

POWERTRAIN GROUPS AT THE FOREFRONT OF TECHNOLOGY

- **A new strategic step in reducing emissions with innovative emissions reduction systems.**
- **New internal combustion engines that are ever more efficient and environmentally friendly.**
- **An expanded offering of manual and automatic transmissions to meet fuel economy requirements while maintaining the best level of driving comfort.**

The PSA Group has always been a forerunner in virtuous technology deployment, and the company has proven know-how in reducing pollution and greenhouse gas emissions. It is also focused on a sustainable mobility approach. The PSA Group made clean technology a strategic pillar of its R&D policy and its sales offensive.

This is exemplified by the PSA Group's new Diesel engines presented today, which already meet the requirements of the future Euro6.d regulations that come into force in 2020. In particular, as of 2017, they will meet an RDE compliance factor of 1.5 instead of the required level of 2.1 for NOx emissions, which is three years ahead of the regulation deadline.

These new Diesel engines benefit from advances made in their emissions reduction system, the BlueHDi technology, making them even more effective in treating NOx. This technological evolution will be inaugurated with the new 1.5 BlueHDi 130 S&S engine.

As part of its continuous drive to improve performance in reducing emissions from its engines, the PSA Group has also developed a particulate filter, or GPF (Gasoline Particulate Filter), to treat particle emissions from direct injection petrol engines. This technology offers 75% higher efficiency in terms of the number of particles captured.

From the end of 2017, the particulate filter (GPF) will be rolled out to all PSA Group direct injection petrol engines, on the 3-cylinder turbo engine families, as well as the 4-cylinder models, regardless of the model. These engines are being upgraded on this occasion to increase performance and output, and thus increase fuel economy even further.

All of these developments in engines are combined with an expanded range of gearboxes, including a new 6-speed manual transmission and an 8-speed automatic transmission (EAT8) to more significantly increase fuel economy, while providing the best level of driving comfort.

CONTENTS

- The new Diesel 1.5 BlueHDi 130 engine, a 100% digital design for an engine combining driving comfort and efficiency
- PureTech Petrol engines, a new generation of petrol engines with a global focus on performance and fuel efficiency
- The new 6-speed manual transmission, a new gearbox for the best level of driving comfort
- The new 8-speed automatic transmission (EAT8), a new automatic transmission that offers more than just its 8 speeds
- Trémery-Metz Industrial Division
- Manufacturing component and foundry production anchored in France
- Media contacts

The new Diesel 1.5 BlueHDi 130 engine

100% digital design for an engine combining driving comfort and efficiency

o **Intelligent design:**

- First engine developed with **100% digital** engineering which:
 - reduces time-to-market: reduces the number of prototypes needed (going from 100 to 7 prototypes) and reduces development time;
 - ensures quality of operation at the best level: digital development makes it possible to simulate a maximum number of customer uses.
- **Making the engine more compact** for integration in the Group's most compact vehicles (new CMP platform), which allows for:
 - optimised aerodynamics (CdA improvement) and therefore a reduction in fuel consumption provided by lowering the bonnet and the canopy, while meeting shock requirements;
 - to offer more freedom in terms of style.
- Nearly 200 new patents filed by the PSA Group applied to this generation of engines.
- **Engine developed in co-operation with Ford:** PSA is responsible for 100% of the base engine engineering, each manufacturer carrying out the vehicle adaptation and the development of its post-processing. PSA will produce this engine for its own needs at FM and Trémery, and Ford will produce it in the UK for its own vehicles.

o **Improved performance, optimised fuel economy:**

- **Performance close to the top range engines (2-litre engines):** up to 130 horsepower (a gain of 10 horsepower compared to the 1.6 BlueHDi 120 S&S replaced) and improved driving comfort with power maintained at high engine speeds thanks to the new 4-valve cylinder head, thus offering driving sensations that are close to those of petrol engines.
- **Integrating driver assistance** allows for safer driving and more user comfort, as well as increased fuel economy, with in particular free wheeling (returns the engine to idle and disengages the gearbox with each lift of the foot off the accelerator for speeds between 20 and 130 km/h) with the new EAT8 automatic transmission.
- An overall improvement in fuel **economy** of 4 to 6% compared to the 1.6 BlueHDi 120 S&S attributable to better **engine output** through:
 - reducing displacement and friction;
 - new combustion system with patented geometry (geometry of the piston of the Peugeot 908 that won the 24 Hours of Le Mans);
 - increasing the recirculation of exhaust gases (EGR) thanks to increased cooling (high efficiency heat exchanger).

