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How the Celtic Tiger lost its claws...

Once the envy of Europe, Ireland's economy is set to have lost value at the highest rate in Europe. The collapse of a housing bubble coupled with the strong Euro is raising unemployment and slowing growth, reducing the Celtic Tiger's roar to the level of a quiet 'miaow.' And the news keeps getting worse. Private sector debt levels will increase to 225% of GDP in 2009 - among highest of developed world - but what has this to do with alternative fuels for the cement industry? Everything, as this article points out.

Above: Part of Greyhound Recycling's solid waste processing facility in Dublin.

The Irish cement industry, involving three players and five plants with a total clinker production capacity of approximately 6.7Mt of clinker, is suffering from the downturn of the Irish economy. Despite having just invested in new kiln lines, as well as in upgrading and modernisation projects, production has fallen by almost 40% in 2009. In fact, additional production capacity is not needed, rather it is optimised production cost per ton of clinker that is required. The

use of alternative fuels is one possibility to reduce energy costs, which usually count for almost half of the total production costs.

The privately-owned Lagan Cement works at Kinnegad was the first player in the market which recognised the cost saving potential of alternative fuels and invested in the required storage, dosing and feeding equipment. The project was started up at the beginning of 2009.

Right: Lagan Cement works' alternative Fuel Storage and Handling (Image courtesy WTW Engineering).





Left: The refuse-derived fuel plant for Greyhound Recycling in Dublin, incorporating Integra laser technology and a MasterMagnets Overband magnetic separator.

Irish Cement, the CRH-owned market leader in Ireland, has applied for the permissions to use alternative fuels and intends to start with the substitution 'as soon as possible.' The company recently invested more than Euro200m in a new kiln at its Platin Plant and is now producing more than 3Mt/year of clinker.

In October 2008, Irish Cement applied for the use of alternative fuels such as meat and bone meal, chipped tyres and other refuse-derived fuels at its plant in County Meath. Irish Cement's plants at Castlemungret, Co. Limerick and at Platin, Co. Meath have been granted the IPC licenses by the Environmental Protection Agency. It is planned to substitute approximately 25% of the fossil fuels by solid recovered fuels. Equipment orders for the required dosing and feeding systems will be placed in the immediate future.

Quinn Cement, another privately-owned cement group, produces cement in two plants: since 1988 at its Derylin works and from 2000 at its FLS-built, 1.4Mt/year state of the art cement works in Ballyconnel. Quinn has started the required technical adjustments and the permitting process for the use of alternative fuels at the plant.

Behind the times

Ireland is the last country within Europe to start the use of alternative fuels - for example it is almost 20 years behind the German cement industry. Fears about the use of alternative fuels and the familiar local concerns that so-often amount to 'not in my backyard' have successfully hampered the industry in using alternative fuels. The National Allocation Plan for CO₂ reduction of Ireland has forced the industry to reduce the use of fossil fuels - but on the other hand the Irish Government was not allowing the plants to use alternative fuels.

Assuming a substitution rate of 50% of alternative fuels in the Irish cement industry, a total of approximately 850,000t of processed

waste could be used as a fuel resource - creating many new jobs in the recycling industry and helping Ireland to meet its European waste legislation targets.

Most of the municipal solid waste and industrial waste in Ireland is still land filled - with its negative impact of landfill gas emissions, water pollution and land consumption.

In 2009, approximately 3.5Mt of municipal solid waste and around 1.5Mt of commercial and industrial waste were land filled in Ireland. Only 35% of the wastes (even recyclables such as paper, cardboard, plastics, packaging waste and organics) are separately

collected or captured. Most of the hazardous wastes are exported, since Ireland does not have sufficient recycling and disposal facilities (apart from the cement Industry, which would like to use such wastes as an environmentally-friendly fuel and the disposal of it as a service to society).

In November 2009, the Green Party leader and Environment Minister John Gormley launched a report underpinning a major review of waste management policy. The Minister announced - after years of discussion - increases to the landfill levy to drive waste from landfill in order to meet challenging EU targets, the first of which occurs in 2010. The levy will increase to €30 per tonne by 2010, to €50 in 2011 and to €75 in 2012. This will certainly drive waste towards re-use or valorisation - preferably in the cement industry.

Below: Waste-derived fuel being delivered by Greyhound Recycling to Lagan Cement.





Above: Refuse-derived fuel being delivered to Lagan Cement's alternative fuels reception area.

The recycling industry in Ireland


The recycling industry in Ireland consists of a few international waste management companies, small and medium sized family companies and some young entrepreneurs. A very enthusiastic and optimistic industry - thinking about future opportunities in the development of recycling facilities and infrastructure - is now also 'coming back down to earth,' suffering from the current low landfill levy and very problematic permitting

procedures for the use of waste-derived fuels.

An example of this position would be Greyhound Recycling Ltd, of Dublin, an innovative waste management company which invested early in processing equipment

to produce a high quality refuse-derived fuel to fulfil the alternative fuel demand for Lagan cement. Supported by MVW Lechtenberg, Greyhound has doubled its capacity to process high calorific-value fractions from municipal solid wastes and industrial wastes into RDF. However, Greyhound is unfortunately obliged to export the RDF by ship, pressed in bales and wrapped in film, to other European cement producers, since the local cement industry still does not have the required permissions and technical equipment to use these fuels.

Outlook for alternative fuels

The use of alternative fuels is always a political issue. Ireland's experience at the moment is similar to the experiences of many other European countries while they started up the use of alternative fuels. Despite other countries having already been 'through the hoops,' this experience will be very costly for the Irish cement and recycling industry - and therefore for the country. The well known practice in using alternative fuels as an environmentally-friendly and cost-effective fuel could support the country's economy, creating many new jobs in the recycling industry, saving fossil fuels and avoiding the emission of greenhouse gases. This will only happen if the Irish Government makes stricter and clearer targets for the National Waste Management plan. 

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