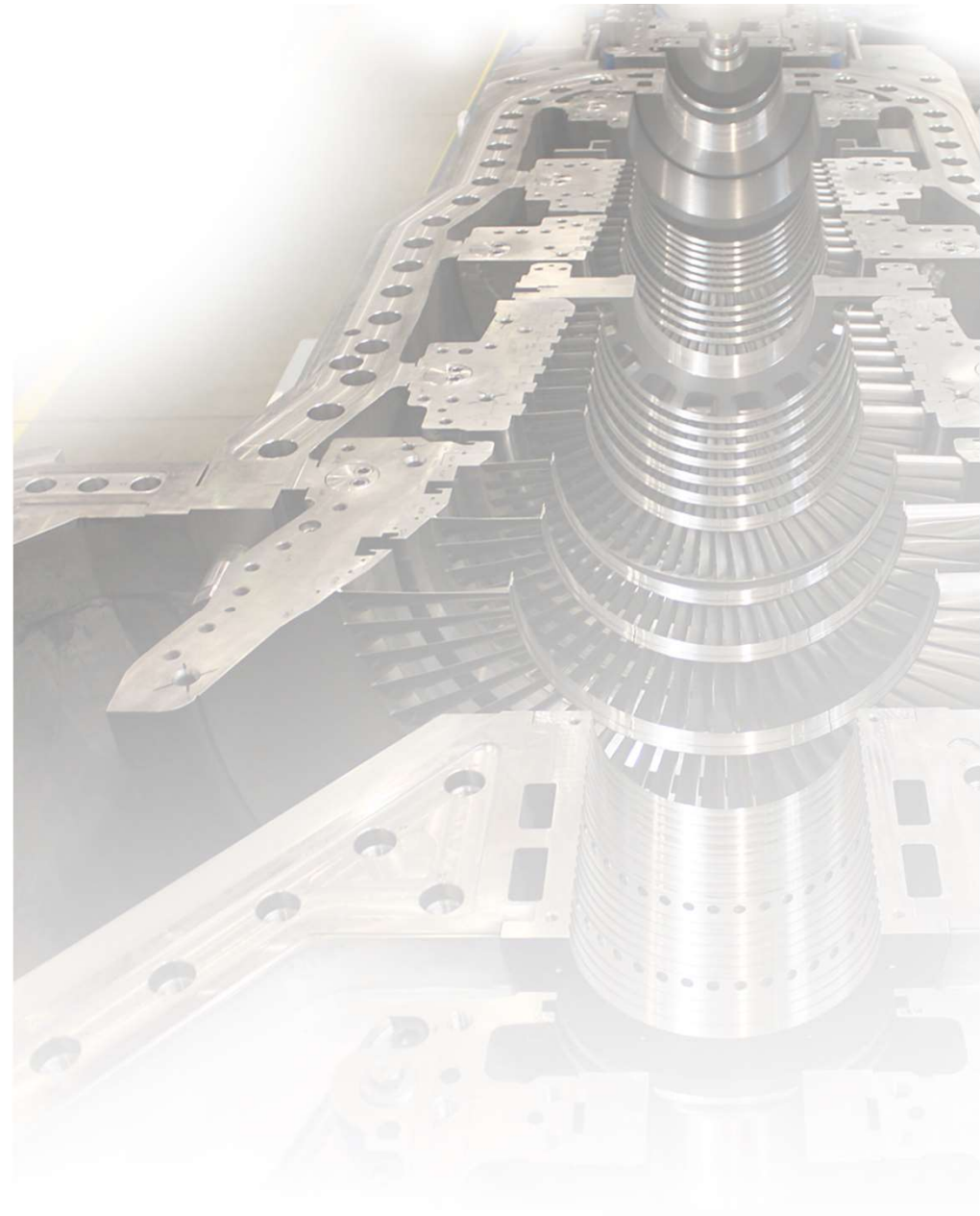
- Veolia Kolín 12 MWe
- EC Kielce 10,8 MWe
- TTA Tábor 11 MWe
- Colterm Timisoara 20 MWe
- TČB České Budějovice 12 MWe

WASTE TO HEAT POWER PLANTS

- Bielefeld 5,6 MWe
- Białystok 9,7 MWe
- Szczecin 15 MWe
- Gdańsk 17,8 MWe

BIOMASS POWER PLANTS

- Banská Bystrica 5,5 MWe
- Domoradice 8,4 MWe
- Energa Elbląg 25 MWe
- Loučovice 7,5 MWe
- Bioenergo Kolín 6,5 MWe
- Benkovac 6 MWe
- Barlinek 6,3 MWe
- Gospič 6,3 MWe
- Bandurka 13,6 MWe



