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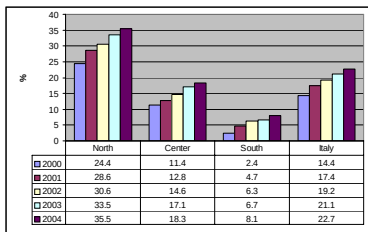


## Population in thousands, Italy, 2004

|        |        |
|--------|--------|
| NORTH  | 26,469 |
| CENTER | 11,246 |
| SOUTH  | 20,747 |
| Total  | 58,462 |

## Source – separated collection

In 2004, the source - separated collection of recyclables and compostables was 7.1 million tonnes, that is equal to 22.7% of the total MSW generated:



However, the situation is very different between the macro - geographical areas of Italy: the North has reached a value of 35.5%, the Center 18.3% and the South 8.1%.

## Mechanical – Biological Treatment (MBT)

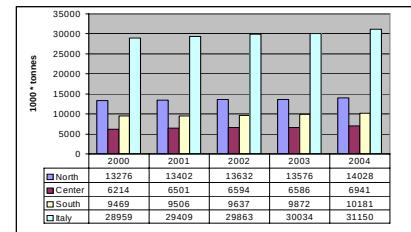
In 2004, the mechanical – biological treatment process (MBT) treated about 9 million tonnes of MSW. About 20% of the mechanical-biological treatment is dedicated to the production of compost from selected fraction; the other 80% produce a large variety of materials such as bio-stabilized, dry fraction and RDF. Often these products, especially the bio-stabilized and dry fractions (which do not have the characteristics of RDF), are disposed in landfills.

## Landfill

From 2000 to 2004 the number of landfills in Italy decreased from 657 to 401. As is the case for other plants (e.g. WTE facilities), the distribution of landfills is not uniform across the nation: 232 are situated in the South, 117 in the Center, and 52 in the North.

## Municipal Solid Waste (MSW) production

The MSW generation in Italy in 2004 was 31.1 million metric tonnes, with an increase of 3.7%, in comparison to 2003.

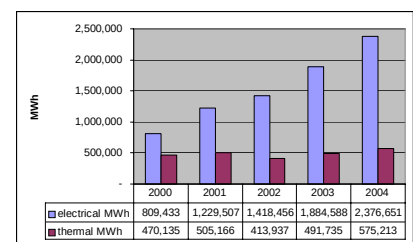


In 2004, the MSW generated per capita in the North was 530 kg, in the Center 617 kg and in the South 491 kg. The Italian average was 533 kg.

## Waste - to - Energy (WTE)

•The tonnage of MSW combusted at waste-to-energy (WTE) facilities increased from 1.6 million in 1996 to 3.5 million tonnes in 2004: this corresponds to an increase of the combusted MSW from 6.1 to 11.4 percent of the total MSW generated.

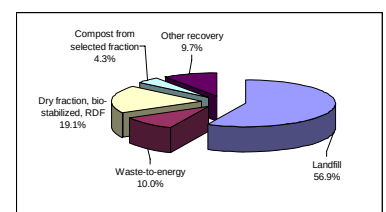
•There are 45 WTE facilities in Italy and three incinerators. In 2004, the WTEs treated 4.1 million tonnes of waste (3.5 million MSW plus medical waste and other special wastes), recovering 2.4 million MWh of electricity and 0.575 million MWh of thermal energy:



In 2004, the specific gross average production of electrical energy was of 587 kWh<sub>e</sub> per tonne of managed waste and of thermal energy 361 kWh<sub>th</sub> per tonne. The corresponding BREF energy recovery was 587 \* 2.4 + 361 = 1770 kWh<sub>th</sub> per tonne.

## Conclusions

- The principal way of MSW disposal in Italy remains landfilling, which receives 57% of total MSW generated.
- Recycling of source - collected materials allows to recover about 10% of MSW.
- WTE plants manage about 10% of MSW.
- MBT plants produce a large quantity of materials whose final destination is not known.



MSW disposition, Italy 2004