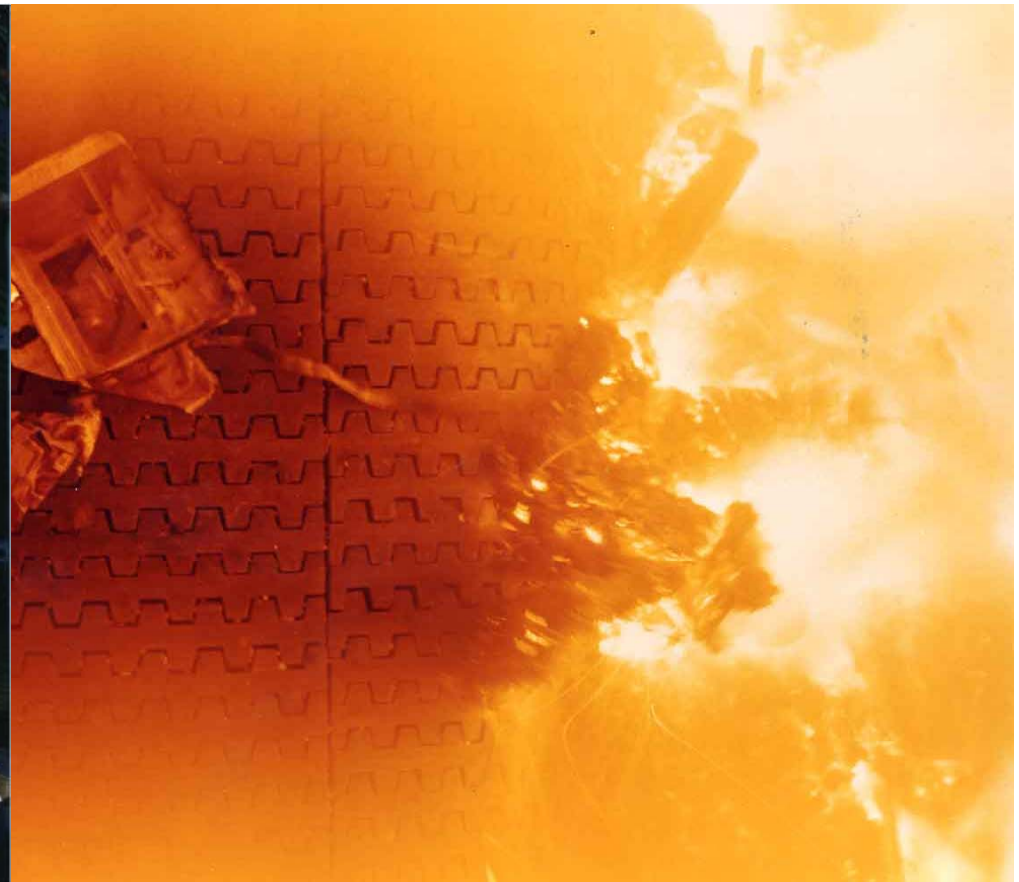
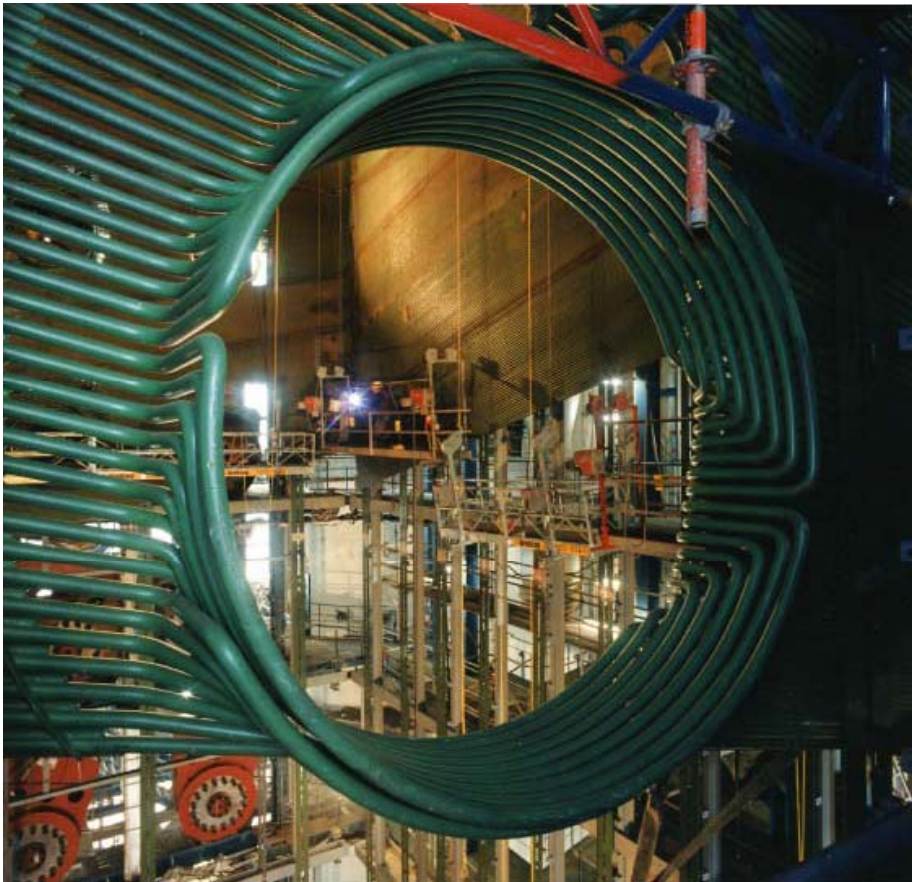


