WASTE-TO-ENERGY SOLUTIONS

Improve your productivity with alternative fuels
The use of biomass and alternative fuels, such as municipal and industrial wastes offers higher environmental performance than landfill and incineration. It is a practical, cost-efficient and safe waste management option.

880% INCREASE IN USE OF ALTERNATIVE FUELS FROM 1990 TO 2017

-18.3% CO2 REDUCTION PER TONNES OF CEMENT PRODUCTS SINCE 1990

THE BENEFITS OF FUELS SUBSTITUTION ARE MULTIPLE

- Reducing CO2 emissions
- Reducing dependence on fossil fuels
- Material recycling
- Offering an alternative to landfill

FOSSIL FUELS SUBSTITUTION

REDUCE YOUR FUEL COSTS WITH WASTE-TO-ENERGY SOLUTIONS. WITHOUT THE RISKS.

Embarking on an alternative fuels project is a great step towards reducing your environmental impact and your fuel costs. Turning waste into energy makes your plant more sustainable and profitable – but it can also introduce new risks to your process. You need an experienced partner to help you select the best solution for your facility.

WHAT YOU GET

- Maximum alternative fuel substitution rates up to 100%
- Overall system guarantee from the fuel receipt up to the clinker quality
- Customized solutions, from quick-start to complex
- Research-based approach to ensure state-of-the-art performance

WASTE-TO-ENERGY FACT SHEET

Source: https://gccassociation.org/sustainability-innovation/gnr-gcca-in-numbers/
1. WASTE SOURCING
A variety of different waste is collected and transported to one or more locations for pre-treatment.

2. WASTE PREPARATION
A complex process of shredding, sorting, drying and sizing, converting the waste to different fuel qualities.

3. MATERIAL HANDLING AND STORAGE
The fuels are transported, stored and if necessary, dried to become part of the fuel mix.

4. DOSING
The extracted fuel is accurately dosed to meet the pyro process requirements.

5. PYRO PROCESSING
The alternative fuel enters the calciner or main burner where it substitutes coal or other fossil fuels.

6. QUALITY CONTROL
Ensuring clinker quality, enabling the control system to compensate and optimise the fuel mix.
CHINA BEATS THE DIFFICULTIES OF WASTE INCINERATION

FLSmidth delivered a solution that achieved a waste feed rate of more than 300 tonnes per day, a straight 100% coverage of our fuel needs. The quality and quantity of clinker is the same as with conventional fuels, keeping emission levels well below limits, with best-in-class environmental performance.”

Located in Binyang, in the Guangxi region of South China, the Hongshuihe plant is one of the China Resources Cement (CRC) company’s 40 production facilities in mainland China. So, when the city government needed help to reduce the waste in Binyang, it was an opportunity for CRC’s top management to replace fossil fuels with waste as a cost-effective and sustainable alternative.

A challenge
But waste incineration in China is a challenge. High level of water and organic substances makes it difficult to produce sufficient energy for energy-hungry processes such as cement production. CRC needed a premium technology which could handle the raw waste’s characteristics. Evaluating FLSmidth’s HOTDISC® combustion solution, CRC concluded it to be the most advanced solution in the market. Supplying other key products for the co-processing system, FLSmidth and our engineers handled the onsite installation and commissioning of the solution from start to end.

Positive environmental impact
The facility already has a positive impact on the environment, scaling back the garbage mountains. All of the ash residue and pre-treated waste can be used as alternative fuel and materials in cement production processes, and the process generates no solid waste or secondary pollutant emissions. Emissions of air pollutants are within national limits, and some indices, such as dioxin emissions, perform significantly better than EU emissions limits. The facility also meets all odour control standards and the sewage treatment and water discharge is in full compliance with local environmental requirements.

This project is not only helping to rid the city of its waste problem; it has also proven itself to be an important energy source at CRC’s Hongshuihe plant. With it, CRC has taken a major step towards environmental protection while paving the way for sustainable development within the cement industry.

Docking Station
Our single and double docking stations are designed to allow for the safe, reliable and efficient receipt of bulk materials, including refuse-derived fuel (RDF), solid recovered fuel (SRF), biomass, household waste and more.

ECS/ProcessExpert
Multi-fuel application
ECS/ProcessExpert advanced process control system maintains a consistent total heat value at the lowest possible cost, without comprising stability or quality.

JETFLEX PLUS
Our JETFLEX® Burner is a highly flexible kiln burner, designed to produce the best flame shape and lowest NOx emissions for various fuel types and operating conditions.

HOTDISC® Combustion Device and In-Line Calciner
The HOTDISC Combustion Device and In-Line Calciner is the best way to substitute calciner fuel with a wide range of coarse alternative fuels – from sludge to whole truck tyres.

Feedex® Overhead Reclaimer
A robust and flexible storage and blending solution for alternative fuels. Suits a wide range of materials, giving you more opportunities to lead the way in sustainable processes.

Pfister® TRW-S/D Rotor Weighfeeder
This feeder solution delivers the highest levels of accuracy and reliability both safely and efficiently, using our proven rotor weighfeeder technology.
MISSION ZERO

TOWARDS ZERO EMISSIONS IN CEMENT

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100% fuel substitution
Zero waste

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