

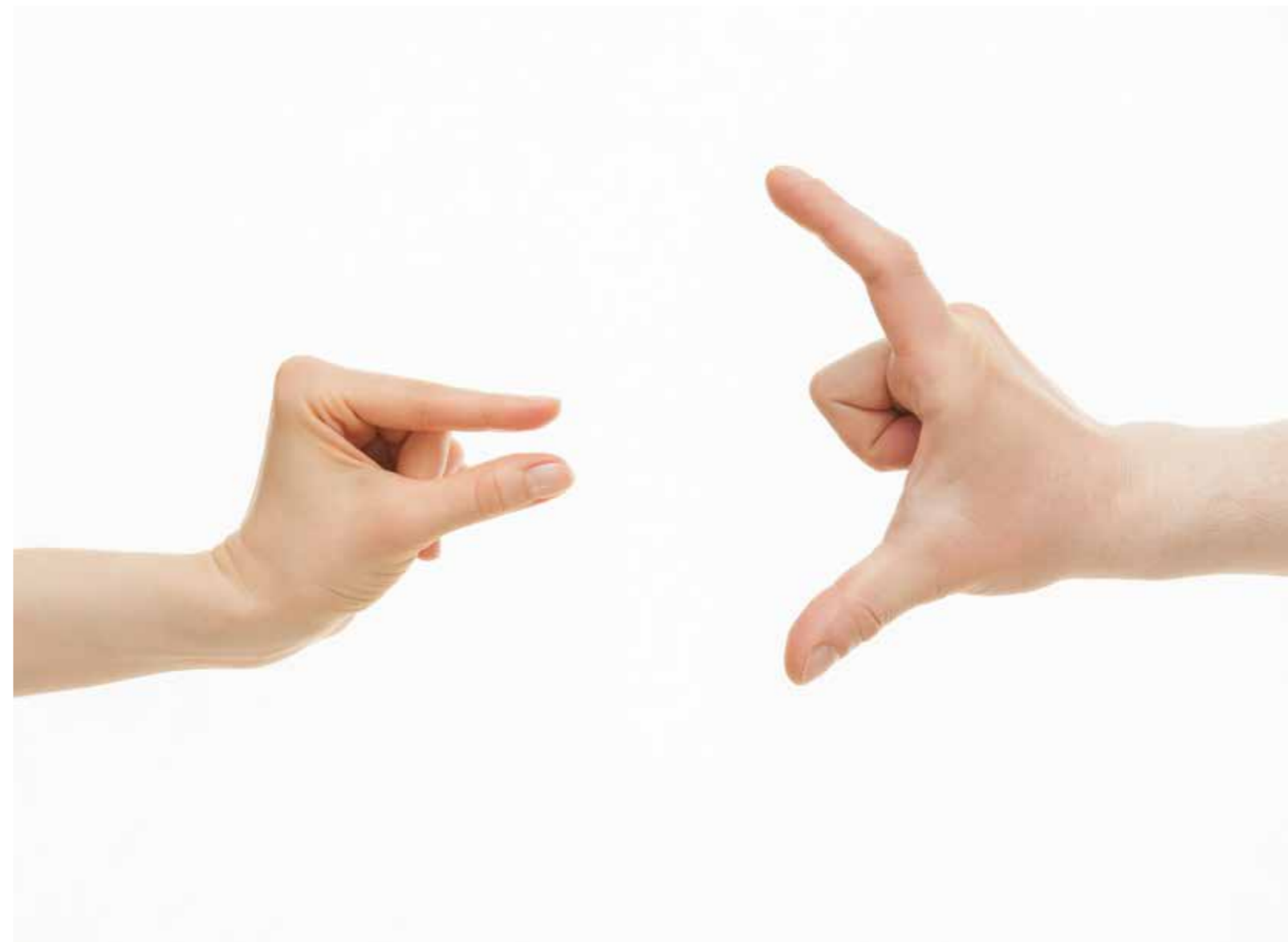
KOPF SynGas sewage sludge utilization: Compact Module for Auxiliary Firing