New Peugeot 308 BlueHDi 130 S&S: approval in progress.

○ **An effective emissions reduction system to meet stringent environmental requirements:**

The emissions reduction system of the second-generation BlueHDi, inaugurated with the 1.5 BlueHDi 130 S&S engine, brings advances in:

▪ **Effectively treating NOx and contributing to fuel economy** thanks to innovative architecture and implementation:

- a more compact emissions reduction system, which is 100% integrated into the close coupled catalytic converter;
- placement of the SCR on DPF close to the engine for better treatment of nitrous oxides (NOx).

=> Vehicles equipped with the BlueHDi 130 engine will meet, from 2017 (three years ahead of schedule), the regulatory limit of the Real driving emissions (RDE) compliance factor required by 2020, as part of the future standard: a factor of 1.5 instead of the required 2.1.

▪ **Lower cost of use** by eliminating the supplemental DPF and simplifying **maintenance**, giving the customer the possibility of refilling the Ad Blue reservoir, now easier to access through an opening on the chassis exterior on all Group PSA vehicles.

○ **Capital expenditure:**

- R&D investment: €250 million
- Additional industrial investment: €180 million

○ **Production**

▪ **Production sites** - Machining and Assembly: from September 2017, **Française de Mécanique** (Douvrin) then at **Trémery** plant (near Metz) during 2018.

- Adaptation of production lines to make them more flexible to market constraints (volume/diversity): Full Kitting

▪ Annual production potential: **1 million engines**

○ **Sales**

▪ **Commercial launch: in September 2017 for the new Peugeot 308**

BlueHDi 130 & 100 engines will equip all Group cars, starting with the B2 segment on all markets requiring the Euro 6 standard, as well as Japan and South Korea.

▪ **Versions:**

- BlueHDi 130 S&S (DV5RC): 130 hp variable-nozzle turbo (commercial launch in September 2017);
- BlueHDi 100 S&S (DV5RD): 100 hp fixed-nozzle turbo (commercial launch in early 2018);
- utility version 100 and 120 hp from mid-2018.

Engine Specifications		DV5RC BlueHDi 130 S&S	DV5RD BlueHDi 100 S&S
Type		<i>4 cylinder, in-line</i>	
Emissions level		<i>Euro6d temp</i>	
Fuel consumption on 308	<i>g CO2/km</i>	<i>Approval under the new WLTC regulations in progress</i>	
Max. power	<i>kW/hp</i>	<i>96kW / 130 hp at 3,750 rpm</i>	<i>75kW / 100 hp at 3,500 rpm</i>

Max. torque	Nm	300 Nm at 1,750 rpm	250 Nm at 1,750 rpm
Combustion type	<i>Turbocharged central direct-injection engine Inclined combustion chamber</i>		
Engine management and fuel intake	<i>SSTG PSA command control / Common rail direct injection to 2,000 bars</i>		
Electric management	<i>Smart power management with optimisation of battery charge and Stop & Start</i>		
Engine displacement	Cm ³	1,499	
Compression ratio		16.5: 01	
Bore/stroke	mm X mm	75 X 84.8	
Engine crankcase material	<i>Pressurised aluminium with inserted cast cylinder liners</i>		
Connecting rod assembly	<i>Connecting rod with floating axle and split big end, high characteristic steel</i>		
Oil pump	<i>Variable displacement driven by the command control</i>		
Cylinder head	<i>Cast aluminium shell high treated characteristics Air intake integrated into the cylinder head casting</i>		
Turbocharging		<i>Variable-nozzle turbocharger with electric switching</i>	<i>Fixed-nozzle turbocharger with pneumatic wastegate switching</i>
Injection	<i>Central direct injection, 7-hole injectors High pressure pump, 2,000 bars</i>		
Distribution	<i>Double camshaft head, tubular composite driven by toothed belt and chain relay</i>		
Valve drive command	<i>Indirect feed by hydraulic lifters and finger followers</i>		
Valves per cylinder	<i>4 valves per cylinder</i>		
Mass according to PSA standard	kg	106.3	105.5
Fuel	<i>Diesel 10 ppm sulphur, complying with EN590 standard Biodiesel B7 (EN14214), B10 (EN16734), B20 and B30 (EN16709) and XTL fuels (EN15940)</i>		
Exhaust line	<i>Emission control elements integrated as a single piece under turbocharger with: Passive NOx Absorber + AdBlue injection + SCR slice + SCR on DPF</i>		
Cooling	<i>Thermo-management controlled by thermostat</i>		

