

HUBER BT Belt Dryer

Medium Temperature
Sewage Sludge Dryer

Drying – Alternatives for sludge use



DEPOSITION

Landfill site

Intermediate
storage



AGRICULTURE

Fertilization



**THERMAL
TREATMENT**

Mono-Incineration

Co-Incineration

Gasification /
Pyrolysis



LANDSCAPING

Composting

Humification

Reduced hauling costs

Stable product / no odor during storage

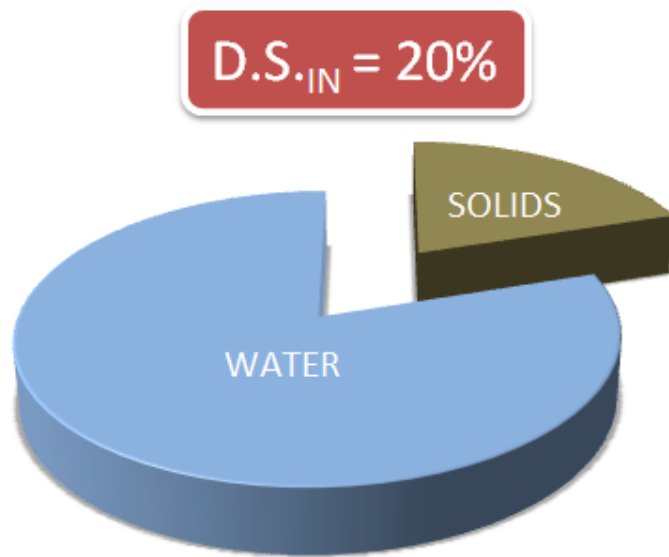
Easy handling of dried sludge granules

CLASS A

Increased heating value

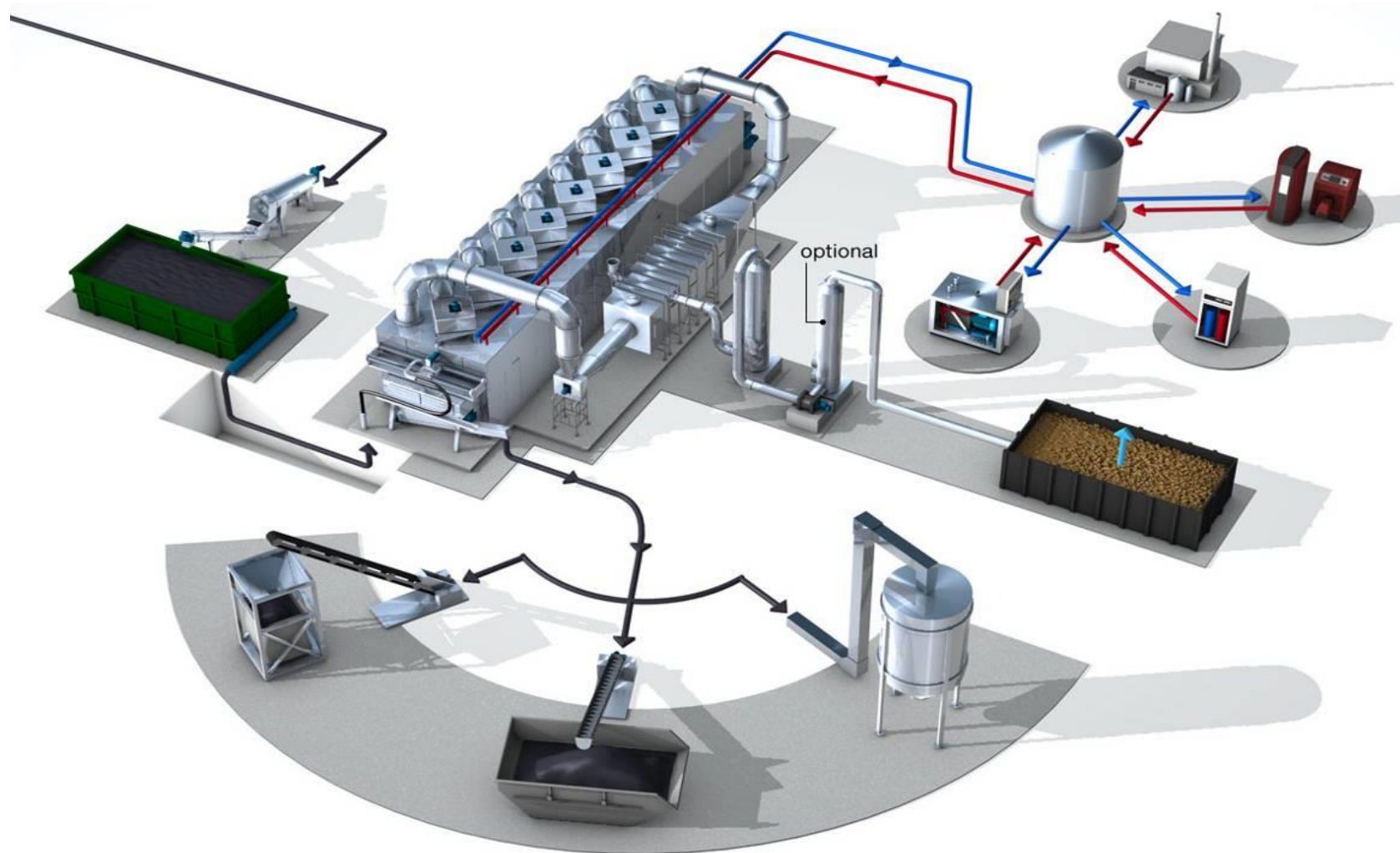
Dewatered sludge: 2,5 MJ/kg

Dried sludge: 8 - 12 MJ/kg

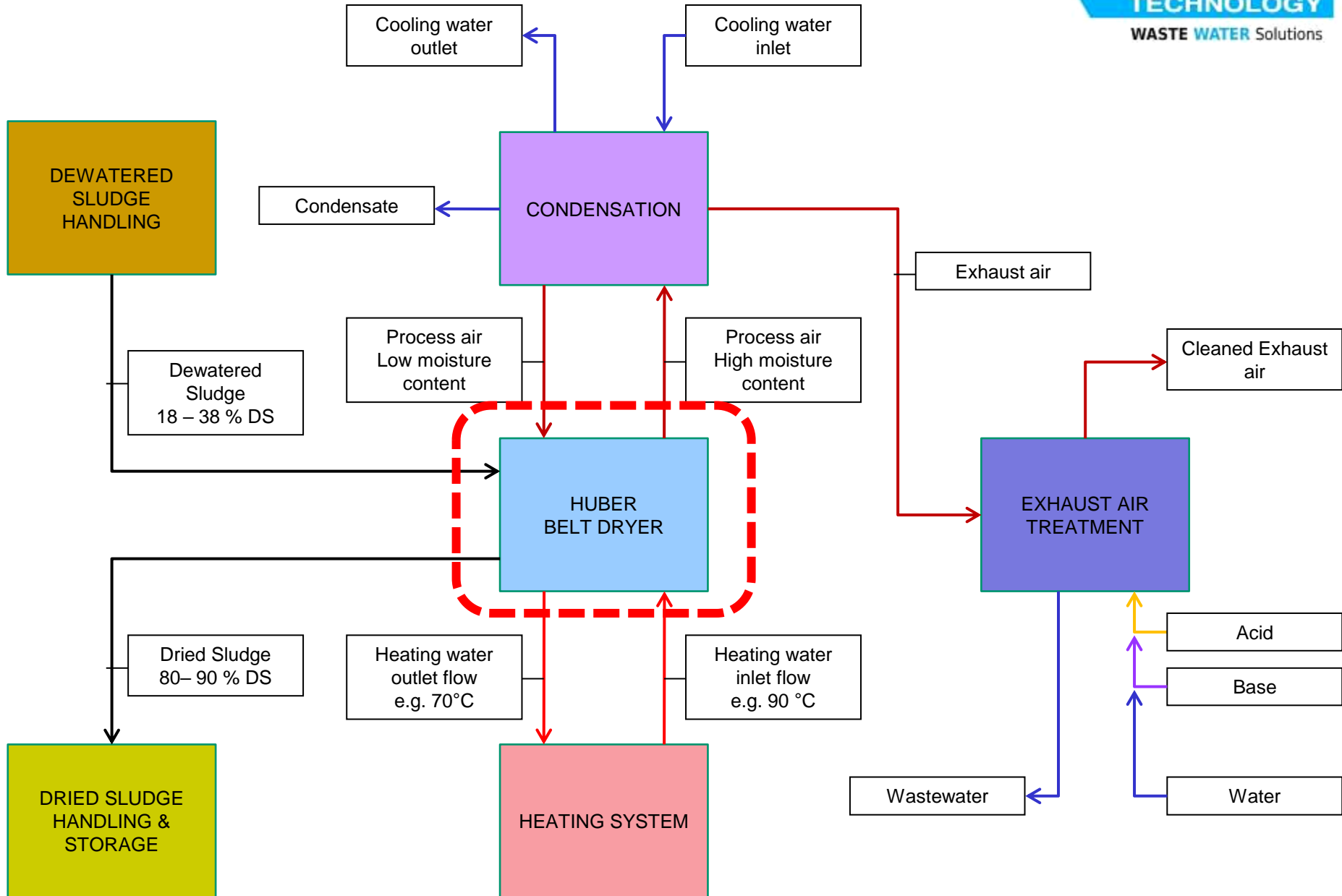


Mass = 1.000 kg
Volume = 1 m³

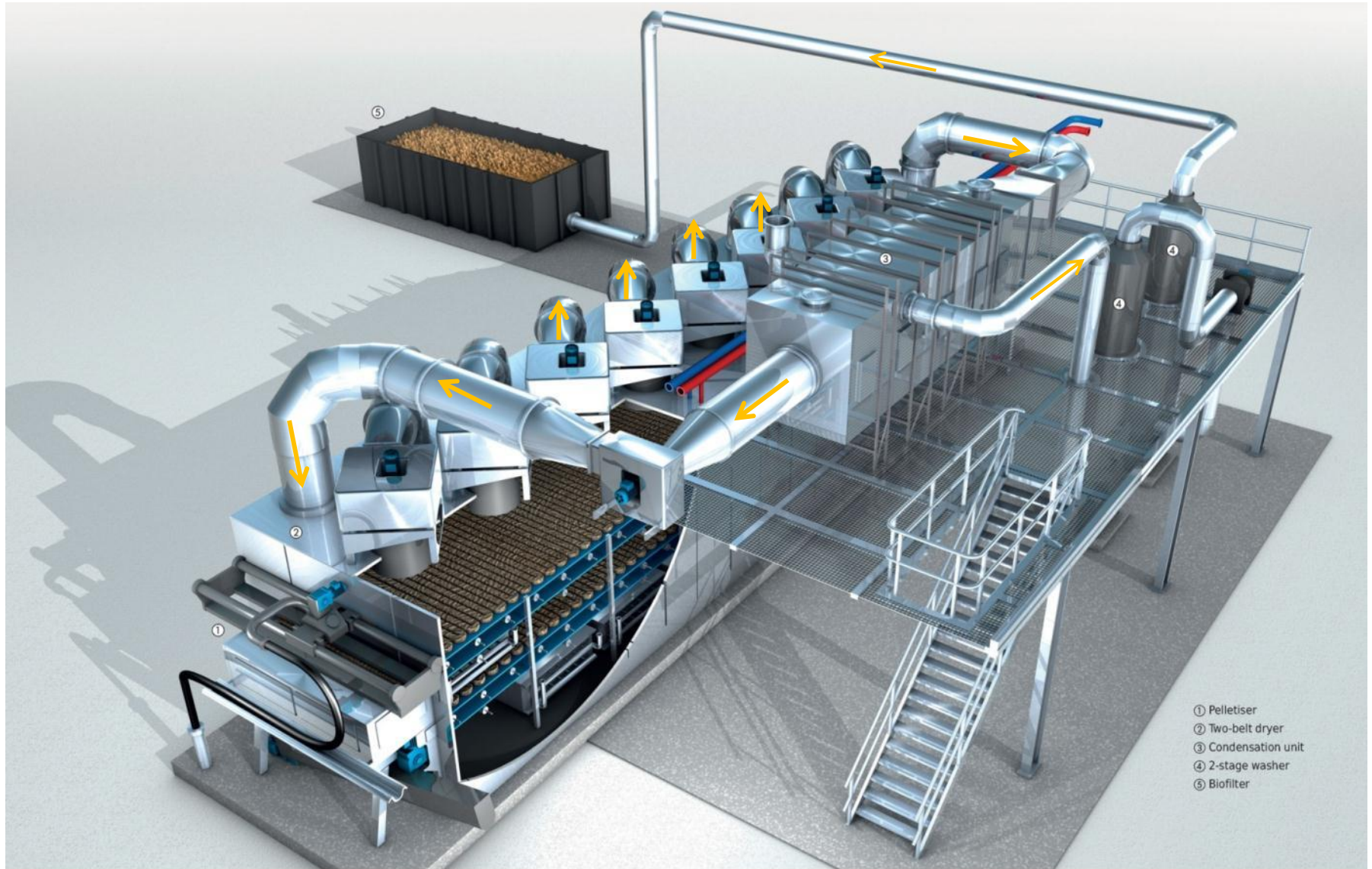
