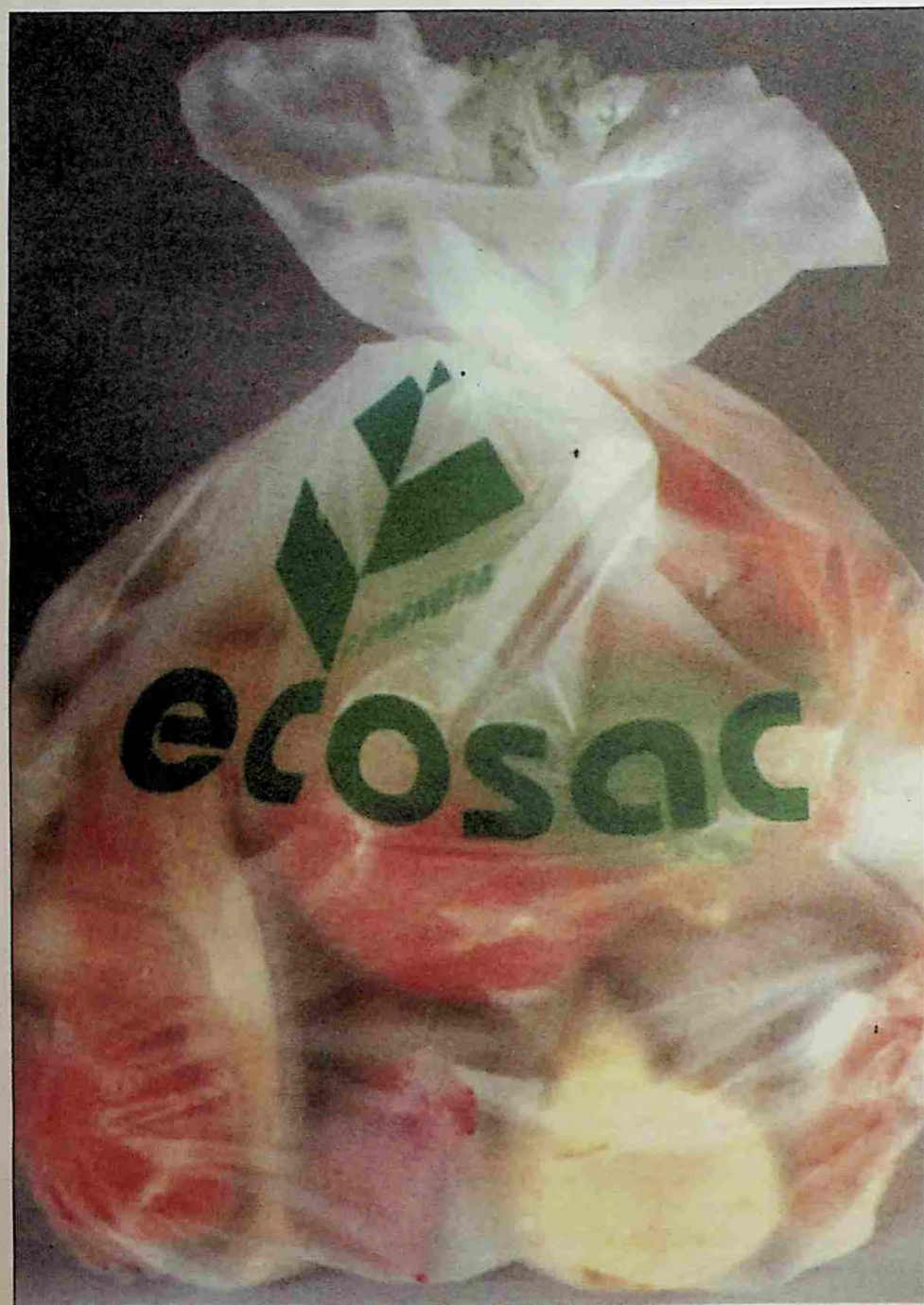


# HIGH DIVERSION

## The Italian way

Italy's waste management costs are three times higher than those of the UK. As a result, the country has cracked the hard nut of managing organic waste and become a composting world leader. Robin Murray takes a look at the lessons that can be learned from Italy's experience



Originality, like creativity, is a response to limits. It is therefore not surprising that one of the major innovations in the handling of organic waste should come from Italy.

The climate means that household waste, because of its organic content, is quick to putrefy. The narrow centres of many Italian towns make it difficult to collect waste using conventional refuse vehicles. As a result waste collection costs are high, some £40-£50 per tonne in the north and more in the south where door-to-door collections may have to be made three to six times each week. With disposal costs often rising to £100 a tonne, traditional waste collection in Italy is three times as expensive as in the UK.

