MORE CIRCULARITY
LESS CARBON
-25% BY 2025

THE CARBON FOOTPRINT OF WASTE

GENOA

ACR+

ZERO WASTE SCOTLAND

ACR+ is an international network of cities and regions sharing the aim of promoting a sustainable resource management and accelerating the transition towards a circular economy on their territories and beyond.

Circular economy calling for cooperation between all actors, ACR+ is open to other key players in the field of material resource management such as NGOs, academic institutions, consultancy or private organisations.

Find out more at www.acrplus.org

Zero Waste Scotland exists to lead Scotland to use products and resources responsibly, focusing on where we can have the greatest impact on climate change.

Using evidence and insight, our goal is to inform policy, and motivate individuals and businesses to embrace the environmental, economic, and social benefits of a circular economy.

We are a not-for-profit environmental organisation, funded by the Scottish Government and European Regional Development Fund.

Find out more at www.zerowastescotland.org.uk/

Project name: Carbon Metric International – ZWS & ACR+ partnership

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ACR+ 'MORE CIRCULARITY LESS CARBON' CAMPAIGN

The ACR+ has partnered with its member Zero Waste Scotland to launch the 'More Circularity Less Carbon' (MCLC) campaign in November 2019 to reduce the carbon impact of municipal waste among its members by 25 per cent by 2025.

Zero Waste Scotland's Carbon Metric International (CMI) tool, developed from Scotland's ground-breaking Carbon Metric, will enable ACR+ members to measure the carbon impact of their municipal waste, take effective actions to reduce it, and track their progress towards the 2025 target.

Genoa is one of the ACR+ members, along with the Brussels Region and Pays de la Loire, to be part of the first cohort of the campaign to benefit from this project and receive support to use the CMI to quantify the whole-life carbon impacts of its municipal waste. The results are summarised in this report, which has three main objectives:

1. Enable Genoa to establish its 2025 carbon reduction target;
2. Provide a detailed breakdown of waste carbon impacts by materials and management process; and
3. Assess several carbon reduction scenarios that can help Genoa achieve its target.

More information on the campaign is available on the following webpage: www.acrplus.org/morecircularitylesscarbon

ZERO WASTE SCOTLAND'S CARBON METRIC INTERNATIONAL

Zero Waste Scotland has developed a ground-breaking tool in the fight against global climate change. The Carbon Metric measures the whole-life carbon impacts of Scotland's waste, from resource extraction and manufacturing emissions right through to waste management emissions, regardless of where in the world these impacts occur (Figure 1).

"The Carbon Metric shows how reducing our waste, and managing what remains in a more sustainable way, is critical to the global fight against climate change."

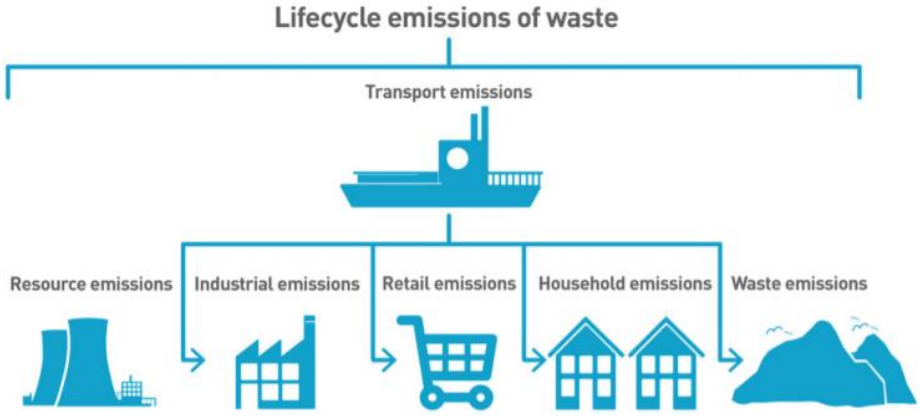


Figure 1 Schematic diagram presenting the lifecycle emissions of waste.

The Carbon Metric provides policymakers and business leaders with an alternative to weight-based waste measurement, allowing them to identify and focus specifically on those waste materials with the highest carbon impacts and greatest potential carbon savings. Scotland's 33% per capita food waste reduction target is an example of a policy informed by the Carbon Metric[1].

Further details on the Carbon Metric methodology can be found on Zero Waste Scotland's website[2].

