

[Home](#) ■ [HUBER Report](#) ■ [Sludge Treatment](#) ■ [Sewage sludge drying on STP Ingolstadt – a success story](#)

## Sewage sludge drying on STP Ingolstadt – a success story



*HUBER Sewage sludge drying plant on STP Ingolstadt*

Two HUBER belt dryers type KULT BT 80 were put into operation on STP Ingolstadt in August 2005. The installed total dryer surface is 160 m<sup>2</sup> which is the same as that of our new dryer type BT 16.

The scope of supply of HUBER SE included not only the drying plants but also the sludge bunkers and thick sludge pumps. The exhaust air treatment system has already been installed. Figure 2 shows the complete plant.

The special feature of sewage sludge drying on STP Ingolstadt is that the drying process takes place on a very low temperature level. Warm water with a temperature of 53 °C is available as heat carrier medium. This warm water is heated in the adjacent waste incineration plant via a water-vapour heat exchanger. The exhaust steam from a condensation turbine is available all year round. As this hot water is free for the sewage treatment plant, their operating costs for sewage sludge drying are very low. The dry sewage sludge, which is dried to 90% DS, is thermally utilised in the waste incineration plant, this closes the loop.

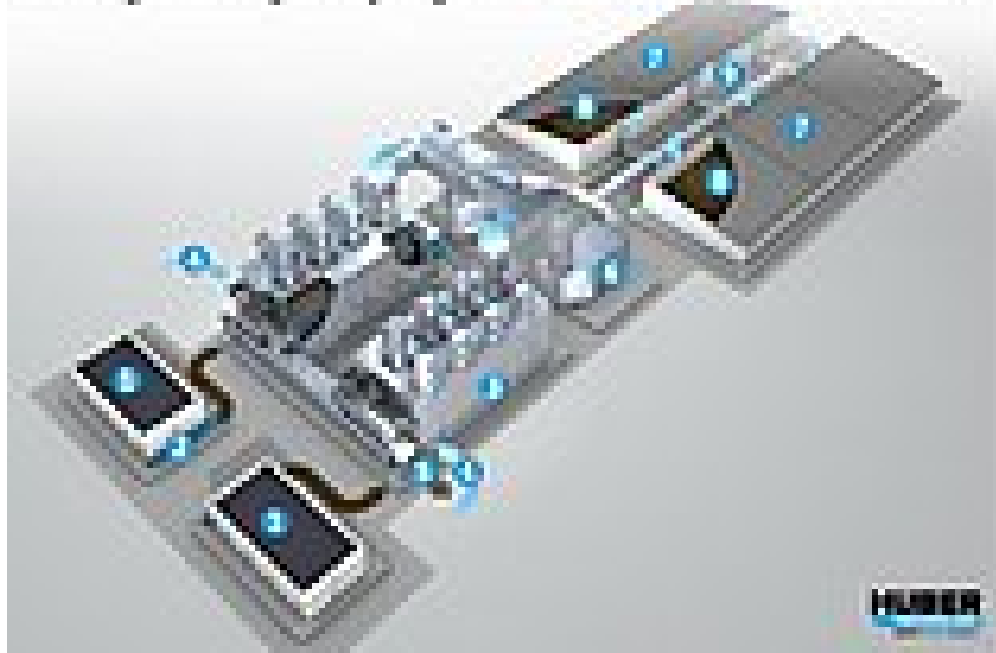
Due to the fact that the wastewater treatment plant is within intermediate proximity to the waste incineration plant Ingolstadt, the following advantages could be achieved:

- 294,000 driving kilometres saved per year
- 88,000 litres of diesel saved per year
- CO<sub>2</sub> emissions reduced by 225,000 kg per year
- No use of primary energy
- Utilisation of secondary energy in the form of cost-free exhaust heat from the waste incineration plant
- Use of current that has been generated from regenerative sources on the waste incineration plant

Most maintenance work (e.g. cleaning the pelletising system) can normally be carried out without having to interrupt plant operation.

# Klärschlamm-trocknung mit Abluftbehandlung

## Sewage sludge drying with exhaust air treatment



1. ankommender Klärschlamm  
incoming sewage sludge
2. Trocknungslinie  
drying line
3. Kälte/temperaturerhöhung  
low temperature dryer
4. Luft  
air
5. getrockneter Klärschlamm  
dried sewage sludge
6. Kälte-  
water
7. Belüfter  
aerator
8. Nachschäufel  
scraper
9. gereinigte Luft  
clean exhaust air

Figure 2: Diagram of the sewage sludge drying process

There are hardly any standstill times, most of the time the dryers operate seven days a week. The sludge drying plants therefore achieve an average annual operation time of significantly more than 8,000 h.

The technical plant manager, Rudolf Beck, is especially enthusiastic about the low maintenance requirements.

The technical data of the sludge drying plant are specified below:

- Sludge input: 12,000 t/a
- Number of drying lines: 2
- Input DS: 30 %
- Output DS: 90 %
- Operating time: > 8,000 h/a
- Throughput per line: approx. 900 kg/h
- Maximum water evaporation per line: approx. 600 kg/h
- Hot water flow temperature: approx. 53 °C
- Heat demand: approx. 7,500 MWh/a from waste incineration plant
- Current demand: approx. 150 kW

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