PureTech Petrol Engines

A new generation of petrol engines for worldwide distribution that have higher performance, greater fuel economy and greater efficiency

○ **A new strategic step in reducing pollutants:**

PureTech petrol engines evolve to enable a drastic reduction of pollutant emissions regardless of usage conditions through:

- Introduction of the Gasoline Particulate Filter on direct injection engines to reduce particulate emissions (filtration effectiveness of over 75%).
- An even more effective emissions reduction system in all environments through greater thermal resistance of materials, optimised exhaust temperature management, and using new catalytic technologies.
- Optimised combustion through a very precise control of the fuel/air mixture using a new generation of proportional oxygen sensor.

These developments mean that the engines meet not only the second stage of the European Euro 6 standard, but also the strictest Chinese standard, China6b.

○ **Improved performance, optimised fuel consumption:**

PureTech petrol engines **have improvements in performance** (addition of 20 horses on the 4-cylinder engine, and faster reaction time on 3- and 4-cylinder engines) and in **fuel consumption** (up to 4% lower for the 3-cylinder PureTech engine, and up to 6% lower for 4-cylinder engines) thanks to:

- **Optimisation of output** particularly related to:
 - developments in the combustion cycle:
 - for 3-cylinder engines: cycle that incorporates a high recycling rate of exhaust gases. Injection pressure increased to 250b in direct injection,
 - for 4-cylinder engines: wide deployment of the continuous variable lift system and development of multiple injection management (Valvetronic);
 - reduced friction;
 - redesign of the turbochargers (electric wastegate, output improvements for the turbine and the compressor).
- **Making the engine more compact** for integration in the Group's most compact vehicles (new CMP platform), which allows for:
 - optimised aerodynamics (CdA improvement) and therefore a reduction in fuel consumption provided by lowering the bonnet and the canopy, while meeting shock requirements;
 - to offer more freedom in terms of style.
- **Integrating driver assistance** allows for safer driving and more user comfort, as well as a reduction in fuel consumption, with in particular free wheeling (returns the engine to idle and disengages the gearbox with each lift of the foot off of the accelerator for speeds between 20 and 130 km/h) with the new EAT8 automatic transmission.

- **Capital expenditure:**
 - R&D investment: €420 million
 - Additional industrial investment: €120 million

- **Patents:** 210 patents filed by the PSA Group

- **Production:**
 - **Production sites - Machining and Assembly:**
 - For 3-cylinder engines:
 - Française de Mécanique (Douvrin) and Trémery (near Metz) plants
 - Xiang Yang plant in China (DPCA)
 - For 4-cylinder engines:
 - Française de Mécanique (Douvrin)
 - Xiang Yang (DPCA) and Shenzhen (CAPSA) plants in China

 - **Annual production potential:**
 - 3-cylinder Non-Turbo and Turbo engines: 1,000,000 in France (Française de Mécanique in Douvrin) and 200,000 in China (Xiang Yang)
 - 4-cylinder Turbo engines: 200,000 in France (Française de Mécanique) and 500,000 in China

 - **Launch of production:**
 - 3-cylinder Non-Turbo engine (PureTech 82 S&S): October 2017 on the Peugeot 208
 - 3-cylinder Turbo Engine (PureTech 130 S&S): starting in December 2017 for the new Peugeot 308
 - 4-cylinder Turbo Engine (PureTech 180 & 225 S&S): launch beginning of 2018

- **Sales:**
 - **Commercial launch: starting in October 2017 for the new Peugeot 208**
These engines will equip all the Group's cars in all markets.

 - **Versions:**
 - 3-cylinder engines:
 - PureTech 82 S&S: 82 hp and 118 Nm
 - PureTech 110 S&S: 110 hp and 205 Nm
 - PureTech 130 S&S: 130 hp and 230 Nm

 - 4-cylinder engines:
 - PureTech 180 S&S: 180 hp and 250 Nm
 - PureTech 225 S&S: 225 hp and 300 Nm