Focus on Steam Generators – POWERing ahead together

Capital Markets Day “Power Services“ at Moorburg Power Plant

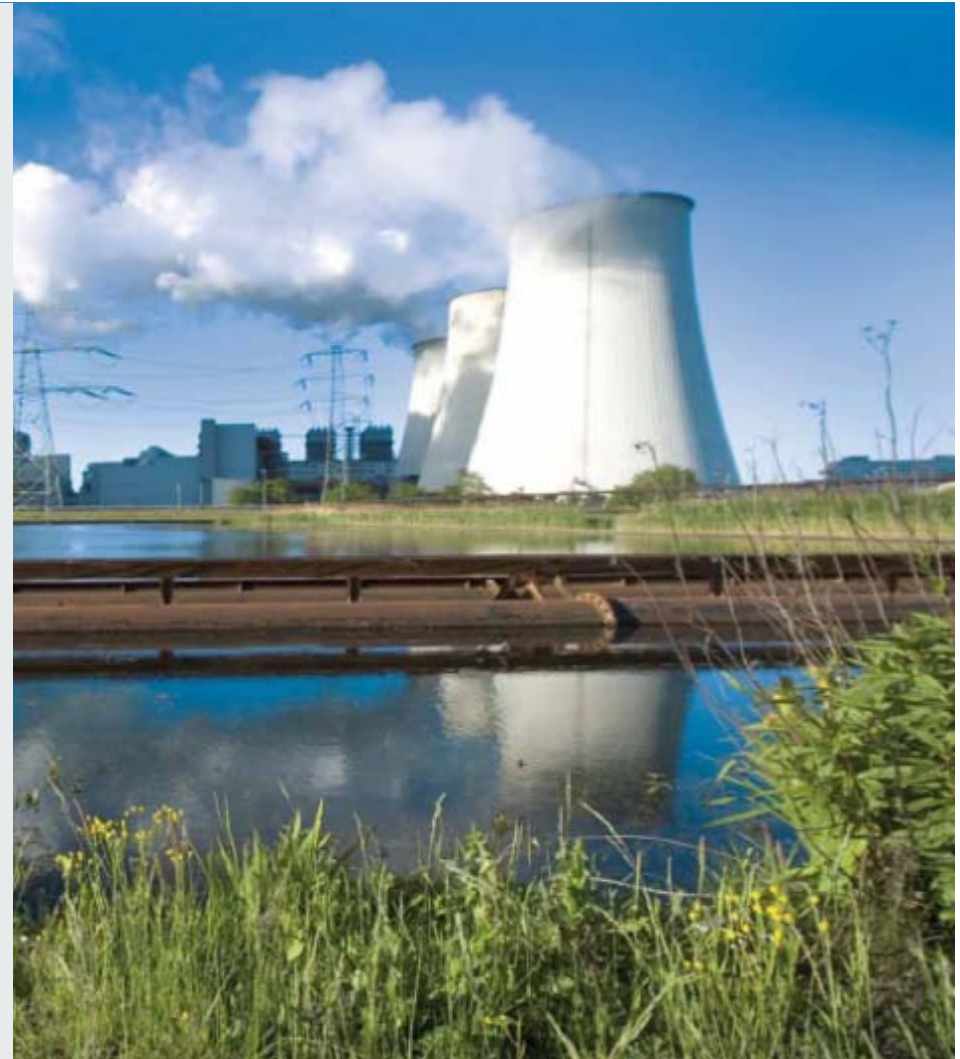
December 2, 2010

Gerd Lesser, CEO of BB Power Services GmbH



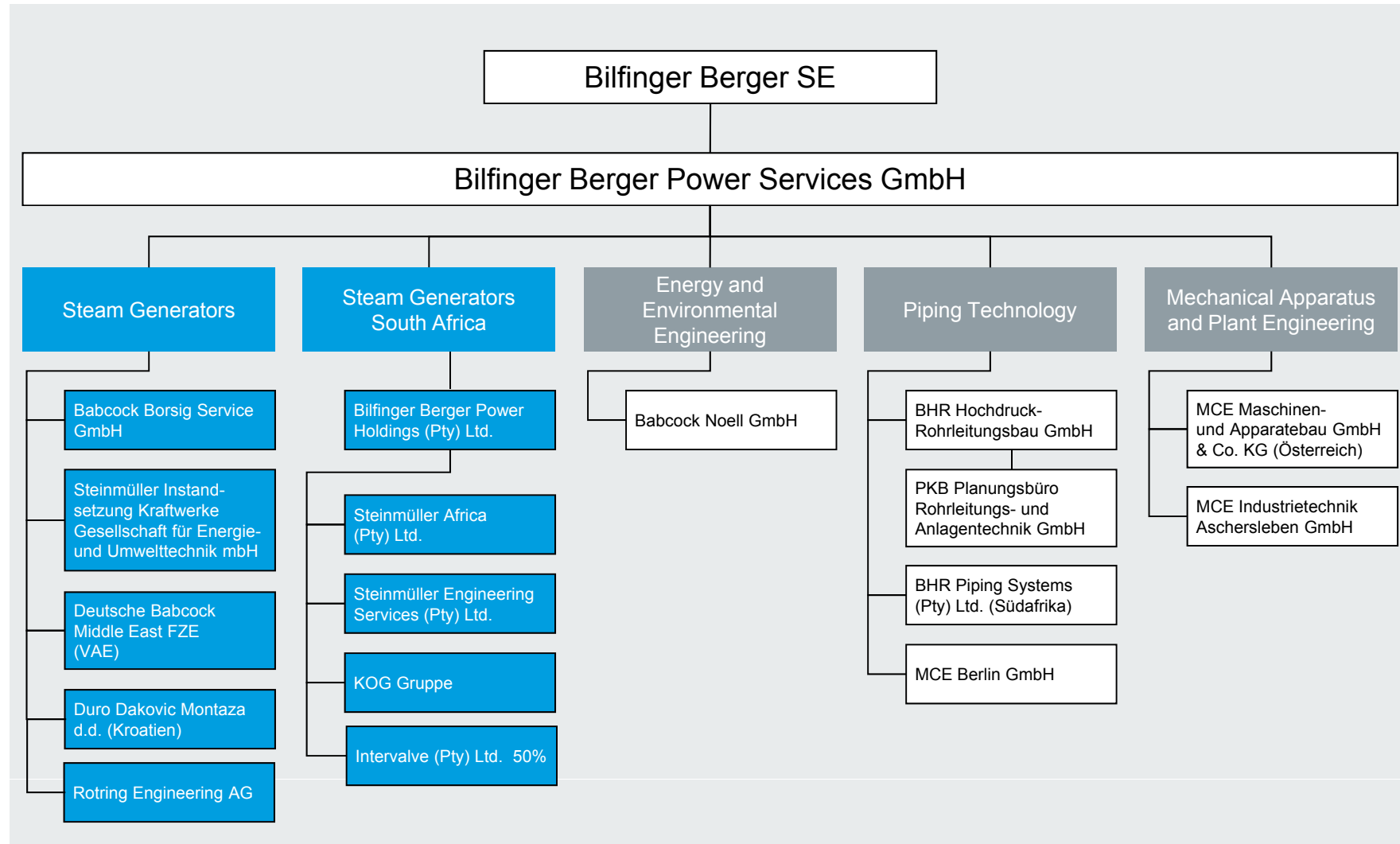
Agenda

1. Competences and portfolio
2. Contract structure
 - 2.1 Definition
 - 2.2 References
3. Value added
 - 3.1 Workshops and capacities
 - 3.2 Assembly capacities
4. Market structure
 - 4.1 Main competitors
 - 4.2 Main customers
5. New technologies / R&D activities
6. Business philosophy



