BILFINGER POWER SYSTEMS

Bilfinger Power Systems GmbH

WE MAKE POWER SYSTEMS WORK

Capital Markets Day – Gerd Lesser

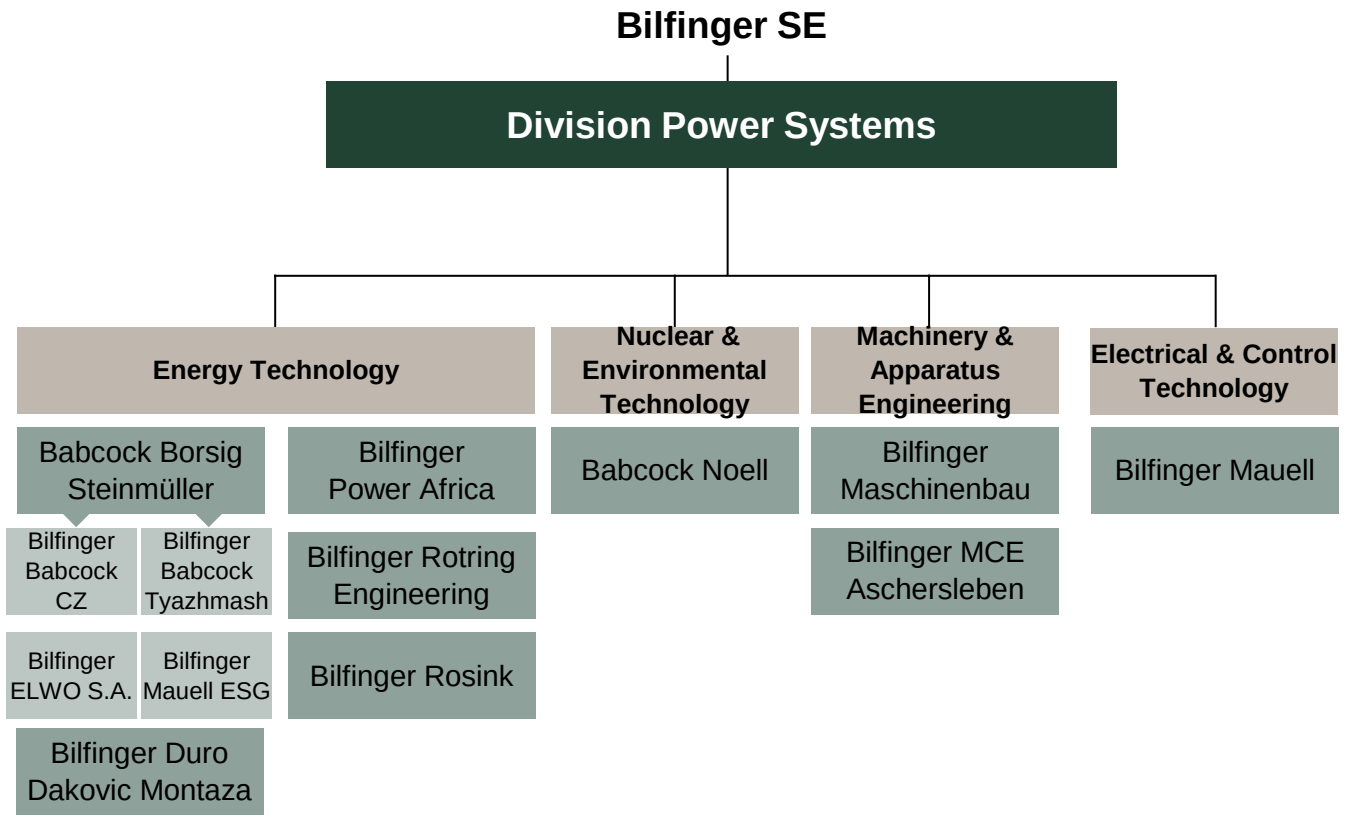
November 29, 2013

Agenda

1. Portfolio and strategy
2. Development of output volume
3. End markets and customer structures
4. Current challenges / Key success factors
5. Cooperation within Bilfinger

6. Current status and perspectives of German and international energy markets (thermal power plants excl. nuclear energy)