Engine Specifications		PureTech 110 S&S / PureTech 130 S&S	PureTech 180 S&S / PureTech 225 S&S
Type		3 cylinder, in-line	4 cylinder, in-line
Emissions level		Euro6d temp	
Fuel consumption on 308	<i>g CO2/km</i>	Approval in progress according to the new WLTC requirements	
Max. power	<i>kW/hp</i>	96 / 130 at 5,500 rpm 81 / 110 at 5,500 rpm	165 / 225 at 5,500 rpm 133 / 180 at 5,500 rpm
Max. torque	<i>Nm</i>	230 at 1,750 rpm 210 at 1,500 rpm	300 at 1,900 rpm 250 at 1,750 rpm
Combustion type		<i>Turbocharged central direct-injection engine Variable intake and exhaust setting</i>	<i>Turbocharged direct injection engine variable lifting on intake Variable intake and exhaust setting</i>
Engine management and fuel intake		<i>SSTG PSA command-control system Direct injection 250 bars</i>	<i>SSTG PSA - Bosch command-control system Direct injection 200 bars</i>
Electric management		<i>Smart power management with optimisation of battery charge and Stop & Start</i>	<i>Smart power management with optimisation of battery charge and Stop & Start</i>
Engine displacement	<i>Cm3</i>	1,199	1,598
Compression ratio		10.5: 01	10.5: 01
Bore/stroke	<i>mm X mm</i>	75 X 90.5	77 X 85.8
Connecting rod assembly		<i>Connecting rod with scored big end, tightened piston axis High characteristic steel</i>	<i>Connecting rod with scored big end, floating piston axis High characteristic steel</i>
Oil pump		<i>Variable displacement driven by the command-control</i>	<i>Variable displacement driven by the command-control</i>
Cylinder head		<i>A57 Aluminium with copper added with heat treatment Gravity casting Exhaust intake integrated into the cylinder head casting</i>	<i>A57 Aluminium with copper added with heat treatment. Gravity casting Steel exhaust manifold</i>
Turbocharging		<i>New generation turbocharger, optimised output, integrated dump valve, electric wastegate</i>	<i>New generation turbocharger, optimised output, integrated dump valve, electric wastegate</i>
Engine block		<i>Vacuum-cast pressurised aluminium with inserted hybrid cast cylinder liners</i>	<i>Pressurised aluminium foundry inserted cast cylinder liners</i>
Oil pump		<i>Variable displacement driven by the command control</i>	<i>Variable displacement driven by the command control</i>
Injection		<i>Central direct injection, 5-hole injectors with laser drilling technology High pressure petrol pump, 250 bars</i>	<i>Direct injection, 6-hole injectors High pressure petrol pump, 200 bars</i>
Distribution		<i>2 composite tubular camshafts wet belt drive, DLC on cams</i>	<i>2 composite camshafts chain drive</i>
Valve drive command		<i>Front feed by mechanical lifters</i>	<i>Continuously variable lift for admission via electric actuator. Indirect feed by finger followers</i>
Valves per cylinder		4 valves per cylinder	4 valves per cylinder Sodium cooled exhaust valves
Engine length	<i>mm</i>	604.5	630
Engine height	<i>mm</i>	683.5	670
Engine width	<i>mm</i>	586	590
Mass according to PSA standard	<i>kg</i>	84 kg	110 kg
Fuel	<i>RON</i>	91-98	91-98
Cooling		<i>Thermo-management controlled by thermostat</i>	<i>Thermo management via thermostat control and disengageable water pump</i>
Exhaust line		<i>Emission control elements integrated as a single piece under turbocharger with: Catalytic converter + GPF</i>	<i>Emission control elements integrated as a single piece under turbocharger with: Catalytic converter + GPF</i>

New 6-speed manual gearbox

A new gearbox for the best level of driving comfort

- **An ingenious design for an optimised gearbox**
 - First engine developed with **100% digital** engineering which:
 - reduces time-to-market: reduces the number of prototypes needed and reduces development time;
 - ensures quality of operation at the best level: digital development makes it possible to simulate a maximum number of customer uses.
 - **Improvements in weight and performance** compared to the existing BVM6
 - **Compactness**: same volume as the equivalent BVM5 with torque of 250 Nm

- **The combination of ease of use and control of fuel consumption:**
 - Flexibility, roundness and economy of effort required provide comfortable **gear changes** thanks to optimisation of efficiency, reducing friction and play in each of the components
 - **Wide range of gear ratios** to minimise emissions and fuel consumption

- **Capital expenditure:**
 - R&D investment: €57 million
 - Additional industrial investment: €78 million