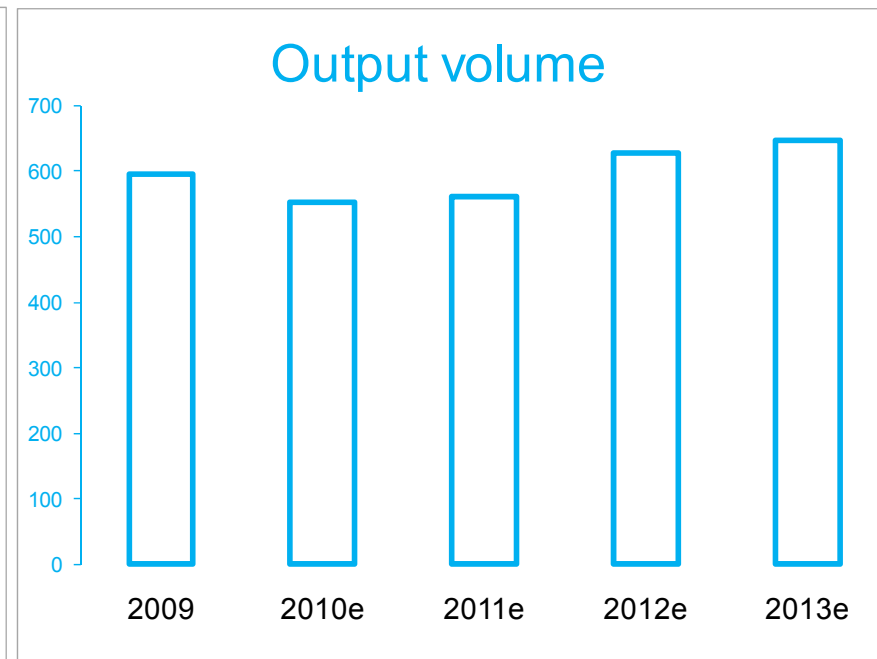
1. Competences and portfolio

Steam Generators



1. Competences and portfolio

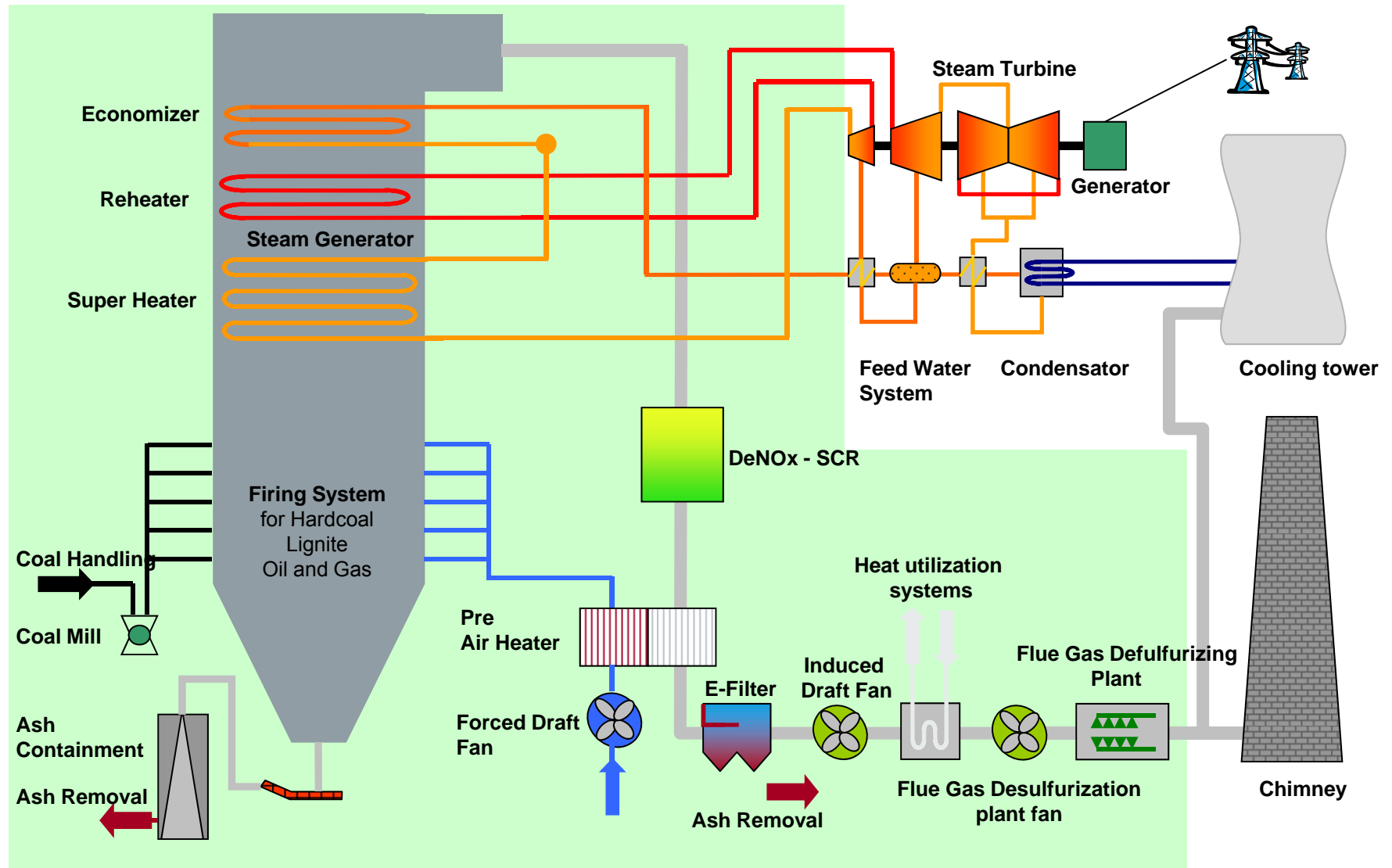
Development and volume forecast for Steam Generators



