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## Chrysler Group Broadens Powertrain Offensive

Onslaught of New Initiatives to Result in Significantly Improved Fuel Efficiency

- Mild-hybrid technology to debut in future Chrysler Group vehicle
- Chrysler [two-mode hybrid program](#) to expand
- 2009 Jeep<sup>®</sup> Grand Cherokee [BLUETEC](#): another 50-state clean diesel from Chrysler Group
- Company to explore development of 4-cylinder diesel for North American market, and expansion of 3.0-liter V-6 diesel
- New V-6 family of engines to include Multi-displacement System (MDS), resulting in fuel economy gain of 6 to 8 percent
- Significantly upgraded 5.7-liter HEMI<sup>®</sup> V-8
- New 4.7-liter V-8 delivers 5-percent fuel economy improvement
- Dual-clutch transmission to result in fuel economy improvement of up to 6 percent
- Common axle program to improve fuel economy, axle efficiency and costs
- Weight reduction, aerodynamic and drivetrain improvements to raise fuel economy 5 percent

June 20, 2007, Chelsea, Mich -

Chrysler Group's Powertrain Offensive took a major leap forward today when Frank Klegon, Executive Vice President – Product Development, announced a barrage of new initiatives targeted solely at improving the fuel efficiency of future Chrysler, Jeep<sup>®</sup> and Dodge vehicles.

Among the fuel-efficient initiatives are a commitment to developing mild-hybrid technology and expanding the company's two-mode hybrid program; new six- and eight-cylinder gasoline engines — including cylinder-deactivation in a V-6; dual-clutch transmission technology; a common axle program; weight reduction, aerodynamic and drivetrain initiatives; and another BLUETEC clean-diesel vehicle.

Additionally, the company announced it is exploring the development of a 4-cylinder diesel engine for the North American market, and the expansion of its 3.0-liter V-6 diesel engine.

"Chrysler Group is focused directly on improving fuel efficiency across our vehicle lineup," Klegon said. "We have developed and are implementing a series of major initiatives — including a bigger push in hybrid and clean-diesel technology — to meet the needs of American consumers.

"Many of these fuel-efficiency initiatives will be incorporated simultaneously into a single vehicle family — our new V-6 with Multi-displacement System (MDS) mated to a dual-clutch transmission, for example — ultimately resulting in double-digit-percentage fuel-economy gains."

### Mild Hybrid

Within the next few years, Chrysler will offer a mild-hybrid powertrain in a Chrysler Group vehicle.

Mild-hybrid vehicles provide many of the benefits of hybrid technology, with less of the cost/weight penalty that is incurred by installing a full hybrid drivetrain. Mild hybrids allow the vehicle's engine to be turned off at stops. Regenerative braking stores energy that would normally be lost. Accessories can continue to run on electrical power

while the engine is off. An electric motor assist results in significant fuel efficiency gains.

### **Two-mode Hybrid**

Chrysler Group announced today that its two-mode hybrid program will expand beyond the [Chrysler Aspen Hybrid](#) and [Dodge Durango Hybrid](#), which debut next year.

Chrysler Group's two-mode hybrid system leapfrogs current technology by addressing inefficiencies that exist in high-speed driving with traditional hybrid technology. The result will be a 25-percent improvement in fuel efficiency overall — and nearly 40 percent in the city — in the Chrysler Aspen Hybrid and Dodge Durango Hybrid.

The new Chrysler Aspen and Dodge Durango Hybrid vehicles can be powered either by the electric motor or by the 5.7-liter HEMI® V-8 engine with MDS — or a combination of the two. When full power is needed, the system automatically adjusts for passing, driving steep grades or hauling a trailer. The result is trend-setting hybrid technology that provides superior fuel economy, performance and load-carrying capability.

### **Another BLUETEC 50-state Clean-diesel Vehicle**

The 2009 Jeep Grand Cherokee will join the 2007 Dodge Ram Heavy Duty as Chrysler Group's 50-state, clean-diesel BLUETEC vehicles.