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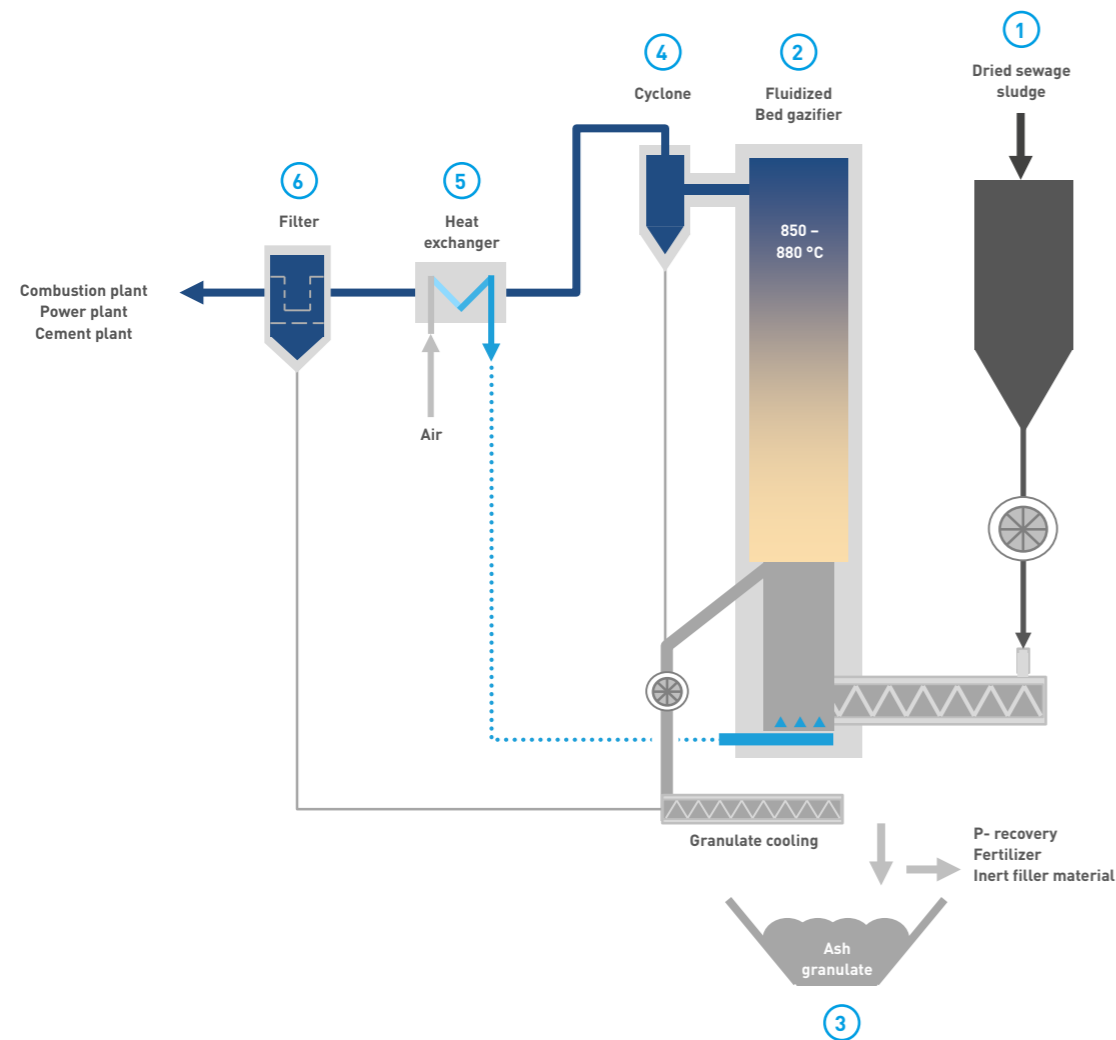
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SMALL EFFORT - GREAT BENEFIT.



It is predictable that in the future co-firing of sewage sludge in power stations or cement factories will be prohibited. The reason for this is prevention of dilution of phosphorous in the sewage sludge ash. The Compact Module for Auxiliary Firing process solves the problem of phosphorous dilution parallel with utilization of the energy contained in the sewage sludge.

Existing supply chains and business partnerships can remain unchanged or even new partnerships made. The sludge is gasified in

a separate SynGas reactor, with the resulting synthetic gas serving as a secondary fuel for the power station or cement factory.

The decontaminated ash is discharged separately from the process, and can be prepared and supplied to the phosphorous recovery process in a following process. The SynGas Compact Module for Auxiliary Firing offers maximal resource utilization with minimal technical requirements and costs.

THERMAL TREATMENT OF SEWAGE SLUDGE

Sewage sludge from the Silo with a dry content of 85%-95% (1) is fed to the single stage gasifier (2). The high gasification temperature of 850 °C ensures the destruction of biologically toxic materials as well as the removal of Mercury and Cadmium from the sewage sludge. The process releases agriculturally important Phosphorous in the ash granules, suitable for utilization, e.g. as fertilizer. The ash granules are discharged from the process through a pressure lock and collected (3).

COMBUSTION OF THE SYNTHETIC GAS AND HEAT RECOVERY

Having passed through the cyclone (4) the synthetic gas goes through a heat exchanger (5) preheating the gasification air. An optional fine filter (6) removes fine particles (if required). A special gas lance injects and burns the synthetic gas inside the combustion chamber of the primary power plant using the energy of the sludge in the power process most efficiently.

FLUE GAS CLEANING

The flue gas cleaning takes place using the existing flue gas cleaning equipment of the prevailing power plant. When compared to co-firing the sludge directly it can even lead to a reduction of the cleaning effort since the combustion of synthetic gas from sludge produces less emissions than the combustion of solid sludge.

ADVANTAGES OF THE SYNGAS COMPACT MODULE FOR AUXILLARY FIRING:

- Sewage sludge can be used as a long term secondary fuel
- Co-firing of Sewage sludge with parallel separation of the ash
- Minimal extra technical costs with maximal utilization
- Modification of the gas treatment infrastructure in the existing power plant is not necessary
- Simple and proven technology
- Low investment and operational costs
- Simple installation
- No dioxins and furans thanks to SynGas gasification technology