The Carbon Metric could be adapted to Genoa's data thanks to the collaborative work between Zero waste Scotland and ACR+.

METHOD & DATA SOURCE

The whole-life carbon impacts of **household waste** in Genoa were quantified in this report, based on 2019 data.

Stages covered in the analysis as follow:

- **Waste generated:** all waste generated by households in Genoa during the reporting year (i.e., 2019). Embodied carbon impacts linked to the production of material (resource extraction, manufacturing and transport emissions) are included in this category. Impacts associated with the product's use are excluded.
- **Waste recycled:** all recycled (or reused) materials including biodegradable materials that have been composted or anaerobically digested. The analysis covers all activities linked to recycling waste, namely waste collection, sorting, recycling, and displacement benefits as recycled content substitutes virgin materials.
- **Waste incineration:** all incinerated waste. The analysis covers waste collection and treatment (including carbon benefits of energy recovery when applicable).
- **Waste landfilled:** all landfilled waste, including incinerator ash and any recycling and composting rejects that occur during collection, sorting or further treatment that are landfilled. The analysis covers the carbon impacts of waste collection and disposal.
- **Other methods:** waste managed by methods outside of conventional recycling, recovery or disposal methods such as Mechanical Biological Treatment (MBT) technologies. Waste data reveals that nearly 83,000 tonnes of Genoa's household waste is processed in an MBT plant which is not considered an alternative to recycling, incineration, or landfill, but rather a pre-treatment step (Figure 5).

More information on waste data used in the analysis, assumptions with regards to waste management operations in Genoa, and its limitations can be found in Appendix 1.

[1] Scottish Government (2016) Making Things Last
[2] https://www.zerowastescotland.org.uk/our-work/carbon-metric-publications

ABOUT GENOA

Genoa is a port city and the capital of northwest Italy's Liguria region with a population of 583,600 inhabitants. Household waste for the region is managed by ACR+ member AMIU Genova S.p.A.. In 2019, this amounted to 283,000 tonnes, representing 485 kg/inh (Figure 4). A breakdown of waste treatment and disposal route is shown in Figure 5.

Figure 2 Location of Genoa.

Figure 3 Logos of the city of Genoa and of AMIU Genova S.p.A.

Figure 4 Breakdown of waste[3] generated in Genoa in 2019 (tonnes).

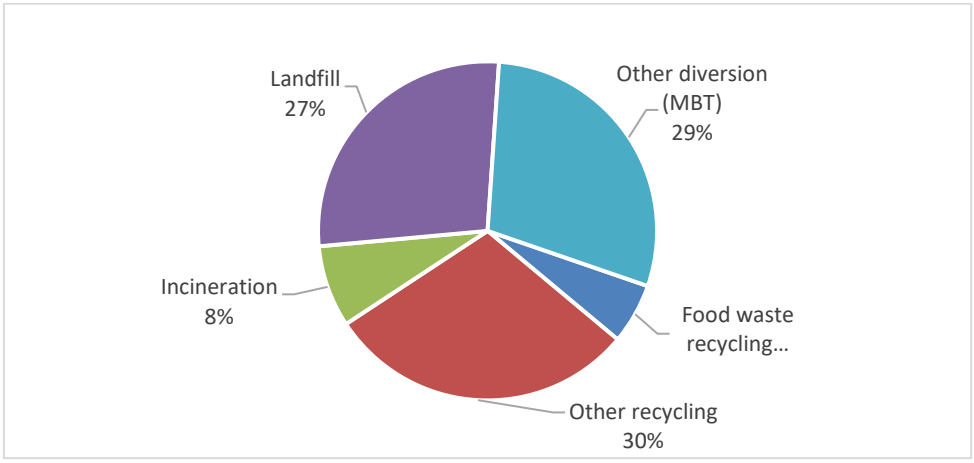


Figure 5 Final destination of household waste in 2019.

[3] Health care and biological wastes category covers non-infectious human health care wastes whose collection and disposal is not subject to special requirements in order to prevent infection (e.g. dressings, plaster casts, linen, disposable clothing, diapers). Household and similar waste is an EWC-EuroStat was categories that covers a number of waste fractions that primarily comes from households. Waste materials include: mixed municipal waste (incinerated/landfilled), street cleansing residues (landfilled), and bulky waste (recycled).

