

Best practice example

Biogas plants



St. Laurent de Cognac, France Biogas Plant

The biogas plant in St. Laurent de Cognac was built in 1970 to valorise distillery waste from Cognac production. Approximately 300 000 t/a of vinasses are treated to produce 20 000 MWh worth of biogas. The vinasses are concentrated by mechanical vapour compression and tartaric acid is precipitated with calcium carbonate. The vinasses are then sent to the 4 infinitely stirred - downflow recirculation -type digestors. Retention time is 3-4 weeks. The digestate (1200-1500 tonnes dry matter /a) is decanted, mixed with ground plant matter waste, and used as agricultural compost. H₂S is eliminated in a soda washing tower and the gas is dehydrated by condensation on an exchanger. A mobile tank containing activated carbon removes most pollutants. The gas is then compressed and valorised via 4 microturbines with an installed electrical power of 200 kW each. The electricity produced is sold and thermal energy is used for own purposes.

Technology at a glance

Biogas production: 20 000 MWh (converted to 13 500 MWh/a thermal energy + 3 300 MWh/a electric energy)

Installed power: up to 20 000 m³/day biogas production capacity

Digester type and volume (m³): infinitely stirred with downflow recirculation ; 17 500 m³

Type of waste used: Cognac distillery residue

Amount of waste/raw material used as substrate (t/year): 300 000 t/a

Operating hours: Waste received
Nov-Jun



Information on financing

Year of realisation: 1970

total investment costs: € 30 million

feed-in tariff electricity: ?

tariff for heat sale: c.a. € 400 000 turnover from sale of electricity

Information

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