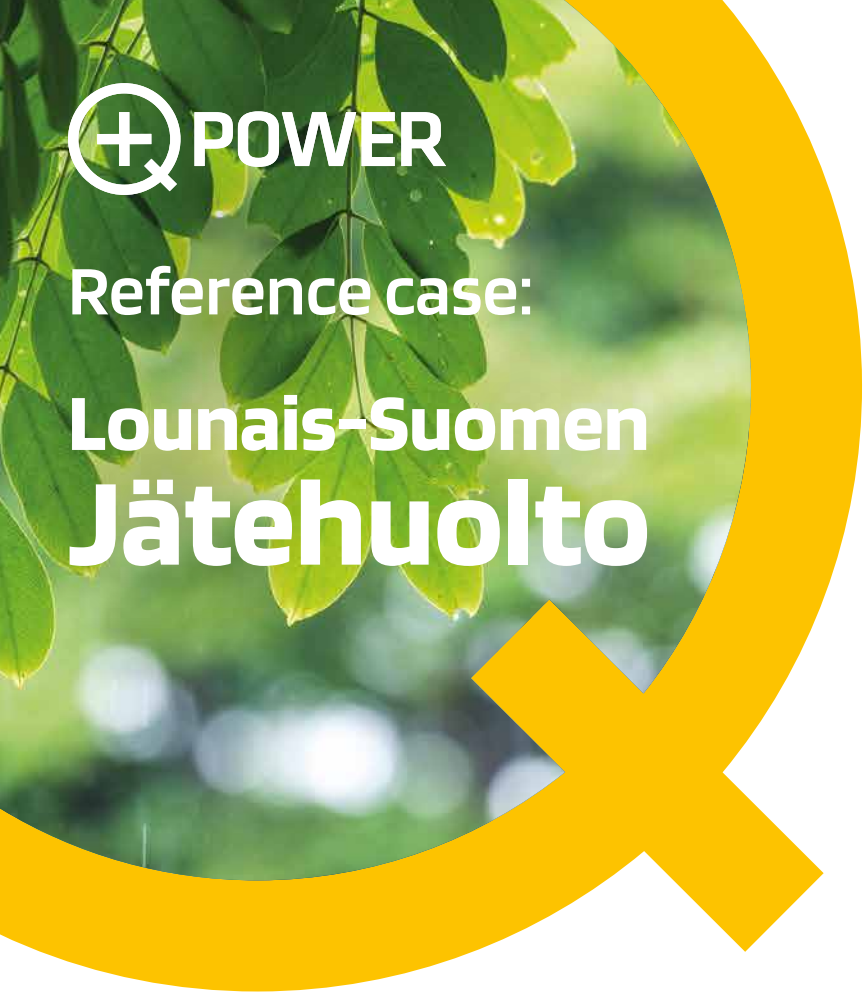


Reference case:

Lounais-Suomen Jätehuolto

Turning Trash into Treasure: Reference case Korvenmäki, landfill gas

Customer

Lounais-Suomen Jätehuolto Oy (LSJH) is a municipally owned waste treatment located in Southwest Finland, that operates Korvenmäki waste management site. In the site, landfill gas was collected but due to the impurities, it could not be utilized.

The challenge and the goal

Landfills are a major contributor to greenhouse gas emissions, with landfill gas being a byproduct of waste decomposition that is rich in methane. In the Korvenmäki site, the goal was to utilize poor-quality landfill gas, that otherwise was unusable, in methane production. Q Power saw an opportunity to address this challenge by developing a technology to refine landfill gas into high-quality synthetic fuel.

> *The pilot with Q Power went well and the results of the testing were quite promising from LSJH's point of view. The new technology enables the utilization of landfill gas significantly more efficiently than previous solutions."*
>
> ***Teemu Jutila**, development director Lounais-Suomen Jätehuolto*

The on-site pilot

The production of synthetic methane was piloted in an on-site pilot, that Q Power has designed to validate the methanation process with the specific flue gas composition.

Q Power provided a turn-key pilot project including a pilot unit, piloting process, data analyze and reporting. Methane was produced to traffic quality.