Components of a drying system



Components of a drying system



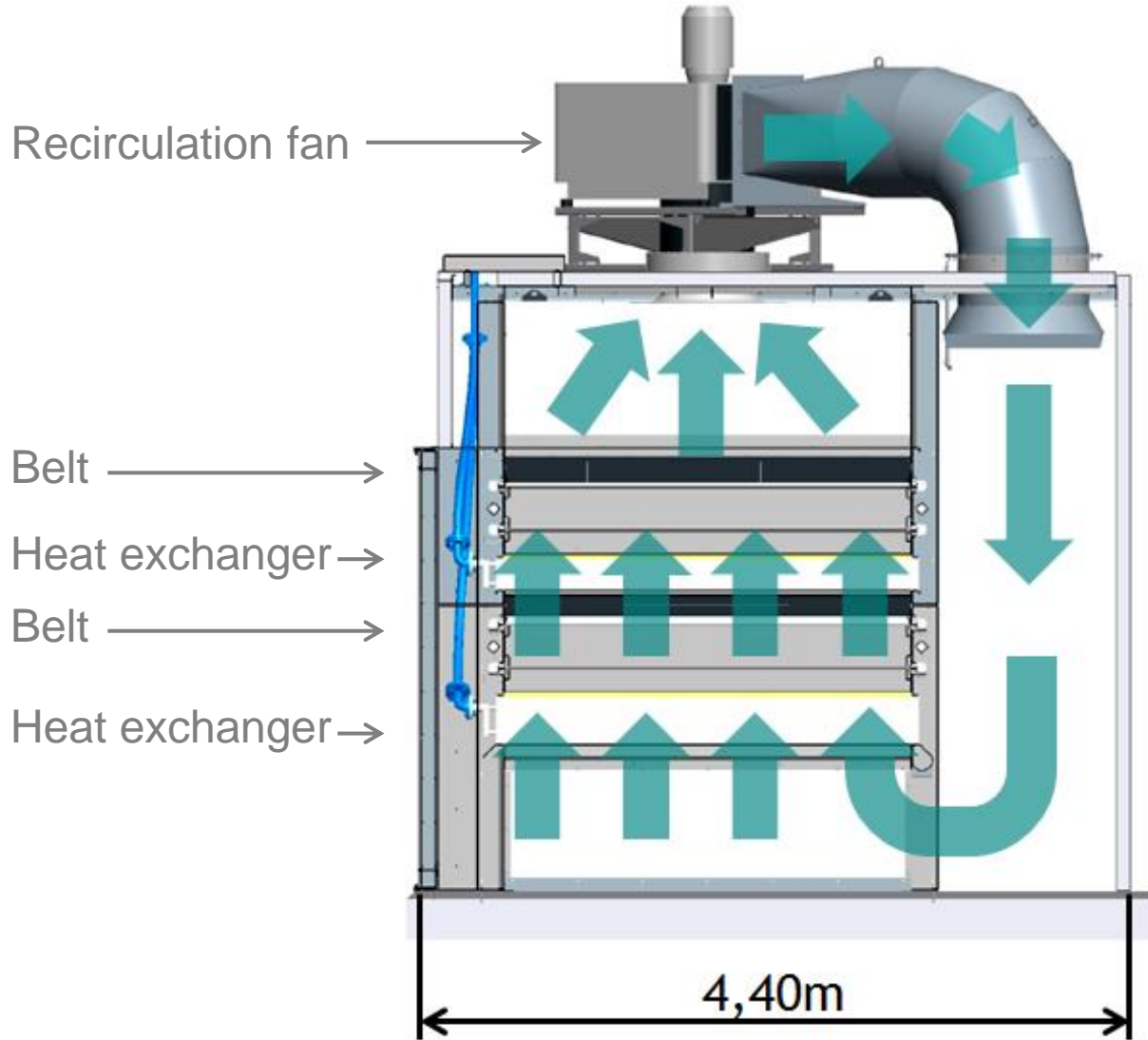
HELIX – Loop Air streaming



The HUBER Belt Dryer BT produces a dry, low-dust, disinfected granular biosolids product which is easy and safe to handle. The dryer uses the exhaust heat on site and reduces disposal costs.