- **Industrial scale production:**
 - Production sites - Machining and Assembly: Valenciennes then in China from the end of 2018
 - Annual production potential: 500,000 in France
 - Series production launch: September 2017

- **Sales:**
 - Commercial launch in mid-2018 for the new Peugeot 308
 - Versions: this new gearbox will equip vehicles in segments B and C

Engines	PureTech 110 S&S / PureTech 130 S&S BlueHDi 100 S&S
Steering	BVM
Number of gears	6-speed
Max. Torque (Nm)	250
Centre distance (mm)	189
GB Mass (with fluid and without coupling)	38 kg
Brief description of the Group and the issuer's position within the Group	Transversal Manual Gearbox 2 drive shafts Triple cone synchronisers in 1/2, simple cone in 3/4/5/6 Reverse blocked Opening 5.7 to 6.7 8 different bridges Length 380 mm MTAC / MTRA: PC: 2,220 kg / 3,300 kg Light-Duty Vehicles: 2,320 kg / 3,200 kg

New 8-speed automatic transmission (EAT8)

A new automatic transmission that offers more than just its eight speeds

- **A new automatic transmission to reduce fuel consumption** up to 7% compared to the EAT6:
 - by improving output with the extension of Stop & Start up to 20 km/h and the transition to eight speeds.
 - by introducing a specific ECO mode with free wheeling (from 20 to 130 km/h).
 - improvements in terms of weight (up to 2 kg lighter compared to the EAT6 (same scope) and more compact.

- **More than just its eight speeds, the EAT8 provides true driving comfort in operation through:**
 - More comfortable Premium shifting of gears by:
 - optimising exchange of torque at the Powertrain level (engine / gearbox);
 - the transition to eight speeds helps reduce the jump between gears at each gear shift;
 - the flexible converter provides comfortable driving when departing from a parked position and for parking manoeuvres.

 - Intuitiveness of shifting with Shift and park by wire:
 - introduction of an electric control that is ergonomic and effortless;
 - transmission put in "Park" on engine cut-off for increased security;
 - automatic management of the direction of travel for Park Assist and ACC Stop and Go driver assistance, without action from the driver.

- **Industrial scale production:**
 - **Supplier:** AISIN AW
 - **Production sites** - Machining and assembly: Aisin Okasaki East Plant (Japan)
 - **Projected volume: 750,000 units per year by 2020**
 - **Series production launch:** in July 2017 for the new Peugeot 308

- **Sales:**
 - PSA is the first car manufacturer to launch this new generation of automatic transmission in Europe and China.
 - **Versions:** this new gearbox will equip cars with BlueHDi Diesel engines and PureTech petrol engines for the B, C and D segments. Scope: World.

Engines	PureTech 180 S&S / PureTech 225 S&S PureTech 110 S&S / PureTech 130 S&S BlueHDi 130 S&S / BlueHDi 180 S&S
Steering	Automatic Transmission
Number of gears	8-speed
Max. Torque (Nm)	430 Nm to 330 Nm
Centre distance (mm)	197 and 189 mm
GB Mass (with fluid and without coupling)	94.5 to 83.9 kg
Brief description of the Group and the issuer's position within the Group	Transversal Automatic Transmission Electronic control unit located on the Automatic Transmission Opening 8.20 to 7.54 Length 360 mm
Electric control	Park and Shift by wire integrated in PSA reference Control cable for powertrain
Complex functions	STT 3 km/h in EP/EB/DV, STT 20 km/h in DW ADAS second wave, Free wheeling



Key Data *(May 2017)*

- **PSA Group Production Unit**
- **Integrated into Northern Industrial Division, bringing together the 3 PSA plants in Hauts-de-France**
- Manufacture of engines (and engine parts) for the automobile
- Founded in 1969
- 138 hectares, of which 37 ha are covered areas
- 2,217 employees (including 137 apprentices and skill-acquisition contracts) + 160 temporary employees
- 47 million engines produced since opening
- 549,473 engines produced in 2016
- 2,575 engines produced per day* (+ 650 CKD)
- 4 engine families (3 for PSA Peugeot Citroën and 1 for Renault)
- New value of facilities: €1.9 billion
- 2016 revenue: €663 million
- ISO TS and ISO 14001 certified
- 35,000 hours of training completed in 2016 (equivalent to 23 people per day)

* Production spread over 5 days

Site Activity:

- Signing on 25 July 2013 of an **agreement between the management and three trade unions (CFTC, CFE-CGC and CFDT) concerning the improvement of the industrial and economic performance of Française de Mécanique.**
- Announcement by the PSA Group on 4 September 2013 of the decision on the **first location of the first production module of the new "DV-R" family of diesel engines**, with launch of operations planned in 2017.
- **A plan to reduce the size of the entire industrial system** was undertaken that aims on completion to regroup all production to only two buildings, instead of the current eight. One of the major portions of this project has been to move all the EP engine production facilities from their original building to the building where the future DV-R diesel engine will also be produced. A year and a half of preparation was required for this transfer, which was finalised during the summer holidays of 2016, with a "steep slope" restart of production in September 2016.