Results in piloting

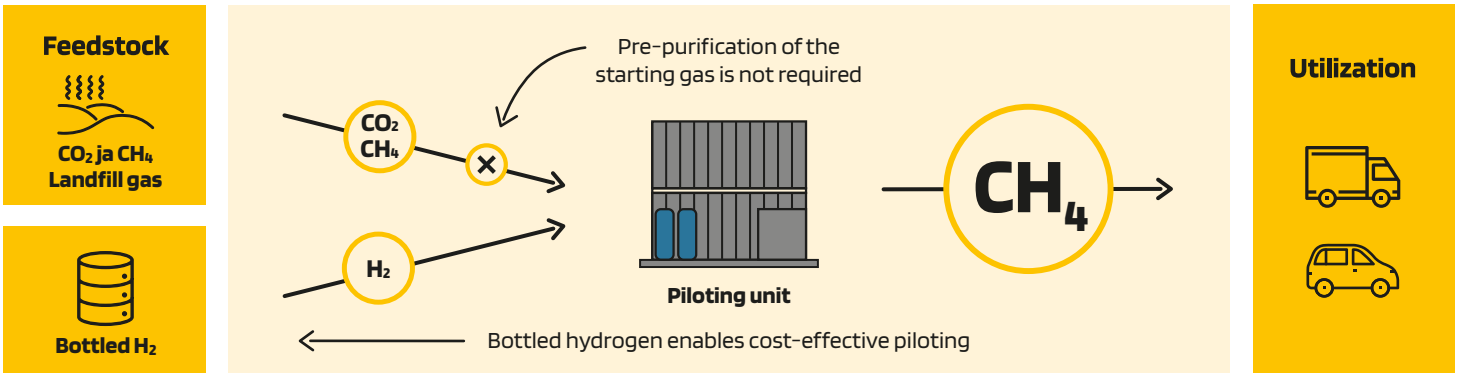
All the targets for the project were met. Synthetic methane was successfully produced from landfill gas. Methane content was upgraded from 40-56% to over 90%.

The best result was that no pre-purification was needed. The microbiological process effectively reduced the concentration of hydrogen sulfide, siloxanes, and other pollutants in landfill gas.

Conclusion

This pilot proves that Q Power's landfill gas refinement technology is a game-changer in the field of sustainable synthetic gas production. By utilizing surplus gases as a resource, Q Power's technology reduces the carbon footprint of industry, transportation, and landfills. Q Power helps to mitigate the effects of climate change and contributes to global energy security. Companies can partner with Q Power to reduce their carbon footprint, save on costs, achieve energy self-sufficiency, and positively impact the world.

Q Pilot for landfill gas



From waste to resource: Q Power's innovative technology transforms landfill gas into sustainable fuel

Landfills are a significant source of methane emissions and carbon dioxide, both potent greenhouse gases that contribute to climate change. However, Q Power is turning this problem into an opportunity with our innovative methanation technology.

Our methanation process utilizes the carbon dioxide in landfill gas as a feedstock to produce renewable methane, which can be used for example to power homes, businesses, and vehicles. Thus, plenty of impurities containing landfill gas are typically upgraded and purified during the treatment.

Benefits of Q Power's Methanation

Reduces the need for fossil fuels: By using landfill gas as a feedstock, we can prevent landfill gas from being released into the atmosphere and use it to substitute fossil-based natural gas.

Produces Renewable Methane: By using green hydrogen as the second raw material, Q Power's methanation process produces renewable gas that can replace fossil natural gas.

How Q Power's Methanation Works

1. **Gas Collection:** Landfill gas is collected from the landfill site and fed to Q Power's methanation bioreactors.
2. **No Purification:** In traditional methanation processes, pre-purification of landfill gas is necessary to remove impurities such as sulfur and siloxanes before landfill gas can be converted to methane. However, with Q Powers' innovative microbiological technology, in many cases, there is no need for pre-purification.
3. **Methanation:** Landfill gas is fed to a methanation process, where it is converted into renewable synthetic methane.
4. **Upgrading:** Renewable methane undergoes an upgrading process to remove any remaining impurities and meet pipeline specifications.
5. **Distribution:** Our customers can utilize synthetic methane in a preferred way. For example, the final product can be used in microturbines or to be distributed to end customers via pipeline or gas fueling stations. E-methane can also be compressed or liquefied to replace CNG or LNG.

Choose Q Power for Sustainable Energy Solutions

At Q Power, we are committed to providing sustainable energy solutions that benefit both the environment and our customers. By using landfill gas in our methanation process, we can turn a problem into a resource, reducing greenhouse gas emissions, producing renewable fuel, and minimizing waste. Choose Q Power for your energy needs and join us in creating a cleaner, more sustainable future.

Contact us today to learn more about utilizing your surplus gas in energy production.

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Q Power is a Finnish power-to-X technology company with patented solutions for storing renewable energy and replacing fossil fuels.

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