

earth matters

Recycled materials are more than landfill

With use in projects ranging from jogging tracks to railway, what is waste to some is increasingly a valuable resource to another

by **Desela Todorova**

ABU DHABI // Situated far from each other, developed by different entities to serve distinctly different purposes, Etihad Rail and the Al Majaz waterfront in Sharjah have very little in common. That is, provided you overlook the successful use of recycled materials on which both projects are relied.

For Etihad Rail, recycled building and demolition debris material from a plant in Al Dhafra has been used to build stage one of the railway, which covers 264 kilometres of track between Shah and Al Ruwais in the Western Region of Abu Dhabi.

Almost a million cubic metres have been used since work on the railway started in August 2011, said David Bulmer, geotechnical manager at Etihad Rail. The majority, about 800,000 cubic metres, was used to make the track sub-ballast, replacing crushed rock aggregate or cement-stabilised material.

"There are very strict specification requirements set out by Abu Dhabi Municipality and the Department of Transport," he said. "It is an excellent material and meets and exceeds our performance requirements. For future applications, there is unlimited potential."

In Sharjah, Shurooq, also known as the Sharjah Investment and Development Authority, used material obtained from recycled tyres for the new jogging track on Al Majaz waterfront. The recycled rubber is manufactured by another company in the emirate, Bee'ah, which has recycled about 10 million old tyres since opening a special plant in 2010.

At the plant, old tyres are pulverised into small particles, called crumb rubber, which is mixed with asphalt to make roads and fillings for road cracks. The recycled rubber is also

used to produce kerbstones, landscaping mulch and tiles.

In September, the company sold about 970 tonnes of rubber powder and 230 tonnes of mulch, said Mohammed Alhosani, director of sales and new product development at Bee'ah. The tiles, used for playgrounds, stables and pool areas, are also high in demand with about 3,000 square metres ordered for this month.

"We have more orders than expected," said Mr Alhosani, explaining that the company also exports to other Gulf countries.

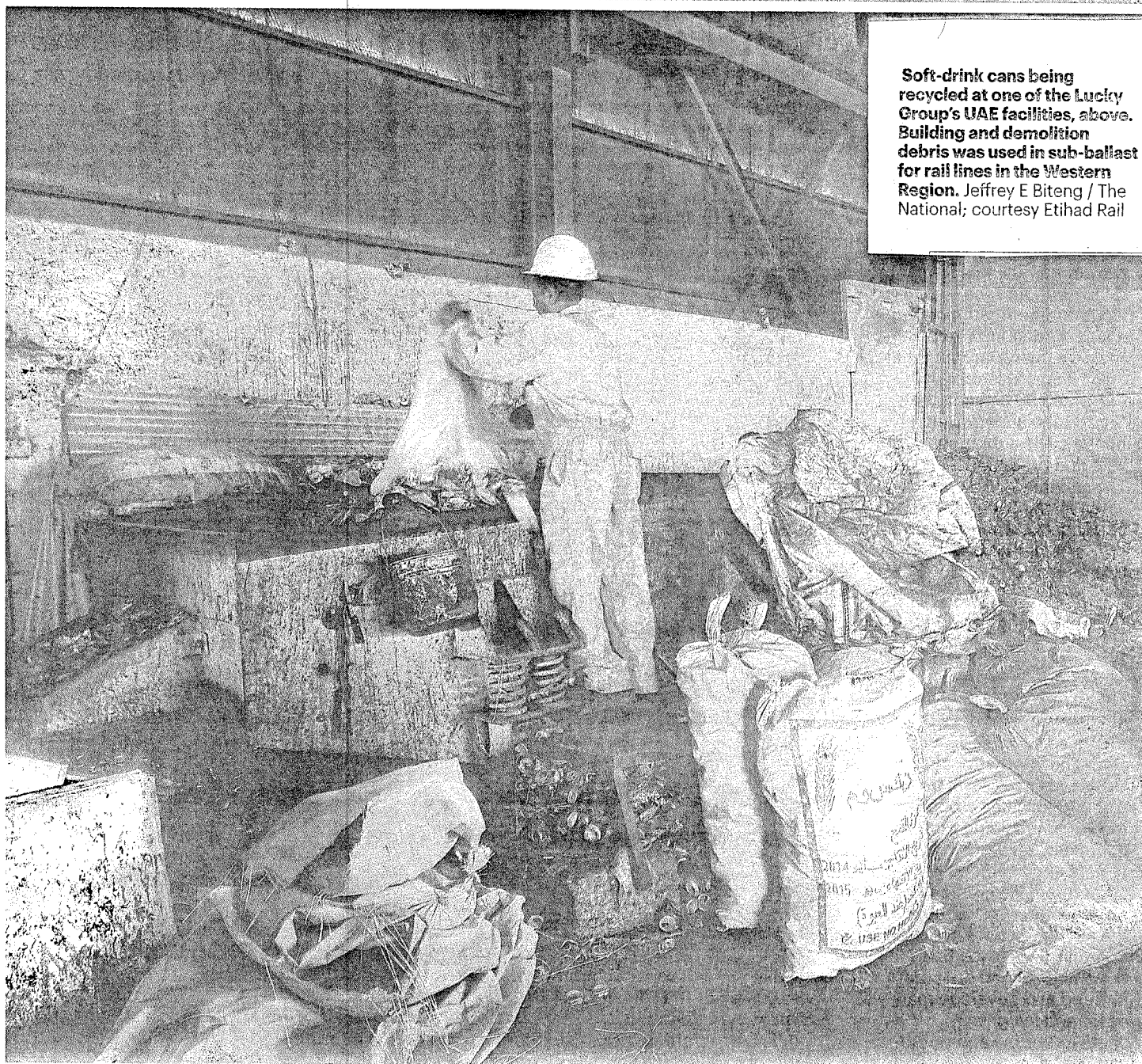
The UAE is also the second largest market for metals recycling in the region, surpassed only by Saudi Arabia, said Salman Shaban, group marketing manager at Lucky Group, which has two sorting and recycling facilities in Dubai.

