PRESS RELEASE

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RENAULT PRESENTS THE NEW 2.3 dCi DIESEL ENGINE, DESIGNED AND PRODUCED IN FRANCE WITH THE BEST COST IN USE IN ITS CATEGORY

- **Renault is launching the all-new 2.3 dCi diesel engine (type M9T) on New Master**
- **Designed by Renault powertrain engineering teams based in Rueil-Malmaison, Villiers-Saint-Frédéric and Lardy in the Paris region and Cléon in Normandy, it features better driving performance and lower CO_2 emissions and fuel consumption than its predecessor and the best cost in use in its category**
- **The new engine will be produced exclusively at the Cléon plant.**

Renault has fitted New Master, its new large van, with an all-new engine, the 2.3 dCi diesel. The Master will feature three versions of the 2.3 dCi unit, with power output of 100 hp, 125 hp and 150 hp. The engine will power other Renault-Nissan Alliance vehicles in the future.

Based on the 2.0 dCi (M9R) available on the Laguna and Espace, this engine will replace Renault's 2.5 dCi (G9U) and four-cylinder 3.0 dCi diesel (ZD30)[1]. Renault is thus pursuing its downsizing strategy of reducing engine displacement – and, hence, CO_2 emissions and fuel consumption – while maintaining performance.

On New Master, the 2.3 dCi engine replaces the 2.5 dCi unit on front-wheel drive models and the 3.0 dCi unit on rear-wheel drive vans. The new engine boasts reduced consumption (by 1 liter/100 km on average and by up to 2.7 liters/100 km on rear-wheel drive models) and lower CO_2 emissions (down by an average 10%), together with 30 Nm more torque and the best cost in use in its category.

The new 2.3 dCi engine will help to reduce cost in use for New Master. In addition to reduced consumption, it benefits from longer servicing intervals, every two years or 40,000 km instead of every 30,000 km for the current 2.5 dCi. The new powerplant is also equipped

[1] Not to be confused with the V6 dCi, which also has a 3-liter capacity. This six-cylinder unit fitted on high-end passenger cars will continue to be available on Laguna.

with a timing chain, which means the timing belt does not have to be replaced every six years. New Master's Total Cost of Ownership has fallen by €1,800 on average over 150,000km (or four years, whichever comes first), for a monthly saving of €37 (based on a pre-tax diesel price of €0.87/litre).

This performance has been accomplished through reduced engine displacement and a new injection system. The 2.3 dCi takes the technical base of the Renault-Nissan Alliance 2.0 dCi, a unit renowned for its comfort in use, robustness and reliability. Capacity has been changed to 2.3 liters by increasing the diameter of the cylinders and piston travel. The new engine is also equipped with latest-generation seven-hole injectors.
The versatile 2.3 dCi can be fitted on all versions of New Master and comes in front-wheel drive (cross-wise architecture) and rear-wheel drive (lengthwise) versions.

Renault has chosen to produce the engine at Cléon in France. The plant, which also produces the high-end 2.0, 2.0 turbo petrol engines and 1.9 dCi and V6 3.0 dCi diesels, along with 5- and 6-speed manual gearboxes, has extensive know-how in powertrain production.
The Cléon plant has flexible production lines, with the same line able to produce the 2.0 dCi and 2.3 dCi engines. Renault has implemented the very latest production techniques such as kitting/picking and strike zones, which make the plant more competitive on quality, costs and lead times.
As a reminder, Cléon will also begin production of the 1.6 dCi (R9M) in 2011, replacing the current 1.9 dCi. This engine will reduce CO_2 emissions by 30 g/km and fuel consumption by 20%.

Annex:

Technical characteristics of the engine:

Two architectures: front- and rear-wheel drive
Two transmissions: manual and robotized with a two-mass flywheel between the engine and gearbox
Two pollution standards: Euro4 (without PF) and Euro5 (with PF)
Three performance levels: 75 kW and 92 kW (with a fixed-geometry turbo) and 110 kW (with a variable-geometry turbo)

Renault's powertrain strategy:

As part of its objective to become European leader by 2015 in terms of the lowest average CO_2 emissions, Renault is working on low-emission vehicles AND zero-emission vehicles, with the aim of bringing new technologies to the greatest number at an affordable price.
Powertrain projects are focused in two areas:

- The continuous reduction of CO_2 emissions of petrol and diesel engines through the widespread application of downsizing and the introduction of new technologies on conventional engines and transmissions.
- A breakthrough technological solution, with 100% electric vehicles emitting no CO_2 emissions in use. Renault's ambition is to become a leader in the mass marketing of electric vehicles. The Renault-Nissan Alliance is developing a complete range of 100% electric powertrains with power ranging from 15 kW to 70 kW (20 hp to 95 hp).

