

# Wärtsilä Capital Markets Day

.Power Plants business logic

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.Trieste, Italy 31 May 2005

## GDP growth

## Population growth

- The more people, the more energy is needed

## Strive for increased standard of living

- Growing demand for energy
- Need for reliable systems

## Environment

- General & political will to safeguard economical development with minimal impact on the environment
- Restrictions to build transmission lines in many populated areas -> decentralized power generation



## Political strive for more competition and free energy markets

- Privatisation
- Power pools
- Energy industry searches for new ways to compete

## Environmental care

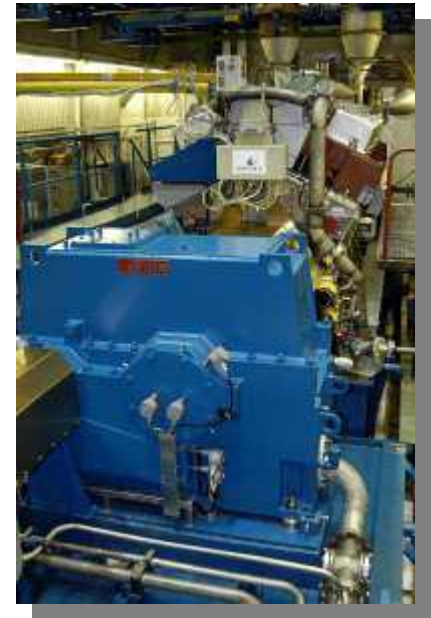
- Difficult to obtain permits for large projects
- Many fuels are almost "banned" – coal, nuclear, hydro...
- Tighter emission norms force technological development
- Kyoto Protocol & emission trading

## Quality

- Continuously increasing quality expectations

## Geographical transitions

- Market opportunities open up and disappear rapidly in various places on the globe. Emergency programs



## Customer's Business

### Energy Production (Electricity & Heat)



### Utility/Municipality/IPP

- ROI
- Availability
- Long-term Performance



### Industrial Manufacturing (Cement, Paper, etc.)



### Industry

- Savings
- Reliability
- Response time
- Peace of Mind



# Main Customer Groups

## Utilities

- Large state or publicly owned companies
- The level of technical skills varies from very good to very bad
- Changes of ownership in several countries
- Have generated the centralised large plant & main grid thinking
- Used to have infrastructure development responsibility from the state

## Municipalities

- City "utility", often managing electricity, gas, water, sewage and possible district heating
- Limited technical skills

## IPP's

- Investors who are looking for a good return for their investment
- Used to be US-based, now more local
- Buy complete solutions and very often a full O&M

## Industry

- Large manufacturers of energy intensive products like cement, textiles, food, cars, paper etc.
- Invest in power generation to reduce risks or to reduce costs

# Segment 1: Developing Countries

***Most of Africa, many Latin American and Central Asian countries, many islands***

## **Under-developed infrastructure**

- The electricity grid is typically weak & overloaded. Large plants cannot be added without major grid investments
- Large coal, LNG etc. logistics do not exist

## **Impacts on power business**

- Fuel that can easily be made available is HFO. Engines are therefore the preferred technology

## **Financing**

- Projects typically require financial engineering

## **Wärtsilä's approach**

- Modular power plants (5-100 MW) based on HFO or Dual Fuel engines
- WDFS active in development/financial arrangements

***China, India, Russia, Turkey, East Europe, Brasil etc.***

## **Rapid economical growth**

- Political support for industrial growth
- Growth in electricity demand
- Construction of power generation, roads, harbours, gas pipelines

## **Impacts on power business**

- Construction of new capacity; urgent demand often leads to decentralisation
- Introduction of local emission norms
- Transition from HFO to gas when available
- Electricity shortages & poor grid = emergency programs

## **Wärtsilä's approach**

- HFO and gas plants for IPP's (20-250 MW)
- HFO and gas plants (CHP) for industry (5-50 MW)
- HFO and gas plants for municipalities (5-50 MW)

# Segment 3: Industrialized countries

*West Europe, North America, Australia, Japan etc.*

## **Slow economical growth**

- Strong existing infrastructure
- Slow growth of electricity demand
- Tight environmental norms
- Political support mainly for renewables
- Growing needs for peaking & reserve power
- Gas widely available, but concern of its long time availability and cost

## **Impacts on power business**

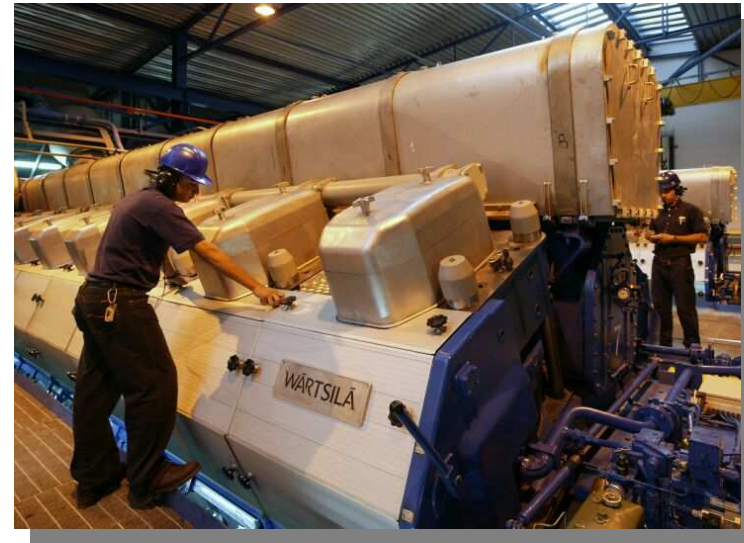
- Cost of grid electricity going up
- Decentralised small scale power generation is growing
- Wind- and biopower are growing
- New major opportunities for peaking, grid frequency regulation and reserve capacity