1. Portfolio and strategy
1.1 Management structure – Division Power Systems

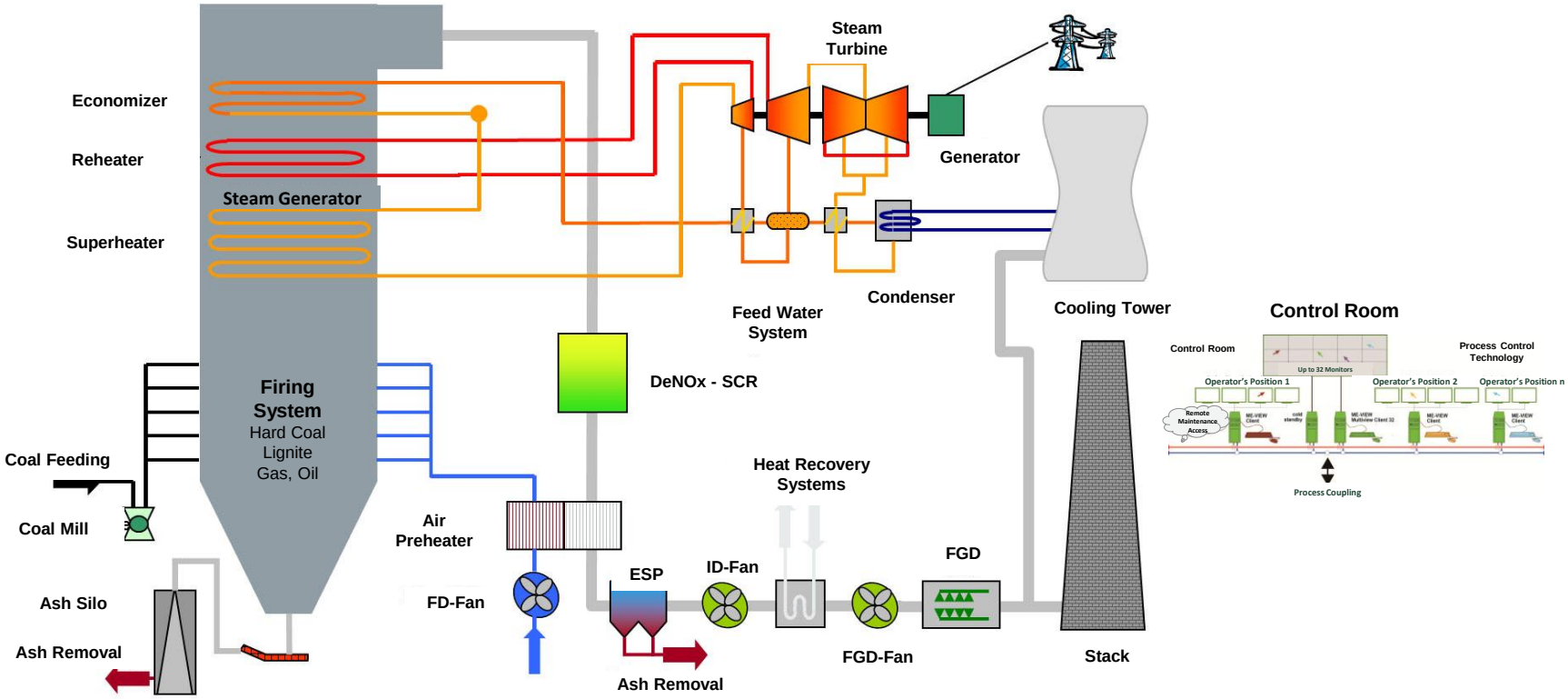


1. Portfolio and strategy
1.2 Strategy / Positioning

- Technological competence with a vertical integration of up to 75%
  - Manufacturer independent
  - Modernization of existing plants with in-house state-of-the-art technology
- Processing quality (scheduling, quality)
- Broadly-based business operations
  - Long-term framework agreements
  - Regular service
  - Project business with subsequent service agreements
  - Component supply
  - Selective participation in power plant construction

- Stable market with good growth potential in Germany and internationally
  - Current markets:
    - Germany
    - Europe, especially (South) East Europe
    - Southern Africa
    - International delivery business
  - Further expansion of business activities in target markets
    - Russia
    - North America
    - South America (especially Brazil)
    - Southeast Asia (Thailand, Vietnam)

1. Portfolio and strategy
1.3 Product competences of the Group
Overview conventional power plants



1. Portfolio and strategy
1.3 Product competences of the Group
I. Energy Technology

The Group's service concept comprises a broad spectrum of engineering and individual customer care:

- Boiler technology
- Manufacturing
- Plant assembly
- Initial operation
- modernization
- Service life extension
- Maintenance
- New components
- Spare parts service

Bitola Power Plant | Macedonia

- Rehabilitation of three lignite-fired boilers of Russian design
- NOx reduction on the firing part through primary measures in line with EU standards
- Extending service life by a further 120,000 hours
- increased efficiency and availability of the boilers

Client	ELEM, Macedonia
Period	2011 – 2014
Volume	approx. € 90 million

1. Portfolio and strategy
1.3 Product competences of the Group
II. Nuclear & Environmental Technology

Environmental technology

- Construction and conversion of flue gas purification systems (REA, DENOX, dust removal)

Nuclear service

- Service, inspections, repairs, maintenance for nuclear power systems

Nuclear technology

- Construction, delivery and installation of components for nuclear power plants, new construction and conversion
- Demolition of nuclear power systems

Magnet technology

- Supra-conducting, normal conducting and permanent magnet systems as well as components for fusion, accelerators and research light systems

1. Portfolio and strategy
1.3 Product competences of the Group

Moorburg Power Plant, Germany

Nuclear Power Plant Olkiluoto 3, Finland

1. Portfolio and strategy
1.3 Product competences of the Group
III. Machinery & Apparatus Engineering

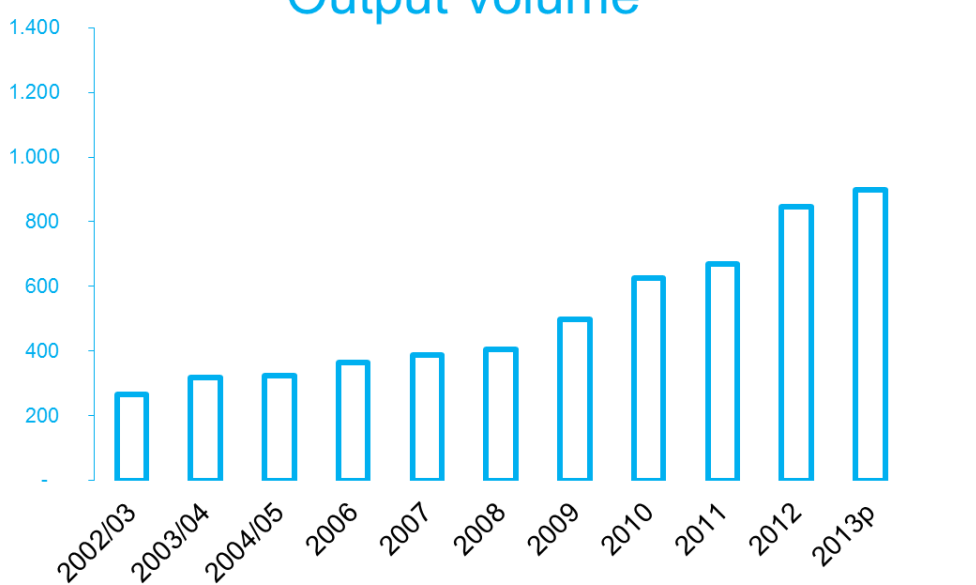
- Components for:
  - Gas and steam turbines
  - Water turbines
  - Aerospace
  - Nuclear technology
  - Foundations for offshore wind
- Machine assembly
- Welded structures
- Hüttenwerksmaschinen
- Spare parts and worn parts
- Special machines

