

InnoDry2E* advanced drying technology

high efficient thermal drying

overview

SUEZ's line of patented InnoDry2E advanced drying technology use a unique 2 stage dryer with heat recovery.

The typical feed to our system is mechanically de-watered sludge, using a screw press, decanter centrifuge, belt press or pneumatic press.

The first stage of the InnoDry2E technology, for municipal applications, will dry the sludge to reach its plastic phase (45-47%DM). Next the extruder will pre-form the sludge into its final 'spaghetti' shape before it is finally dried in the second stage. All the energy (vapor) coming out of first stage is reused in the second stage.

benefits

Energy efficient: savings

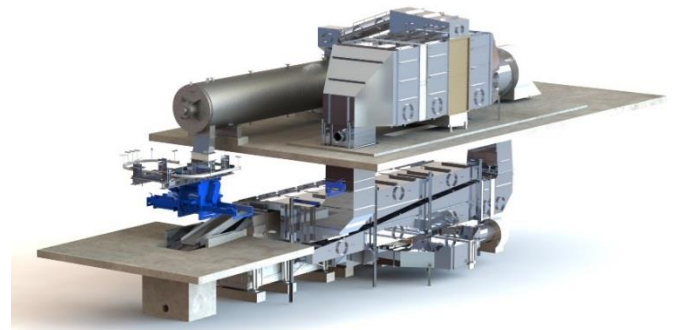
- Lowest energy consumption system on the market. 600-750 kWh/Ton evaporated H₂O.
- Very high density of dried biosolids, 600 kg/m³ → low transportation costs.
- Hot water recovery (45-60°C) possible for digester or other thermal duties.
- Low footprint due to 2 level installation (concrete or metal platform).

Safe

- ATEX compliant without oxygen monitoring.
- Integrated biosolids cooling belt (safe storage).
- Very compact and uniform shaped biosolids, virtually dust free (< 0.27% w/w).

Reliable

- Class A Biosolids delivered.
- Low maintenance needed.



Adaptable

- High sludge dryness variation accepted without back mixing (15% → 35% dry matter).
- Flexible dryness output (60% → 90% dry matter).
- Fully automated system. Variations of inlet dry matter are automatically adjusted.

why thermal drying

- Reduce weight and volume for transportation.
- Produce safe and hygienic biosolids.
- Biologically stable, long term storage.

equipment integrator

Auxiliary equipment we offer:

- Sludge reception.
- Heating plant (thermal oil, steam).
- Condensate system.
- Granulate handling.
- Storage.

biosolids recycling: new resource

- Cement factory (biofuel).
- Energy production, replacing coal & wood.
- Agricultural reuse as fertilizer.