RESULTS

5.1 Key findings

The carbon impacts of municipal waste in Genoa in 2019 were 708,000 tonnes of carbon dioxide equivalent (t CO_2eq.), or 1.2 tonnes CO_2eq./capita[4]. Figure 6 shows that carbon saved through recycling and other diversion was higher than carbon impacts of waste disposal (landfilling and incineration), meaning waste management activities (i.e., collection, treatment, and disposal) in Genoa are carbon negative. Embodied carbon impacts of waste material (i.e., the emissions generated by the extraction of resources, production, manufacturing, etc. of the corresponding products, labelled as "Generated" in Figure 6) are the highest contributor to the net carbon impacts of waste, which is why waste prevention, in accordance with the waste hierarchy, always offers the greatest carbon savings. **Accounting for the full lifecycle impacts, Genoa's waste carbon intensity amounts to 2.5 tCO_2eq./tonne of waste.**

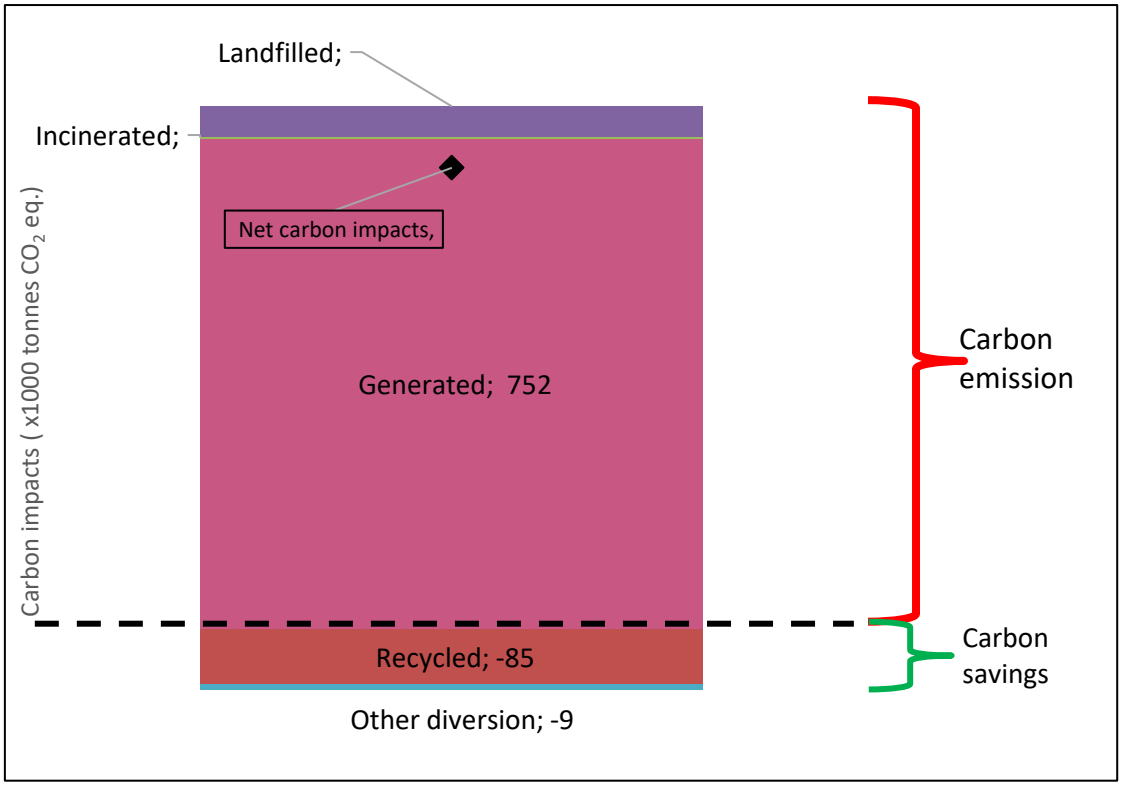


Figure 6 Breakdown of whole-life carbon impacts of waste by stage.