1. Portfolio and strategy
1.3 Product competences of the Group
IV. Electrical & Control Technology

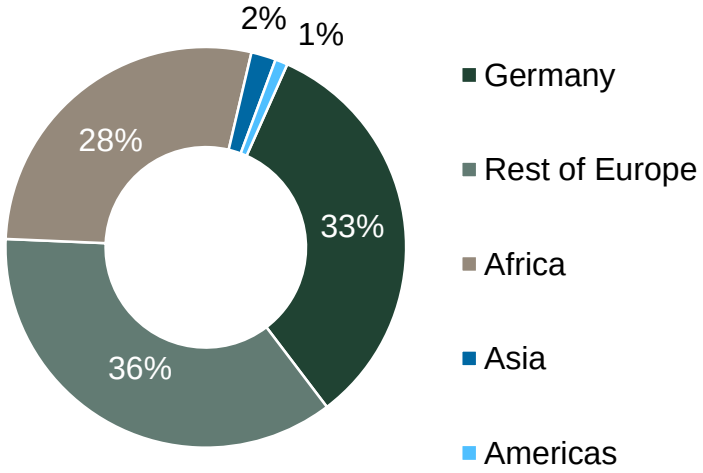
- Process control technology
- Remote control technology – control systems for supply grids
- Network control technology
- Power plant control technology
- Station control technology
- Visualization systems
- Maintenance engineering
- Repair engineering
- Mosaic systems
- Machines for automation

2. Development of output volume

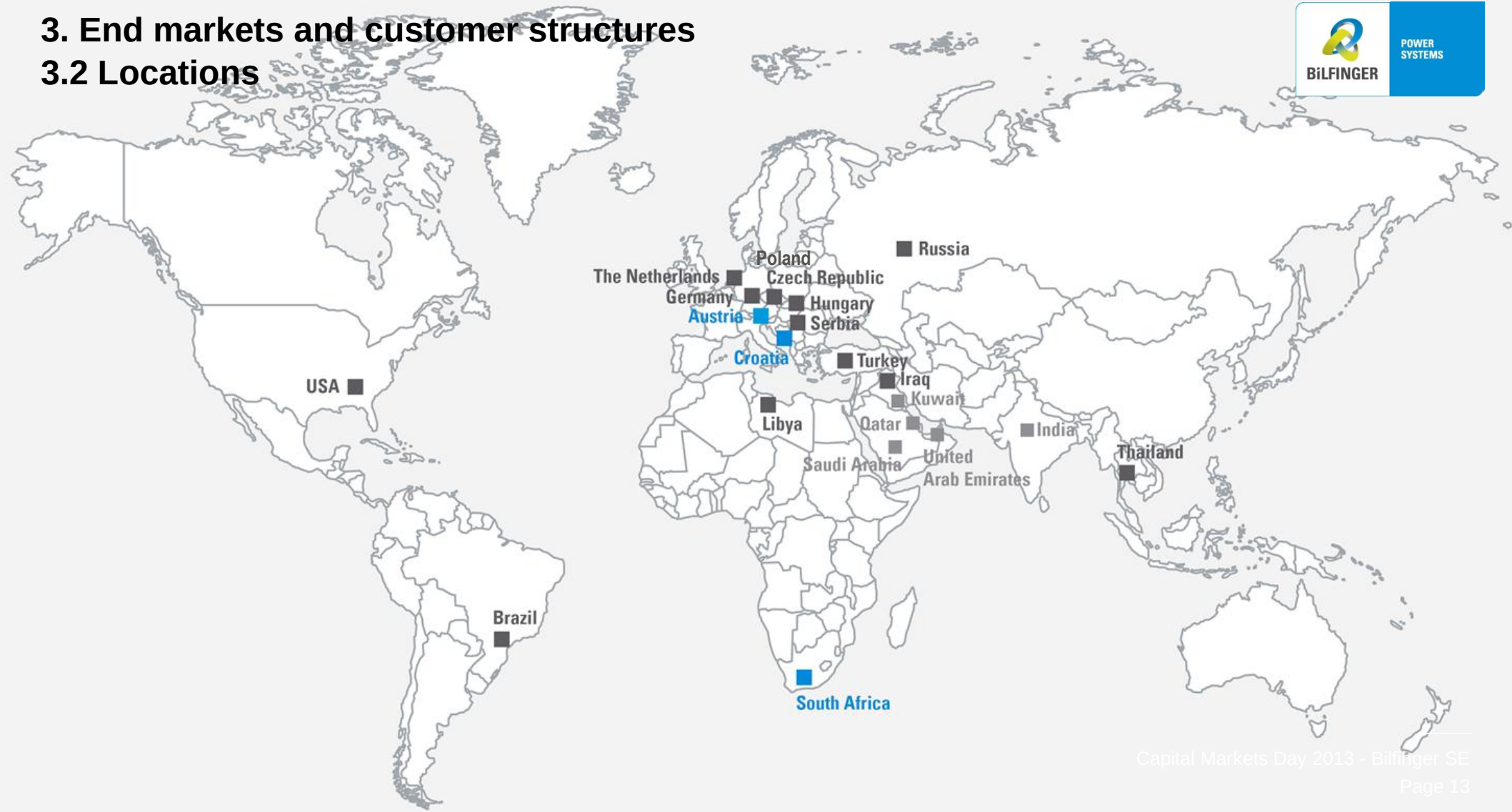
2002 – 2013 (€ million)



3. End markets and customer structures
3.1 Development of output volume 2012



3. End markets and customer structures
3.2 Locations



3. End markets and customer structures
3.3 Customer structures

Customer structure: Utilities 85 % / Industrials 15 %

- Utilities (e.g. Eskom → €160 million, PGE → €120 million, RWE → €110 million, IEC → €50 million)
- Industrials (e.g. Areva → €100 million, Hitachi → €70 million, Alstom → €40 million)

Repeat customers

- 75 %

Contract structure

- 40% service / 60% projects

Typical contract periods

- Service: from 1 day to 10 years (framework agreements)
- Projects: from approx. 0.5 years to 5 years

Typical contract sizes

- Service: from €1,000 up to approx. €20 million
- Projects: from approx. €10 million to €500 million (mainly between €10 million and €150 million)

