

Nocart Biogas Power Plant

What does it do?

The Nocart Biogas Power Plant generates electricity by anaerobically digesting biodegradable material and breaking it down into biogas, which is converted into electricity and distributed with the Nocart Power Management Unit.

The biogas plant can utilize source materials such as cow manure, organic waste and sludge from waste water treatment or municipal waste. After the biogas has been separated, the source material can still be further utilized in fertilization.

The Nocart Biogas Power Plant is a reliable source of energy that helps customers become **energy self-sufficient**. Organic material like cow manure emits methane, which is 21 time more harmful greenhouse gas than CO². Using that methane to produce electricity reduces CO² emissions even more and is a truly environmentally friendly option. The only

emission the Nocart Biogas Power Plant produces is water vapor. This brings energy cost savings and improves the footprint of the community, corporation or farm.

Additional cost savings can be achieved with the use of processed sludge as a **fertilizer** for the farm fields.

Power values for different materials

Type	Head count	Power
Cow manure	1000	200 kW
Pig manure	10 000	200 kW

Note that specific production numbers can be defined once the quality of the source material has been analysed.

How does the Nocart Biogas Power Plant work?

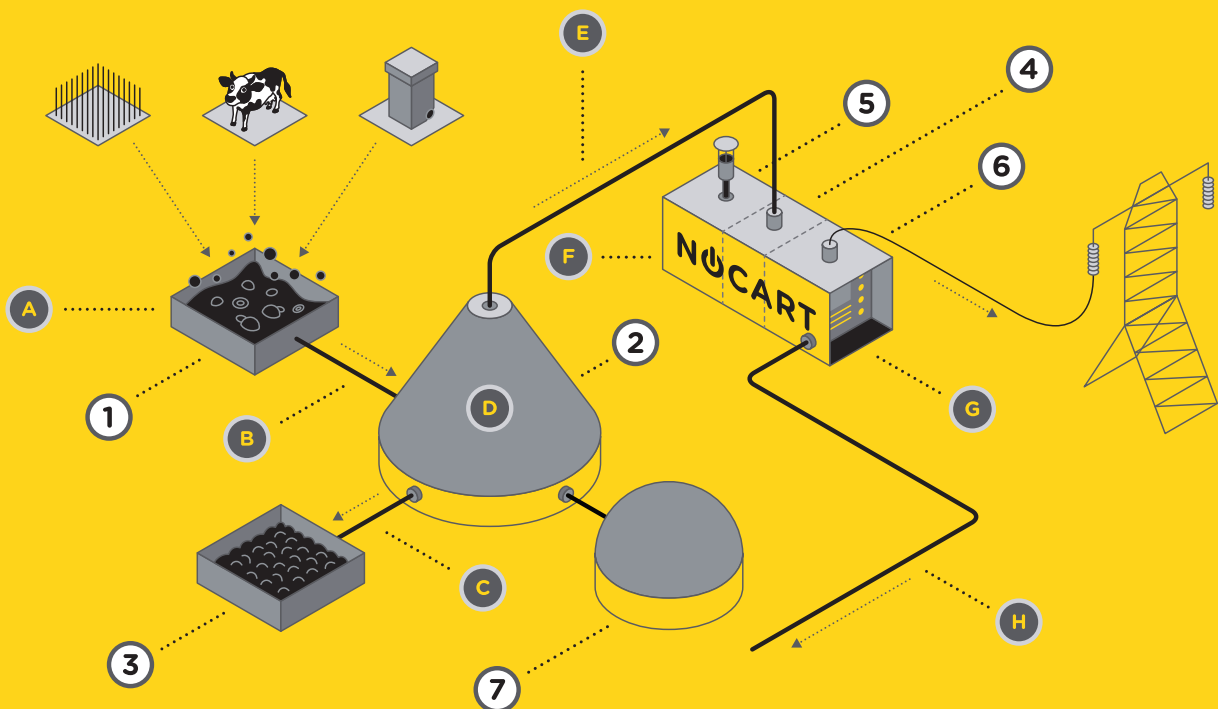
Parts

The Nocart Biogas Power Plant is composed of a biogas reactor, gas processing unit and power management unit. Nocart provides in one simple delivery a gas processing and power management container where the equipment and generators are preinstalled.

1. The gas-tight biogas reactor.
2. The gas processing unit is where the biogas is compressed, filtered and separated.
3. Methane is then directed to the motor units and generator.

4. The Nocart Power Management Unit transfers the power from the generators to local consumption grid or into batteries where the electricity is stored for later use. **Remote data monitoring** of the power generation unit is an option.

5. We also propose to deliver a separate **gas storage unit**. The function of the gas storage is to serve the role of a 'fuse' or 'fuel tank' for the whole system: if a reactor temporarily is not operational, the gas storage will still enable power and heat production while the reactor operation is being repaired.



Functional description

- A)** The source material is fed into the mixer and mixed into sludge in which the moisture of the material is set to the target level.
- B)** The sludge is pumped into the reactor pool where anaerobic bacteria create biogas from the sludge.
- C)** The processed material waste exits the reactor at the same pace as new material is fed into it. The excess material can be used as fertilizer.
- D)** The biogas is collected in the gas dome on top of the reactor pool.

- E)** The biogas created in the process then travels along a pipe to the gas processing unit where the gas is compressed, cooled down, and filtered.
- F)** The methane is burnt in engines which rotate the generators.
- G)** The generators are connected to the power management unit, which feeds the electricity into a local micro grid or the existing grid or batteries.
- H)** The process heat can be used for the customer's own needs.