In € million

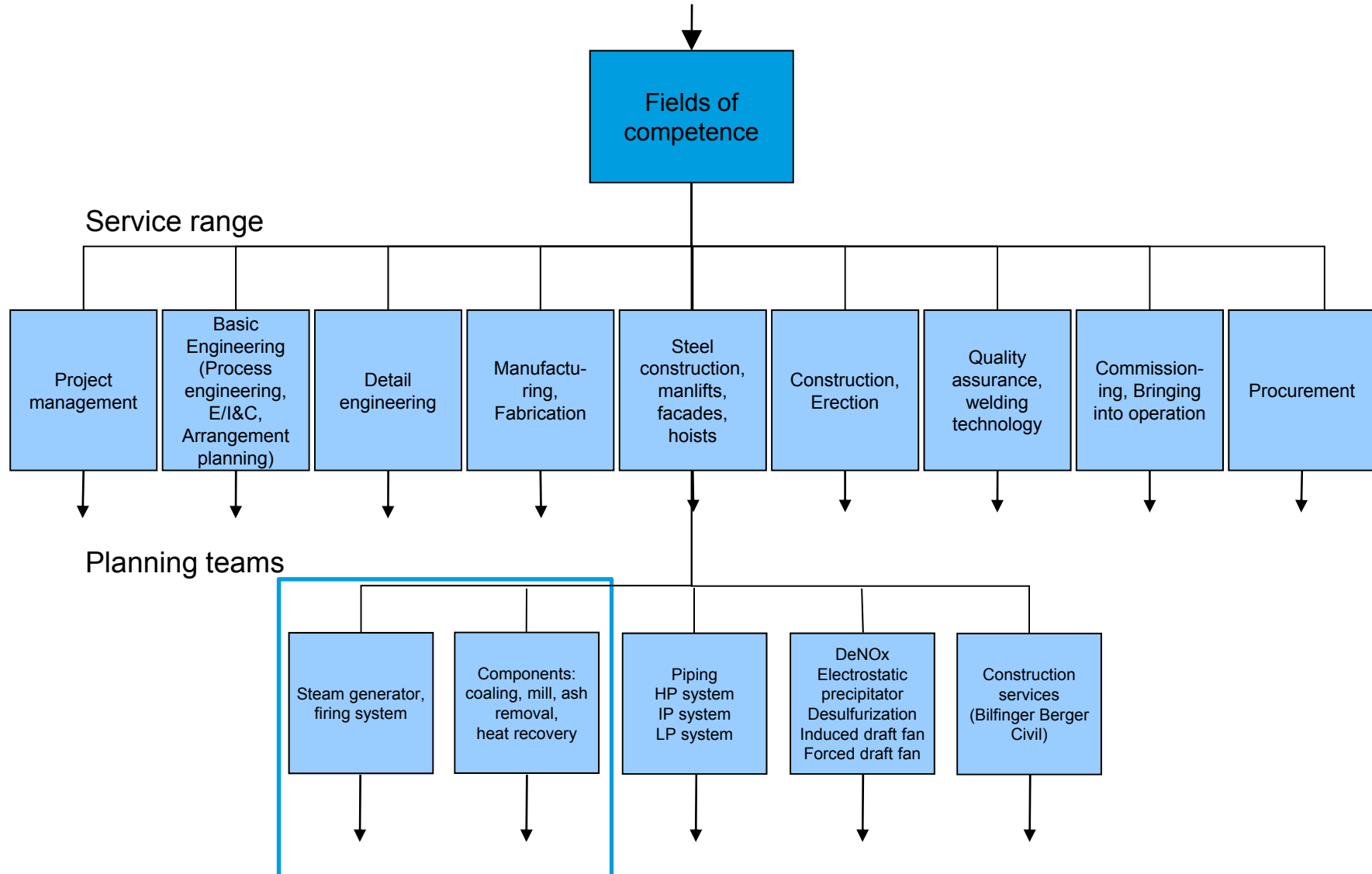
1. Competences and portfolio

Overview of fossil-fuel power generation



1. Competences and portfolio

Activities in the power plant sector



1. Competences and portfolio

Service range

**Steam
Generators &
Pressure Parts**



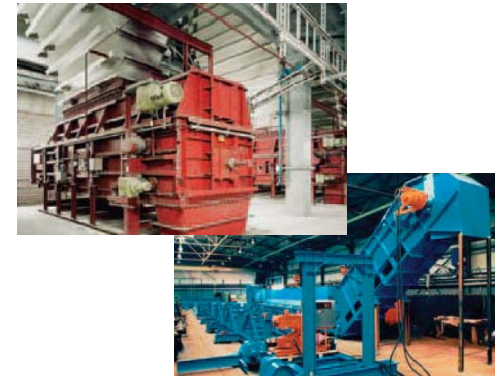
**Oil- Gas Firing,
Coal Firing Systems**



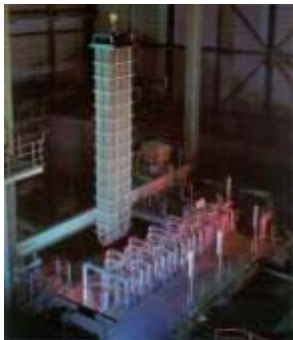
Coal Mills



**Coal Handling and Ash
Removal Systems**



Heat Reclaimers



**Valves
Flow Measurements**

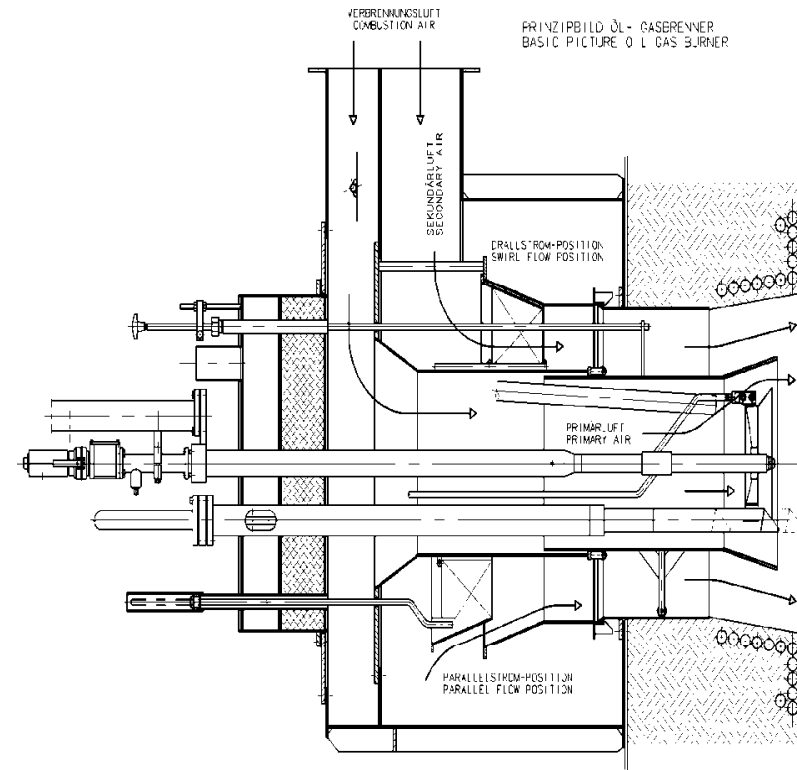


**Electrical and
I & C**



1. Competences and portfolio

Low-emission oil and gas burner (ADS burner)



Further development of the oil and gas burner at a test station and through numerical simulation. Nox reduction rates of up to 70 %.