Figure 7 shows the amount of waste generated by each waste category[5] and their associated carbon impacts. The "Household and Similar Wastes", a pre-defined EUROSTAT EWC-Stat waste category, includes the following categories: residual waste (71%), street cleansing residues (1%), and bulky waste (28%). The residual waste fraction reported under the

[4] Based on a population of 583,601 inhabitants (Source: Eurostat)

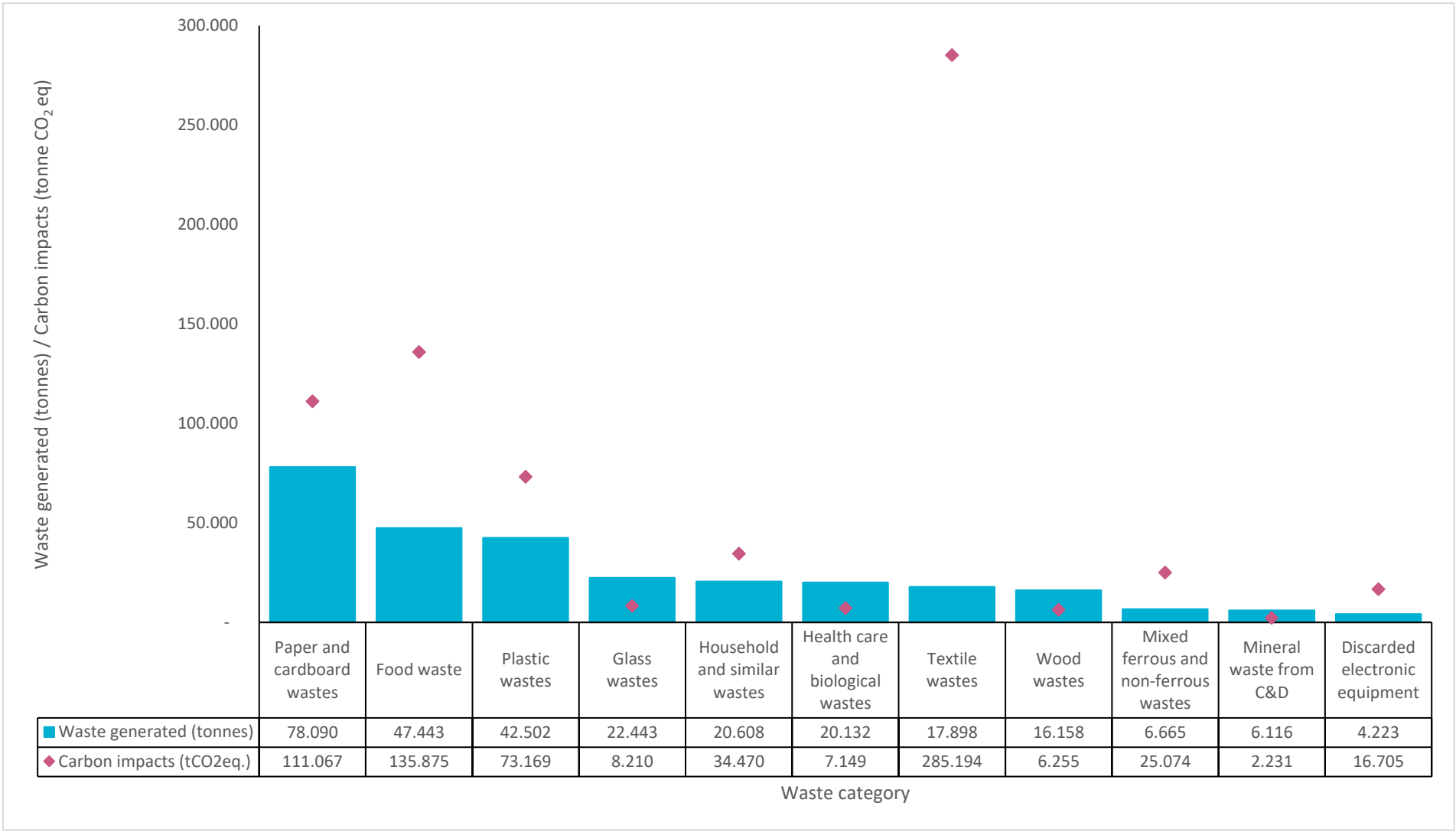
[5] Each category does not refer to waste tonnages in a single stream (e.g. "garden waste collected in civic amenity sites"), but rather to the total waste fraction that encompassed in multiple waste streams (e.g. garden waste collected in civic amenity sites, garden waste collected door-to-door, and garden waste improperly discarded in residual waste

“household and similar wastes” covers waste tonnages in the residual waste stream that could not be disaggregated to specific material categories.