EKOL steam turbine references

PAPER MILLS AND CHEMICAL PLANTS

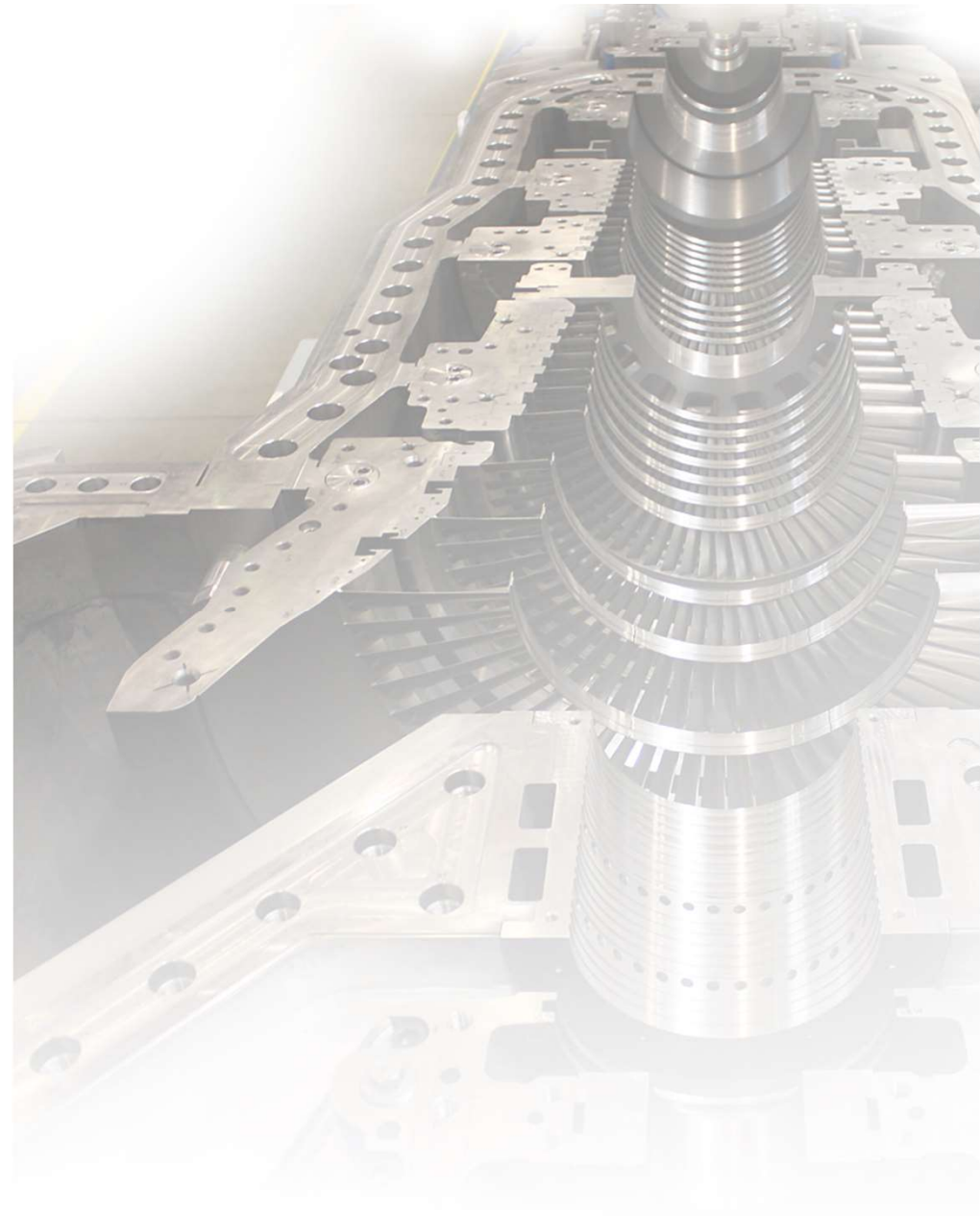
- HSFC Bangkok 40 MWe
- Synthos Dwory 28,5 MWe
- Soda Inowroclaw 10,5 MWe
- Lovochemie Lovosice 25 MWe
- Bukoza Hencovce 25 MWe

SUGAR PRODUCTION

- Armant, Edfu, Qous, Kom-Ombo 6 MWe
- Nobaria 2x 8 MWe, Nile Sugar 2x 8 MWe
- Jazan Sugar 2x 7 MWe, Etihad 2x 10 MWe
- Etihad II. 2x 20MWe

MECHANICAL DRIVES

- Syzran Refinery 3,5 MW
- Starobeshevo 5,5 MW
- Mingshui 2x 26 MW
- Ekibastuzskaja Gres 2x 14 MW
- Yantai Wanhua 9 MW
- Yuncheng 30 MW, Jinan 42,5 MW