Kallo Power Plant, Belgium: reduction of NOx from 700 mg/Nm³ to < 200 mg/Nm³.

1. Competences and portfolio

Coal mills



New development of the coal mill (BBS) together with the Russian company Tyazhmash (Syzran) as well as a newly patented (BBS) separator (for use in Zolling Power Plant and others).

Installation in the Voerde Power Plant

Technical data:

- 100 t/h coal, grinding 5% to 90 μ m filter
- Hot air temperature carrying gas 320°C
- Separator temperature 85°C
- Pressure surge resistance 3.5 bar
- Service life wear parts > 20,000h



2. Contract structure

2.1 Definition

Projects

Complex orders consisting of engineering, delivery and assembly, including process technology risks.

Service

Contracts with fixed periods and order volume. The difference to the project business is the lack of involvement from the process technology engineering capacities. Examples include planned turnarounds.

Framework agreements

Long-term (1-10 years) service contracts. Service delivery is on demand (no purchase commitment). Invoicing based on time and expenses as well as according to special prices or catalogue prices.

Delivery and spare parts business

Delivery of spare parts for older facilities from the Babcock and Steinmüller history (1:1 delivery of components based primarily on existing parts lists and drawings).

2. Contract structure

2.2 Reference: Project Power plant Belchatow, Poland

Client

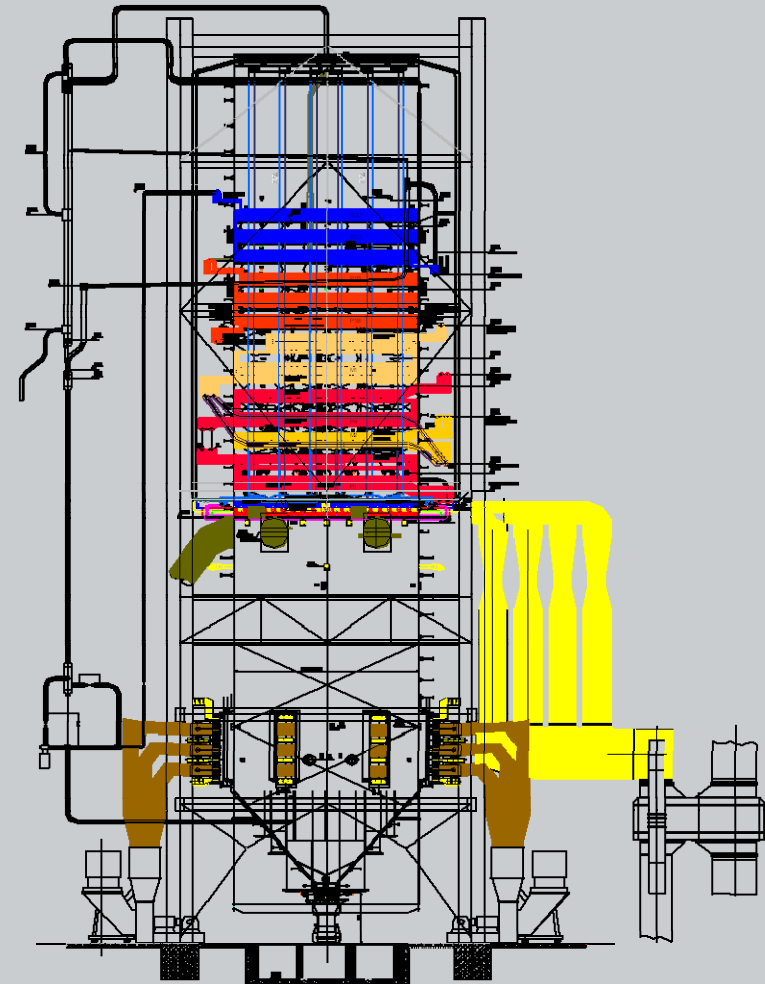
PGE Elektrownia Belchatow

Period

2007 – 2011

Scope

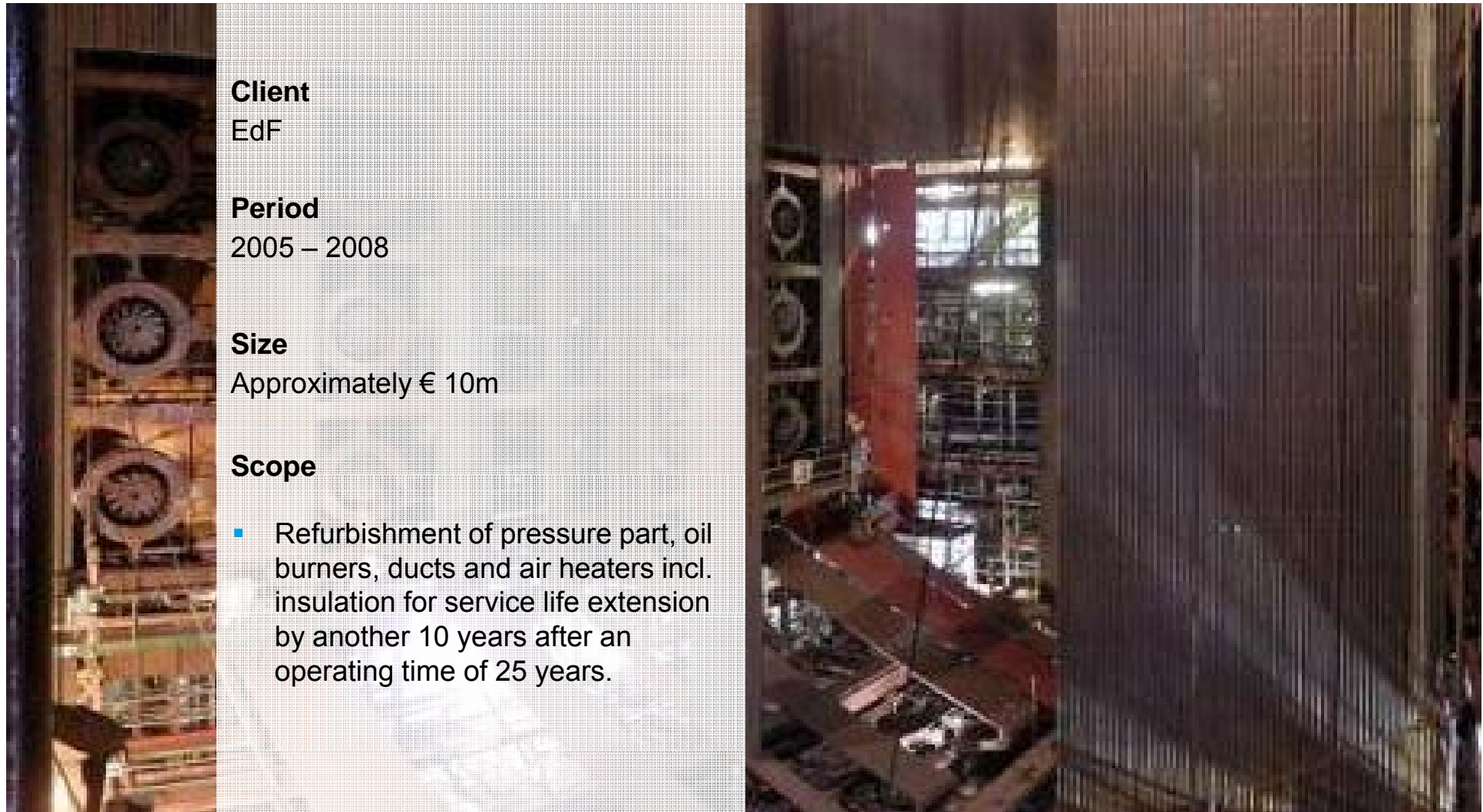
- Modernisation Boiler 3
- Modernisation Boiler 4
- Modernisation Boiler 5



2. Contract structure

2.2 Reference: Service

Heavy oil power stations Cordemais / Aramon, France



Client

EdF

Period

2005 – 2008

Size

Approximately € 10m

Scope

- Refurbishment of pressure part, oil burners, ducts and air heaters incl. insulation for service life extension by another 10 years after an operating time of 25 years.