The company has been operating here since 1973 and has a facility in Doha, Qatar, and offices in North America and China. Each year, it collects about 200,000 metric tonnes of steel from its North American offices and 50,000 metric tonnes of non-ferrous metals such as copper, aluminium and brass, mostly from the UAE.

"There is still room for improvement but I salute Dubai for what it has become," Mr Shaban said. "Earlier, everything was collected and going straight to landfill."

"We receive everything one uses in their daily life," said Mr Shaban as he pointed to various items at the company's Jebel Ali sorting facility - car wheels, window and door frames, sanitary equipment, cables, air-conditioning parts and beverage cans.

The company buys metal scrap from waste-management companies and in its Dubai operations focuses primarily on aluminium, which can be remelted and recycled repeatedly, while keeping its quality. This fact allows metal recyclers to offer good rates to their



Soft-drink cans being recycled at one of the Lucky Group's UAE facilities, above. Building and demolition debris was used in sub-ballast for rail lines in the Western Region. Jeffrey E Biteng / The National; courtesy Etihad Rail

suppliers and in turn to get high rates for their products - which is not always the case with recycled products.

When it comes to recycling glass, for example, one stop is the low price of virgin material. This is also a challenge when it comes to

recycling building and demolition debris.

Last year, the UAE generated an estimated 11 million tonnes of construction waste, said Kshitij Nilkanth, programme manager of environmental technologies for the region for international

consultancy firm Frost & Sullivan. While there are recycling facilities in Abu Dhabi, Sharjah and Dubai, finding a market for their end product has been a challenge.

"What we have observed is that there is not much of a domestic market," he said. "Virgin material

is not very expensive for developers. The domestic demand compared to what is produced

In Abu Dhabi, the Government addressed that by requiring certain large projects use a certain percentage of aggregate material from recycled sources. But, said Nilkanth, more could be done to encourage the use of recycled construction debris, as well as the collection and use of other recycled products.

More coordination between emirates, ensuring that residents segregate their household waste at source where recycling options are provided, and increasing the price for landfill waste were of his key suggestions. Recycling companies interviewed for the package also complained that materials that could feed processing lines were being exported, thus undermining long-term potential to develop and contribute to the country.

"At some point in time, when existing landfills in all emirates will start coming under pressure because of space constraints," said Mr Nilkanth.

