

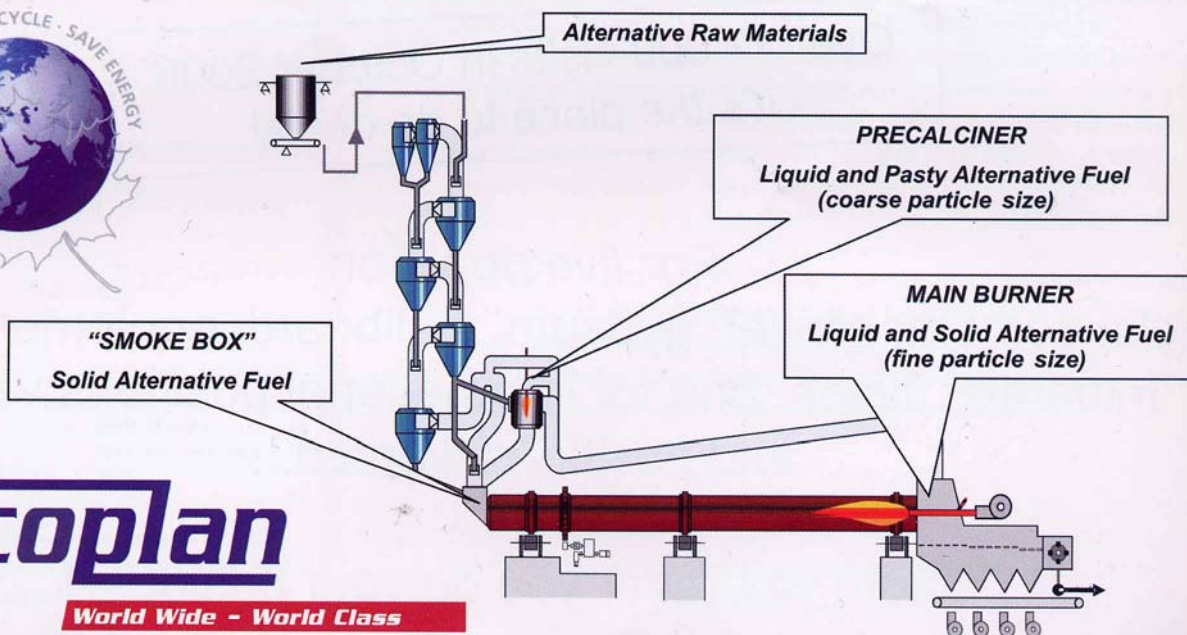
Global FUELS MAGAZINE

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Alternative Fuels

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LINDNER-RECYCLINGTECH & MVW LECHTENBERG: TURNKEY SOLUTIONS FOR ALTERNATIVE FUEL USE

BY DIRK LECHTENBERG, MVW LECHTENBERG

Cement plants want to concentrate on their core competence, which is production of cement. The field of alternative fuels can often be much too involved for cement plants to want to handle themselves. For this reason the Austrian company Lindner-Recyclingtech and the German company MVW Lechtenberg have established a partnership to provide turnkey solutions to enable the cement industry to use alternative fuels.

The family-run company Lindner was established in 1948 and up to the present day it has been managed by the Lindner family with premises in Spittal, Austria. Almost 100 employees work with the most modern engineering and production technologies. The company has designed its own shredding installations which are continuously upgraded and provide output capacities of up to 40 tonnes of different waste an hour. The RDF refuse derived fuels (RDF) treatment plants were successfully built by Lindner some years ago.

MVW Lechtenberg has premises in Ahaus, Germany. Dirk Lechtenberg, the company's managing partner, operated treatment plants for alternative fuels for many years. These

alternative fuels have been mainly used in the German cement industry. Alongside this, MVW Lechtenberg has provided a consultancy service, passing on its wide experience in the production and use of alternative fuels to cement plants worldwide.

