

PACKAGING RECYCLING IN THE TRANSITION PHASE

STATE OF THE ART AND DEVELOPMENT PROSPECTS IN PACKAGING RECYCLING. 20 YEARS AGO, ONLY 1 IN 3 PACKAGING ITEMS WAS RECYCLED AND NOT LANDFILLED, WHEREAS TODAY THE RATIO IS 3 TO 4. THE ITALIAN NATIONAL PACKAGING CONSORTIUM IS MAKING EFFORTS TO FURTHER INCREASE RECYCLING.

The Italian National Packaging Consortium (Conai) was set up in 1997 following the implementation of Legislative Decree 22/1997, which transposed the European directives on waste management and focused on recycling priorities.

In Italy, Conai has been promoting a real circular economy based on the enhancement and recycling of packaging waste for the past 20 years, and it continues to do so bringing important social, economic and environmental benefits to the country as a whole. The system established by Conai and sectoral consortia is based on compliance with the principle of shared responsibility between companies, municipalities and citizens, whereby separately collected packaging waste is recycled. The municipalities involved are compensated for additional costs based on the quality and quantity of their separate collection, in line with the Anci-Conai framework agreement. Compensation is financed by an environmental contribution paid by the companies producing and using steel, aluminium, paper, wood, plastic and glass packaging.

In 2015, recycled packaging waste further

TABLE 1
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Recycled packaging waste.

Source: Conai - Sectoral consortia

Material	2014 (kton)	2015 (kton)	Annual variation
Steel	336	348	+3,5%
Aluminium	47,1	46,5	-1,3%
Paper	3.482	3.653	+4,9%
Wood	1.553	1.633	+5,1%
Plastics	790	867	+9,7%
Glass	1.615	1.661	+2,8%
Total	7.823	8.208	+4,9%

increased at a national level and reached 66.9% of the total quantity released for consumption with 8.2 m tons.

48% was managed by consortia and the remaining 52% was processed by independent operators.

Current recycling rates show that the goals set by European legislation (Directive 2004/12/EC) have been exceeded, and that the 2020 goals set by Directive 98/2008 – whereby at least 50% of some types of urban waste should be recycled – have been met well in advance. When energy recovery is considered, the amount of packaging diverted from landfills rises to 78.6%, for a total of 9.6

m tons. In 2015, packaging recycling led to the generation of secondary raw materials with 3 bn of 0.75 l glass bottles, 329 m of A4 paper reams, 32 m of wood pellets, 9 bn of detergent bottles made from PET, 1 bn of 33 cl aluminium cans and 725 Frecciarossa 1000 (high-speed trains) for steel.

The results achieved are extremely important but there is still much room for improvement. This holds true both for Italy, where there are still discrepancies in terms of quantity and quality of waste sorting – which is key for packaging waste recycling – between the most effective regions in the north and those



in the centre and south of Italy, and for industrial technologies that can re-use hardly recyclable waste.

In this context, the Consortium has implemented five different projects in collaboration with scientific institutes, universities and research centres.

For example, together with *Stazione sperimentale del vetro* in Venice (a glass research centre), Coreve consortium is investigating the re-use of “glass sand”. At present, it is sent to landfill but it could increase recycling by 70,000 tons/year. Research has obtained purified glass sand that can be sent to glassmakers together with cullet ensuring manufacturing stability and quality standards. This project has also developed innovative systems for separating glass from crystal in case of mistakes during waste sorting.

But there is more to that. Similar projects are under way to increase recycling opportunities for:

- plastics, e.g. PP and PE fine films
- paper, through the creation of products generated by pulper waste from paper mills
- aluminium, for the recovery of metal layers with dry and wet processes
- steel, with the design of an electrochemical process to eliminate tin and improve recycling performance.

Conai has also been proactive in promoting the adoption and use of sustainable packaging. Most importantly, it has diversified environmental contribution for plastic packaging, which is the most complex waste in terms of waste type and selection/recycling technologies. The new environmental contribution will be defined based on three main parameters: easy selection of packaging after recycling, actual recyclability (according to industrially available technologies) and type of destination (household or trade/industry). The pilot phase started in April 2017 and

TABLE 2
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% recycling on total quantity released for consumption.

Source: Conai - Sectoral consortia

Material	2014	2015	Annual variation
Steel	72,5%	73,4%	+0,9%
Aluminium	74,3%	69,9%	-4,4%
Paper	78,7%	79,7%	+0,9%
Wood	59,0%	61,1%	+2,1%
Plastics	38,0%	40,7%	+2,8%
Glass	80,3%	70,9%	+0,6%
Total	65,4%	66,9%	+1,5%



the system will be fully in place on 1st January 2018.

In addition to that, Conai is boosting the design of more recyclable and sustainable packaging through a “prevention tender”, which is organized on an annual basis to give visibility and money prizes to the most effective companies.

In 2017, the jackpot will be further increased by € 400,000.

Last but not least, the Italian National Packaging Consortium is finalizing a document providing guidelines to facilitate plastic packaging recycling, in collaboration with a designer from Iuav University in Venice and Corepla.

After a public consultation with packaging producers and users, selectors, recyclers and environmental associations,

it will provide companies with an additional tool to promote the production and use of green packaging.

To conclude, 20 years ago only one in three packaging items was recycled and not landfilled, whereas today three in four items are recycled. On such an important anniversary, it is vital to start from the work done and the major objectives achieved to outline a strategy and consolidate results, so that the Italian system will still feature among the most efficient ones in Europe.

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FIG. 1
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Total recycling and recycling by material in 2015. Comparison with set goals.

Source: Conai - Sectoral consortia

■ Recycling results