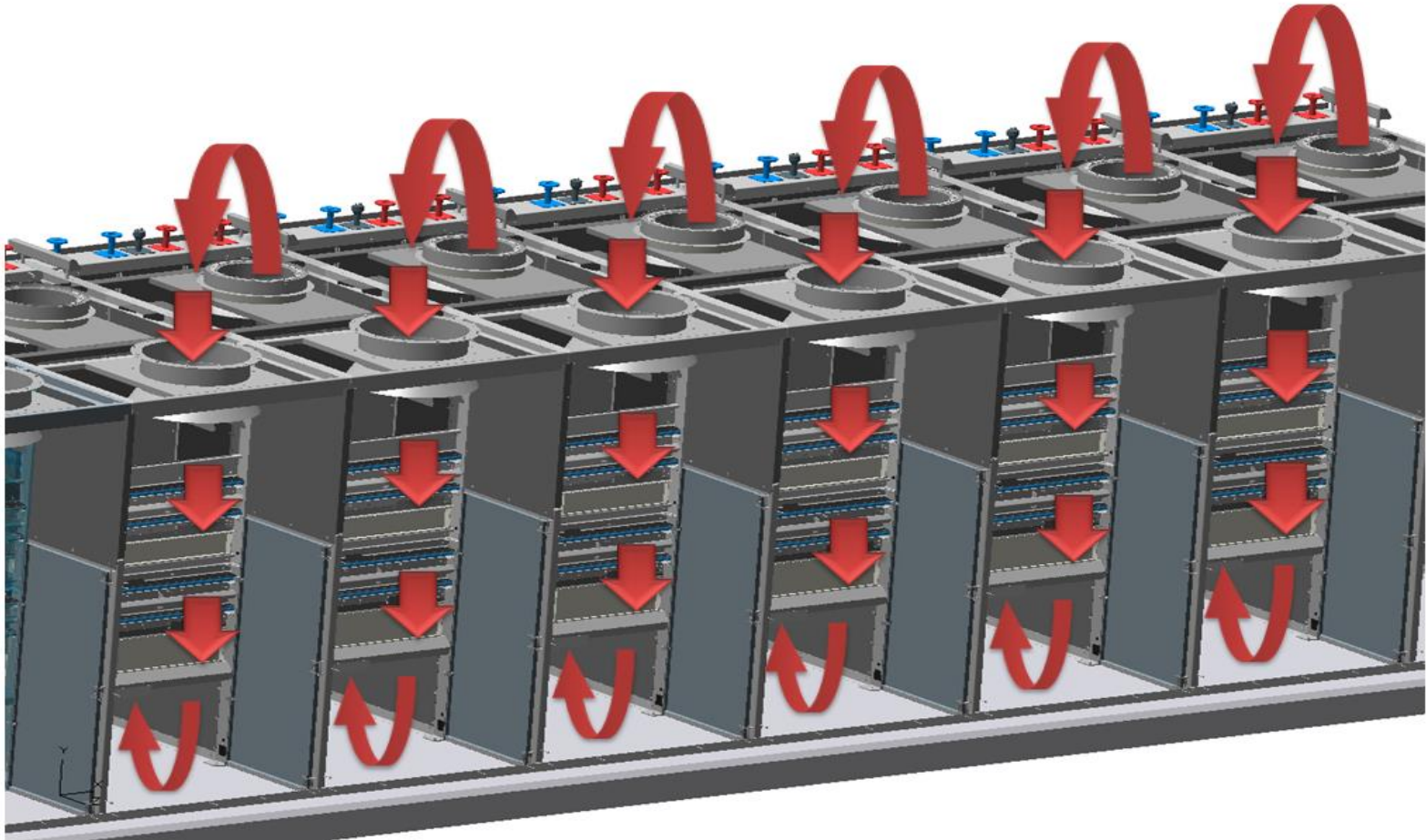
HELIX – Loop Air streaming

Cross section of dryer segment



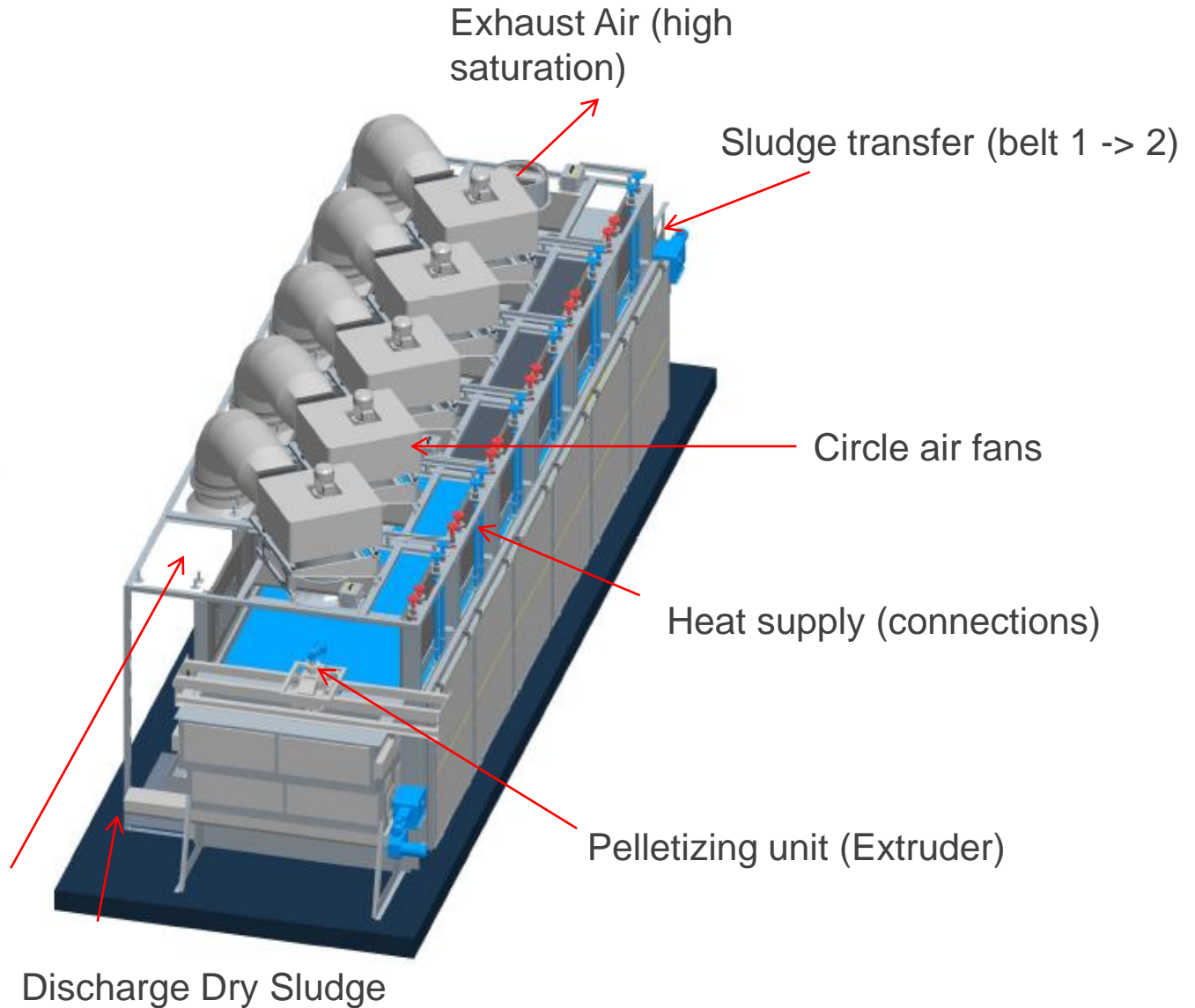
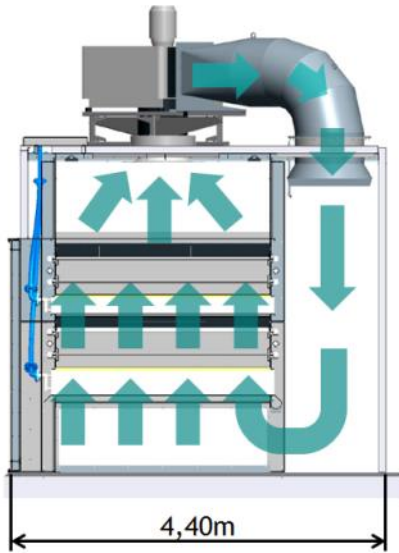
HELIX – Loop Air streaming