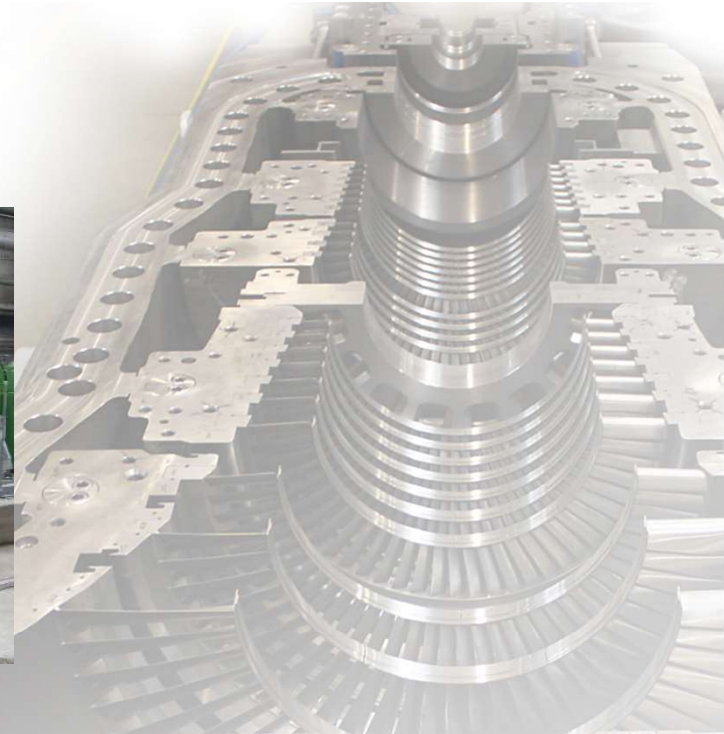


Steam turbines for Paper Mills and Chemical Plants

Bokoza Hencovce 25 MWe



Lovochemie Lovosice 25 MWe

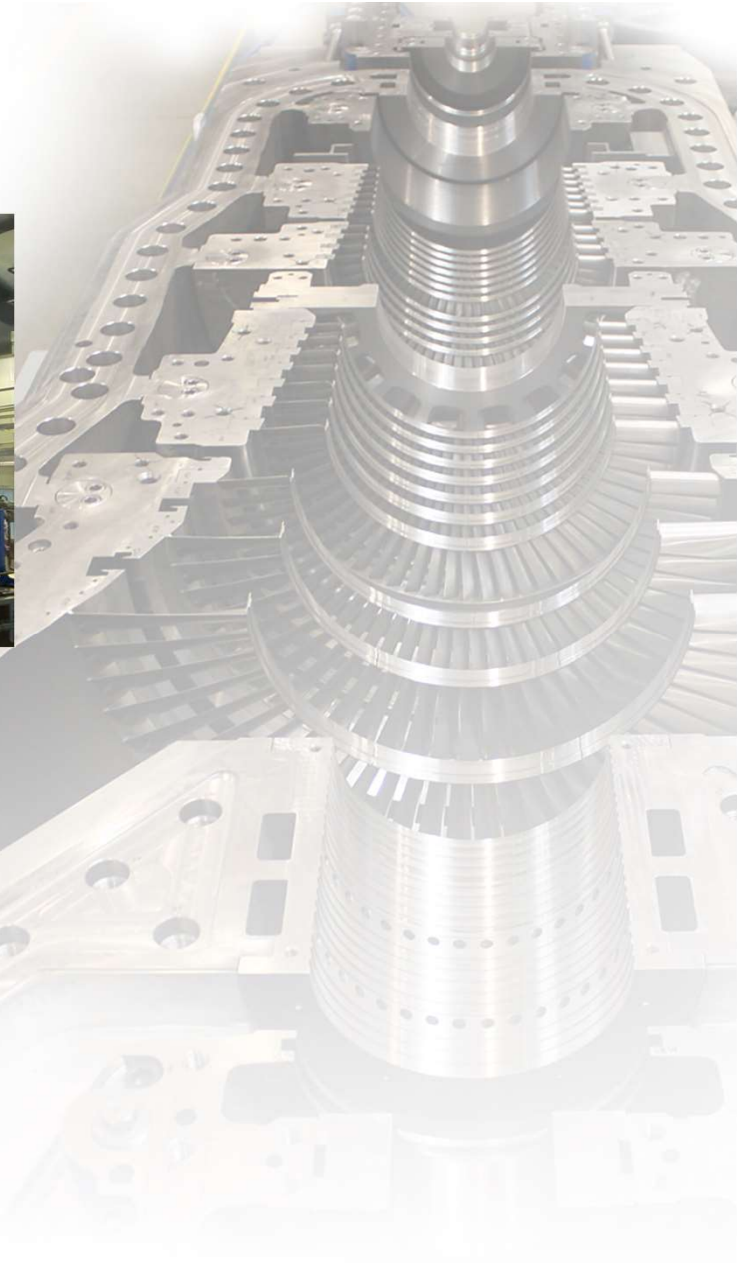


Steam turbines for Waste to Heat Power Plants

Białystok 9,7 MWe



Gdańsk 17,8 MW

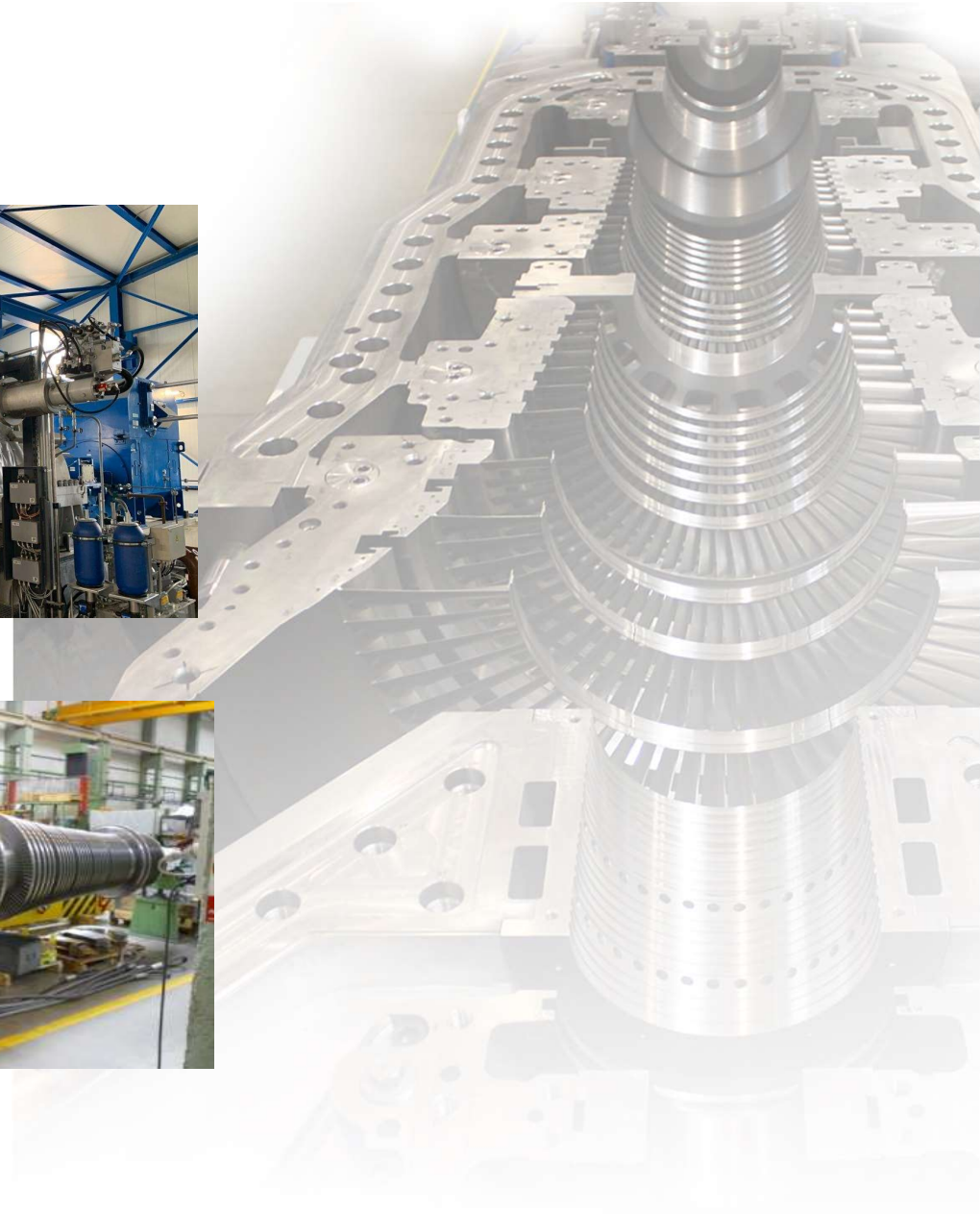


Steam turbines for Biomass Power Generation

Gospič 6,3 MWe

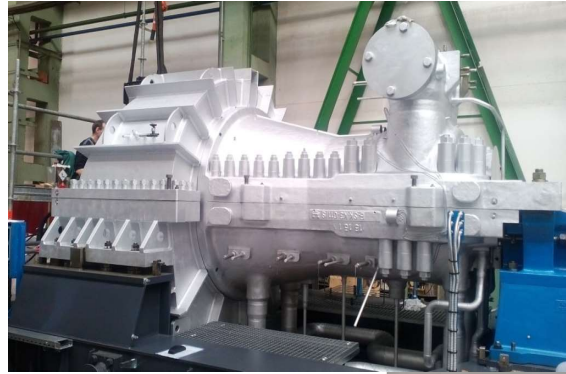