Italy's response to EU waste policy has been more ambitious than Britain's. In 1997 the Italian Government passed a Waste Management Law which set recycling targets of a minimum of 35 per cent by 2003, and required all municipal waste to be treated prior to landfill by that date. Treatment was defined not in the minimalist way proposed by the UK's Environment Agency in its recent consultation document, but in terms of reducing the level of fermentability in residual waste by 90 per cent of untreated levels.

The 35 per cent target meant that local authorities could not expect to meet their targets without tackling organic waste. As a result more than

1,000 municipalities in Italy have now introduced source separation of organic waste. In addition an increasing number of mechanical and biological treatment (MBT) plants are being built, in order to meet the 10 per cent fermentability criteria for residual waste.

### Characteristics

Separate kerbside collections of organic materials are now well established in Northern Europe, notably in Holland, Germany and Austria (as are MBT plants in the latter two). Italy's innovation has come in the way the systems are planned and executed. There are five key features of the Italian system.

Food and garden waste are treated as separate streams. The rationale is that putrescible food is the main problem in the dustbin and needs regular collection; most garden waste can be composted in the garden. Accordingly, food waste is collected on the same rotation as the traditional refuse rounds, while home composting programmes target garden waste, with the remainder being taken to civic amenity sites or picked up in fortnightly or monthly seasonal garden waste collections.

Cutting the proportion of organics in residual waste is a priority in programme design. Organics account for between 35 and 50 per cent of dustbin arisings in Italy (higher in the south than the north). Italian schemes aim to capture 65-80 per cent of all putrescibles in order

to cut the organic portion of residual waste to 10-15 per cent. At that level *restwaste*, as it is called in Italy, need not be collected so regularly – once or twice a week in central Italy, depending on the season – and once a week or even once a fortnight in the north near the Alps. In northern Europe, where there is a high diversion of dry recyclables and lower food waste capture rates, the level of organics in residual waste rises to 40 or 50 per cent.

Convenient, small household receptacles, which can be easily monitored, are one of the principal innovations of the system. Homes are issued with a small 6-10 litre bin for use near the sink, with watertight, transparent, and biodegradable plastic (*MaterBi*) bags of the same size. The bags are then placed in a 30 litre bucket with a lid, which is put outside the door on the day of collection. The transparency of the bags makes them easy to monitor, and some councils have also introduced transparent plastic bags (60-100 litres) for residual waste to help lower the organic content of *restwaste*.

Wheeled bin collections from apartments, restaurants and food shops are integrated with low-rise organic collection, instead of having paladins or Eurobins collected on separate rounds.

Food waste has a high density that does not need compacting. This means that small collection vehicles can be used. The most usual ones have a skip-like container on the

back with a capacity of 1.5-5 cubic metres. They are only partially loaded to ensure that there are no spills. The one in Monza, shown in the picture, loads to a weight of 0.7 tonnes in an hour, and does five loads a day. It has a single operator, serving over 2,000 homes/traders.

The vehicle has a loader on the back for wheeled bins, and a tipping mechanism that allows the load to be transferred to a mobile RCV for bulk carriage to the central compost site.

The feeder vehicles can also be used for dry recyclables like glass and news and pams. Garden waste, with a low density, is collected (usually at weekends) using an off-duty RCV.

### Performance

The average yield of the food waste schemes is 150-200 kg per household per year, or from 60-80 per cent of food waste in the average dustbin. Little if any of this is garden waste (not least because of the small size of the household receptacles like the Bio-bags). Garden waste is largely composted at home.

One of the lessons of the Italian system as against the North European ones is that while the overall yields are similar, the North Europeans collect only a third to a half of the Italian food waste yields, but much higher volumes of garden waste. This means that there is a wheeled bin effect for organics. If separate unrestricted garden waste collections are introduced this will

Robin Murray's new book *Zero Waste* is published on March 12th 2002 by Greenpeace. A copy costs £12.50 and can be ordered on 0207 865 8100. Alternatively download a copy of the book from [www.greenpeace.org.uk](http://www.greenpeace.org.uk)





raise the recycling rate, but it will also increase collected waste levels. What is good for the recycling targets is bad for waste arisings.