Airflow through dryer



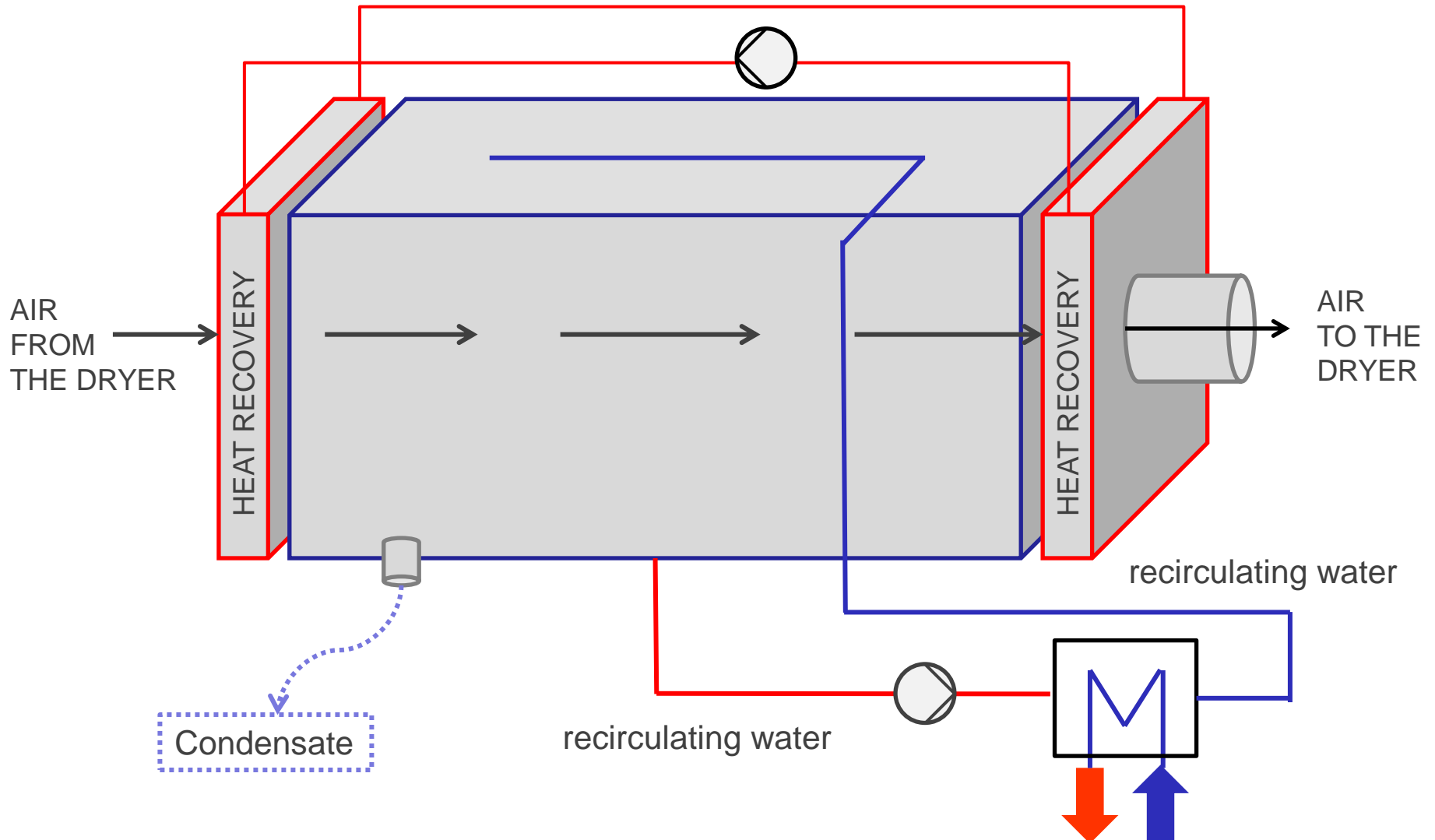
HELIX – Loop Air streaming

Small footprint



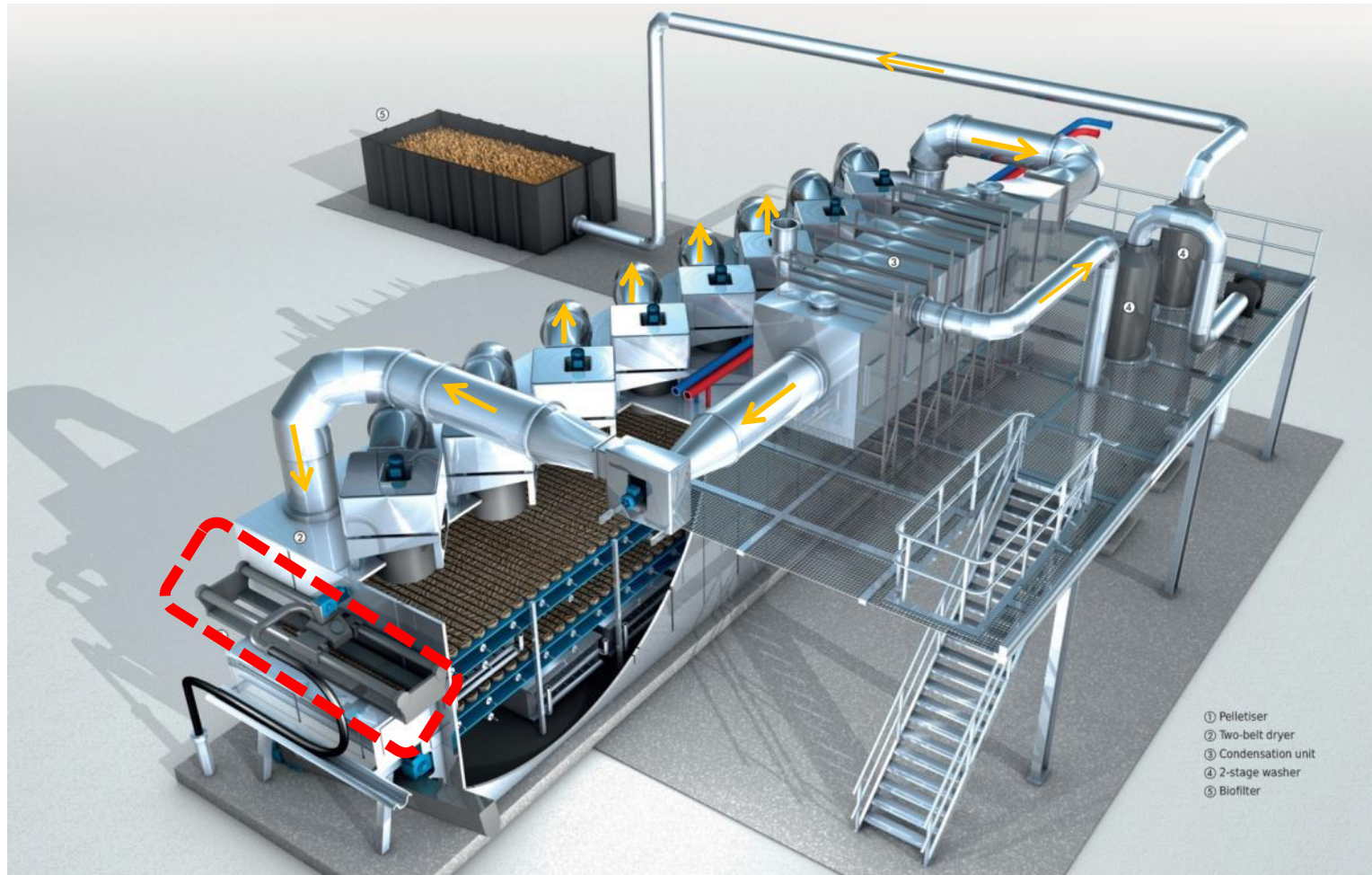
HELIX – Loop Air streaming

Condensation Unit – Principle



HELIX – Loop Air streaming

Small exhaust air treatment



The HUBER Belt Dryer BT produces a dry, low-dust, disinfected granular biosolids product which is easy and safe to handle. The dryer uses the exhaust heat on site and reduces disposal costs.

- ⇒ High efficiency