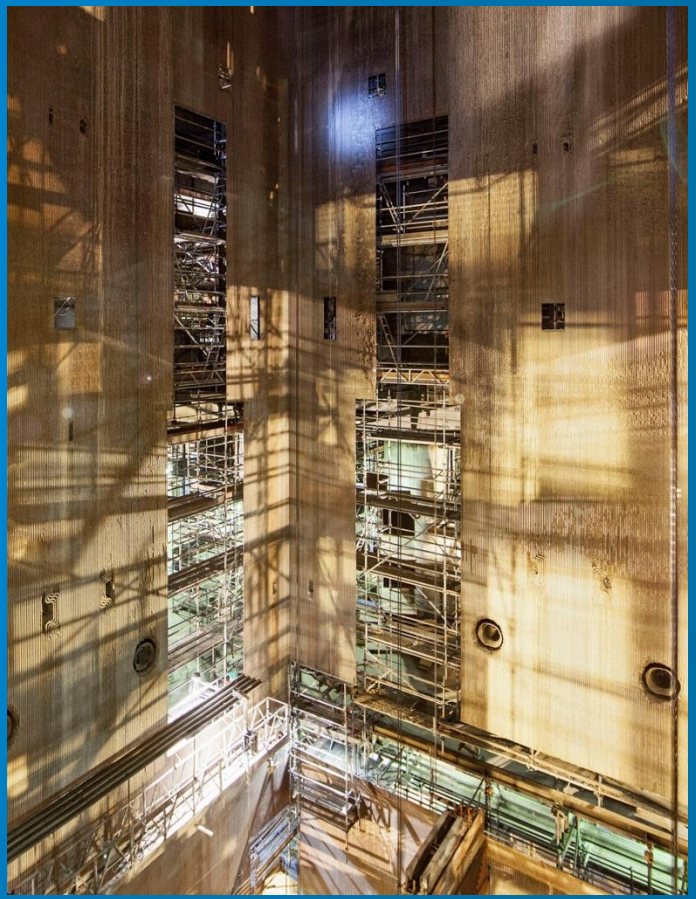
Competitors

Projects	Services / Long-term services	Delivery & spare parts
Alstom Power	Alstom Power	Alstom Power
Hitachi Power Europe	Hitachi Power Europe	Hitachi Power Europe
Doosan Babcock	Doosan Babcock	Doosan Babcock
Ansaldo	Balcke-Dürr Service	
	E.ON Anlagenservice	

4. Key success factors / current challenges

Competitive advantages

- High degree of vertical integration: engineering, assembly, manufacturing from a single source
- Processing quality, i.e. on-time delivery, execution periods, manufacturing and assembly quality
- Strong expertise in the modernization of older plants (manufacturer independent)
- Engineering competence in nearly all power plant components
- Longstanding service agreements and thus excellent plant knowledge and customer relationship based on trust
- Personnel that has both the necessary service mentality and many years of experience in the international project business Good positioning through regional proximity to customers in Europe and in South Africa as well as engineering back-up
- Largest assembly capacity on the market in Germany, Croatia and South Africa
- Bilfinger Power Africa serves 70% of installed power plant capacity in South Africa



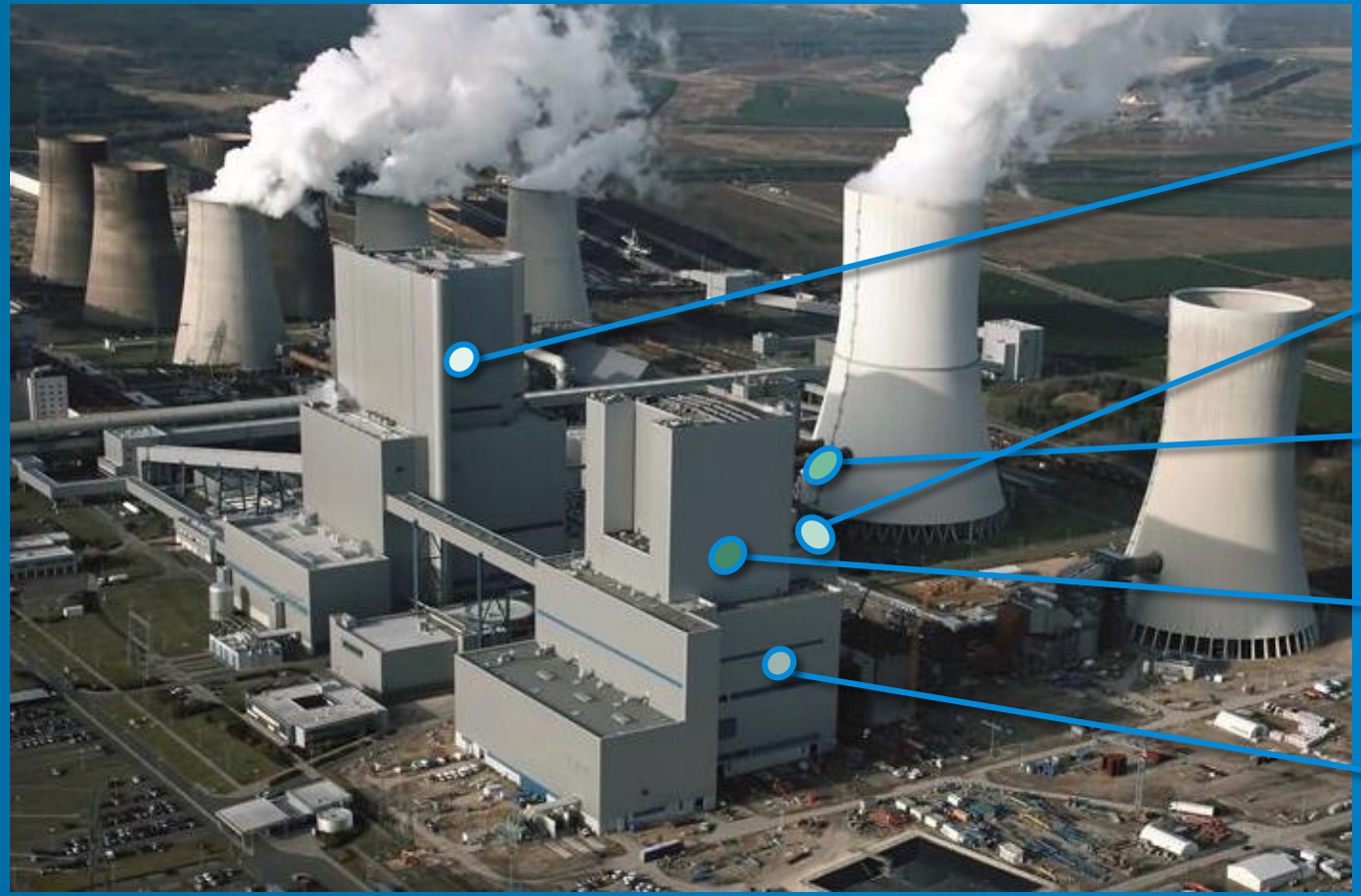
4. Key success factors / current challenges

