Wärtsilä Capital Markets Day

Power Plants business logic

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Trieste, Italy 31 May 2005
Business Drivers

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
Electricity Market Trends

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 Segmentation

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

Energy Production

Industrial Manufacturing
## Main Customer Groups

<table>
<thead>
<tr>
<th>Utilities</th>
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<tbody>
<tr>
<td>- Large state or publicly owned companies</td>
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<tr>
<td>- The level of technical skills varies from very good to very bad</td>
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<td>- Changes of ownership in several countries</td>
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<td>- Have generated the centralised large plant &amp; main grid thinking</td>
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<td>- Used to have infrastructure development responsibility from the state</td>
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<td><strong>Municipalities</strong></td>
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<td>- City &quot;utility&quot;, often managing electricity, gas, water, sewage and</td>
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<td>possible district heating</td>
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<tr>
<td>- Limited technical skills</td>
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<td><strong>IPP’s</strong></td>
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<td>- Investors who are looking for a good return for their investment</td>
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<td>- Used to be US-based, now more local</td>
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<td>- Buy complete solutions and very often a full O&amp;M</td>
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<tr>
<td><strong>Industry</strong></td>
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<tr>
<td>- Large manufacturers of energy intensive products like cement, textiles,</td>
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<td>food, cars, paper etc.</td>
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<td>- Invest in power generation to reduce risks or to reduce costs</td>
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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

Europe
- Gas: 6,480 MW
- Oil: 402 MW

America
- Gas: 5,250 MW
- Oil: 347 MW

Africa and Middle East
- Gas: 6,630 MW
- Oil: 1,125 MW

Asia
- Gas: 13,860 MW
- Oil: 439 MW

Total installed base: 32,220 MW
Order intake 2004: 2,313 MW
- 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