- ⇒ Small footprint / compact design
- ⇒ Small exhaust air treatment
- ⇒ **electrical** 0.035 – 0.15 kWh / kg evaporated water | **thermal** 0.80 – 0.90 kWh / kg evaporated water
- ⇒ Low costs of operation
- ⇒ Lower investment costs

Extruder (Pellet Former)



- Best sludge extruder available
- Rotating knife
- Excellent air streaming through sludge layer means efficient drying
- Constant drying result
- Low dust granulate
- Stable operation
- Low costs of operation



- ⇒ Easy installation on site
- ⇒ Easier project management
- ⇒ Less problems during installation
- ⇒ Reduces installation time
- ⇒ Installation by supervision
- ⇒ Sturdy design

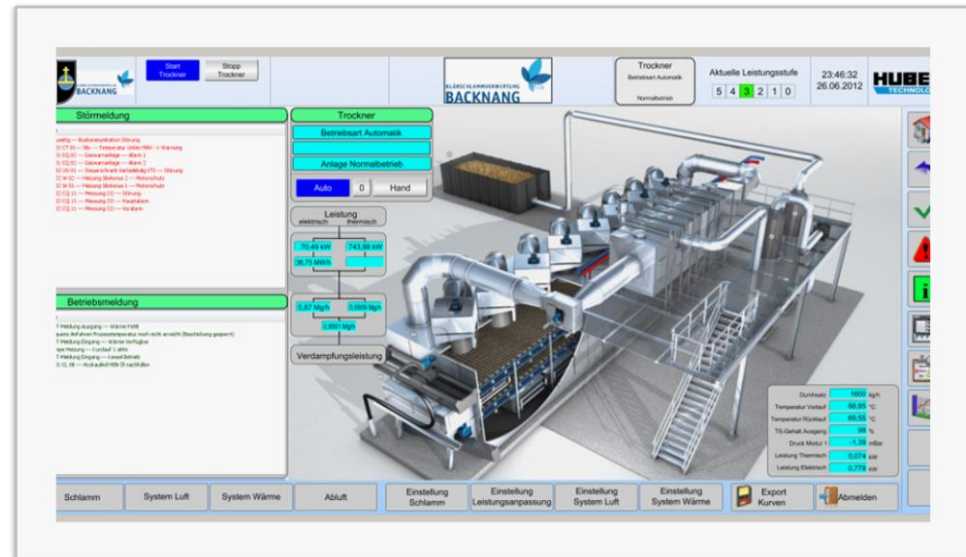
Throughput adjustment

Control system

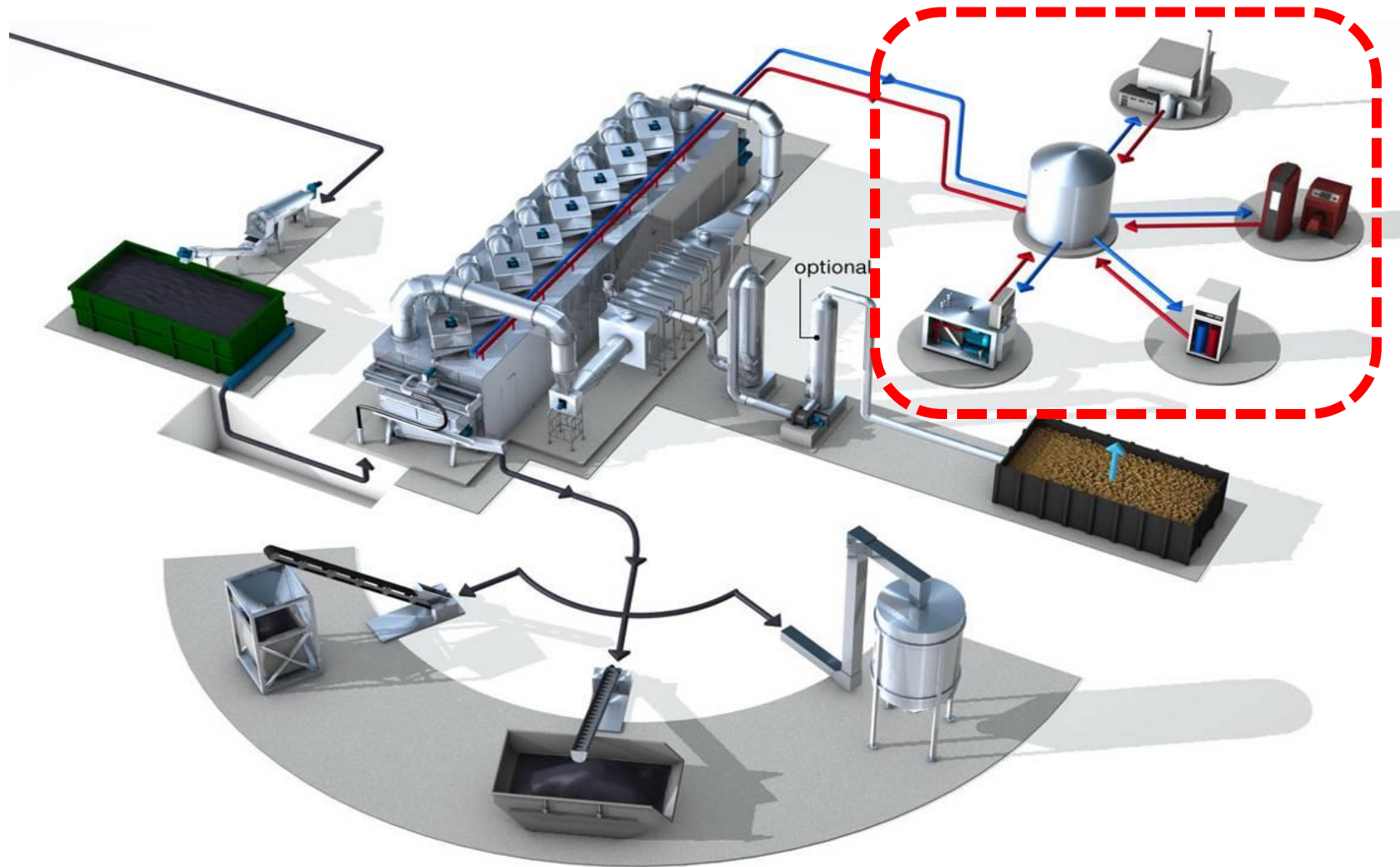
The screenshot displays the control system interface for a wastewater treatment plant, specifically the drying system. The interface is divided into several sections:

