

From the recycling bin to your fuel tank

- **A project promoted by SEAT turns organic waste into biofuel**
- **An 80% reduction in CO2 and less waste are the benefits of this initiative**
- **Biomethane can be used in any gas powered vehicle**

Martorell, 09/04/2019. We all know that there are Vehicles powered with petrol, electricity and gas. Now there is a new way to drive engines, and it begins in our household rubbish bin. This is the aim of the *Life Methamorphosis* project: to achieve biomethane from organic waste, turning it into renewable gas in the following five steps:

1. Recycling. Each inhabitant of the city of Barcelona generates about 1.5 kilos of waste daily. 2.5 million kilos of rubbish every day of which only 40% is recycled. **“With all the organic waste that is generated we can produce enough biomethane to power 10,000 cars to travel around 15,000 kilometres every year”**, points out Andrew Shepherd, the SEAT engineer who heads the *Methamorphosis* project. Of all the rubbish collected at the Ecoparc 2 in Barcelona, biomethane is produced using the organic waste from the brown containers and whatever is useful from the grey containers. All of this raw material will be turned into biofuel.

2. Transforming. The transformation process begins once all the organic waste is selected onsite at the Ecoparc and fed into 26-metre tall anaerobic digesters, the same height s an 8-storey building, each with a capacity of 4,500 cubic metres. As there is no oxygen in the digesters, a decomposition process begins which generates gases. About 30 days later, biogas with 65% methane is produced. **“This biogas still lacks the sufficient quality to power a SEAT gas engine, so it has to be refined”**, explains Shepherd. Furthermore, everything is put to use, as the organic waste that is not turned into biogas is used as fertilizer.

3. Refining and compressing. At this point, the mixture contains methane and carbon dioxide, but it requires refining to obtain a high enough quality for cars. The SEAT engineer points out that **“one of the greatest efforts we are making with our project is to ensure that the gas is of the highest quality. At the end of the study, we’ll test the impact of the exclusive use of our biomethane on the engines of the four vehicles we’re testing”**. Following this refining stage, the gas is compressed and stored.

4. Refuelling. The biomethane is now ready for use in any gas powered vehicle. Refuelling at the project’s gas station takes less than three minutes. **“This biomethane can be injected into the gas supply network. They have the same chemical composition, so it can be used directly or mixed with conventional gas”**, says Shepherd.

5. Driving off. Although the *Methamorphosis* pilot project generates enough biomethane to fuel the four vehicles used in the test, the Ecoparc 2 has the potential to produce much more. If all the biogas at the Ecoparc 2 were refined into biomethane, 3,750 SEAT Leon cars could drive around the world every year. **“We’re tackling very important issues today with this renewable gas, such as contributing to the circular economy, and reducing waste and greenhouse gases, as its production and use generates 80% fewer CO2 emissions than petrol”**, concludes Shepherd. There are currently three SEAT Leon and one Arona working

with this biomethane to test its effect on their engines after being driven a minimum of 30,000 kilometres each.

The Life Metamorphosis project aims to mitigate **climate change** thanks to the use of **biomethane** from waste treatment plants as vehicular fuel. In addition to SEAT, other businesses participating in the project include Aqualia, FCC, Naturgy, Àrea Metropolitana de Barcelona (AMB) and the Institut Català d'Energia (ICAEN)

SEAT is the only company that designs, develops, manufactures and markets cars in Spain. A member of the Volkswagen Group, the multinational has its headquarters in Martorell (Barcelona), exporting 80% of its vehicles, and is present in over 80 countries on all five continents. In 2018, SEAT sold 517,600 cars, the highest figure in the 68-year history of the brand, posted a profit after tax of 294 million euros and a record turnover of close to 10 billion euros.

The SEAT Group employs more than 15,000 professionals and has three production centres – Barcelona, El Prat de Llobregat and Martorell, where it manufactures the highly successful Ibiza, Arona and Leon. Additionally, the company produces the Ateca in the Czech Republic, the Tarraco in Germany, the Alhambra in Portugal and the Mii in Slovakia.

The multinational has a Technical Centre, which operates as a knowledge hub that brings together 1,000 engineers who are focussed on developing innovation for Spain's largest industrial investor in R&D. SEAT already features the latest connectivity technology in its vehicle range and is currently engaged in the company's global digitalisation process to promote the mobility of the future.

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