Challenges

- Substantial decrease in new construction of major power plants in Germany and thus more intense competition in service in the medium term
- Competition in power plant service is also increasing on an international level
- In the long term, renewable energies will change the products of PS, currently limited presence in the market for renewable energies
- Scheduling changes of major projects
- Assuming greater system responsibility results in greater risks in project processing/technical guarantees
- Avoiding system responsibility means drifting into low-tech engineering service segment with low margins and predatory competition as well as difficult retention of qualified engineers
- Securing the necessary personnel resources (qualified management and specialist personnel)

5. Cooperation within Bilfinger

Boxberg Power Plant, Germany



Bilfinger Piping Technologies
High-pressure piping systems

Babcock Borsig Steinmüller
Heat displacement system, boiler assembly

Babcock Noell GmbH
Flue gas desulfurization system

Bilfinger MCE Aschersleben
Feed water tank & flash tank

Bilfinger Mauell
Control systems for steam generators, ancilliary equipment and flue gas desulfurization system; control room

5. Cooperation within Bilfinger
Belchatov Power Plant, Poland

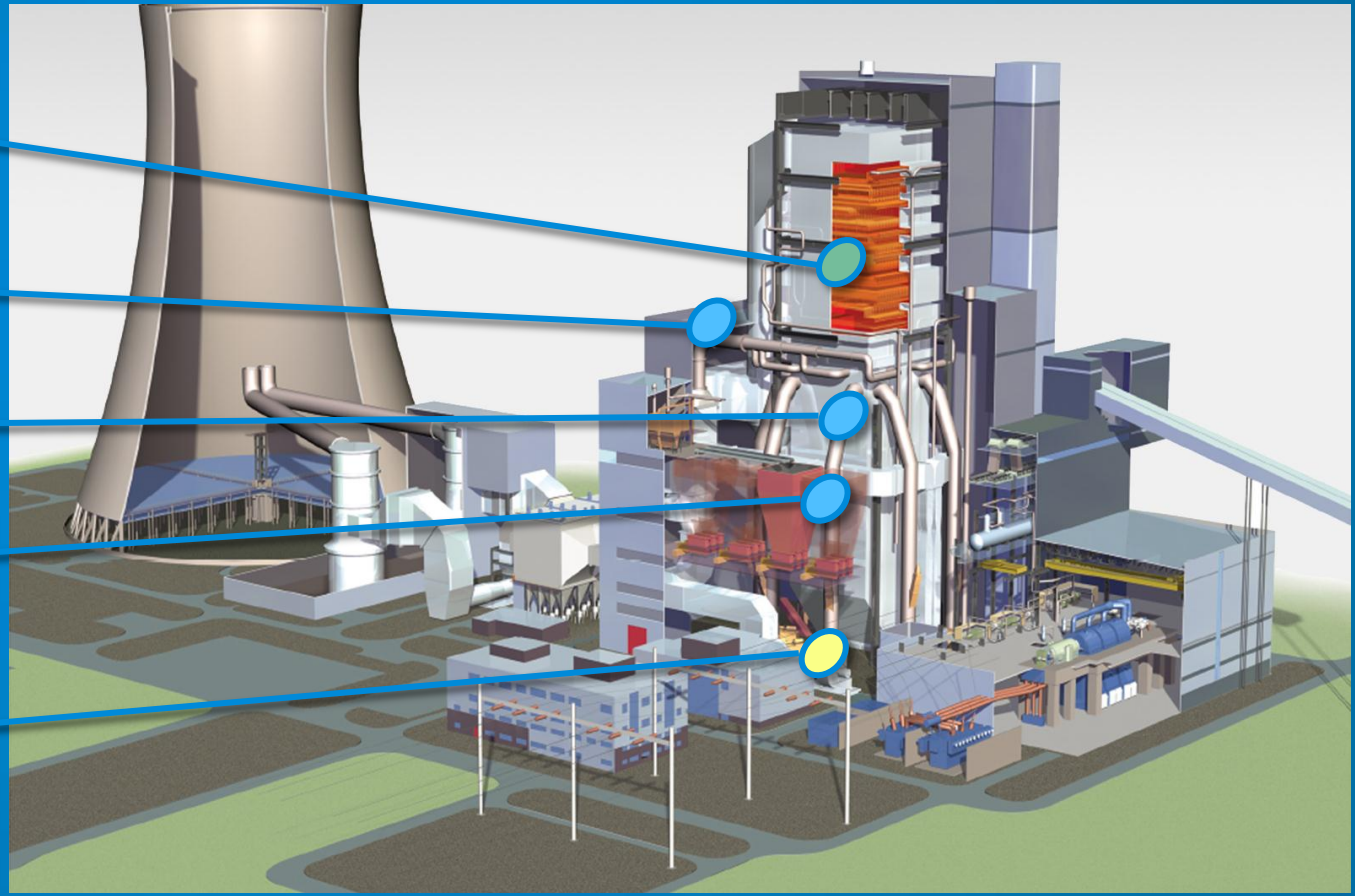
Main supplier
Power Systems
Boiler modernization, etc.

