



Special points of interest:

- **Gasification makes all dairy industry waste extinct with a full cycle solution**
- **Systems produces electrical energy, heat and fuel from dairy waste**
- **PowerCan® 200 are movable Plug and Play operations**
- **PowerCan® 200 is the most efficient modular Dairy WtE waste process**

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PowerCan® 200 Dairy and Dung

“PowerCan® 200 a gasification system that can turns cow dung into local electricity and heat?”

PowerCan® 200	The Movable Power Solution
Feedstock Conversion	30% of original mass at <25%
Packaging as feedstock	1 System Consumes <4 tons daily
Conversion to Fuel	1 ton mixed feedstock €280l fuel
Heat Temperature	Hot water is supplied 80-120C
Feedstock	Dried Cow Dung/Biomass mixed
Ideal Feedstock Form	<25% Dung Blended Biomass MSW
By content PowerCan® 200	Consumes 4 tons <25% daily Consumes 12 tons >70% daily
CAPEX Payback Period	Typically <2-3 years
Products	Electricity, Heat and Fertilizer
Typical Dairy Farm Uses	Energy, Pasteurization, Sanitization, Waste Extinction
Delivery/Commissioning	3-6 months Delivered Plug and Play
Dung Solids to Liquids	70 kilos = 138 Liters
Parasitic Energy Consumption	<4% of total [all ratings are Net] so Parasitic Energy is included
Physical Size	20ft Containers, Systems can include dryers, power pack etc
Output/Scale	PowerCan® 200 24 hour operation all year round and in any conditions



PowerCan® 200 uses cow dung feedstock

PowerCan® 200 is a 200kW_e + 260kW_{th} off the shelf gasification power plant ideal for the dairy medium and large scale Dairy Farmer. PowerCan® 200 gasifies its feedstock reducing what you put in to its basic elements and with almost no emissions. PowerCan® 200 can convert dry cow dung into to very clean usable Syngas. The Syngas is cooled and converted to run converted Diesel CHP [combined heat and power] units or tapped for FT conversion for any Diesel engine

Cow Dung

A healthy cow dung is emitted at 68.8% moisture and the average mature cow depending on its breed nationality and age on average produces between 38 and 71 kilos of dung per day. Cow dung is recovered neat from the dairy floor or mixed with bedding materials such as straw or sawdust.

Processing Cow Dung

Ideal PowerCan® 200 feedstock contains far less moisture, drying is economically achieved either combining ventilation [drying] and mixing the dung with a dry biomass such as straw. In warm climates dung is simply turned out on a concrete floor in the sun for a few hours, in North Europe PowerCan® 200 can be provide with a bespoke containerized automated drying solution such as DORSET they use a small proportion of the PowerCan® 200 heat for drying and bulk handling feedstock.

Cow dung as a feedstock

Dried or dried mixed cow dung feedstock are crushed and simply processed into a cake briquette. This highly manageable feedstock is simply top loaded into the PowerCan® 200 with very little risk of blockage. Cow Dung is easily bulk handled with other agricultural wastes to make excellent fuels

“With Multiple feedstock capability PowerCan® 200 services Dairy full cycle from biomass and dung to returned packaging”

A Multiple Dairy Solution

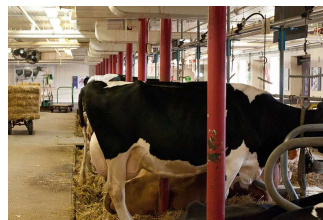
PowerCan® 200 is designed for the Dairy industry, the PowerCan® 200 keep the parlor clean with constant auger feed in capability. SOLIDEA can engineer the best feedstock solution to get the best use from PowerCan® 200 from any size installation and as a local energy and fuel solution.

Getting Started

PowerCan® 200 makes waste extinct using only a fraction of the energy it produces. Unlike other hot solutions plasma PowerCan® 200 parasites less than 5% of the total electricity produced [using non of its rated energy]. PowerCan® 200 specifications are all net ratings after parasitic consumption. PowerCan® 200 delivers CHP from its own gen set. Off grid at start 20 litres of propane is capable to start PowerCan® 200 the system can then produces all its own energy requirements

Variable Feedstock

PowerCan® 200 systems consumes a variety of Dairy related production waste, cow dung, bedding and other biomass which may be produced on site or



locally. Downstream PowerCan® 200 systems consume all types of Dairy MSW like PET, plastics and almost all types of packaging including the foils used in aseptic packaging. PowerCan® 200 system can be integrated into any dairy and full product cycle to make returned waste extinct and deliver more electricity and heat locally. Many units can be added to upscale PowerCan® 200 anywhere and its delivery potential is unlimited.

Electrical Energy

PowerCan® 200 produces electricity 24hrs per day at 200kW_h. Output is achieved through a continu-

ous feedstock supply which can be fully automated. All PowerCan® 200 systems can be supplied with the necessary software to operate and monitor PowerCan® 200 smart grid and via internet. PowerCan® 200 systems can standalone for Micro Grid generation an energy hub ideal for isolated communities. SOLIDEA Group recommend electricity is delivered via a grid system as this demonstrates to be the most profitable application.

Heat Delivery

Heat is delivered as hot water at temperatures between 80-120 Degrees Celsius and at low pressure pumped hot water. Foodsafe heat can be delivered for a variety of purposes including pasteurization and sanitization. PowerCan® 200 CHP ratio is 60% heat to 40% electrical energy.

By products. Ash and Residue

PowerCan® 200 produces very clean ash all of which will remain on the farm and in the food cycle. Syngas can be tapped for Diesel manufacture using FT there are almost zero gas emissions. All PowerCan® 200 emissions are far cleaner than regular Diesel Emissions and are entirely safe