In 2019, all non-selective, non-recyclable waste stream was sent to MBT facilities to extract recyclable materials when possible and then stabilise and redirect the reject to landfill in Scarpino. All MBT facilities, but one, were located outside of the Liguria Region. Further details about MBT plants in Italy are available in the 2020 Ispra report[6].

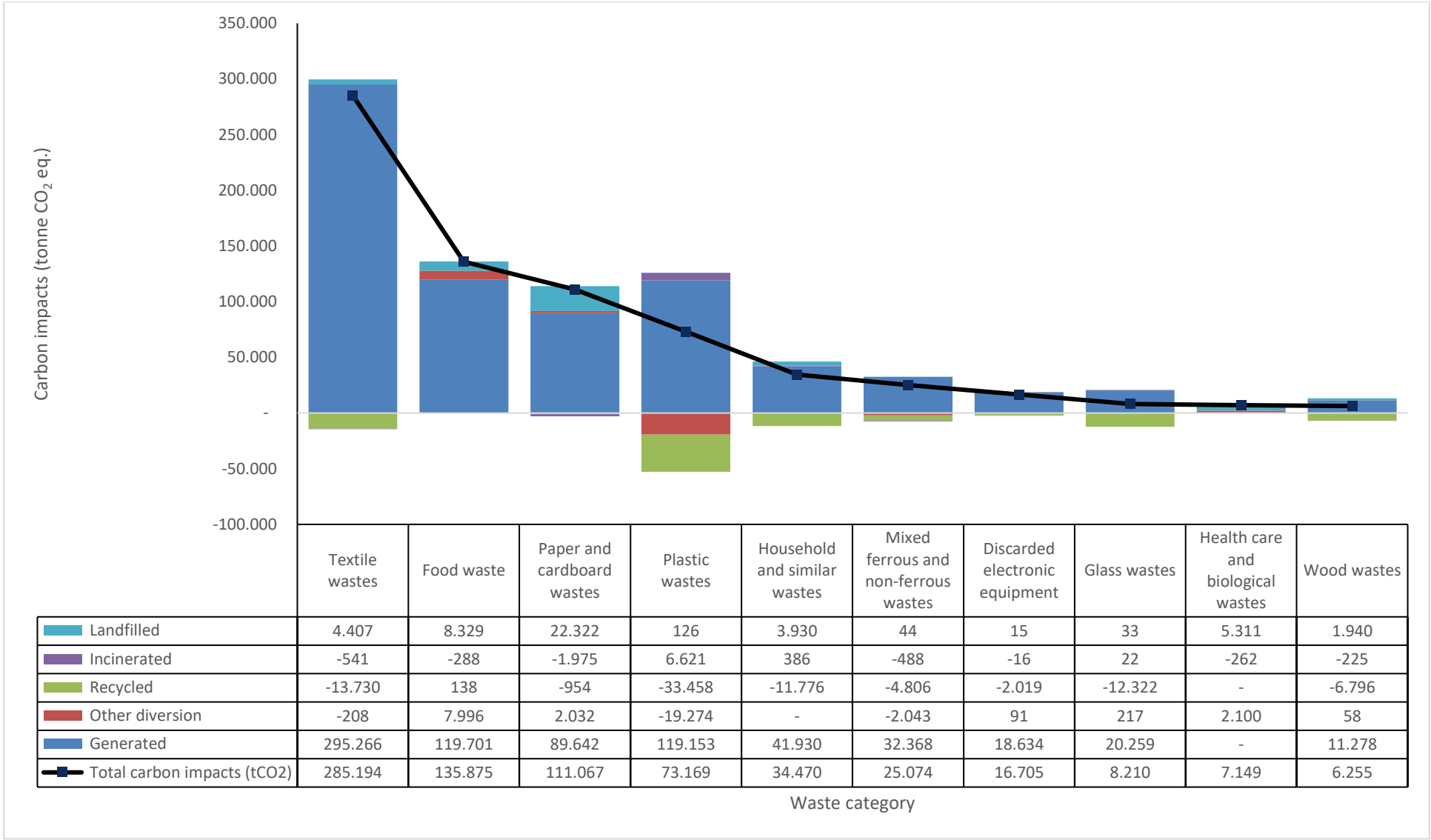
A detailed breakdown of waste tonnages and their impacts is available in Appendix 2 and 3 and can be used to identify areas for improvements in terms of both recycling rates and waste reduction. For example, the analysis shows that improving recycling rates for paper, food and plastic waste will lead to significant carbon savings. Textile also offers similar large-scale carbon saving opportunities due to the carbon intensity of textile waste.