Industrial Services
Boiler insulation

Industrial Services
Piping insulation

Industrial Services
Scaffolding

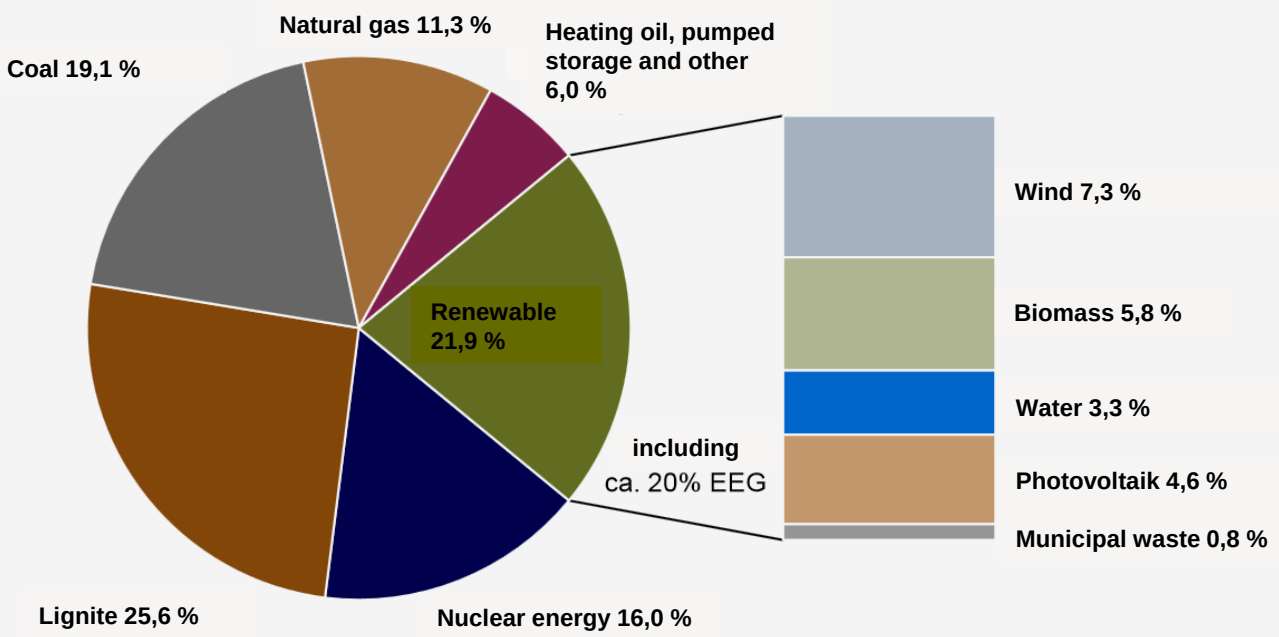
Infrastructure
Foundations



6. Current status and perspectives of German and international energy markets
6.1 Germany

Share by energy source

Gross electricity generation 2012 in Germany: 617 billion kilowatt hours *



Sources: BDEW, AG Energiebilanzen, as of 12/2012

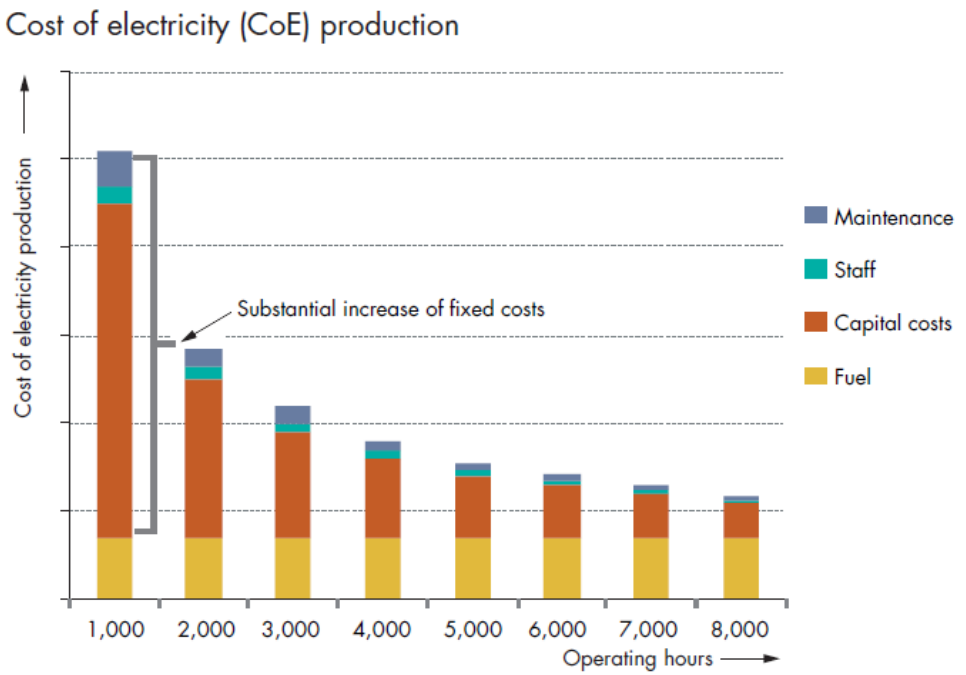
* provisional, partly estimated

- Since the introduction of the German Renewable Energy Act in 2000, the renewable energy share of electricity consumption rose constantly, in 2012 the share of renewables in energy generation was about 22%.
- In the future, sufficient thermal power plants and efficient storage technologies will continue to be essential due to the share of fluctuating renewable energies (BMWi).
- Base load is still being carried by fossil power plants.

6. Current status and perspectives of German and international energy markets
6.1 Germany

- Operation of fossil fuel power plants is becoming less efficient:
  - Feeding of more limited amount of electricity due to increasing volume of renewable energy.
  - Often lower price of electricity as a result excess energy in system (e.g. during renewable energy production peaks).
  - Lower operating loads lead to increased operating expenses: costs double for a power plant block that is calculated to operate at a base load of approx. 6,000 peak use hours per year when it operates at only 2,000 peak use hours per year. When it operates at just 1,000 peak use hours per year, costs increase by a factor of four.
  - Particularly affected by lower loads are often new, highly-efficient power plants that are burdened by significant portion of overheads (personnel, maintenance costs, depreciation, etc.).