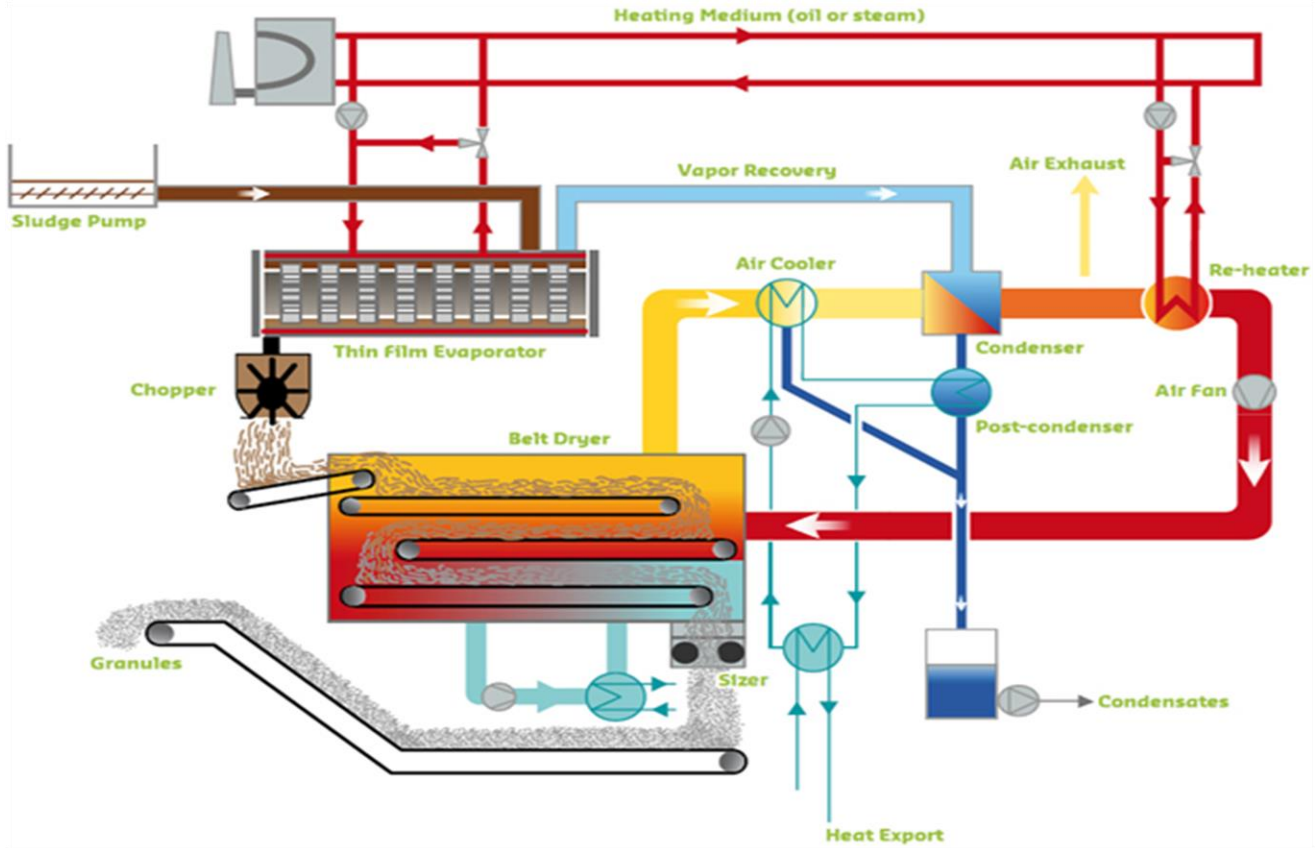
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capacities

500 to 8300 kg H₂O/hour per line.

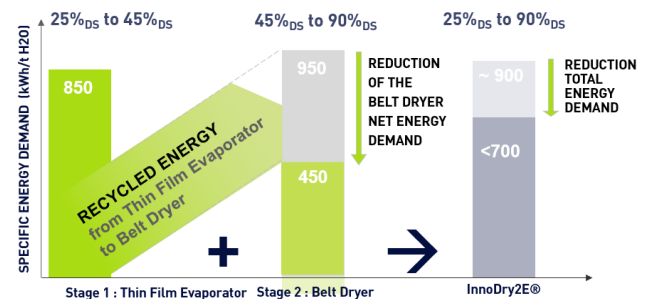


how it works

InnoDry2E is a unique combined two stage sludge thermal drying system made of three main elements:

- A Thin Film Evaporator (TFE), to dry the dewatered sludge up to 45%-47% dry matter.
- A Chopper, to extrude sludge strings (spaghetti) while the sludge is still in the plastic phase.
- A Belt Dryer (BD), to finish drying the strings to a minimum of 60-90% dry matter.

The combination of those elements gives InnoDry2E its unique pattern and allows the Integrated Heat Recovery System that reuses the vapors produced in the TFE, to heat the circulating air of the Belt Dryer. This unique feature allows InnoDry2E to dry sludge with up to 38% less thermal energy than conventional one stage systems.



references

Cork (IE)	2 lines	3400 kg H ₂ O/h.
Warsaw (PO)	2 lines	3700 kg H ₂ O/h.
Bendern (LI)	1 line	620 kg H ₂ O/h.
Chongqing (CN)	3 lines	14583 kg H ₂ O/h.
Meistratzheim (FR)	1 line	875 kg H ₂ O/h.