



Model Series, Innovation and Technology Communications

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Clean and fit for the future: 2.0 TFSI engine in the Audi A4 Avant g-tron and A5 Sportback g-tron

- CO₂ emissions 80 percent lower thanks to standard offering of Audi e-gas**
- Bivalent 2.0 TFSI runs on CNG (compressed natural gas), e-gas or gasoline
- Board Member for Development Peter Mertens: “g-tron drive is currently the cleanest combustion engine in our portfolio”

Fuel consumption of the models named above:

A4 Avant g-tron: CNG consumption in kg/100 km: 4.3 – 3.8*; combined fuel consumption in l/100km: 6.5 – 5.5* (36.2 – 42.8 US mpg); combined CO₂ emissions in g/km (CNG): 117 – 102* (188.3 – 164.2 g/mi); combined CO₂ emissions in g/km (gasoline): 147 – 126* (236.6 – 202.8 g/mi)

A5 Sportback g-tron: CNG consumption in kg/100 km: 4.2 – 3.8*; combined fuel consumption in l/100 km: 6.3 – 5.6* (37.3 – 42.0 US mpg); combined CO₂ emissions in g/km (CNG): 114 – 102* (183.5 – 164.2 g/mi); combined CO₂ emissions in g/km (gasoline): 143 – 126* (230.1 – 202.8 g/mi)

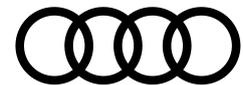
A3 Sportback g-tron: CNG consumption in kg/100 km: 3.5 – 3.3*; combined fuel consumption in l/100 km: 5.4 – 5.1* (43.6 – 46.1 US mpg); combined CO₂ emissions in g/km (CNG): 96 – 89* (154.5 – 143.2 g/mi); combined CO₂ emissions in g/km (gasoline): 126 – 117* (202.8 – 188.3 g/mi)

Ingolstadt, September 8, 2017 – Efficient, thrifty and environmentally friendly combined with sporty driving dynamics – the bivalent 2.0 TFSI engine in the Audi A4 Avant g-tron and A5 Sportback g-tron is an absolute all-rounder. The biggest plus point of this engine is its low pollutant emissions. In the CNG mode, the two models already undercut the limit values of emission standards that will not take effect for a number of years yet. Furthermore, thanks to the use of e-gas Audi is cutting CO₂ emissions by 80 percent compared to a gasoline model in the same performance category.**

“In the CNG mode, the clean drive in the g-tron models already undercuts the limit values of future emission standards. Independent institutes have confirmed that,” emphasized Peter Mertens, Member of the Board of Management of AUDI AG for Technical Development. Mertens believes CNG-powered models will continue to occupy a key role within the Audi portfolio: “For us, g-tron with e-gas is more than merely a bridging technology, it is a fixed element in our future strategy on alternative drives.”

* Figures depend on the tires/wheels used and on the transmission version

** In pure e-gas mode (CNG) with a well-to-wheel analysis (a life cycle assessment that includes fuel production and normal driving of the automobile), in comparison with an equivalent model in the same performance class with a conventional gasoline engine



The automobile manufacturer extended its range of g-tron models just a few weeks ago. With the new A4 Avant g-tron and A5 Sportback g-tron, the premium brand proposes an alternative for the midsize category. The A3 Sportback g-tron has already been on the market since 2014.

The new A4 Avant g-tron and A5 Sportback g-tron are powered by a 2.0 TFSI engine operating according to the highly efficient, Audi-optimized “B cycle” combustion principle. Overall, the engineers used 29 new components and materials, and adjusted the power unit so that it also runs optimally on gas. The pistons and valves have been specially modified and allow for an optimal compression ratio. The turbo engine produces 125 kW (170 hp). Its maximum torque of 270 Newton meters (*199.1 lb-ft*) is available at 1,650 rpm. An electronic controller reduces the high pressure of the gas flowing from the tank from as much as 200 bar to a working pressure of 5 to 10 bar in the engine. This operation is performed dynamically and precisely in response to the power requested by the driver. The correct pressure is always present in the gas line and at the injector valves – low pressure for efficient driving in the lower speed range, and higher pressure for more power and torque.