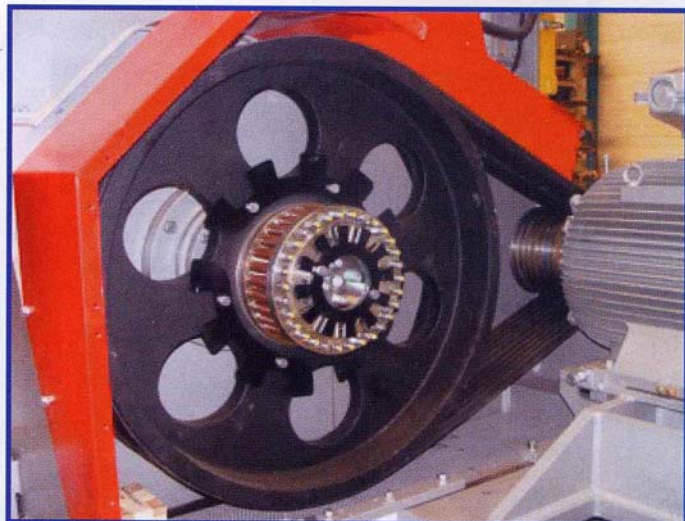
The alliance of the two companies enables cement plants to outsource the whole business of alternative fuels. The first step in finding a turnkey solution is to analyse the available waste streams. The whole range of solid alternative fuels is looked at – everything from coconut shells and rice husks to industrial waste and municipal waste. Apart from the chemical and physical parameters of the waste, the impact of the alternative fuels on clinker quality and emissions will be analysed.

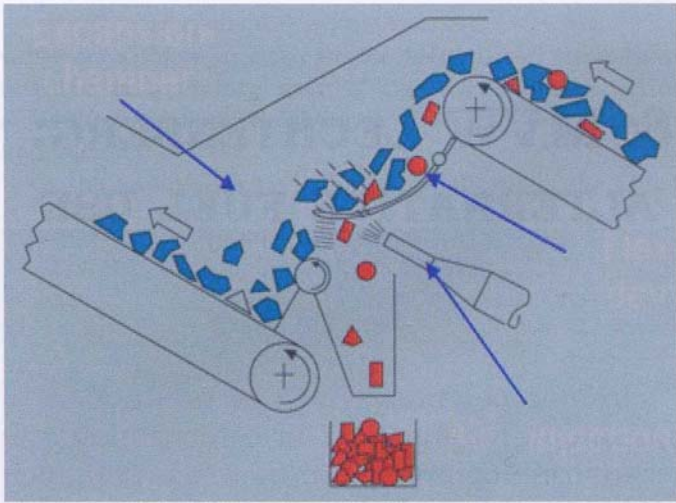
The basic engineering is carried out by MVW Lechtenberg. This includes the layout of the processing technology, as well as dosing and material handling equipment. The plant construction together with erection and assembly – using locally manufactured components if the client wants – is done by Lindner. The main components made in Austria guarantee up to 12t/hour of ready RDF from each processing line.

Strict quality management, as well as ongoing monitoring of the substitution rates and the quality of RDF, are part of the service, thanks to the most modern process technology and an expert system for flame control. The processing plants have proved themselves in practice.

The central points of the process-

Below left: The direct drive and safety clutch. Below right: Jupiter 3200, the primary shredder.





Above left and right: The heavy fraction separator in diagrammatic form and in real life.

ing plants are the shredders which rejoice in the names Jupiter, Saturn, Meteor and Komet. A simple and robust direct drive, safety clutch and a foreign bodies flap prevent machine breakdowns and long downtimes and are standard equipment.

The waste in bulk form or in bales can be fed into the shredder by a wheel loader or an excavator. The waste will be shredded into 30cm pieces as a first step – at a rate of up to 40t/hour!

Defined grain size enables the separation of ferrous fractions by a magnetic separation system over the belt. Another feature is that other foreign bodies such as stones and non-ferrous materials will be separated off by a heavy fraction separator that we designed.

It is also possible to separate the

material into two different fractions. The high calorific value light fraction from municipal waste can be further processed as alternative fuel or separated out and sent to the main burner, while the heavy fraction is burned in the pre-calciner.

The Komet re-shredder finally cuts the alternative fuels to exact defined sizes, forming ready-to-burn fuel. The robust drive here provides for a high production capacity. The smooth running of the shredders is assured by direct access to the rotor for quick removal of foreign bodies. Easily replaceable, custom-designed knives cut the waste.

Once they have been finally shredded the alternative fuels are stored in an automatic bunker system. Then, after weighing, they are fed pneumatically or by belt conveyor into the

burning system. This transport system is provided as part of the turnkey solution.

An optional extra is the 'Expert System', which may be integrated with the conventional control systems of the cement plant. Monitoring of, among other things, operational capacities, temperatures, free lime content and emissions values enables optimal operation of the burning systems, even with high substitution rates.

Several plants have been operating successfully for some time. These include Holcim's Ecorec plant in Slovakia, Lafarge's Retznei plant in Austria, HeidelbergCement in Sweden and many others. Lafarge Romania has recently placed an order.

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Below left: Komet, the final shredder. Below right: Checking the foreign bodies flap for obstructions.