[6] ISPRA (2020) Rapporto Rifiuti Urbani [Online]. Available at: www.isprambiente.gov.it



	Paper and cardboard wastes	Food waste	Plastic wastes	Glass wastes	Household and similar wastes	Health care and biological wastes	Textile wastes	Wood wastes	Mixed ferrous and non-ferrous wastes	Mineral waste from C&D	Discarded electronic equipment
Waste generated (tonnes)	78.090	47.443	42.502	22.443	20.608	20.132	17.898	16.158	6.665	6.116	4.223
Carbon impacts (tCO2eq.)	111.067	135.875	73.169	8.210	34.470	7.149	285.194	6.255	25.074	2.231	16.705

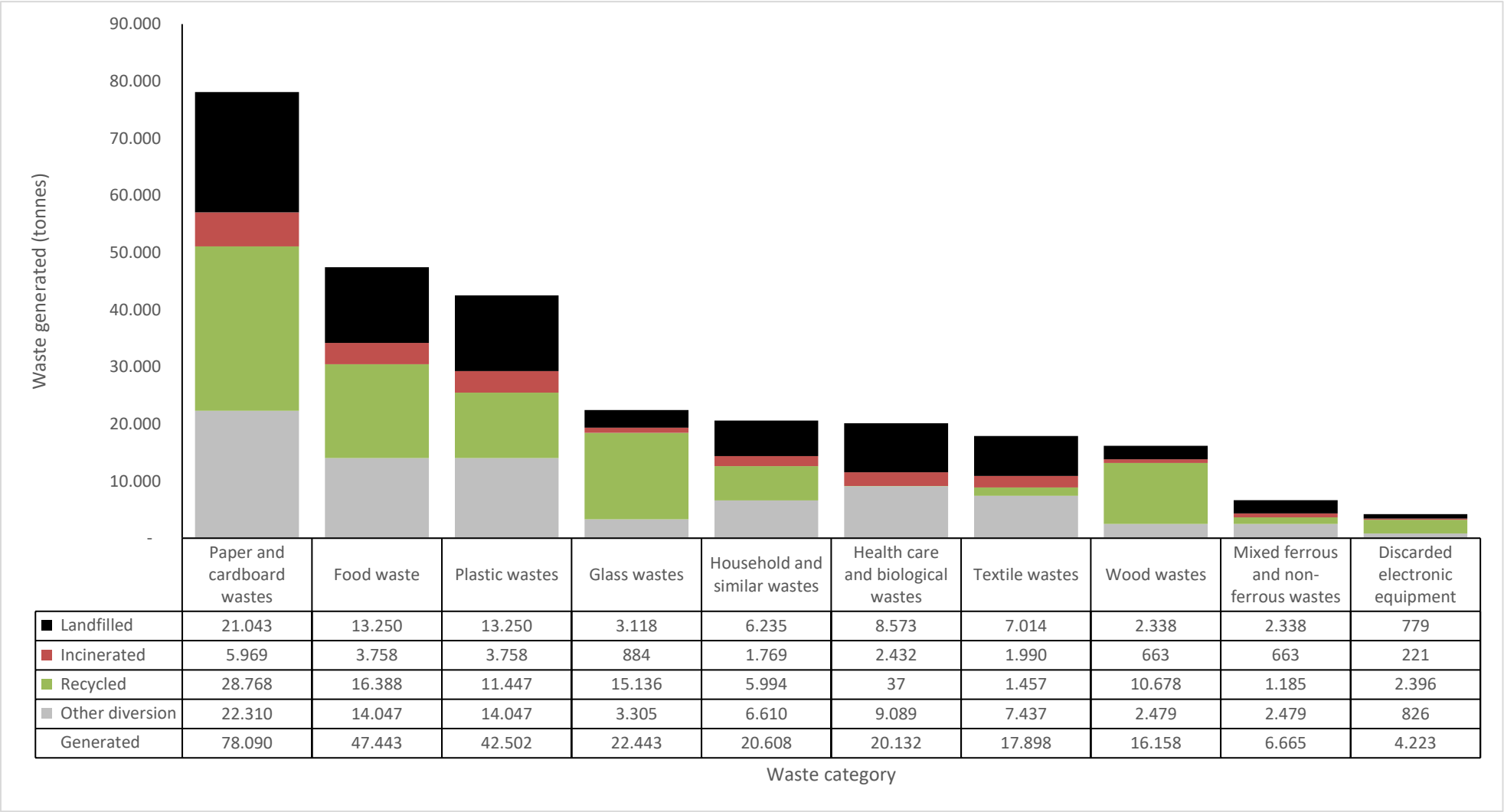
Figure 7 Weight vs carbon impacts of waste in Genoa.