## **Wärtsilä's approach**

- Gas plants for IPP's/Utilities (50-200 MW)
- Gas plants for peaking/reserve (10-200 MW)
- Gas and HFO plants (CHP) for industry (5-50 MW)



- ❑ **Empowered and skilled global sales organisation**
- ❑ **Complete energy solutions**
  - Project development capabilities
  - Complete plant delivery
  - Modular fast track delivery
  - Financial services
  - O&M with long-term commitment
- ❑ **Technically advanced products**
  - Technology leader on diesel and gas engines
  - Modular design of plants
- ❑ **Very experienced project organization**
- ❑ **Short delivery times**
- ❑ **Global service**
  - Service and spare parts available in most areas
  - Commitment to the future



# Order Intake 2004 and Total Installed Base (MW)

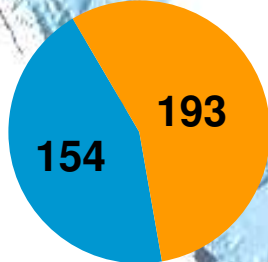
Total installed base: 32.220 MW

Order intake 2004: 2.313 MW

## Americas

5.250

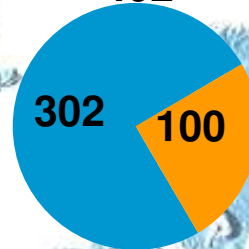
347



## Europe

6.480

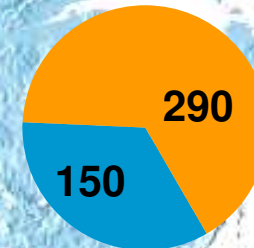
402



## Asia

13.860

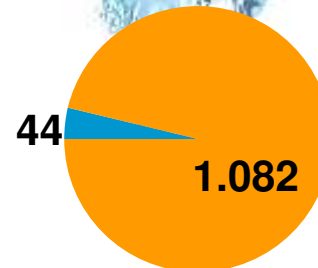
439



## Africa and Middle East

6.630

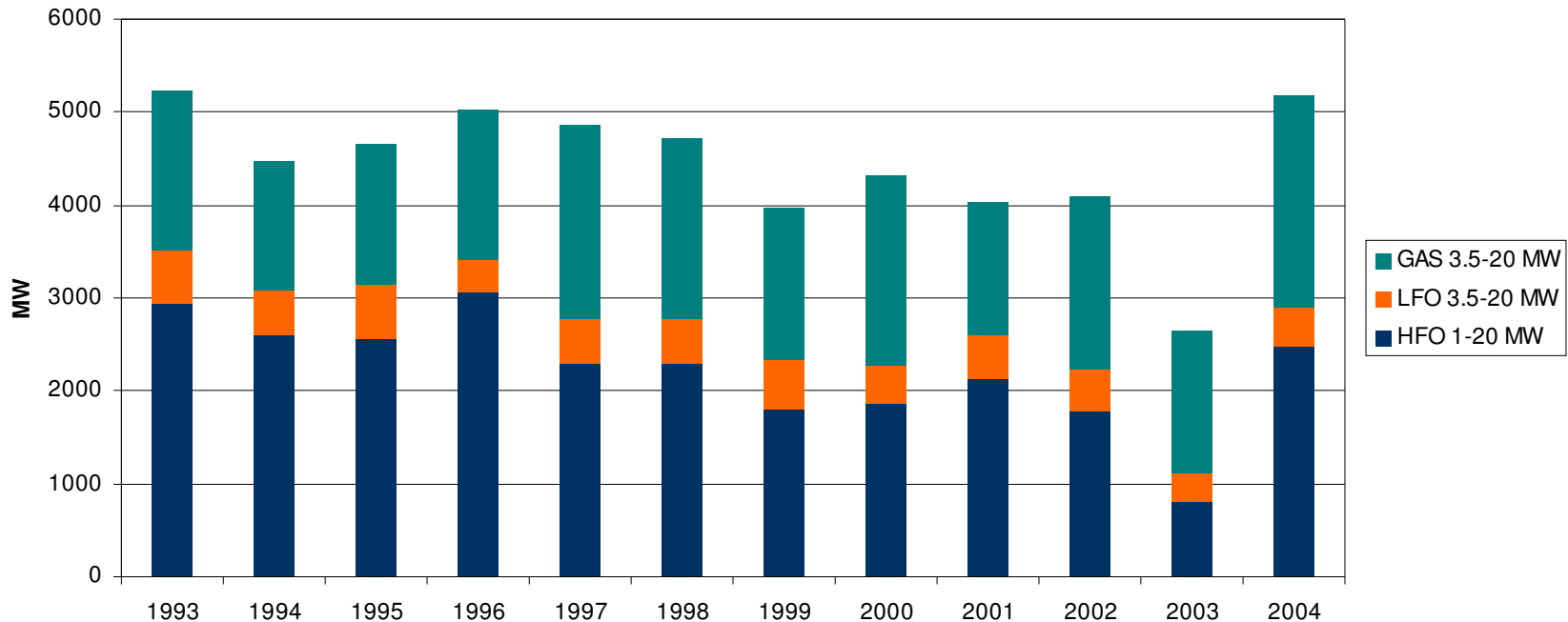
1.125



MW

Gas

Oil



- ❑ **HFO 1-20 MW units (W20...W46)**
- ❑ **LFO 3.5-20 MW units (W32...W46).** *Below 3.5 MW = High speed engine market*
- ❑ **GAS 3.5-20 MW units (W34...W50).** *Below 3.5 MW = High speed engine market*