Capital Markets Day 2013
KSPG – The Mobility Part of Rheinmetall
Dr. Peter Merten

Automotive – Partner for mobility
Focused on the attractive segment of powertrain technology

Sales (FY 2012): € 2.4 billion

- Hardparts: € 1.1 billion*
  - Pistons
  - Aluminum Technology
  - Plain Bearings
  - Large Bore Pistons

- Mechatronics: € 1.1 billion*
  - Pierburg
  - Pierburg Pump Technology

- Motor Service: € 0.3 billion*
  - International
  - Domestic

* Inter-company sales not eliminated
Automotive
Well-positioned with large product portfolio

- Engine blocks
- Pistons
- Exhaust-gas recirculation
- Pumps (oil/water/vacuum)
- Exhaust-gas mass flow sensors
- Actuators/throttle bodies
- Turbo control valves/divert-air valves
- Cylinder heads
- Engine bearings
- Secondary-air systems

Bushings for tailgates
Recirculating water pumps (residual heat, standby heater, cooling system)
Control valves
Bearings for seat adjusters/doors
Structural parts
Bearings for active engine hoods (pedestrian protection)
Bushings for injection pumps
Bushings for shock absorbers

Global automotive markets
Markets expected to increase continuously

Expected production of light vehicles by region
in million units
Long-term global growth especially driven by emerging markets

Global automotive component market in € billion
Powertrain segment with strongest growth

<table>
<thead>
<tr>
<th>Region</th>
<th>2012</th>
<th>2016e</th>
<th>CAGR '12-'16e (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>79.7</td>
<td>94.6</td>
<td>4.4</td>
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<tr>
<td>Rest of World</td>
<td></td>
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<tr>
<td>Triad*</td>
<td></td>
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<tr>
<td>Western Europe</td>
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<table>
<thead>
<tr>
<th>CAGR '12e-'16e (%)</th>
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<tbody>
<tr>
<td>Powertrain</td>
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<tr>
<td></td>
</tr>
<tr>
<td>Chassis</td>
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<tr>
<td></td>
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<tr>
<td>Exterior</td>
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<td></td>
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<tr>
<td>Interior Infotainment</td>
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</table>

* Triad = Western Europe + NAFTA + Japan
Source: IHS Automotive (July 2013)
Strategic development Automotive

- **Internationalization**
  - Continue to expand business activities in growth markets outside Europe
  - Further strengthening of production base in low-cost countries

- **Growth by products and innovations**
  - Realization of growth potential driven by powertrain megatrends

- **Cost efficiency**
  - Rightsizing of European capacities
  - Optimization of global production footprint
  - Further development of service centers worldwide
Internationalization
Disproportionately high growth in emerging markets with local production

Expected change of LV production 2015 vs. 2012 in %
Sales Automotive 2015 vs. 2012 in € million resp. in %

USA + 13%
Mexico + 21%
Brazil + 23%
Western Europe + 2%
China + 35%
India + 35%

Source: IHS Automotive (March 2013) * Including 100% of sales of Joint Ventures

Internationalization
Automotive network in China

3 Joint Ventures (50 : 50)
3 Wholly Foreign-Owned Enterprises (WFOEs)
1 Subsidiary of a Joint Venture

12 sites in 3 cities
- Shanghai
- Kunshan (Shandong province )
- Yantai (Jiangsu province )
Internationalization

Automotive network in China – Sites and products

**Joint Ventures (50 : 50)**

- **KPSNC** Shanghai Loutang (Head office)
  - Cylinder heads, engine blocks and structural body parts
- **KPSNC** Kunshan
  - Cylinder heads and engine blocks
- **KPSNC** Yantai Fushan
  - Cylinder heads
- **KPSNC** Shanghai Waigang
  - Machining of engine blocks
- **KSSP** Shanghai Anting
  - Pistons
- **PHP** Shanghai Yuepuzhen
  - Electrical & mechanical pumps