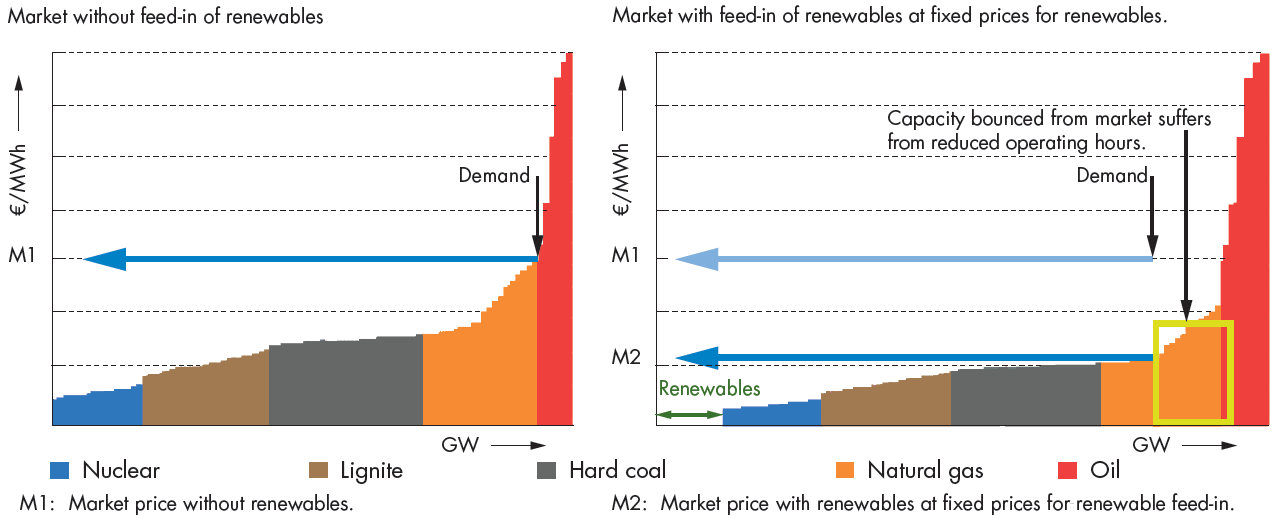
Conclusion: decreasing income with increasing costs.



Source: VGB Power Tech

6. Current status and perspectives of German and international energy markets
6.1 Germany
Mechanisms for energy pricing

Example for the electricity market price development



M1: Market price without renewables.

M2: Market price with renewables at fixed prices for renewable feed-in.

To achieve an increasing power input from renewable energies, **thermal power plants remain necessary** in order to establish a **grid stability**.
The the **profitable regular load operation** of plants powered by coal or gas, the **remuneration mechanisms must be redesigned**.

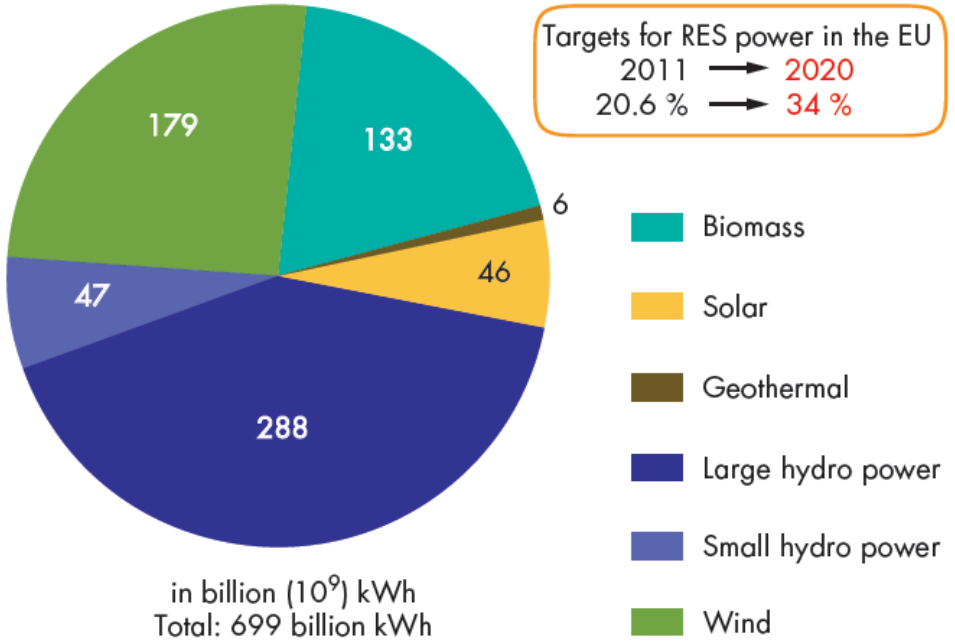
- In the energy market to date (small share from renewable energies) **pricing was carried out through the marginal costs of the power plant type**.
- In the situation presented here as an example, the market price **M1** (€/MWh) justifies the **operation** of important **system-relevant conventional power plants** from an **economic perspective**.
- If, on the other hand, a significant amount of electricity from **renewable energies** is fed into the system, the aggregate demand curve shifts to the right. With an **identical** level of demand, the **market price** falls to M2. Gas-fired power plants that were previously on the market and could be profitably operated **drop out of the market**.

Source: EnBW, supplements: VGB PowerTech

6. Current status and perspectives of German and international energy markets
6.2 EU energy goals

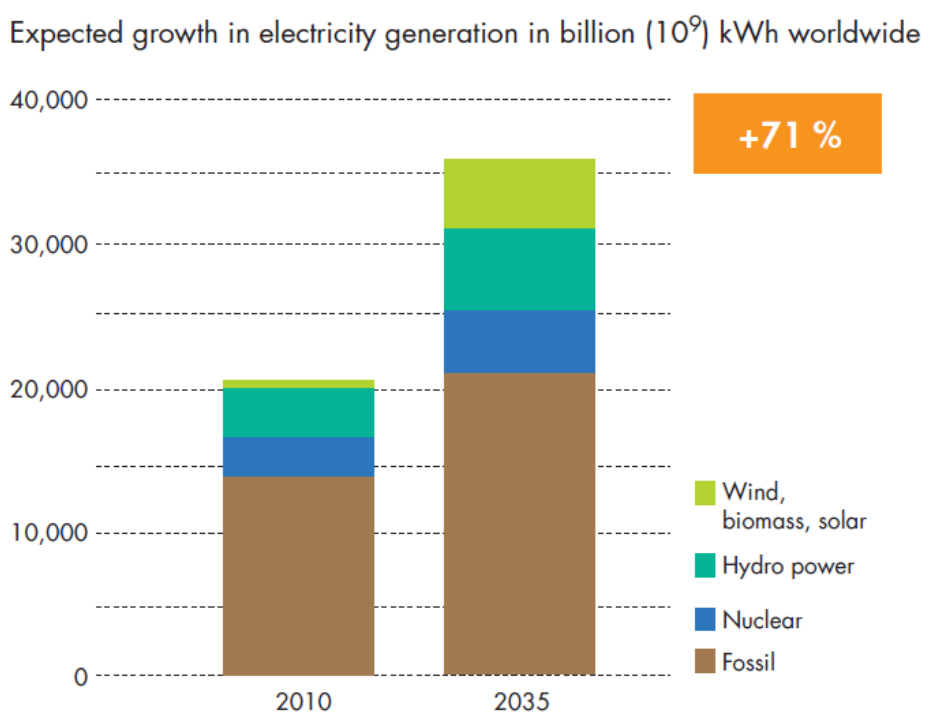
- The goal of the EU is to increase the share of renewable energies in overall energy consumption to 20% by 2020.
- **Despite** the expansion of renewable energies, conventional power plants will cover the majority of the energy need. It is therefore important **to modernize the existing power plant park** or to replace it with highly-efficient **new plants**.
- Due to a lack of valid long-term political framework conditions, **investment** in new power plants throughout Europe has **faltered**.
- **An alternative is plant modernization in 6-8 months with the following effects:**
  - Service life: + 30 years
  - Efficiency enhancement: + 2-10%
  - Return to service capacity (especially international)
  - Performance improvement: + 10% → these additional MW are achieved with approx. 25-30% of the costs that would have been incurred for new construction

