HERITAGE
ECO SOLUTIONS

SLURRY TO ENERGY

bert

UNLOCK YOUR LIVESTOCK'S ENERGETIC POTENTIAL

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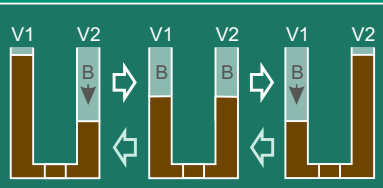
Did you know that your livestock represents a considerable energetic potential that's just waiting there to be capitalized on? A potential, existing of electricity and heat, representing such an economic value that you should not ignore it? Our SLURRYTO**ENERGY bio-digesting solution, developed by our tech partner Bert Energy, will unlock this potential for you. Although this patented and meanwhile worldwide proven technology is well capable of converting all kinds of bio waste into considerable amounts of green energy without the use of energy crops (silage, root crops), it's especially suited to process any livestock slurry.**

BERT TECHNOLOGY

Bert Anaerobic (absence of free oxygen) Digestion slurry only plants are optimized for liquid fermentation. They apply the unique „Power Of Nature" (PON) technology: the principle of communicating vessels is applied to mix the slurry in the digester. This continuous natural process helps saving on expenditure and operational costs and it allows the farmer to operate small plants (starting at 60m³, 15kW/hour output). No other biogas system is using the power of nature as consequently as do Bert Energie bio-digesters!

The Bert technology is designed to have minimal moving parts and require minimal operations and maintenance (15-30 minutes per day depending on the number of digesters).



The Bert PON technology applies the principle of communicating vessels: The left schematic shows that the downward pressure in V2 (right vessel), created by the expanding biogas (B) volume, pushes the digestate high up in V1 where the biogas is released through the open valve. By releasing the biogas in V2 and closing the valve in V1 the pressure in V2 decreases, enabling the digestate to flow back, restoring the balance (center schematic). Next, that same process will take place in a reversed order (right schematic) and so on.

All components are standardized. Consequently structural service and maintenance are minimal, straightforward and easy to learn.

SMOOTH SLURRY MANAGEMENT

Integration of Bert technology in the farm slurry management allows additional savings and logistic advantages. Fresh slurry is fed continuously from the barn into the pre-pit and from there on pumped automatically and on regular intervals into the digester to realize maximum slurry freshness, optimal composition and thus maximum biogas potential. The mixing inside the digester happens continuously by the force of nature. The digestate is then automatically released into the storage lagoon or directed to the optional SLURRYTO**WATER** processing unit. As a result no vehicular transport of the digestate is required and manpower/time is reduced to a minimum.

PRODUCT RANGE

Bert offers a broad range of standardized tank sizes ranged from 60-1200 m³. The electric output ranges from 15 to 150 kW per hour! A **Bert Mobile** becomes profitable as of 3 metric tons of slurry processed per day, whilst as of 9 tons of slurry per day **concrete build** digesters can be more economic. The kW/hour output can be modified as per customer's requirements. This results in a winsome expenditure and an attractive ROI.

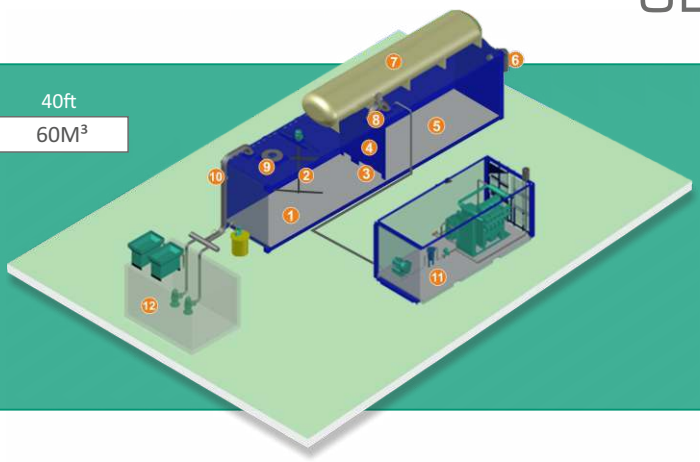
BERT MOBILE SERIES

A Bert Mobile is a standardized, modular and compact designed biogas plant existing of a 20ft container housing a Combined Heat & Power (CHP) unit, combined with one or more 40ft digester containers. Besides its design Bert Mobile offers more advantages; like ease of operation (15 minutes of your time per day with 1 digester), low maintenance costs and a quick and problem free installation and up-powering.

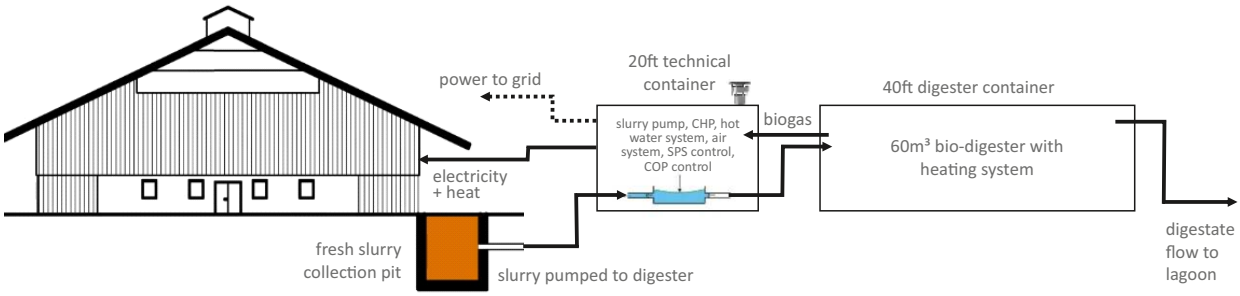
Another major advantage of this system is the ability to operate off grid, self sustainable generating electricity to run your farm and heat your pigsty, cowshed and/or home. This stand alone operation will result also in improved hygiene conditions and an effective disease control. And the odor free process leaves the environment unaffected.