	Textile wastes	Food waste	Paper and cardboard wastes	Plastic wastes	Household and similar wastes	Mixed ferrous and non-ferrous wastes	Discarded electronic equipment	Glass wastes	Health care and biological wastes	Wood wastes
Landfilled	4.407	8.329	22.322	126	3.930	44	15	33	5.311	1.940
Incinerated	-541	-288	-1.975	6.621	386	-488	-16	22	-262	-225
Recycled	-13.730	138	-954	-33.458	-11.776	-4.806	-2.019	-12.322	-	-6.796
Other diversion	-208	7.996	2.032	-19.274	-	-2.043	91	217	2.100	58
Generated	295.266	119.701	89.642	119.153	41.930	32.368	18.634	20.259	-	11.278
Total carbon impacts (tCO2)	285.194	135.875	111.067	73.169	34.470	25.074	16.705	8.210	7.149	6.255

Waste category

Figure 8 Whole-life carbon impacts of key waste categories by management route.



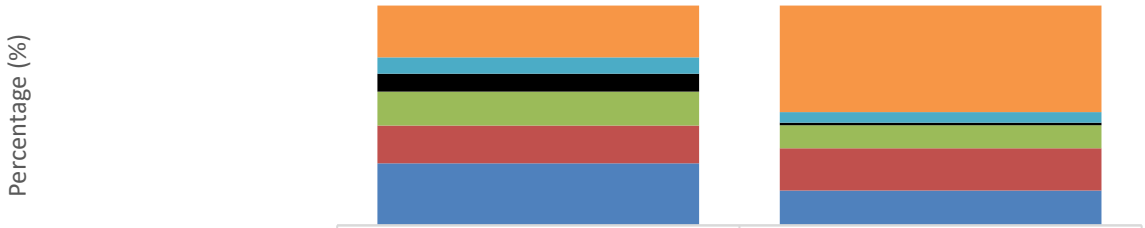
	Paper and cardboard wastes	Food waste	Plastic wastes	Glass wastes	Household and similar wastes	Health care and biological wastes	Textile wastes	Wood wastes	Mixed ferrous and non-ferrous wastes	Discarded electronic equipment
Landfilled	21.043	13.250	13.250	3.118	6.235	8.573	7.014	2.338	2.338	779
Incinerated	5.969	3.758	3.758	884	1.769	2.432	1.990	663	663	221
Recycled	28.768	16.388	11.447	15.136	5.994	37	1.457	10.678	1.185	2.396
Other diversion	22.310	14.047	14.047	3.305	6.610	9.089	7.437	2.479	2.479	826
Generated	78.090	47.443	42.502	22.443	20.608	20.132	17.898	16.158	6.665	4.223

Figure 9 Total tonnages of waste (key categories) in Genoa Loire in 2019 by management route.

5.2 The top five waste materials: weight vs. carbon impacts

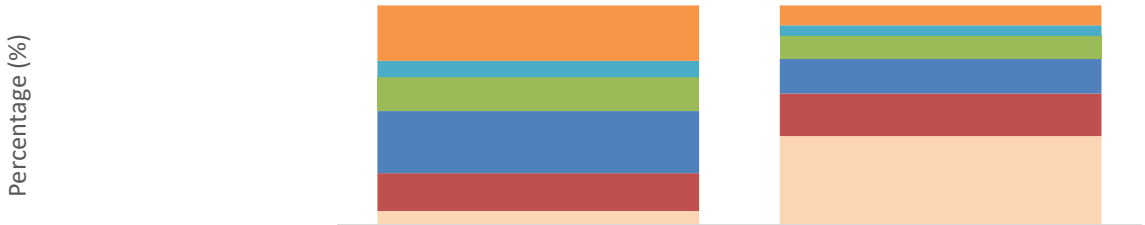
Many of the high tonnage materials in Genoa's waste stream have relatively low carbon impacts (e.g. glass waste accounts for 8% of total waste generated, but just 1% of total carbon impacts). To achieve the 2025 carbon savings target, focus should be placed on the most carbon intensive waste materials, such as food waste and textiles.

