

# THE "STOP & START" SYSTEM

As part of its research into controlling the greenhouse effect, the PSA Peugeot Citroën Group has developed "Stop & Start". Designed for mass-market use, this new system improves fuel economy. The basic principle: as soon as the car comes to a standstill (red lights, traffic jam, etc.), the engine cuts out.

## 1 When the vehicle stops, the engine cuts out

When the driver brakes to stop the car, the engine cuts out and a green "eco" indicator appears on the dashboard. The engine remains in standby for as long as the driver keeps a foot on the brake pedal, even if the pressure is slight.



## 2 The engine starts again automatically and instantaneously

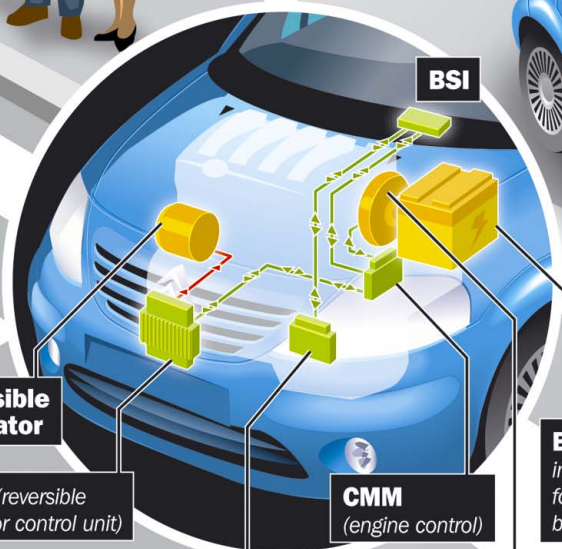
When the driver releases the brake pedal, the engine starts up again, automatically, instantaneously and in complete silence (in some 400 milliseconds compared with around one second for a conventional start-up). The green "eco" indicator is switched off.



The release of the brake pedal is detected by an electric contactor controlling the rear brake lights. A start-up order is then sent to the reversible alternator through the AR2S.



The different control units (BSI, engine control (CMM), gearbox control (BVMP), Stop & Start reversible alternator control (AR2S), etc.) check that conditions for stopping the engine are satisfied: driver's foot on the brake pedal, vehicle speed of less than 6 km/h, battery sufficiently charged, etc. The reversible alternator control unit (AR2S) orders the engine control unit to stop fuel injection, and the engine cuts out.



Reversible alternator

AR2S (reversible alternator control unit)

BVMP (gearbox control)

CMM (engine control)

Battery (640A instead of 480A for a conventional battery)

Monitoring negative pressure in the braking system

### Advantages of Stop & Start

**Driving pleasure:** simple to use, no noise and vibration when the car stops moving, instant and silent start-up.

**Environmental protection:** fuel consumption and CO<sub>2</sub> emissions reduced by 10% over an urban cycle (6% over a combined cycle).

Stop & Start is making its debut on the Citroën C3 1.4 I petrol model, fitted with the SensoDrive gearbox.