SLURRY TO**ENERGY**

20ft	40ft
15kW	60M³



1. Mixing compartment
2. Agitator
3. Digestate flow throughput
4. Dividing wall
5. Mixing compartment
6. Digestate outlet
7. Biogas storage balloon
8. Outlet pipe and valve (2x)
9. Manhole/hatch
10. Slurry feeding inlet
11. Combined Heat and Power unit
12. Pre-pit/feeding pump (optional)



Setting up Bert Mobile

After an on-site inventory of the situation as well as your wishes we will draw up a project plan. Bert Mobile then arrives by standard truck. After a local crane has placed the 20 ft Combined Heat and Power (CHP) container and the 40 feet digester container(s) at the prepared location, our team will then install the biogas system within 4-6 working days. Next, the on board pump will fill up the digester and the slurry is heated up. Biogas production starts within 10-15 days. The CHP will start to generate energy accordingly.

Container volume and max output combinations*

20ft	40ft
15kW	60M³

20ft	40ft
30kW	60M³
	60M³

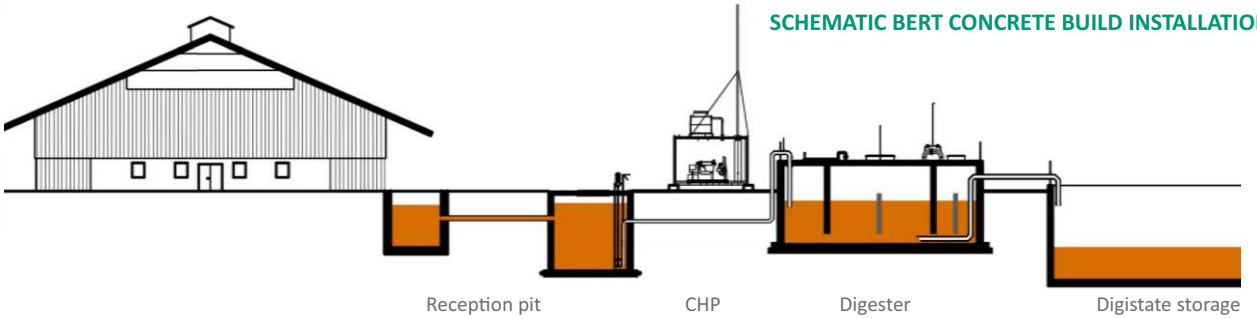
20ft	40ft
40kW	60M³
	60M³
	60M³

* Configurations existing of 4 or more containers are available upon request.
* The CHP/kW per hour output can not be guaranteed for it depends, amongst others, on the slurry's quality.
* An equal amount of heat is generated. Depending on the local climate a small part is applied to keep the digester at temperature.
* Final design/finish and technical specifications are subject to local conditions like climate zone, type of slurry and availability of materials.

CONCRETE BUILD DIGESTER

We offer different sized digesters in combination with different CHP engines. The typical combinations are: 300 m³ /30 kW, 400 m³/40 kW, 500 m³/50 kW and 600 m³/75 kW. Other combinations are conceivable, depending on slurry volume. Of course two concrete build digesters can be combined to process larger volumes of substrates (for example 30.000 m³ of slurry per year).

SCHEMATIC BERT CONCRETE BUILD INSTALLATION



BERT MOBILE ADVANTAGES

- ✓ Modular, compact and standardised design
- ✓ Capacity can be increased over time, any time
- ✓ Containers can be relocated
- ✓ 15-40 kW/hour green power output by standard configurations
- ✓ Equal amount of free heat can be used to heat pigsty, cowshed or home, or applied to dry wheat, grass, wood etc.
- ✓ Patented Power Of Nature (PON) technology
- ✓ Innovative digestate mixing by the increasing pressure generated by the biogas itself
- ✓ Minimal moving parts
- ✓ Requires 15-30 minutes of attention per day depending on number of digesters
- ✓ Full control over process and results
- ✓ Easy to integrate into the farm's slurry management
- ✓ No vehicular slurry transport required
- ✓ Problem free mixing 'up to' minus 30°C
- ✓ Maximum and constant slurry "freshness" = maximum biogas potential
- ✓ Better hygiene/disease/contamination control due to stand alone operation
- ✓ 'Island mode' guarantees independence of local power grid
- ✓ AC, DC, 2 or 3 phase power or E-vehicle battery charging output
- ✓ In general no (costly) special grid connection interfase is required up to 30 kW/hour output
- ✓ Savings on energy bill or income from selling electricity to third parties
- ✓ Fast and worry free installation and commissioning
- ✓ Attractive OPEX and CAPEX
- ✓ Become less dependent on dairy and/or meat prices
- ✓ Compressed biogas (CBG) for bio-fuel purposes available through optional unit
- ✓ Odor free process leaves the environment unaffected

Would you like to learn (more) about biogas?

Register at www.boba.bio to enjoy informative webinars

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