Renault powertrain engineering:

Renault powertrain engineering's mission is to:

- Develop the powertrain strategy of the Group, benefiting from synergies with Nissan within the Alliance
- Design a range of innovative powertrains meeting the customers' needs, pollution regulations, requirements for CO2 emission reduction, and the best levels of quality and cost
- Design and implement the mechanical industrial system in mechanical plants.

Its activities include Diesel, gasoline and electric engines and all manual and automatic transmissions.
The Renault mechanical engineering department comprises 5 100 employees worldwide, 3 500 of whom are based in France, mainly in Rueil-Malmaison, Lardy and Cléon.

The Cléon plant:

Timeline:

1958: Creation of Cléon plant, producing gearboxes.
1960: Construction of a second building dedicated to engines.
1964: Creation of the aluminum foundry. Production of first aluminum cylinder blocks for the Renault 16.
1970: Construction of a new building for the production of gearboxes then engines.
2000: Installation of flexible production lines.
2001: Transfer to Cléon of Powertrain Component Production for prototypes.
2005: Production launch of the M9R (2.0 dCi), the first Alliance engine, and the PK4 gearbox.
2007: Construction of a wharf for direct exports of M9 engines to Japan and South Korea.
2008: 50th anniversary of the plant; production launch of the V9X (3.0 dCi).
2010: Production launch of the M9T (2.3 dCi).
2011: Production launch of the R9M (1.6 dCi)

Production:

Engines: F4R (2.0 and 2.0 T), F9Q (1.9 dCi), G9T (2.2 dCi), M9T (2.3 dCi), G9U (2.5 dCi), M9R (2.0 dCi)
Gearboxes: JH1 (5-speed manual), PK5 (5-speed manual), PK6 (6-speed manual), PF6 (6-speed manual), PK4 (6-speed manual), JR5 (5-speed manual).

Renault in France:

Key data:
• Renault has 14 industrial sites in France out of a total 38 worldwide. One in three industrial employees at the Renault group works at a French site.
• In 2009 Renault produced around 545,000 vehicles and sold 635,000 Renault vehicles in France.
• 55% of the industrial value-added of the Group is achieved in France.
• For production in France, 60% of purchasing is sourced from suppliers located in France.
• 82% of Renault's R&D workforce works in France.
Renault vehicle production today in France:

• **Batilly** produces Master and New Master (world exclusive).
• **Choisy** is responsible for standard exchange parts.
• **Cléon** is the Group's biggest powertrain plant and produces gearboxes and the following engines: 1.9 dCi, 2.0 dCi, 2.3 dCi, 2.5 dCi, V6 3.0 dCi, 2.0 petrol and 2.0 turbo petrol.
• **Dieppe** produces Clio Renault Sport (world exclusive) and fits LPG kits on Clio.
• **Douai** produces New Scénic, New Grand Scénic and New Mégane Coupé-Cabriolet (world exclusives).
• **Douvrin** produces the 1.2 petrol engines (world exclusive).
• **Flins** produces Clio Campus and Clio III.
• **Le Mans** produces front and rear axles and various powertrain components.
• **Maubeuge** produces Kangoo PC, LCV and be bop (world exclusives).
• **Ruitz** produces automatic gearboxes.
• **Sandouville** produces Laguna Hatchback, Estate and Coupé and Espace (world exclusives).
• **Villeurbanne** produces front and rear axles.

Manufacturing news:

• In 2007 Renault launched Laguna Hatchback and Estate (produced exclusively at Sandouville) and New Kangoo (produced exclusively at Maubeuge).
• In 2008 Renault launched Laguna Coupé (produced exclusively at Sandouville) and Kangoo be bop (produced exclusively at Maubeuge). Still in 2008, Renault launched the industrial production of the V9X V6 diesel, at Cléon.
• In 2009 Renault launched New Scénic and New Grand Scénic (produced exclusively at Douai), as well as Clio III phase 2 (partially produced at Flins).
• In 2010 Renault is to launch New Master (produced exclusively at Batilly) and New Mégane Coupé-Cabriolet (produced exclusively at Douai).
• In 2011 Renault will launch Kangoo Z.E. (produced exclusively at Maubeuge), and), the new R9M 1.6 dCi engine (produced exclusively at Cléon)
• In 2012 Renault will launch Zoé Z.E. (produced exclusively at Flins and electric vehicle batteries (Flins).
• In 2013 Renault will launch a new van, produced at Sandouville, and Clio IV, partially produced at Flins.

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