- Top Bar:** Includes the Huber Technology logo, the date and time (23:46:32, 26.06.2012), and a status indicator for the drying system (Trockner) showing "Aktuelle Leistungsstufe" (Current performance level) as 5 4 3 2 1 0, with '3' highlighted in green. The system is in "Normalbetrieb" (Normal operation).
- Left Panel:** Contains "Störmeldung" (Alarm) and "Betriebsmeldung" (Operational message) sections. The alarm section lists various faults such as "Buskommunikation Störung" and "Temperatur Unkonform". The operational message section lists events like "POT-Meldung Ausgang" and "Wärme Fehlfunktion".
- Center Panel:** Features a 3D model of the drying system. To the left of the model, there are control buttons for "Start Trockner" and "Stopp Trockner", and a "Trockner" status panel showing "Betriebsart Automatik" and "Anlage Normalbetrieb". Below this, there are "Auto" and "Hand" mode buttons. The "Leistung" (Performance) section shows electrical and thermal power values: 70.49 kW and 36.75 MW/h (electrical); 743.98 kW (thermal). The "Verdampfungsleistung" (Evaporation rate) section shows 0.87 Mg/h and 0.0909 Mg/h, with a total of 0.9561 Mg/h.
- Right Panel:** Contains a vertical toolbar with icons for home, back, forward, check, warning, information, and a small data table. The data table shows: Durchsatz (1600 kg/h), Temperatur Vorlauf (88.85 °C), Temperatur Rücklauf (69.55 °C), TS-Gehalt Ausgang (99 %), Druck Modul 1 (-1.39 mBar), Leistung Thermisch (0.074 kW), and Leistung Elektrisch (0.778 kW).
- Bottom Bar:** Includes navigation buttons for "Schlamm", "System Luft", "System Wärme", "Abluft", "Einstellung Schlamm", "Einstellung Leistungsanpassung", "Einstellung System Luft", "Einstellung System Wärme", "Export Kurven", and "Abmelden".

- ➔ Fully automated
- ➔ Easy operation
- ➔ Remote operation possible
- ➔ Low costs of operation



Flexible heat utilization



Possible heating systems

| <i>ENERGY SOURCE</i> | <i>ENERGY SYSTEM</i> |
|---|---|
| BIOGAS / NATURAL GAS | BOILER MICROGASTURBINE GAS POWERED CHP (COMBINED HEAT AND POWER UNIT) |
| FUEL / OIL | BOILER FUEL POWERED CHP (COMBINED HEAT AND POWER UNIT) |
| WASTE HEAT e.g. hot flue gas in chimney or steam | TRANSFER UNIT e.g. HEAT EXCHANGER using hot water |
| ELECTRICITY | HEAT PUMP |



- **HUBER** belt dryers use **hot water** supply

Range 70°C – 150°C

- **Waste heat** utilization possible from:

Microgasturbine

Cogeneration plant

Any incineration process

- **Hot water** generation with natural gas / biogas boiler
- **Safe operation** – low temperature operation



Sludge feed range:

18%DS - 35%DS

Dry sludge range:

65%DS - 92%DS

Supply temperature:

70°C / 158°F up to
150°C / 302°F

- ⇒ HELIX – Loop Air streaming
 - ⇒ High efficiency
 - ⇒ Small Footprint
 - ⇒ Small exhaust air treatment
 - ⇒ low electrical and thermal power demand
- ⇒ Unique feeding system
 - ⇒ Best sludge extruder available
 - ⇒ Low dust formation
 - ⇒ Save operation
- ⇒ Modular Assembly
 - ⇒ Easy installation on site
- ⇒ Throughput adjustment
 - ⇒ Easy operation
- ⇒ Flexible heating utilization
 - ⇒ Low operational costs