Production of Française de Mécanique (April 2017)

TUF-EC5 engines (72 units per day). Petrol - Non-Turbo

Displacement: 1,124, 1,360 and 1,587 cm³

Equipping vehicles:

- TUF Engine: Partner, Berlingo
- EC5 Engine: 301, C-Elysée
- 650 collections / d of CKD (Complete Knock Down or unassembled parts) and CALS

EP Engine (462 units per day). Petrol-Non-Turbo and Turbo

Resulting from the co-operation between PSA Peugeot Citroën and BMW

Displacement: 1,350 and 1,598 cm³

Equipping vehicles:

- Citroën Berlingo, C3, C3 Picasso, C4, C4 Cactus, C4 Picasso, C4 Grand Picasso, C5
- Peugeot Partner, 208, 2008, 308, 308 SW, 3008, 508, 5008, RCZ
- DS3, DS4, DS5

EB Turbo PureTech Engine 1,551 engines / d, in production spread over 5 days: 1,265 units per day, in 3 teams on Mondays, Tuesdays, Wednesdays, Thursdays and Fridays + 1,430 engines on weekends in Sat., Sun. teams.

3 cylinders, turbocharged direct injection petrol

2015 Engine of the Year in its category (1 l to 1.4 l)

Displacement: 1.2 l - Power: 110 to 130 hp

- Citroën C3, C3 Picasso, C4, C4 Cactus, C4 Picasso, C4 Grand Picasso
- Peugeot 208, 2008, 308, 308 SW, 3008, 5008
- DS3, DS4



EB Turbo Engine: Project co-financed by the European Union, with the support of the Nord-Pas de Calais Region, by the French State through the Interministerial Delegation for Regional Development and Regional Attractiveness and by the Intercommunal Group in charge of the Parc des Industries Artois-Flandres.



Activities for Renault

D Engine (490 units per day). Petrol - Non-Turbo, Turbo and LPG

Displacement: 1,149 cm³

Equipping vehicles:

- Clio
- Logan, Sandero
- 1,300 cylinder heads / d

Machined parts for other engines:

- "H4" cylinder heads, "K9" engine and "R9" engine

Trémery-Metz PSA Industrial Division

Trémery: created in 1979, ISO 14001 certified since 2001 & ISO / TS certified since 2014.
Metz: created in 1969, ISO 14001 certified since 2003 & ISO / TS certified since 2015.

ACTIVITIES

TREMERY

- Production Manufacture of diesel engines (DV, DW) and petrol (EB)
- Products 3 families of engines: DW (2.0 l), DV (1.6 l) and EB (1.2 l)
- Activities Machining of cylinder heads, cylinder blocks, connecting rods, crankshafts + DW camshafts

Engine Assembly

43.7 million engines produced since 1979

METZ

- Production Manufacture of gearboxes and balancing shaft housings
 - Products MA, ML and AEB
- 45 million gearboxes produced since 1970
- Activities Machining and assembly of gearboxes
 - Special processes Heat treatment, Ionic nitriding, Phosphating, Laser welding, bonding-shrinking, metallisation, prestress shot-blasting

KEY FIGURES

2016 Output:

- 1,893,575 engines (428,348 DW, 1,080,956 DV and 384,271 EB)
- 893,260 gearboxes (425,791 MA and 467,469 ML)

Workforce (30/03/2017): 4,711 people

KEY MESSAGES

- The PSA Group is the largest private employer in the Metz metropolitan area (Metz site), and the Moselle and Lorraine departments (Metz site + Trémery site).
- March 2015: PSA Group assigned additional production capacity for the turbo EB engine (3-cylinder petrol PureTech Turbo) at the Trémery site.
- May 2016: allocation of the production of engines / electrical machines by the PSA Group to the Trémery site. In 2018, the Trémery site will become the Group's most diversified engine plant, with capacities in petrol, diesel and electric.