Energa Elbląg 25 MWe

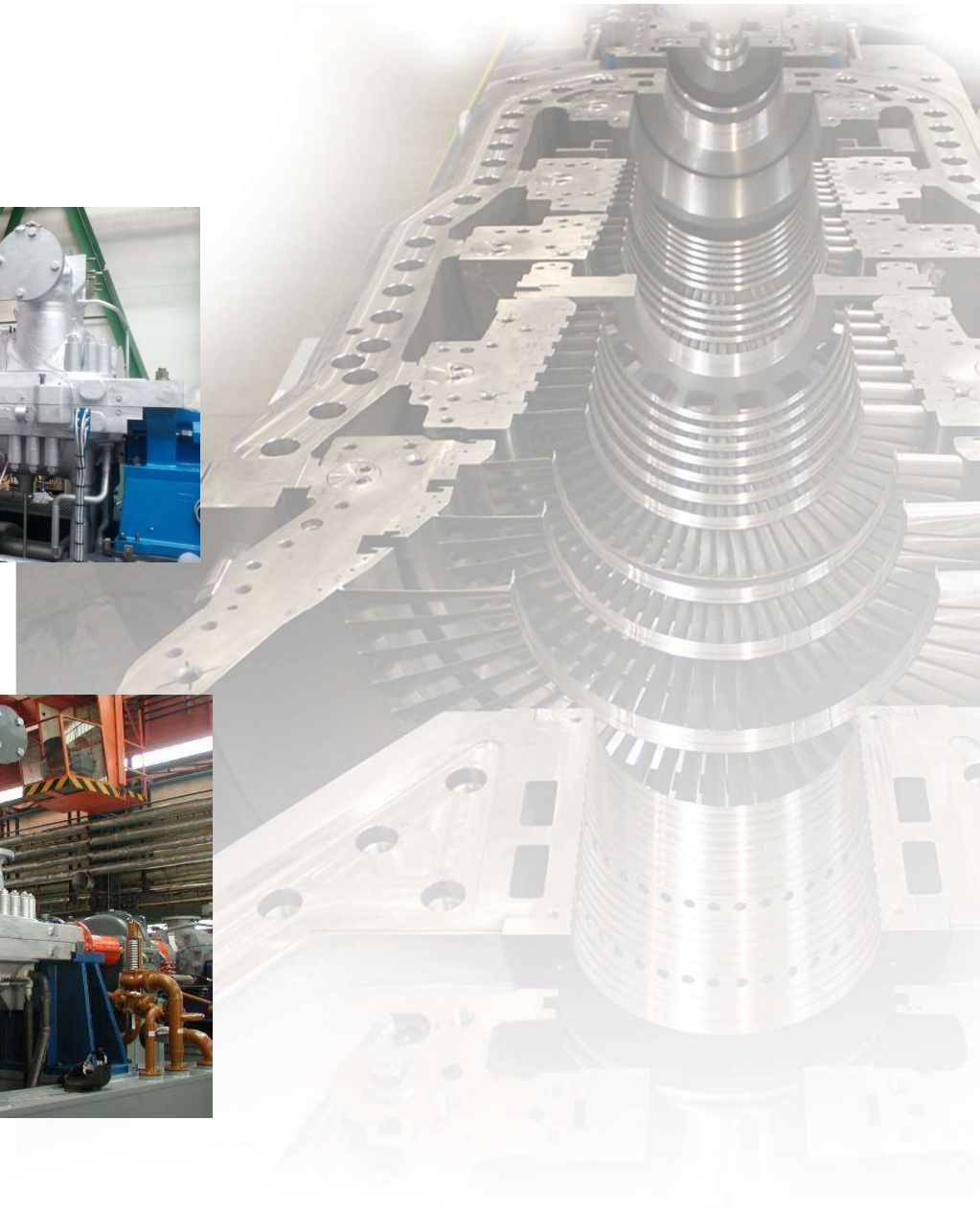


Steam turbines for Mechanical Drive

Mingshui 2 x 25 MWe



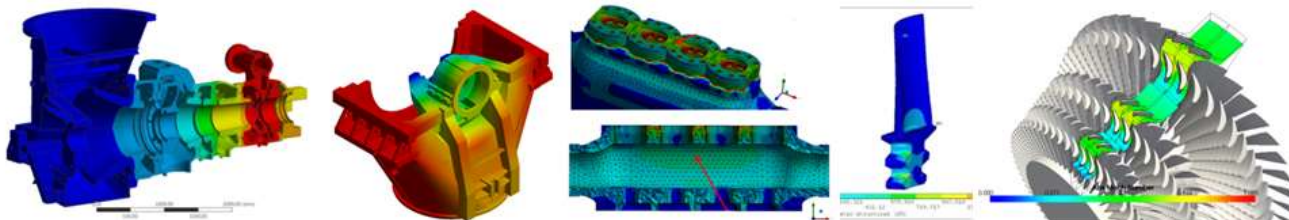
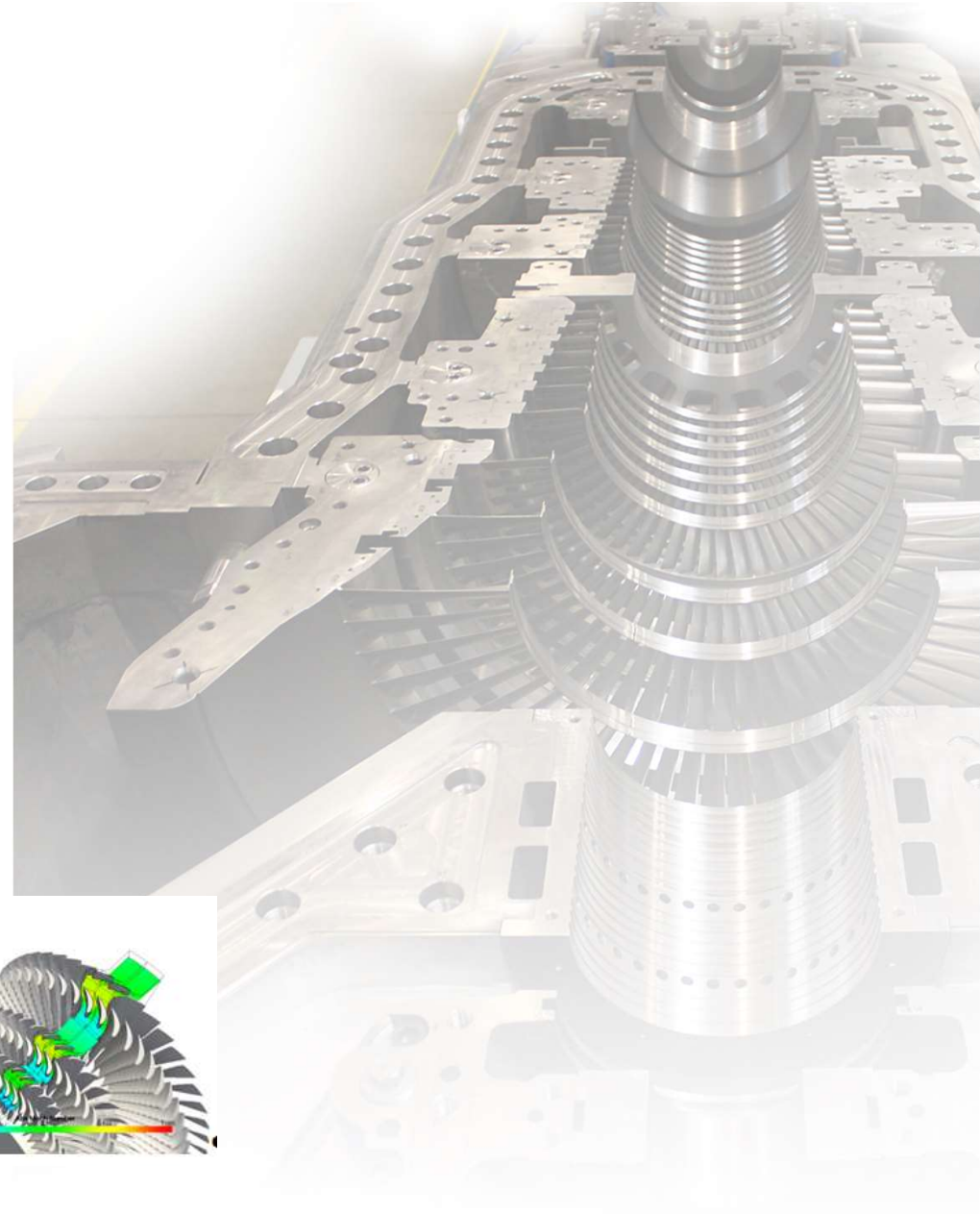
Starobeshewo 5 MWe



R & D of EKOL, experimental measurement

The main focus of the division's activity is now in line with tasks mentioned below, namely:

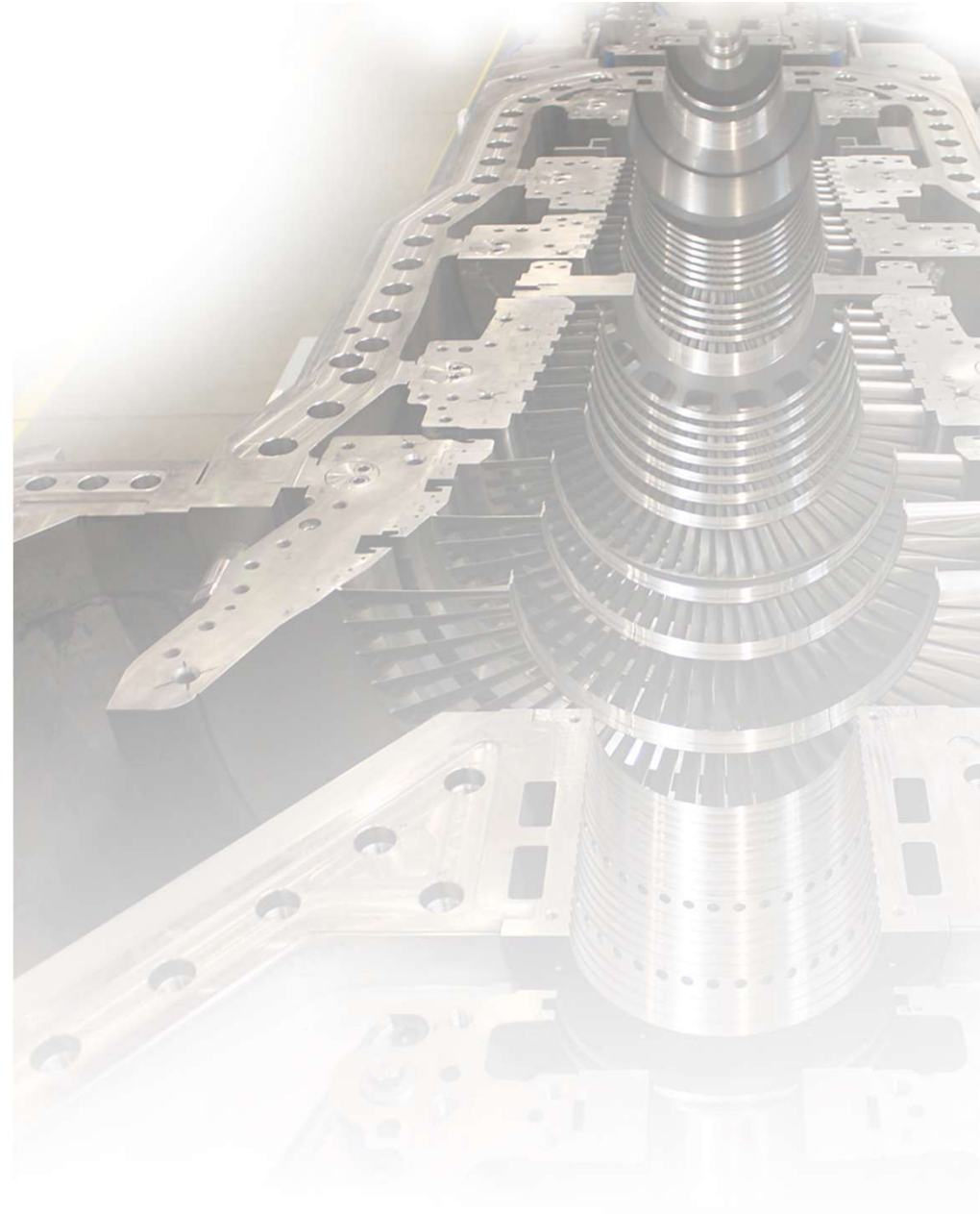
- Realization of **new types of last blades**
- Creation of a **modular system** of stator parts, governor valves, bearings and with overlap and usability in the field of realization of modular system and unification elements for steam engines, etc. of steam turbines, especially for mechanical drives with a power range of up to turbines designed to drive generators
- Implementation of new version of the semi-automated unification system software.