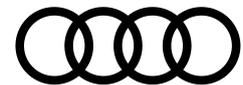
The engine was tested in extreme temperature conditions and had to withstand minus 35 degrees in Scandinavia. Additional features were developed to protect the components required for CNG operation from cold temperatures. These prevent the gas valves from freezing up, for instance. To ensure smooth running in high summertime temperatures, the developers made modifications especially to components for the gasoline mode. For example, they came up with a stainless steel valve to protect the high-pressure injection valve for gasoline. The component may heat up to as much as 400 °C as a result of the CNG combustion process.

All in all, Audi engineers have achieved unparalleled efficiency in CNG engines through these measures. In the NEDC, the Audi A4 Avant g-tron with optional S tronic consumes just 3.8 kilograms of CNG per 100 kilometers, corresponding to CO₂ emissions of 102 grams per kilometer (*164.2 g/mi*). In gasoline mode, the figures are 5.5 liters per 100 kilometers (*42.8 US mpg*) and 126 grams of CO₂ per kilometer (*202.8 g/mi*). The figures for the A5 Sportback g-tron with S tronic are identical in CNG mode. When running on gasoline, it consumes 5.6 liters per 100 kilometers (*42.0 US mpg*) and emits 126 grams of CO₂ per kilometer (*202.8 g/mi*). Both models accelerate from 0 to 100 km/h (*62.1 mph*) in 8.4 seconds. The A4 Avant g-tron reaches a top speed of 221 km/h (*137.3 mph*), the A5 Sportback g-tron 224 km/h (*139.2 mph*).

The overall range of the new midsize models is 950 kilometers (*590.3 mi*) – including up to 500 kilometers (*310.7 mi*) on CNG alone. This fuel is stored in four tanks that are distributed space-efficiently through the rearward structure. There is also a gasoline tank with a capacity of 25 liters (*6.6 US gal*). Fuel costs compared with an equivalent gasoline engine are much lower, at around four euros per 100 kilometers (*62.1 mi*) (Germany, as at: September 2017). The lower CO₂ emissions also mean owners pay less in motor vehicle tax.

* Figures depend on the tires/wheels used and on the transmission version

** In pure e-gas mode (CNG) with a well-to-wheel analysis (a life cycle assessment that includes fuel production and normal driving of the automobile), in comparison with an equivalent model in the same performance class with a conventional gasoline engine



The g-tron models are especially eco-friendly when running on Audi e-gas. Compared to a gasoline-powered car in the same performance class, their CO₂ emissions are 80 percent** lower. That means no extra costs for the customer: As the standard offering, Audi will supply the green fuel Audi e-gas for three years for all g-tron customers who place an order by May 31, 2018.

Customers can fill up their g-tron model at any CNG filling station and pay the regular price. By feeding the computed volume of Audi e-gas into the natural gas grid, Audi works behind the scenes to ensure the green benefits of the program, including the corresponding reduction in CO₂ emissions.

Audi produces the synthetic e-gas using renewable energy from water and CO₂ or from organic residual materials such as straw and plant clippings. This process takes place in its own power-to-gas facility in Werlte in Lower Saxony (Emsland), among other venues. During its production, Audi e-gas binds exactly the amount of CO₂ emitted by the car.

– End –

The Audi Group, with its brands Audi, Ducati and Lamborghini, is one of the most successful manufacturers of automobiles and motorcycles in the premium segment. It is present in more than 100 markets worldwide and produces at 16 locations in twelve countries. 100 percent subsidiaries of AUDI AG include Audi Sport GmbH (Neckarsulm), Automobili Lamborghini S.p.A. (Sant'Agata Bolognese, Italy) and Ducati Motor Holding S.p.A. (Bologna, Italy).

In 2016, the Audi Group delivered to customers about 1.868 million automobiles of the Audi brand, 3,457 sports cars of the Lamborghini brand and 55,451 motorcycles of the Ducati brand. In the 2016 fiscal year, AUDI AG achieved total revenue of €59.3 billion and an operating profit of €3.1 billion. At present, approximately 88,000 people work for the company all over the world, more than 60,000 of them in Germany. Audi focuses on sustainable products and technologies for the future of mobility.

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** In pure e-gas mode (CNG) with a well-to-wheel analysis (a life cycle assessment that includes fuel production and normal driving of the automobile), in comparison with an equivalent model in the same performance class with a conventional gasoline engine