**Wholly Foreign-owned Enterprises**

- **Pierburg China** Kunshan
  - EGR modules, electric throttle bodies
- **KS Large-bore pistons** Kunshan
  - SOP 2013
- **MS Motor Service Asia Pacific** Shanghai Waigaoqiao, Kunshan
  - in free-trade area

**Subsidiary of a Joint Venture**

- **Pierburg Mikuni Pump Technology** Shanghai Zhangjiagang
  - Water- & oil pumps

**KSPG House**

- Head office Shanghai Zhangjiagang
  - HO for all wholly-owned subsidiaries

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**Internationalization**

**Automotive in China – Sales and EBIT**

**Sales in € million**

- 2010: 258
- 2011: 298
- 2012: 388
- 2016e: x 2.5

**EBIT in € million**

- 2010: 15
- 2011: 22
- 2012: 31
- 2016e: x 2.5

* Rheinmetall Automotive owns 50% of the joint ventures, consolidated at equity
Internationalization

Automotive activities in Mexico

**Pistons**
- Kolbenschmidt de Mexico S. de R.L. de C.V.
- Celaya
- Pistons (aluminum and steel)
- Employees: 538

**Pierburg Pump Technology**
- Pierburg Pump Technology Mexico S.A. de C.V.
- Celaya
- Electrical & mechanical water-, Ool- and vacuum pumps
- Employees: 68

**Plain Bearings**
- KS Gleitlager de Mexico S. de R.L. de C.V.
- Celaya
- Bushings and thrust washers
- Employees: 68

Brief history of KSPG at Celaya

- **2006** Acquisition of Pistones Moresa in Celaya from DESC
- **2010** Start of production of pump business
- **2010** Decision to expand pump business and to move US and Brazilian bearings business to Celaya
- **2010** Acquisition of additonal property for expansion
- **2012** Start of production of plain bearings and pump business in new building

Internationalization

Automotive in Mexico - Sales and EBIT

Sales * in € million

- 2010: 30
- 2011: 36
- 2012: 59
- 2016e: x 3

EBIT * in € million

- 2010: 3
- 2011: 2
- 2012: 3
- 2016e: x 6

* Including sales and EBIT of US entities due to Maquila concept (subcontracting)
** without € 2 million non-recurring income BU Pierburg Pump Technology
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Growth by products and innovations

Megatrends: Reduction of fuel consumption and emissions

Strong growth through increasingly stringent emissions regulations* in g/km

Substantial reduction of fuel consumption and therefore CO₂ emissions**

Origins of CO₂ emissions in mid class segment cars

Growing powertrain technology content per vehicle**

Powertrain costs per mid-size gasoline vehicle (in €)

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* Source: DieselNet; PM (particulate matter): g/km; NOₓ (nitrogenous oxide): g/km
** Source: Roland Berger (2010/I), Roland Berger (2011)
Growth by products and innovations

**Mechatronics and Hardparts divisions with broad range of innovative products for CO₂ reduction**

- **Downsizing/Turbocharging**
  - High performance bearings
  - Wastegate actuator
- **Hybridization**
  - Electric vacuum pump

**Legal framework for CO₂ fleet emissions**

**CO₂ emission targets in g/km**

- **EU**
  - 2006: 160, Target 2015: 120, Target 2020: 95
- **USA**
- **China**
  - 2006: 187, Target 2015: 132

**Savings effect of CO₂ penalties in €**

- Variable valve drive
- Low friction piston
- Variable oil pump
- Variable water pump
- EGR (gasoline)
- Electrical water pump

**Growth by products and innovations**

**Variable valve drive**

- Systems for targeted deployment in internal combustion engines (UniValve) and diesel engines (FlexValve)
- Optimisation of charge cycles and combustion processes methods of future engines
- Enabler for the achievement of future CO₂ and emission caps
Growth by products and innovations

