BIOSOLIDS

Dehydris® Ultra

Biomimicry for sustainable ultra-dewatering

Reduce sludge volume and produce a sanitized biocoal for agricultural reuse

⇛ **Sludge volume reduction**

2 or 3 times less sludge volume with 3 to 4 times less energy that a thermal dryer

⇛ **Production of an hygienized biocoal**

An innovative combination of hydrothermal conditioning and post-dewatering

The ultra-dewatering workshops developed by SUEZ use a **combination of hydrothermal conditioning and post-dewatering** to produce a **sanitized biocoal that is easily transportable and storable.** This process mimics the hydrothermal carbonization of the organic matter contained in sludge, in a thermal conditioning reactor operating between 175°C and 220°C at low pressure (< 30 bar).

The ultra-dewatering workshop can be configured with either a centrifugal decanter or a piston press for post-dewatering.

By achieving up to

75%

volume cake reduction

storage and transport are significantly lowered (4x fewer trucks)

The Dehydris® Ultra technology…

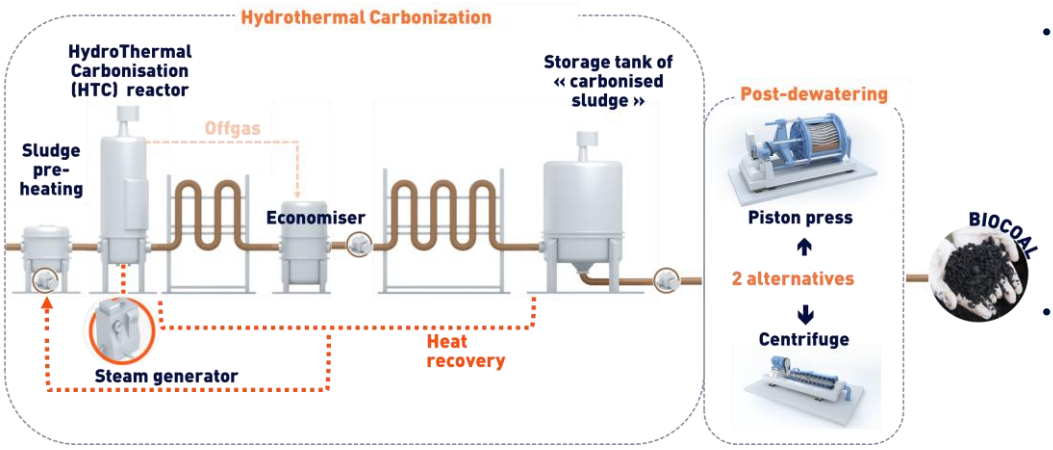
The first step transforms the sludge into a carbon-rich liquid through the hydrothermal carbonization process. Then, post dewatering using piston press or centrifuge makes it possible to obtain a sanitized "biocoal".

Hyrothermal Carbonisation process:

Dewatered sludge (18–25% dry) is fed into a hopper and pre-heated using steam recovered from downstream cooling. The Hydrothermal Carbonisation (HTC) reaction then takes place in a continuously operating reactor designed for optimal mixing.

Following the reactor, two heat exchange stages recover energy:
- An economizer reduces pressure and lowers the sludge temperature, generating flash steam for pre-heating.
- Tubular heat exchangers further cool the sludge and produce hot water for cleaning post-dewatering equipment.

The cooled, carbonized sludge is pumped to a storage tank.



Post-dewatering options:

- **Piston Press:**
  Achieves **60–65%** dryness without chemical conditioning for most sludge types, reducing sludge volume by up to 75%, cutting storage and transport costs (4x fewer trucks).
- **Centrifuge:**
  Achieves **40–45%** dryness. It reduces sludge volume by up to 60%, requiring 2.5x fewer trucks.

. . . what it can do for you

Environment

- **An sanitized biocoal valuable in agriculture**
- **Up to 70% of carbon retained in the biocoal**

Savings

- **Up to 3 time less energy consumed** than a thermal drying
- **Less sludge transported** (higher density than dried sludge)

Energy

- **Thermal energy self-sufficiency through coupling with digestion**
- **A biocoal with high calorific value** (LHV: up to 10 MJ/Kg): 2/3 of that of wood

Among our references

Pau Lescar, France
Urban wastewater (Biofactory®)
Capacity: 200,000 PE

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