France road tax in disarray

The French government’s attempts to impose a transit tax on heavy goods vehicles are in disarray following the indefinite suspension of the ‘écotaxe’.

The écotaxe was to apply to all goods transport vehicles over 3.5 tonnes using the 15,000 km of the French national road network (‘N’ roads). Motorway users – both lorries and cars - already pay tolls through the pliage system.

However, the tax has been stalled ever since it was conceived as far back as 2008 as part of a national enquiry into future environmental policies. After delays due to various ‘technical issues’ the écotaxe was scheduled to be introduced on 1 January 2014.

However, in October last year then Prime Minister Jean-Marc Ayrault delayed its introduction following violent protests by hauliers, especially in Brittany. At the time, he emphasised the scheme was not being abandoned but “time was required to make adjustments to it”.

But during late September, early October road transport federations called for more protests against the tax with threats to mount blockades on major routes. Then, on Thursday 9 October, a meeting with government ministers ended with ecology secretary Ségolène Royal announcing that the écotaxe was to be suspended indefinitely. Most observers view the move as effectively killing the scheme.

Not surprisingly the haulage industry was pleased with the outcome. “We have achieved a major step forward,” said Nicolas Paulissen, general delegate of the Fédération Nationale des Transports Routier (FNTR).

Aline Mesples, president of OTRE, the truckers’ union, said the announcement was a victory for the (road) lobbyists, “Nothing justifies this failure, this filthy money.”

Killing the tax is a setback for France’s finance minister which is desperately trying to plug a huge gap in the public coffers. It was to have generated annual revenue of €1.2 billion, of which around €240 million would have been paid to Ecomouv’, the public-private partnership charged with installing the technology and collecting the tax. Ecomouv’ could claim as much as €1.5 bn in compensation given that the ‘indefinite’ suspension most likely means the project will never get off the ground.

Edith on the Thames

On 19 October the largest ship ever to enter the River Thames arrived at DP World London Gateway. The 397m long, 56m wide Edith Maersk has a draught of 16m and can carry up to 15,500 TEU.
A Flexicon system helps a leading US tyre recycler raise efficiency

According to the US Environmental Protection Agency, approximately 290 million scrap tyres are generated in the United States each year. As recently as 1990, most of these scrap tyres took up space in landfills or were dumped illegally. Today, many of them are recycled by companies such as Edge Rubber into various grades of ground rubber, also known as fine mesh crumb rubber.

Markets now exist for 233 million (80%) of all scrap tyres. Some 130 million (56%) of these scrap tyres are burned as fuel. Another 56 million (24%) are used in civil engineering projects such as artificial reefs, while 30 million (13%) are recycled into ground rubber. A further 16.5 million (7%) scrap tyres are retreaded.

Rough ground particles from shredded scrap tyres comprise 80% of Edge Rubber’s raw material. About 0.5ins (1.3cm) particles, which are gravity fed into cutting-edge technology for tyre recyling

2,000lb (907kg) bulk bags,” says Sam Kauffman, vice president and chief operating officer of Edge Rubber. “These rough ground particles make up 80% of the raw material that we process into fine mesh crumb rubber.”

The other 20% arrives in small bags from tyre retreaders that grind the carcasses, generating “buffings” that measure approximately 3/16ins (0.5cm). Because Edge Rubber has eliminated manual dumping of small bags from its production process, it first transfers the contents of small bags into bulk bags which are stored, or discharged to feed small bags from the production process, it first transfers the contents of small bags into bulk bags which are stored, or discharged to feed ground rubber particles, along with rough shredded particles, to a cracker milling process to further reduce particle size.

Moving the rubber particles from the bulk bags to the cracker mills is a six automated Bulk-Out BFC Bulk Bag discharger systems with integral flexible screw conveyors from Flexicon. An operator loads a bulk bag onto the discharger frame by electric hoist and trolley on a cantilevered I-beam; the discharger unloads the particles into a 20 cbft (0.56 cbm) capacity floor hopper from which a 15ft (4.57m) long flexible screw conveyer transports them into one of six cracker mills.