R & D of EKOL, experimental measurement

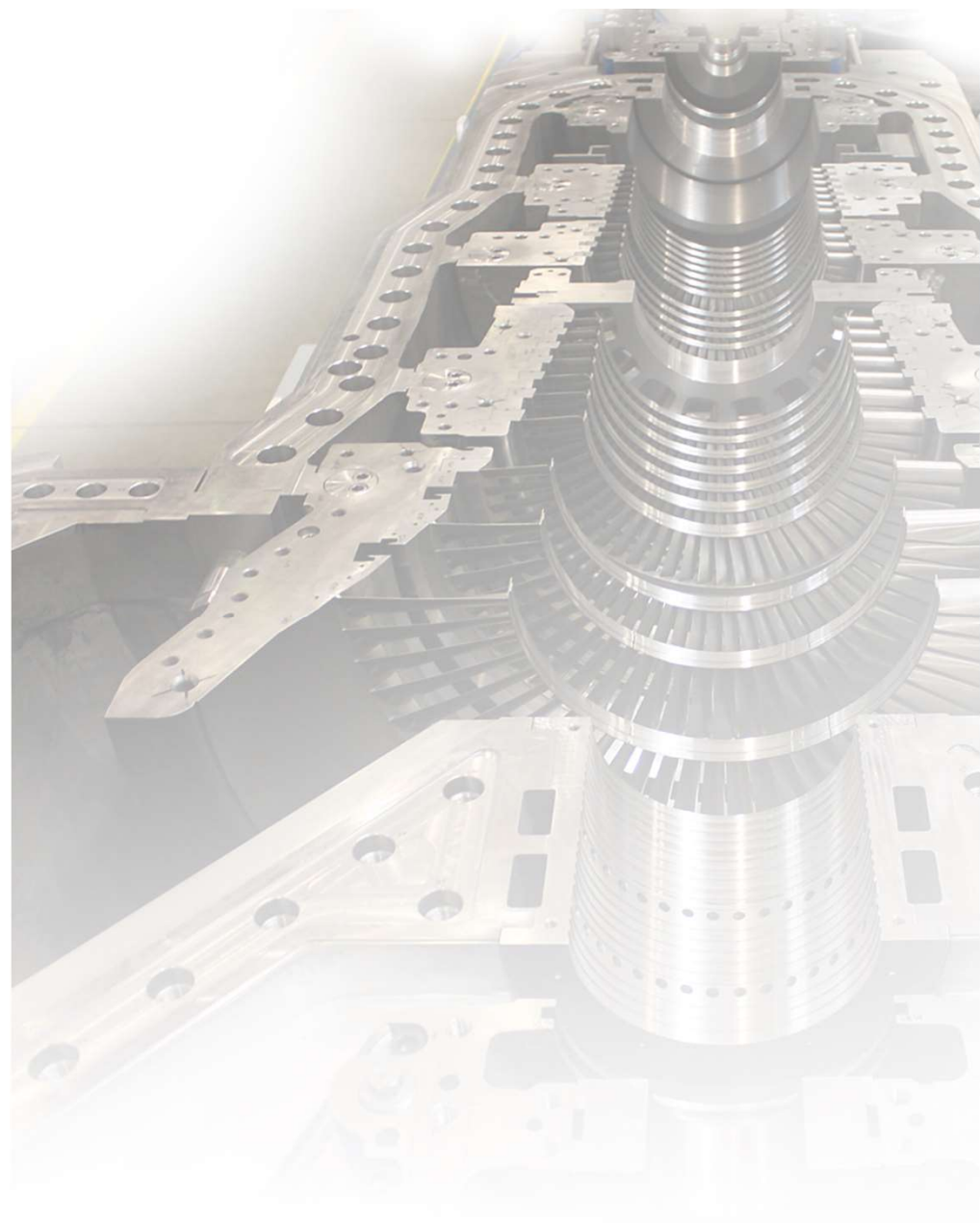
For the seamless operation of the division and productivity gains, the implementation of powerful SW tools for the following areas contributes:

- Analytical calculations: additional modules of common SW tools (HT basic, Visual Basic / Excel, etc.)
- Two-dimensional design layouts and 2D documentation: Autodesk solutions (AutoCAD mechanical, ME10)
- Creating and validating 3D data and documentation: Autodesk solutions (Navisworks, Inventor, [Plant 3D](#), Dassault Systems ([SolidWorks](#), [SolidWorks Simulation](#), [SolidWorks Enterprise PDM](#)))
- Verification of designs: For the verification of the rotary parts of the rotary machines of the [NREC solution](#)([AxCent TurboOPT](#) and TurboGrid), [Ansys](#) ([Ansys Mechanical Enterprise](#), [Ansys CFX](#), [Fluent](#), etc.)