BLUETEC brings together a host of technologies for diesel passenger vehicles, beginning with completely modern, efficient diesel engines and a focus on "denoxing" to reduce nitrogen oxides in the exhaust gases. The result is clean-diesel technology in vehicles that meet 50-state emissions standards for 2010.

### **Future Diesel Considerations**

Chrysler Group announced today that it is exploring additional penetration of its 3.0-liter V-6 common-rail diesel (CRD) engine — currently in the [2007 Jeep Grand Cherokee](#) — and the possibility of a four-cylinder diesel engine for the North American market.

The company's current diesel lineup includes Dodge Sprinter, Jeep Grand Cherokee and Dodge Ram Heavy Duty.

Earlier this year, Chrysler Group announced that an all-new Cummins turbodiesel engine will be available in light-duty pickup trucks after 2009. Along with generous power and low-end torque, the new engine will provide up to 30-percent improvement in fuel efficiency and a 20-percent reduction in CO2 emissions compared to an equivalent gasoline engine.

### **V-6 Engine Family With Cylinder Deactivation**

In February, Chrysler Group announced that an all-new family of engines — known as "Phoenix" — will join the Chrysler Group lineup in 2010. Since then, the company has broken ground on new plants in Trenton, Mich., Kenosha, Wis., and Mexico — all of which will produce this family of engines.

The company announced today that this new family of V-6 engines will feature cylinder deactivation (MDS). Specifically, this means the engine will operate efficiently on three cylinders when less power is needed, and in V-6 mode when more power is needed. This optimizes fuel economy when V-6 power is not required — without sacrificing vehicle performance or capability.

The new family of V-6 engines will feature an aluminum die cast block, dual variable valve timing (VVT) and a two-stage oil pump, among other technologies. The end result is an expected across-the-board V-6 fuel efficiency improvement of 6 to 8 percent — in addition to new levels of V-6 power, performance and refinement.

### **Significantly Upgraded 5.7-liter HEMI V-8**

For 2009, Chrysler Group will deliver a significantly upgraded version of its renowned 5.7-liter HEMI V-8, resulting in notable gains in fuel efficiency, refinement, power and torque.

### **New 4.7-liter V-8**

The new 4.7-liter V-8 offers up to 5 percent better fuel economy than the previous 4.7-liter engine.

At the same time, this E85 flex-fuel engine delivers increased performance and improved refinement. These improvements come from the 4.7-liter V-8's two spark plugs per cylinder (the only Chrysler Group engine to do so, other than the 5.7-liter HEMI), increased compression ratio, improved cylinder-head port flow and new combustion system.

In addition to improved fuel economy, the result is a 30-percent increase in horsepower and a 10-percent increase in torque (up to 75 additional horsepower and 35 more lb.-ft. of torque, depending on application) compared with the previous 4.7-liter V-8 engine.

#### **Dual-clutch Transmission Technology**

A new dual-clutch transmission — developed in partnership with Getrag — joins the Chrysler Group lineup in significant volumes in 2010 model-year vehicles.

The new dual-clutch transmission is expected to deliver a fuel economy improvement of up to six percent, based on preliminary testing.

The new transmission is equipped with two independent lay-shaft style gear sets with separate clutches, using manual transmission-based components. During shifts, the next gear is anticipated and pre-selected. Then one clutch is opened while the other is closed, allowing shifting without torque interruption. The result is quicker acceleration and refined shift quality.

#### **Common Axle Program**

New common axle technology will result in fuel-economy and axle-efficiency gains, while providing weight savings, cost reduction, increased refinement and less complexity. New advanced materials increase overall axle strength and reduce package size.

Already featured in the Chrysler 300C SRT8, this axle will soon move to other Chrysler Group vehicles.

Aerodynamic, weight reduction and drivetrain improvements Chrysler Group announced today that a new set of initiatives are in place to improve fuel efficiency across its vehicle lineup by at least five percent. These initiatives include weight reduction, aerodynamic drag improvements, reduced rolling resistance and brake drag, optimized accessory loads, and minimized drivetrain losses.

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