2. Contract structure

2.2 Reference: Long term services

Power plant Jämschwalde

Client

Vattenfall Europe

Period

3 Years

Size

Approximately € 20m

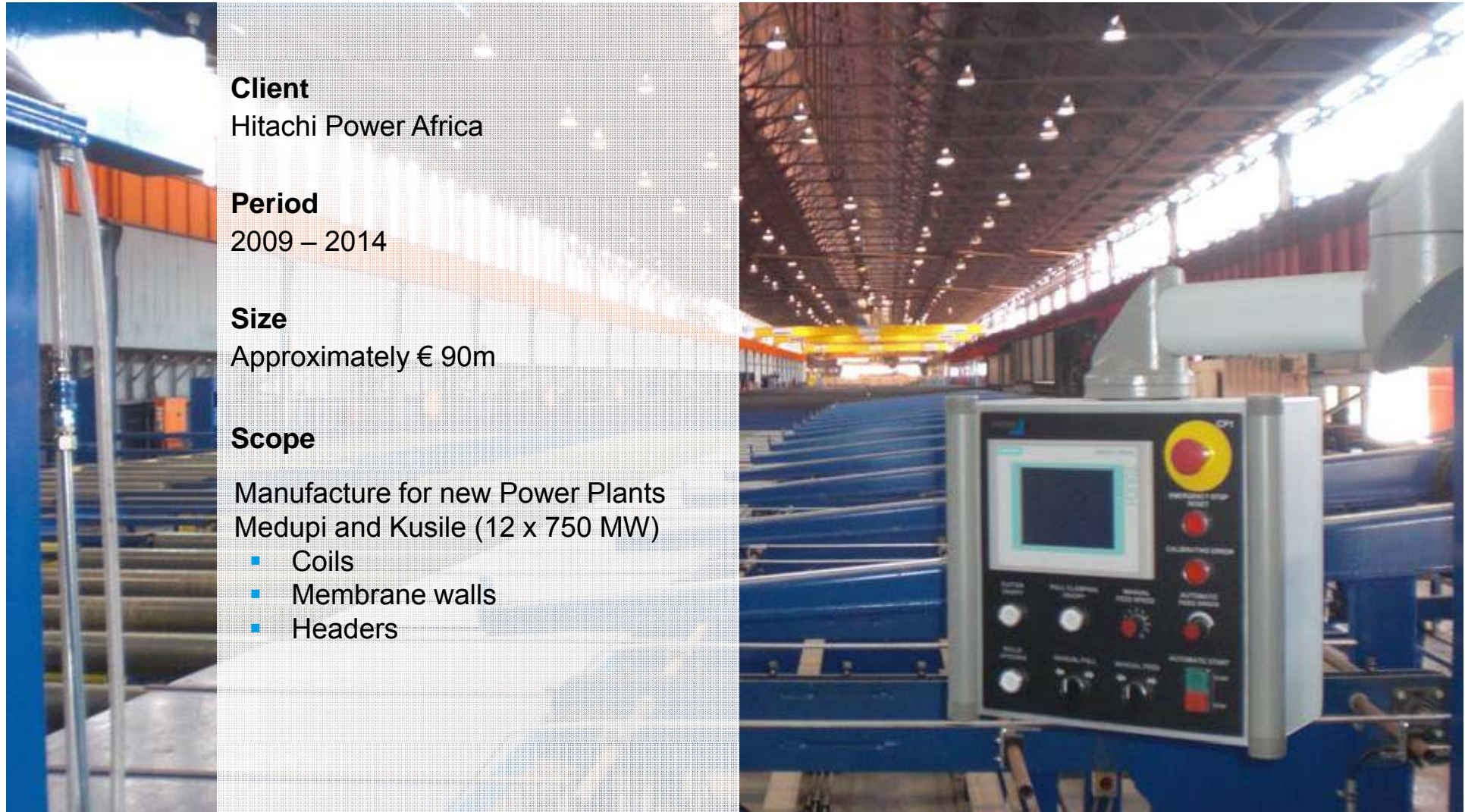
Scope

- Mill service in abrasive process

2. Contract structure

2.2 Reference: Delivery

Fabrication of boiler components Pretoria, South Africa



Client

Hitachi Power Africa

Period

2009 – 2014

Size

Approximately € 90m

Scope

Manufacture for new Power Plants
Medupi and Kusile (12 x 750 MW)

- Coils
- Membrane walls
- Headers

3. Value added

3.1 Workshops and product manufacturing

Sites and capacities

	Employees	Square footage (m ²)	Manufacturing Capacity
Bilfinger Berger Power Holdings (Pty) Ltd. Steinmüller Africa, Pretoria	430	115,300	870,000 h/a
Babcock Fertigungszentrum GmbH, Oberhausen 50% shareholding	130	16,000	200,000 h/a
Heatec Co., Ltd. / Thailand, Laemchabang	63	7,525	110,000 h/a
Steinmüller Instandsetzung Kraftwerke GmbH, Jänschwalde	50	16,000	100,000 h/a
Babcock Borsig Service GmbH, St. Ingbert	26	4,500	40,000 h/a
Đuro Đaković Montaža d.d., Slavonski Brod 81% shareholding	120	14,436	260,000 h/a
Total manufacturing capacity	819	173,761	1,580,000 h/a

3. Value added

3.2 Assembly capacities

	Internal personnel	External personnel
Germany Steam generators, components	1,850,000 h/a	
Croatia & Europe Steam generators and industrial plants, environmental technology, components	500,000 h/a	
South Africa Steam generators, components	1,150,000 h/a	4,000,000 h/a
Gulf region Stream generators, components, pipings	600,000 h/a	4,500,000 h/a
Total assembly capacity	4,100,000 h/a	8,500,000 h/a

4. Market structure

4.1 Main competitors

Projects

Alstom
Hitachi Power Europe
AE&E
Doosan
Ansaldo

Services / Long-term services

Alstom
E.On Anlagenservice
Balcke-Dürr Service
ThyssenKrupp Xervon (LLS)
Doosan

Delivery and spare parts business

Alstom
Hitachi Power Europe
Doosan

4. Market structure