Projects:

- End of 2017: serial production launch of the DV5R engine (Diesel, 4 cylinders, 1.5 l - BlueHDi) in Trémery.
- During 2018: serial production launch of the EB2DT engine (Petrol, 3 cylinders, 1.2 l turbo - PureTech) in Trémery.
- Beginning of 2019: production launch of electric machine in Trémery.

Manufacturing component and foundry production anchored in France

- 15 Manufacturing component plants and foundries (MB), of which 11 are located in France
- 80% of engines and gearboxes are manufactured in France
- 15,000 employees in French MB plants
- Trémery, the world's highest volume plant for the manufacture of diesel engines
- Charleville, the largest automotive casting in Europe, combining aluminium and cast iron
- Mulhouse, largest forge in France, and one of the three main castings of aluminium cylinder blocks in Europe
- All the Group's vehicle production centres are clients of at least one of the French MB plants

11 PRODUCTION SITES IN FRANCE

The PSA Group has 15 Manufacturing component plants and foundries that manufacture subassemblies (engines, gearboxes, chassis systems, components or foundry parts) that are used in Group vehicles or vehicles of other car manufacturers.

Of these 15 plants, **11 are located in France**, and 4 are located near the Group's vehicle production centres in Latin America and China to meet all or part of the local needs:

- **2 engine plants:** Trémery and Douvrin
- **2 gearbox plants:** Valenciennes and Metz
- **2 chassis systems plants:** Caen and Mulhouse
- **3 foundry parts plants:** Charleville, Sept-Fons and Mulhouse
- **1 small stamping plant:** Saint-Ouen
- **1 small-scale plant and renovation of engines and GB:** Hérimoncourt
- **4 engine plants and / or GB and / or chassis systems outside France:** Porto Real (Brazil), Jeppener (Argentina), Xiangyang (China, JV DPCA with DongFeng Motor) and Shenzhen (China, JV CAPSA with Changan)

Caen (France)	Liaisons au sol et transmissions
Charleville (France)	Fonderie d'aluminium et de fonte
Douvrin Française de Mécanique (France)	Moteurs essence et diesel
Hérimoncourt (France)	Moteurs, boîtes de vitesses : assemblage petite série et rénovation
Jeppener (Argentine)	Liaisons au sol et usinage de pièces pour Liaisons au sol, Moteurs
Metz (France)	Boîtes de vitesses
Mulhouse mécanique (France)	Liaisons au sol
Mulhouse métallurgie (France)	Fonderie d'aluminium sous pression, forge acier, outillage
Porto Real (Brésil)	Moteurs flex-fuel et essence
Saint-Ouen (France)	Emboutissage
Sept-Fons (France)	Fonderie de fonte
Trémery (France)	Moteurs essence et moteurs diesel
Valenciennes (France)	Boîtes de vitesses

Two Manufacturing component plants and foundries as part of the JV in China:

- DPCA with DongFeng Motor in Xiangyang: engines, gearboxes
- CAPSA with Changan in Shenzhen: engines

WORKFORCE FOR MANUFACTURING COMPONENT PLANTS AND FOUNDRIES IN FRANCE

15,000 people work in the Group's French MB plants, including 79% of operators, 17% of technical staff and supervisors, 4% of engineers and management. 10% of the workforce is made up of women, and the average employee age is 43.

THE CHALLENGE OF ENERGY TRANSITION

To meet the challenge of energy transition, the PSA Group is strengthening its petrol offering in Europe and is investing in electric and hybrid powertrains in France.

As part of its steering of energy transition and in line with the technology offensive of the "Push to Pass" strategic plan, the PSA Group is fully committed to diversifying its technological offer with petrol plug-in hybrid vehicles, and new-generation electric powertrains to equip its future "e-CMP" platform, developed in partnership with Dongfeng Motor. The Group will also pursue the development of new generation petrol and diesel internal combustion engines.