During a visit to Monza by a British waste group in July, the party was taken aback by the high recycling rates. Monza's record is shown in the table. Food waste is the largest contributor to recycling, more than a quarter of the total. Overall Monza diverted 51 per cent of its MSW. But Monza is in no way exceptional. Out of the 188 municipalities in the Province of Milan, 88 achieved diversion levels of 50 per cent or above, with five of them exceeding 70 per cent. This has already had a dramatic impact on the reduction of waste going to landfill, and represents the first benefit of the organics programme.

Another of its benefits is that the quality of the collected food waste (with less than two per cent contamination by weight) means that there is high quality compost which can be applied to agricultural land. For Italy, which has lost half of its soil in 20 years, this means that it has found a powerful means of countering desertification. So important is this that three regions now provide subsidies to farmers for applying compost to their land.

For more information on composting in Monza, log on to: [www.monzaflora.it](http://www.monzaflora.it)

## RECYCLING RATES IN MONZA, ITALY, FOR THE YEAR 2000/2001

Waste type	tonnes/pa	Kg/hh/pa	% of total
Food waste	7,524	158	13.6
Garden waste	2,465	53	4.6
<b>All organics</b>	<b>9,989</b>	<b>211</b>	<b>18.2</b>
Paper	6,132	129	11.1
Glass and cans	3,980	83	7.2
Plastics	1,112	23	2.0
Other recyclables	6,914	145	12.5
<b>All dry recyclables</b>	<b>18,138</b>	<b>380</b>	<b>32.8</b>
<b>All waste diverted</b>	<b>28,127</b>	<b>591</b>	<b>51</b>
<b>Total MSW</b>	<b>55,250</b>	<b>1,159</b>	<b>100</b>

### Economics

Equally striking to the high diversion rates is the fact that in the majority of Italian municipalities, food waste diversion has been introduced without increases in overall costs, and commonly with budgetary savings. The reason is that it is much cheaper to run a food waste round than a conventional *restwaste* one. The micro vehicles cost between £10,000 and £20,000. They are covered by full maintenance contracts avoiding the need for back ups, and they have one operator rather than three. Once food is cut from the ordinary dustbin and a collection of dry recyclables is in place, it means that residual rounds can be cut, and a schedule introduced with two or three food waste collections and fewer *rest waste* ones.

### Relevance to the UK

The Italian system has been taken up in Catalonia in Spain and in parts of Austria, so how applicable is it to the UK? The answer is that it is critical. Removing organics from the residual waste stream is a priority, since it cuts methane and other emissions from landfill, and restores the biological cycle by producing a high-quality soil improver.

The EU's draft bio-waste directive includes provision for virtually all households in Europe to have separate organic kerbside collections. The Italian system allows this to be done economically.

Until now, those UK councils which have introduced separate organic collections have done so mainly by adding a wheeled bin (for example Daventry, Braintree, Chelmsford, Rochford, and Colchester). This has been costly in terms of bins and vehicles and in the encouragement it

has given to official garden waste arisings. The Italian system radically cuts the cost of containers and vehicles.

A study of the costs of introducing an Italian-style system in Greater Manchester confirmed the Italian experience. The cost of running a micro vehicle round was just over a third that of a normal residual round. In three of the nine boroughs, the shift to a weekly food waste and a fortnightly residual collection schedule saved money, and all of them cut waste costs once the savings from disposal were taken into account.

One development which would further reduce costs is the construction of local, enclosed-vessel composting, avoiding long leads to compost plants which are set outside the Milan region. A 2,500 tonne per annum micro composter would service an area of 15,000-20,000 households, and if centrally sited would allow feeder vehicles to go straight to the compost site.

### Conclusion

Like the Vespa, the Italian micro vehicle is a response to compact cities. It first appeared, along with the collection system of which it forms a part, in those regions of the third Italy famous for networks of small and medium-sized firms whose flexibility, innovation and design made them European leaders in so many branches of manufacturing. The ideas move the recycling movement a major step forward. What now needs to happen is for UK councils to establish twin relations with Italian counterparts who have introduced this system, to learn from their experience and speed up the adoption of these ideas within a British context. □

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- > lezione teorica: Martedì 30 maggio 2000 alle ore 21.00;
- > lezione pratica: Sabato 3 giugno 2000 alle ore 10.00.

• In lezione teorica il corso presso il Comune di Monza.  
• In lezione pratica in altro luogo, che ti verrà comunicato all'inizio del corso. Per partecipare puoi essere direttamente contattato al primo numero.  
• In concomitanza con la lezione pratica occorre distribuire le compostiere.  
• Per cittadini che partecipano al corso è prevista una riduzione della tassa su rifiuti.