**Tandem pump**

- Compact, weight-saving design
- Combination of lubricant supply and vacuum generation in a single product
- Little installation space required
- Optional with variable oil pump function
- Fuel savings of up to 3%

**Market entry with US customers**

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Growth by products and innovations

**Stricter emission regulation drive the Mechatronics business**

**Estimated value-added of KSPG per vehicle for EGR products**

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<tbody>
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<td>2005</td>
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<td>2010</td>
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<tr>
<td>2015</td>
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</tbody>
</table>

**Truck business expected to follow**

- EGR valve
- EGR cooling module
- Dual EGR (high/low pressure)

EGR = Exhaust Gas Recirculation
Growth by products and innovations
Well-positioned to benefit from transferring know-how into truck business

Steel Piston
Variable water pump
EGR Valve etc.

KSPG content per Heavy Duty Vehicle engine in Europe

<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
<th>Long-term target</th>
</tr>
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<tbody>
<tr>
<td>2010</td>
<td>34</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>41</td>
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</tbody>
</table>

(1) Total sales / number of engines

Growth by products and innovations
Truck business – Product range Mechatronics

- EGR Linear & Rotary
- EGR Modules
- Back Pressure Valves
- EGS
- Reed Valves

*Exhaust Gas Recirculation

**Exhaust Gas Mass Flow Sensor
Growth by products and innovations

**Truck business – Significant growth with commercial diesel systems**

*Sales* in € million

<table>
<thead>
<tr>
<th>Year</th>
<th>Sales in € million</th>
</tr>
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<tbody>
<tr>
<td>2011</td>
<td>22</td>
</tr>
<tr>
<td>2012</td>
<td>22</td>
</tr>
<tr>
<td>2013e</td>
<td>48</td>
</tr>
<tr>
<td>2016e</td>
<td>x3 * 48</td>
</tr>
</tbody>
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Growth by products and innovations

**Commercial Diesel Systems – Developing a well balanced customer portfolio**

- Cummins
- John Deere
- DAF/Paccar
- Deutz
- FPT
- Perkins/Caterpillar
- Others (incl. intake manifolds)

*2013e* and *2016e*
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  - Further development of service centers worldwide

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Cost efficiency

**Optimization of global production footprint**

**Headcount 2016 vs. 2012 in FTE**

*Expected change of headcount 2016 vs. 2012 in %*

- USA: 1,151 to 1,100 (4% decrease)
- Mexico: 674 to 882 (31% increase)
- Brazil: 1,702 to 1,527 (10% decrease)
- China: 6,554 to 6,565 (0% change)
- Western Europe: 961 to 1,224 (27% increase)
- Eastern Europe: 1,500 to 2,890 (93% increase)

*Including 100% of permanent staff of Joint Ventures*
Cost efficiency

**Globalization supported by additional cost-efficient service centers**

![Map showing service centers around the world](image)

**Service Centers**
- USA
- Mexico
- China
- India
- Brazil

**Shared Service Centers - Typical services rendered by one central function**

- **Administrative Services**
  - Human Resources
  - Payroll
  - Accounting
  - Hedging
  - Treasury
  - Taxes
  - IT
  - International Trade
  - Legal

- **Infrastructure Services**
  - Power Supply
  - Tool shop
  - IT network
  - Cantine
  - Security
  - Facility Management
  - Maintenance

- **Coordinative Services**
  - Purchasing
  - Sales
  - Application Engineering
  - Production

*Non-exhaustive enumerations*
Rheinmetall Automotive expects an EBIT margin of 8% after restructuring costs.

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**Portfolio shift**
- Towards BIC markets and low-cost production
- Towards Mechatronics

**Optimization of worldwide cost structures**

<table>
<thead>
<tr>
<th>Year</th>
<th>EBIT margin after restructuring costs in %</th>
</tr>
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<tbody>
<tr>
<td>H1/2013</td>
<td>6.3%</td>
</tr>
<tr>
<td>2015</td>
<td>8.0%</td>
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