



Press Release
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In a world first, ENGIE produces renewable gas from solid non-recyclable waste

Located in the heart of “Chemical Valley” in Saint-Fons (Rhône), France, the GAYA semi-industrial Research & Development platform took a historic step forward in the production of renewable gas on 17 November.

Supported by the French agency for ecological transition ADEME, the GAYA platform is in line with the targets set by the French Law on Energy Transition for Green Growth, which aims for a 50% reduction in the quantity of waste going to landfill by 2025 compared with 2010 and a 30% reduction in fossil fuel consumption in 2030 compared with 2012, with a view to preserving the environment and strengthening France’s energy independence. It contributes directly to the ENGIE Group’s purpose, “to act to accelerate the transition towards a carbon-neutral economy, through reduced energy consumption and more environmentally friendly solutions”.

A year after successfully producing biomethane from forest biomass, the GAYA platform achieved a world first and took a historic step forward with the production of its first cubic metres of renewable gas from Solid Recovered Fuel (SRF). In the absence of dedicated recycling channels, this type of fuel is mostly made up of waste wood, paper, cardboard and plastic resulting from economic activities. ENGIE’s demonstrator has validated the integrated operation of the entire chain of innovative technologies under industrial conditions. This configuration maximises the production of renewable gas.

“With GAYA, we have made major scientific advances in the development and industrialisation of renewable gas production sectors. The platform model contributes to the energy transition with the production of renewable gas and to the circular economy by making use of waste that until now was destined for landfill. The tests carried out using SRF show that we now know how to produce renewable gas from this type of waste,” says Adeline Duterque, Director of ENGIE Lab Crigen, the Corporate Group’s Research & Development centre.

Construction of a first industrial unit in Le Havre could begin in 2023

Based on the work already undertaken, ENGIE plans to build a first industrial unit in Le Havre, France, starting in 2023, the SALAMANDRE project. From 2026, this will allow 70,000 tonnes of non-recyclable waste per year to be used to produce up to 150 GWh of renewable gas, equivalent to the consumption of 670 urban buses. In addition, the multi-energy process will allow production of 45 GWh of renewable heat to meet urban and industrial needs. As an alternative to landfill, which is due to be phased out, the GAYA chain is positioned as the channel of reference for making use of non-recyclable waste to produce a storable renewable gas, which can substitute for natural gas and as such has multiple end uses: sustainable mobility, industry, the tertiary sector.



History:

Born out of a collaborative Research & Development project bringing together 11 partners of excellence, GAYA reflects an ambition to launch projects centred on new energy technologies. This extremely ambitious project has received financial support from ADEME.

Key dates:

- 2010: launch of the GAYA project, coordinated by ENGIE, co-financed by ADEME and bringing together 11 partners from the industrial, institutional and academic worlds, in France and Europe.
- 2012 to 2017: design, construction and commissioning of the GAYA platform.
- 20 October 2017: official inauguration.
- End November 2018: first injection of biomass into the gasifier and production of purified synthesis gas.
- 13 November 2019: first production of biomethane from forest biomass.
- 17 November 2020: first production of renewable gas from waste (SRF).

Key figures:

- 10 patents filed.
- Among the very first gasification and methanation demonstrators in France and in Europe / Supported by ADEME / brought together 11 partners including ENGIE (CEA, LGC, LRGP, CTP, UCCS, FCBA, UCFF, CIRAD, RAPSODEE, REPOTEC).
- Capacity: a gasifier of approximately 600 kWth in incoming biomass and waste; 30-40 Nm³/h of biomethane / 15 to 25 permanent staff on site.

GAYA and SRF: how does it work?

Non-hazardous waste from economic activities is prepared, thus becoming solid recovered fuel according to the standards in force. This is then gasified at very high temperature to produce synthesis gas with high calorific value. The synthesis gas resulting from this first conversion is then purified to transform it into biomethane using a catalytic methanation process.

About ENGIE

We are a global group that leads the world in the provision of low-carbon energy and services. ENGIE's purpose ("raison d'être") is to act to accelerate the transition towards a carbon-neutral economy, through reduced energy consumption and more environmentally friendly solutions, reconciling economic performance with a positive impact on people and the planet. We use our expertise in our key business areas (gas, renewable energies, services) to provide competitive and bespoke solutions. Our 170,000 employees, clients, partners and stakeholders work together to form a community of Imaginative Builders, constantly striving to achieve more harmonious progress - worldwide.

Turnover in 2019: €60.1 billion. The Group is listed on the Paris and Brussels stock exchanges (ENGI) and is represented in the main financial indices (CAC 40, DJ Euro Stoxx 50, Euronext 100, FTSE Eurotop 100, MSCI Europe) and non-financial indices (DJSI World, DJSI Europe and Euronext Vigeo Eiris - World 120, Eurozone 120, Europe 120, France 20, CAC 40 Governance).

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