Fuel Efficiencies - A Supplier Perspective

Our Beliefs
- Respect
- Collaboration
- Excellence
- Integrity
- Community
Outline

- BorgWarner Overview
- Fuel Efficiencies
- Summary
The Borg Warner Strategic Difference

- Technology Leadership Drives Growth
- Customer and Geographic Diversity
- Cost Focus
- Financial Strength and Discipline

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BorgWarner at a Glance

- **2008 Sales:** $5.3 Billion ($6.0B with NSK-Warner)
- **Employees:** 14,000
- **Operations:** 60 Locations
  18 Countries
- **Products:** Engine, Transmission and AWD systems
- **Market Drivers:** Fuel Economy
  Emissions
  Performance
2009 Sales Outlook *

- **Asia**: 11%
- **Europe**: 15%
- **Commercial Vehicles**: 5%
- **Other**: 1%

**Customer and Geographic Diversity**

- **US OEMs**: ~12%
- **Americas**: ~30%* 32%**
- **Asia**: ~20%* 13%**
- **Europe**: ~50%* 55%**

* NSK-Warner included
** NSK-Warner excluded

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BorgWarner = Efficient Gasoline

- Examples - 2010 Ford Fusion, VW Golf, BMW Mini Cooper, Honda Fit
- Features BorgWarner
  - Transmission Modules, One Way Clutches, Friction plates
  - Turbochargers
  - Cam Torque Actuated VCT
  - Engine Timing Systems, HY-VO® Chain

Efficient Gasoline Examples
BorgWarner = Clean Diesel

- Example – VW Jetta TDI, Mercedes C-Class/E-Class, BMW 1/3/5 Series, Mazda Atenza
- Features BorgWarner

- VTG Turbochargers
- One Way Clutches, Friction Plates
- Pressure Sensor Glow Plugs
- DualTronic™ Dual Clutch & Control Modules

Clean Diesel Examples
Example – Medium/Heavy Duty Trucks, Construction/Agricultural Vehicles, and Buses

Features BorgWarner

- Turbochargers
- eGearDrive™
- Fan drives (Cool Logic® and Visctronic) and Coolant Pumps
- Diesel Cold Start & Tire Pressure Monitoring Systems

Commercial Examples
BorgWarner has broad production experience with current products in hybrid and electric vehicle applications.

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<th>Hybrid and Electric Vehicle Applications (A few examples)</th>
<th>Current Product Coverage</th>
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<td>Smart ForTwo hybrid</td>
<td>Engine Valve Timing System</td>
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<td>BMW Mini</td>
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<td>Toyota Prius</td>
<td>HY-VO® Chain</td>
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<td>Honda Insight and Civic</td>
<td>Engine Valve Timing Components</td>
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<td>Ford – Escape, Mariner, Tribute, Fusion, Milan</td>
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<td>GM/Saturn – Vue, Aura, Malibu</td>
<td>Transmission Components &amp; HY-VO® Chain</td>
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<td>GM – Escalade, Tahoe, Yukon</td>
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<td>Fisker Karma</td>
<td>Turbocharger</td>
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Fuel Efficiencies
Tightening Fuel Economy Standards

Actual and Projected Fuel Economy for Light Vehicles

- 15%-30% more fuel economy
- 5%-15% more fuel economy
- 5% fuel economy possible

Source: International Council on Clean Transportation, January 2009
Fuel Economy percentages may vary depending on vehicle application, use and data sourced for comparison

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Global Engine Downsizing

Light Vehicle Engines Produced Worldwide

- 2 & 3 Cylinder: 7.4M units globally by 2014
- 4 Cylinder: strong positive trend, dominates market; 59.3M units by 2014
- 6 Cylinder: growth in units, slight loss of share; 10.1M units by 2014
- 8 & 10 Cylinder: downtrend; 2.7M units by 2014

Source: CSM Worldwide, Internal BW forecasts (Jan. 2009)
Global Light Vehicle Engine Market

50 Million LVs
- Alt. Fuel: 2.7M
- Diesel: 11.0M
- GDI: 3.0M
- Gasoline: 33.3M

76 Million LVs
- Alt. Fuel: 4.0M
- Diesel: 18.5M
- GDI: 11.0M
- Gasoline: 42.5M

68% Growth
270% Growth

Source: CSM Worldwide, Internal BW forecasts (May 2009)
LV Turbocharger Growth by Market

**Diesel Turbochargers**
- 48% growth
- 2007-2014
- Source: CSM Worldwide, JD Power Internal BW forecasts (May 2009)

**Gasoline Turbochargers**
- 184% growth
- 2007-2014
- Source: CSM Worldwide, JD Power Internal BW forecasts (May 2009)

- Includes North American light truck applications
- *OE demand only
- *R2S is counted as 2 turbos
Automatic Transmissions Advance

- **2009**
  - 3/4/5 AT: 14.5M
  - 6/7/8 AT: 5.0M
  - CVT: 2.5M
  - DCT: 0.8M
  - Full HEV: 0.4M
  - AMT: 0.4M

- **2014**
  - 3/4/5 AT: 11.5M
  - 6/7/8 AT: 15.0M
  - CVT: 4.5M
  - DCT: 5.0M
  - Full HEV: 1.0M

- **2014**
  - 6/7/8 Spd AT: 400+% Growth
  - 3/4/5 Spd AT: 200+% Growth

Source: CSM Worldwide, Internal BW forecasts (May 2009)
Summary

- Proven Technologies Exist

- Investment will be Necessary
  - Timing?

- Technology Neutral Policies are Key
  - Need to use all technologies available
Thank You

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better fuel economy
reduced emissions
great performance