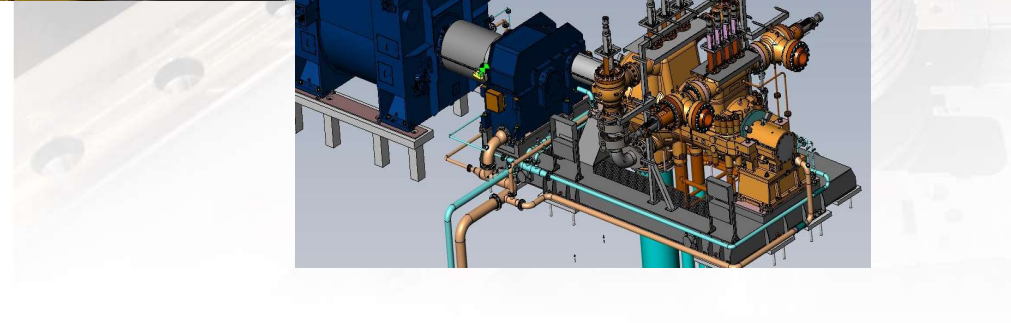
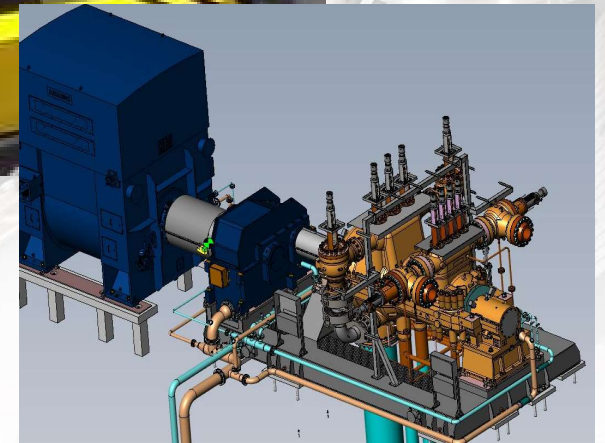
The latest realization 2021 -2023

300808-LOMŻA, PL	3,3 Mwe
300809-LUBLIN, PL	12 MWe
300819-JINAN, China	42,5 MW
300825-MINGSHUI2,China	28 MW
300826-GDAŃSK, PL	18 MWe
300828-SYNTHOS DWORY, PL	31,5 MWe
300829-KOSTRZYN, PL	7 MWe
300834-HUAFENG2, China	10,7 MW
300837-ERDEMIR, Turkey	20 MW
300848-MALEIC, China	20,6 MW
300849-AWW ZBIERSK, PL	9,8 MWe
300858-JINGYUAN, China	36 MW



Synthos Dwory

EST 50BE
5 200 rpm
77,6 bar/ 499°C
31,5 MWe



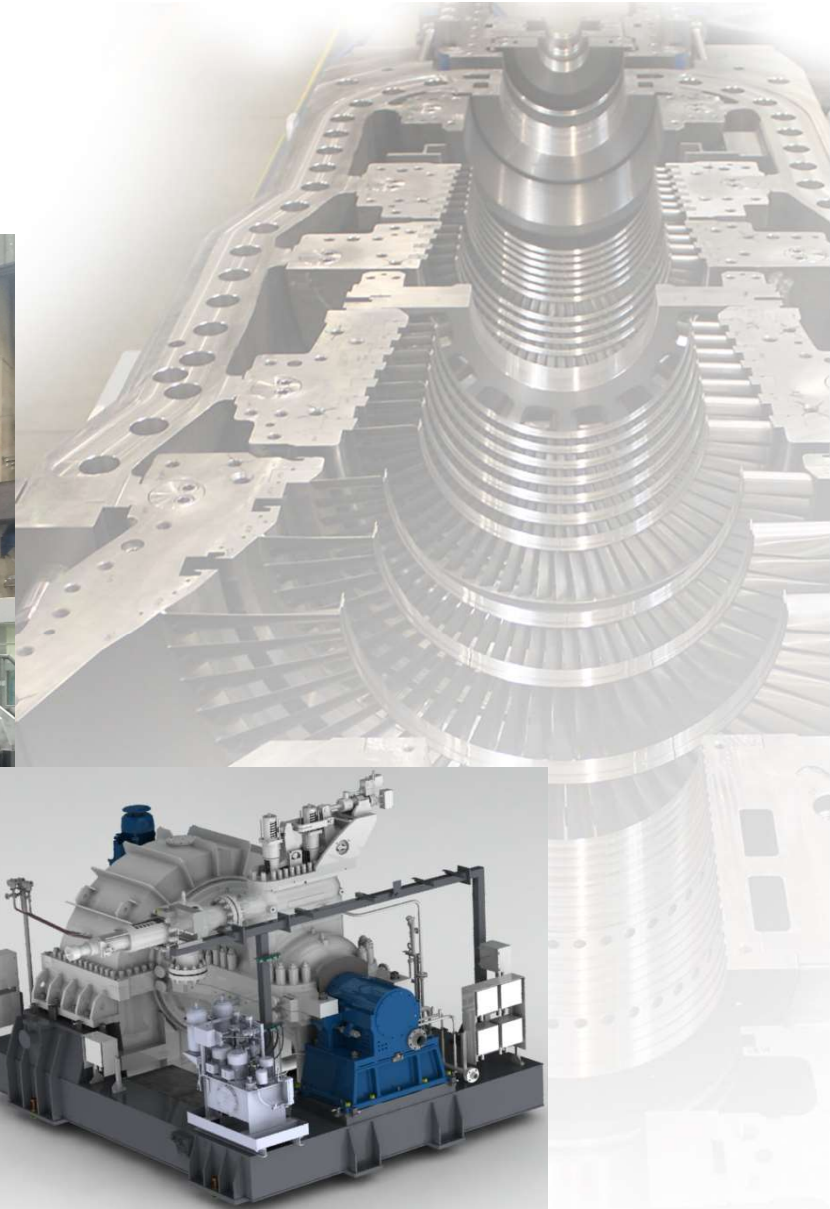
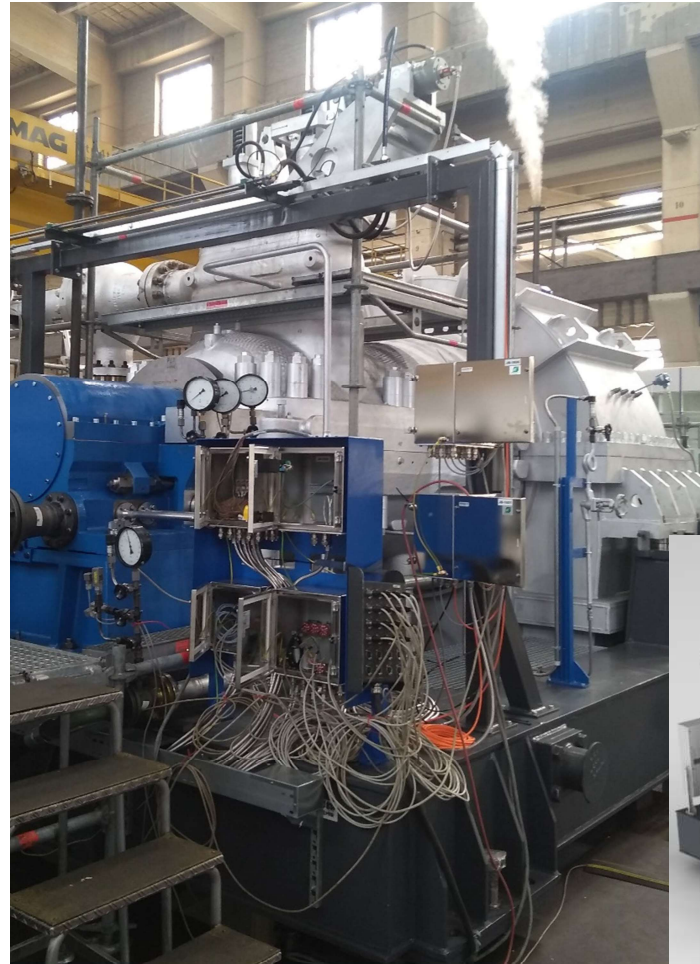
Erdemir

