

**press release**

Bologna, 28 March 2017

## **From sorted organic waste to biomethane**

*A virtuous circle that begins with families and returns to citizens, made possible by the new plant that Hera will create in S. Agata Bolognese within 2018, the first multi-utility in Italy to do so.*

*A € 30 million investment, it will lead to the annual production, at full capacity, of 20,000 tonnes of high-quality natural fertiliser and 7.5 million m<sup>3</sup> of biomethane, a 100% renewable combustible, improving the carbon footprint of the Group and the area in which it operates*

The starting point consists in families, and waste coming from household kitchens, i.e. sorted organic waste for separate waste gathering, with the arrival being the local area itself, when the gas produced is injected into the network to provide power for private or public transportation, or again for household use, such as cooking and heating, with immediate benefits for air quality.

This is the virtuous cycle conceived, and soon turned into reality, by Hera. It involves the production of biomethane, a sustainable and renewable fuel, in the new plant that the company, the first in Italy to do so, will create in S. Agata Bolognese (BO) within 2018, inside the composting site that is already active, with no further use of land area.

This important project will allow 6,000 tonnes of oil to be saved each year and will be inspired by similar initiatives implemented in the most advanced regions of Europe as regards waste recovery, such as Scandinavia and Holland.

The plant will thus be in line with the best technologies envisaged by the European Union for a circular economy and with regional guidelines for treating the organic portion of waste. Its dimensions will also be significant, requiring an overall investment of roughly € 30 million.

The necessary authorisations have all been granted, including approval by the Regional Committee, and construction work will soon begin.

### **From organic waste to biomethane, a 100% renewable fuel**

For years, Hera has already been producing biogas for renewable electricity generation, through biogas digesters and landfills. Now, however, the gas will be refined so as to obtain biomethane, entirely similar to the kind that currently fuels our transportation or flows through the pipes of our houses.

In the new S. Agata Bolognese plant, organic waste will be subjected to a process of anaerobic biogas production. Essentially, the organic waste, shredded and sifted, will remain for approximately 21 days in 4 horizontal digesters, hermetically sealed, where appropriate microorganisms will complete the digestion process producing biogas, made up of methane and carbon dioxide. This will undergo an "upgrading" (purification) process, passing through pressurised water against the current: the carbon dioxide will thus be separated from the methane. The end result will be biomethane, a gas with a methane content of over 95%, and a completely renewable source of energy.

At the end of the digestion process, lignocellulosic material will be added to the outgoing solid part, to obtain a compact mass that will then undergo a composting phase from which quality compost will be derived, used as potting soil for home use or as fertilizer in agriculture.

### **Biomethane will allow 6,000 tonnes less oil to be used each year**

In the S. Agata Bolognese biomethane plant, a process with great potential will then begin: thanks to the implementation of new and improved anaerobic digestion and up-grading technologies (respectively developed by Kompogas in Switzerland and Malberg in Sweden), biomethane will be produced without relinquishing the recovery of materials and the production of compost for agriculture. From 100,000 tonnes per year of organic sorted waste, in addition to 35,000 tonnes from harvested vegetables and pruning, it will be possible to obtain, at full productivity, 20,000 tonnes of compost and 7.5 million m<sup>3</sup> of biomethane, avoiding a use of fossil fuel coming to the equivalent of over 6,000 tonnes of oil, or 14,600 tonnes of CO<sub>2</sub>. The resulting biomethane will be able to be used as fuel for private methane vehicles and local public



transportation, thanks to partnerships with local public transport companies, and citizens will be able to circulate in vehicles fully powered by the new green fuel. This is therefore an initiative that, if replicated, may offer an important contribution to the nation's energy strategy and towards achieving the 20-20-20 European targets.

#### **A converted and fully modernised plant**

With this conversion and modernisation project, work will be done on an already existing site which has hosted for many years a working plant authorised for higher quantities than those now foreseen at full capacity (going from 150,000 to 135,000 tonnes per year, with an ensuing reduction in vehicle traffic) and that will exclusively process sorted waste.

Previously, non-sorted waste was taken to the site to be treated and disposed of in the neighbouring landfill. Once the latter's capacity was filled, Herambiente, pursuing the objectives of a circular economy, chose not to expand it, even though authorisation had already been obtained and the project included in provincial planning.

The new plant's machinery and operations will be located indoors, minimizing the impact of noise and odours. The air treatment system of the current composting plant is also scheduled to be upgraded, to reduce the odours coming from the phase in which the materials are processed. Composting will take place in cells, constructed inside the plant's buildings, closed and aspirated one by one. The exhausted air drawn out will go through a deodorisation system consisting of biofilters and a water washing unit (scrubber), a technology already used in Northern Europe in similar plants. A filter room, called a foretrough, will furthermore be created, in the area where the waste is transferred and stored, whose function will be to provide further isolation for the area in which waste coming in from the environment is unloaded and stored. Therefore, no combustion plants are foreseen.

#### **An innovative solution, and a benchmark for the Italian market**

The technologies used in the plant are the fruit of research, studies and European competitions that have led Hera to choose the best of what is now available on the market. The project is already becoming a benchmark for the Italian market and will undoubtedly act as a reference point for the entire country. Bearing in mind that new national legislation is expected within next summer, which will promote this type of plant as a source of renewable energy above all by encouraging biomethane production for use in automobiles, further impetus will certainly be added to projects such as this.

"Environmental sustainability and a circular economy are two of the main areas on which Hera's innovative policies are focused, with the objective of valorising, and drawing the greatest benefit from, waste and refuse", comments Tomaso Tommasi di Vignano, Executive Chairman of the Hera Group. "This is why we are working on various projects, the most important of which is the S. Agata Bolognese biomethane plant, which also represents a concrete answer to needs such as treating the increasing volumes of sorted waste and contributing to improving both air quality and the carbon footprint. The project respects the guidelines contained in the European commission's "Clean energy for all" package, concerning both energy efficiency, reducing consumption of fossil sources, and second-generation bio-carburant production, including biomethane, coming from waste instead of farmed products. Furthermore, we are already looking into new and innovative processes to valorise other areas of production, such as purification sludge and prunings, to obtain new-generation combustibles".

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