4.2 Main customers



5. New technologies / R&D activities

- Participation in R & D Projects
 - Micro gas turbine and **PowerBlock** - BTU Cottbus / BBPS
 - Marcko 700- new materials for 700 ° C power plant
 - Examination and testing of new materials FDBR / VGB
 - Development of a steam pressure fluidized bed drying of lignite - pilot stage
 - Development of an FGD with extremely high precipitator efficiency for oxyfuel power plant - pilot stage

- Further developments of components and processes
 - Concept development for dried lignite / brown coal (TBK) steam generators
 - Oxyfuel concept development for steam generator based on lignite
 - Welding procedures for new materials and large wall thicknesses
 - Low-NO_x Oil /Gas / pulverized coal Burner
 - New materials for pulverized coal Burner - less wear, improved temperature resistance and stability
 - Rollers for coal mill
 - Classifier with improved selectivity

- Innovative future technologies – CCS (Carbon capture and storage)
 - Pre-combustion capture – Oxyfuel-combustion
 - Post-combustion capture – CO₂-scrubbing

5. New technologies / R&D activities

Reference: DDWT pilot plant Schwarze Pumpe

Client

Vattenfall Europe

Period

2007 – 2010

Scope

- Realisation of and participation in trial operation of a plant for the pressurised steam fluidised bed drying (PFBD) of lignite



6. Business philosophy

- Service based on up-to-date engineering know-how
 - High level of own value added (engineering, manufacturing, delivery, assembly)
 - Strict and high quality assurance standards
-
- Strong reputation and confidence with regard to quality and schedules
 - Own capacities: Even when we cooperate with other (e.g. local) companies, we can fully control the processes (quality review) with our own personnel, or, if needed, we can fulfill the contract ourselves.

Strong arguments for efficiency increase in power plants!

Thank you for your attention!