EST 40 CEE

4 500 rpm

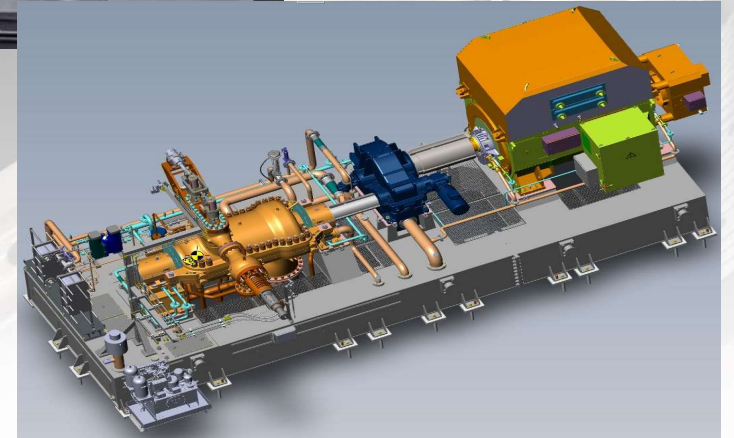
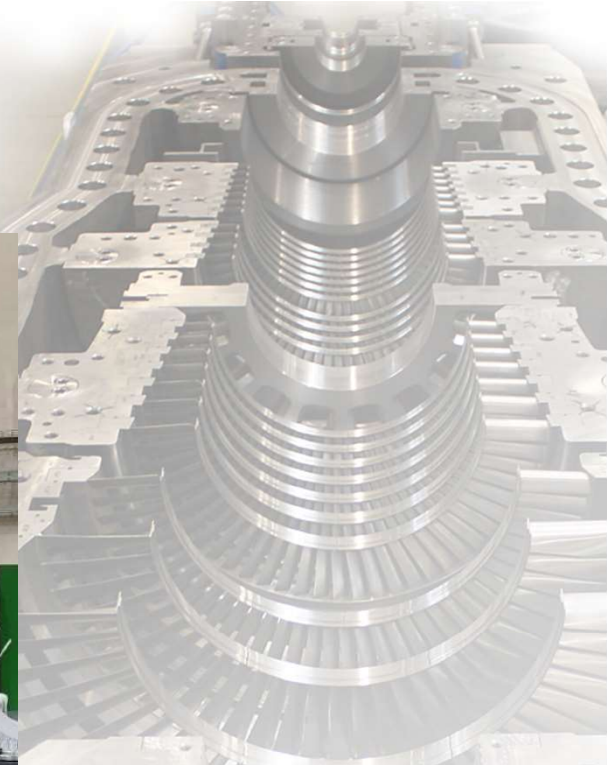
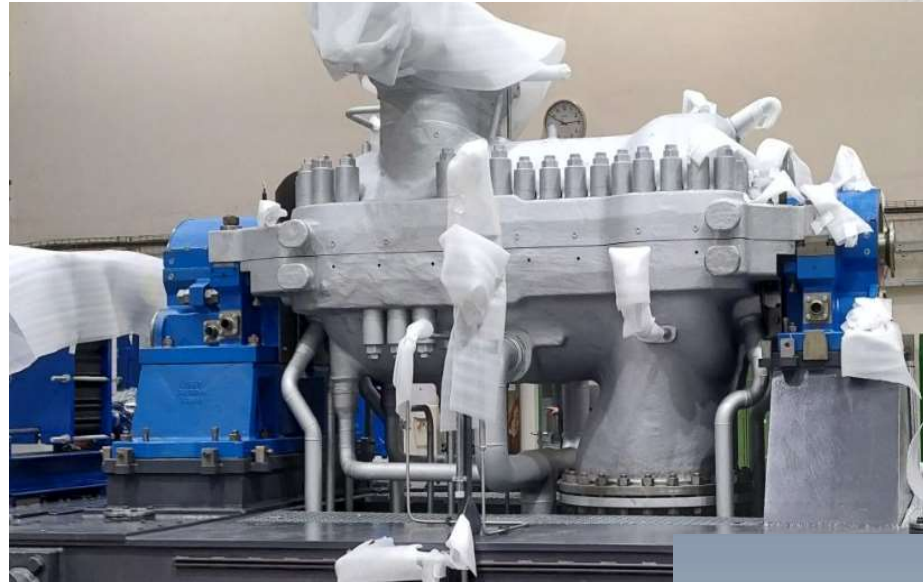
43,7 bar / 445°C

20 MWe



AWW Zbiersk

EST 30B
8 800 rpm
67 bar / 479 °C
9,8 MWe





Legal Address: Křenová 65 ,
602 00 Brno,
Czech Republic

Tel: +420 543 531 710

Fax: +420 543 242 912

Internet: www.ekolbrno.cz

Email: ekolsro@ekolbrno.cz