Kauffman explains: “Four of these discharger systems are identical, one has a larger diameter flexible screw conveyor for faster feeding capacity, and one is a double discharge unit with two flexible screw conveyors that feed material to two cracker mills.”

Once the bag is in place, the operator pulls the tied end through an iris valve, which prevents material flow while the bulk bag is being untied and allows controlled discharge of the material into the hopper once the bag has been opened.

Due to the nature of the rubber particles, material flow from the bag can be inconsistent. In order to ensure continuous and efficient operation, Flow Flexer bag activation devices positioned on the frame continually compress and release opposite sides of the bulk bag to promote flow through the bag spout into the floor hopper.

The rubber particles flow from the discharge port of the floor hopper and charging adapter into the 15ft (4.57m) long Model 1450 flexible screw conveyor, designed to handle difficult materials and consisting of a flexible steel screw rotating inside a 4.5 ins (11.4cm) diameter carbon steel outer tube. The screw is driven by an electric motor located at the discharge end of the conveyor, which feeds the rubber particles through a transition adapter into the cracker mill.

High and low level sensors in the floor hopper signal a PLC to activate the conveyor on reaching high level, and turn off the conveyor on reaching low level.

“Before we acquired the bulk bag dischargers, we manually emptied the small bags of material from tyre retreaders into the cracker mills. If our shredder was down for maintenance or repair, the volume of retread buffings we were feeding the cracker mills was not enough to maintain full production speed, which slowed the entire ambient grinding process. Manually emptying the bags was also a very slow operation,” Kauffman adds. “Now the bulk bag dischargers and flexible screw conveyors feed all raw material into the cracker mills in a continuous, automatic flow.” This results in increased throughput, and reduced inventory.
A typical tire shredded by Edge Rubber contains, by weight, approximately 70% recoverable rubber, 15% steel, 3% fibre and 12% extraneous material such as inert fillers. On average, one passenger tire yields 10-12lb (4.5-5.4kg) of crumb rubber.

The rough shredded particles and retread buffings are first ground in the cracker mills (ambient grinding) – the first of two size reduction processes that produce nine particle sizes ranging from 10 mesh (2mm, 0.8ins) to as fine as 200 mesh (0.003ins).

Ambient grinding

Wet grinding, or micro milling, produces cleaner, finer mesh particles. “While it produces particles as coarse as 40 mesh (0.40mm, 0.016ins), the majority of the particles are 60 mesh (0.25mm, 0.01ins) and finer. A percentage of the overall throughput, in fact, is finer than 200 mesh (0.003ins),” says Kauffman.

In wet grinding, the crumb rubber particles are mixed with water to create a slurry and proceed through micro mills. When the desired size is achieved, the water is evaporated from the slurry and the particles are dried and classified. An advantage of wet grinding is the cleanliness and consistency of the fine crumb rubber produced, as the process ‘washes’ the crumb rubber to remove the last traces of fibre.

These particles have a unique morphology, or surface structure, and are often sold as additives to improve the performance of injection moulded and extruded plastics. Although most wet milling processes produce particles with a smooth surface, Edge Rubber’s proprietary technique yields particles with a rough surface and unique shape for maximum surface area. They offer superior performance for applications requiring strong bonding or high tensile strength in industries such as automotive, sealants, specialty coatings and custom compounding.

Most of Edge Rubber’s wet milled particles are packaged in pre-measured batch-inclusion bags that are placed directly into the customer’s moulding process and then disintegrate by melting at a low temperature. The rest of the wet milled particles, along with the larger particles produced by the cracker mills, are shipped in various size bags to customers in the United States and internationally.

“Thanks in large part to our bulk bag discharging equipment, we are one of the most efficient scrap rubber recycling plants in the United States,” concludes Kauffman.