Electricity generation based on renewables (RES) in EU-27 (20.6 % of total generation in 2011)



Source: VGB Power Tech

6. Current status and perspectives of German and international energy markets
6.3 Energy production worldwide

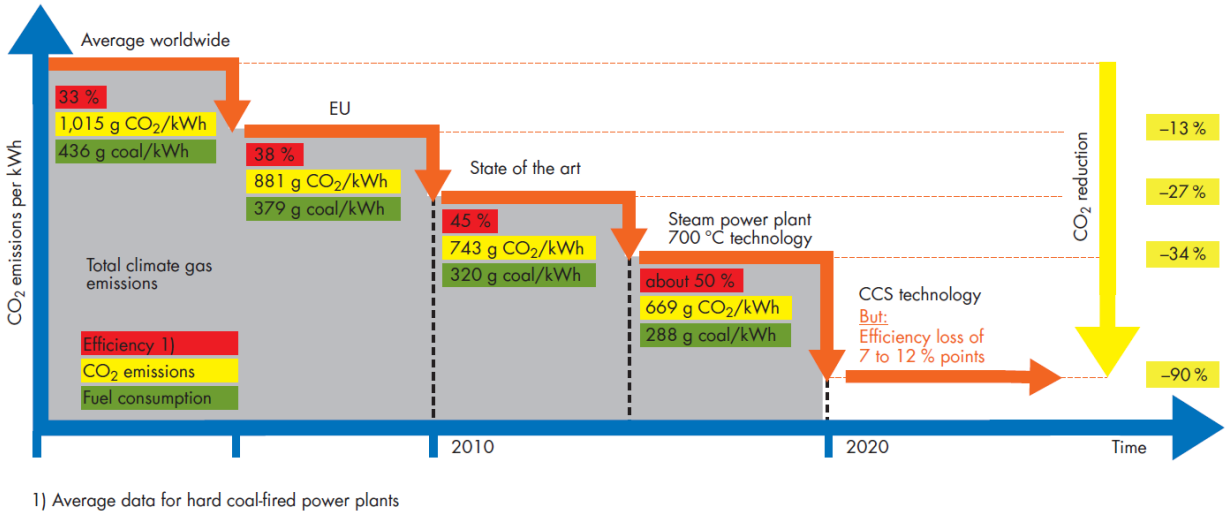


Source: VGB Power Tech, EU Commission, Eurostat, IEA (oriented toward New Policy Scenario)

- Energy production will **increase** in line with growing demand for electricity. This will happen primarily in the current developing countries.
- **Fossil** energy sources will continue to cover the **largest portion of consumption**. In 2035, the worldwide share of energy production on the basis of fossil fuels is forecast at approximately **60 %**.
- In order to meet climate-protection targets, **thermal** power plants must be **technologically optimized for lower CO_2 emissions**.

6. Current status and perspectives of German and international energy markets
6.4 CO_2 reduction within the scope of energy production

CO_2 reduction potential of coal-fired power plants[1)] by increased efficiency



1) Average data for hard coal-fired power plants

CCS = Carbon Capture and Storage
Source: VGB Power Tech

Opportunities to reduce CO_2 emissions in energy production:

- **Efficiency enhancements** at coal-fired power plants and thus emission reduction
- Increased use of **gas power plants** because they have a better efficency (approx. 60 %) and lower CO_2 emissions
- **CCS technology** for separation of CO_2
- Increasing the share of **renewable energies**

6. Current status and perspectives of German and international energy markets
6.5 Conclusion

- Stable market due to rising global demand for energy
- Bilfinger offers highest level of expertise in current technology

- Social importance of this market is rising
- Political influence is very high (and increasing) this means greater political pressure

  → Greater environmental awareness: initially focused on the development on new technologies, but now some segments of the population are against all kinds of energy production ("simply electricity from the outlet")

  → Influence of energy mix: political tendency that some forms of energy production must be questioned (also economically)

  → Declining acceptance for major projects (differs depending on the region)

6. Current status and perspectives of German and international energy markets

6.5 Conclusion - Consequences for Bilfinger

- **Maintenance business**
  - In the coming years at a constant level – small number of new power plants means that the old ones must run longer.
  - A reduction will follow over the long term because old power plants will be shut down when new power plants and renewables go into operation.
  - Expansion of existing international markets (e.g. Poland).
- **Modernization / rehabilitation**
  - Growth in Eastern Europe and Turkey (with focus on new EU countries, Russia).
- **ISP approach**
  - Independent Service Provider: further expansion of the non OEM business for all power plant components.
  - Takeover of integrated services: complex modernization works and rehabilitation projects → through independent service approaches without relying on third parties and thus securing scheduling and quality.
- **Construction of new power plants**
  - Selective participation in new construction projects in the following areas: steam generation and environmental technology in regions where we already have local capacities.
- **Expansion of product portfolio**
  - CHP on the basis of micro gas turbines, service for windparks.

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Strong arguments for efficiency improvements at power plants!

Thank you for your attention!

November 29, 2013