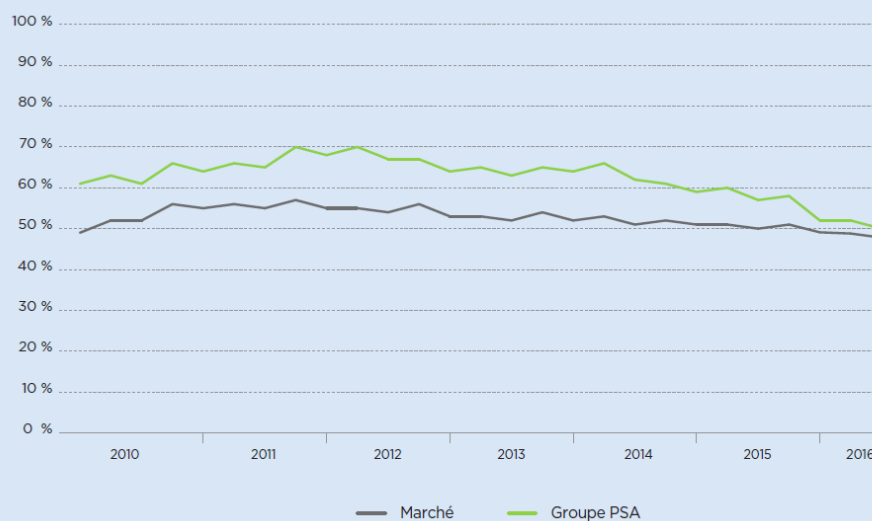
The PSA Group makes the strategic choice to anchor the production of the main components of the electric powertrain in France, demonstrating its ambition to develop high-tech activities in promising niches. It will build the electric powertrain on the Trémery / Metz excellence cluster and produce the reducing agents at the Valenciennes site.

The PSA Group has also decided to equip its petrol plug-in hybrid vehicles with engines built at Française de Mécanique in Douvrin.

In order to meet the growing customer demand for petrol engines, the Group will double its 3-cylinder turbo petrol engine in France by 2019. 350,000 additional turbo petrol engines will therefore be manufactured in 2018 at the Douvrin and Trémery sites, which will increase potential to 670,000 engines. On completion of these investments, the Trémery site will become the Group's most diversified engine plant, with capacities in petrol, diesel and electric.

Through all of these decisions, the PSA Group is deploying its technological offensive to adapt to the evolution of the market and modernise its sites.

La part de marché du diesel pour les véhicules particuliers (VP) du Groupe PSA converge vers la part de marché moyenne du diesel dans les ventes en Europe (sur périmètre Europe des 22). Le Groupe s'adapte à ce contexte en augmentant sa production de moteurs essence.



FRENCH MB PLANTS FOR GLOBAL CUSTOMERS

The main customers of the 11 French MB plants are:

- **The PSA Group vehicle production centres and spare parts production centres worldwide:** all the Group's assembly plants are clients of at least one of the 11 French MB plants
- **The plants of PSA Group partners in "subassembly" co-operation:** The Ford-Volvo plant in Skövde, Sweden (parts for DW engines), the Renault STA plant (parts for the AL4 automatic transmission)
- **The plants of PSA Group partners in "vehicle" co-operation:** the Mitsubishi plants of Okazaki in Japan and Nedcar in the Netherlands (DW12 engines), the Fiat plants of SevelSud in Italy and Iveco in Brazil (MLGU gearboxes), the Karsan plant in Bursa, Turkey (parts and components)
- **Other customers:** some of the Group's international mechanical plants and customers of the Group's Peugeot Citroën Moteurs (PCM) subsidiary (e.g. ThermoKing)

KEY FIGURES FOR FRENCH MB PLANTS

	Workforce*	Production as at end-2016
Trémery	2,900	1.9 million engines
Douvrin (Française de Mécanique)	2,200	550,000 engines
Valenciennes	2,000	1.3 million gearboxes
Metz	1,340	900,000 gearboxes
Caen	1,200	1.4 million chassis systems 3.4 million transmissions 1 million discs
Mulhouse Mécanique	970	740,000 chassis systems 2 million discs 3.3 million hubs and pivots
Mulhouse Métallurgie	1,310	39 million stamped forged pieces 1.6 million aluminium castings 230,000 hours of tooling
Sept-Fons	560	7 million iron castings
Charleville	1,680	2.5 million aluminium castings 9.4 million iron castings 47,000 hours of tooling
Saint-Ouen	515	107 million small stamping pieces
Hérimoncourt	280	45,000 engines and GB (small series and renovation)

* Workforce on permanent contracts+fixed-term contracts recorded in full-time equivalent at 31/12/2016 per establishment - rounded data

Media Contacts:

Laure de Servigny - + 33 (0)1 40 66 35 42 – laure.deservigny@mpsa.com

Harmonie Torresan - + 33 (0)1 40 66 48 06 – harmonie.torresan@mpsa.com

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