The top five waste materials by weight in 2019 accounted for 76% of Genoa's waste, but only 52% of its waste carbon impacts (Figure 10). On the other hand, the top five most carbon intensive waste materials accounted for 75% of the total weight, but 91% of waste carbon impacts (Figure 11). The waste category with the single greatest carbon impact is textile waste, which accounted for 6% of waste by weight but 41% of waste carbon impacts. Other carbon-intensive materials identified are plastic wastes, food wastes, and paper & cardboard wastes.



	Waste by weight (%)	Waste carbon impacts (percentage)
Remaining	24%	48%
Household and similar wastes	7%	5%
Glass wastes	8%	1%
Plastic wastes	15%	10%
Food waste	17%	19%
Paper and cardboard wastes	28%	16%

Figure 10 Top five waste materials by weight and their associated carbon impacts.



	Waste by weight (%)	Waste carbon impacts (percentage)
Remaining	25%	9%
Household and similar wastes	7%	5%
Plastic wastes	15%	10%
Paper and cardboard wastes	28%	16%
Food waste	17%	19%
Textile wastes	6%	41%

Figure 11 Top five waste materials by carbon impacts and their associated weight.

In addition to prioritising textile waste for waste prevention and recycling, our analysis reveals that food, plastic, and paper & cardboard wastes have both high waste tonnages and significant carbon impacts. Prioritising these categories in future policy interventions will not only reduce carbon impacts but also increase recycling rates in Genoa considerably.

5.3 Scenario analysis

Genoa must reduce its waste carbon impacts by approximately 177,000 tCO_2eq, to a total of 530,000 tCO_2eq by 2025, in order to achieve the 25% ACR+ target. Analysis was carried out to investigate scenarios that Genoa might use to accomplish this.

Our results show that Genoa can achieve high carbon savings by capturing more recyclable materials, in particular food waste, and increasing the efficiency of recycling process. Waste Data shared by AMIU Genova S.p.A., shows that nearly 30% of waste is sent to a mechanical biological treatment facility which tends to have a lower efficiency rate due to contamination. If Genoa were to capture and recycle 75% of food waste via composting, a reduction of 100,000 tonnes of carbon could be achieved (i.e., 1.5% total carbon impacts). Although composting food waste does not seem to achieve substantial carbon savings when compared to prevention, the process of sorting food waste at home will help individuals to realise the amount of food waste generated in their homes and hopefully change their practices to reduce food waste.

Although improving recycling rates and capturing high-quality material will achieve high carbon savings, preventing waste in the first place by introducing waste reduction targets remains the preferred option to achieve substantial reduction in carbon impacts. Future measures should be designed in a way to help Genoa to prevent waste by reducing product consumptions, upstream losses, and extending products' lifespan through re-use.

As part of this project, we looked into a number of waste-reduction scenarios that can help Genoa in achieving its target. Scenarios covered in this work focus on the following carbon-intensive materials:

1. Textile waste;
2. Food waste;
3. Plastic wastes;
4. Paper and cardboard wastes;
5. Mixed ferrous and non-ferrous wastes; and
6. Household and similar waste (undifferentiated waste)

Table 1 lists scenarios considered in this analysis and their results, also presented in Figure 12.

Table 1 Summary of the scenario analysis results.

Scenario number	Description	Total carbon impacts (tonnes CO_2eq.)	Reduction rate (%)
Scenario 0	Business as usual	707,605	-
Scenario 1	5 targeted materials - 20% reduction	574,600	19%
Scenario 2	Textile (30%), food waste (30%), remaining target materials (20%)	532,500	25%
Scenario 3	Textile (40%), food waste (40%), remaining target materials (20%)	490,400	31%
Scenario 4	All materials (25%)	530,704	25%

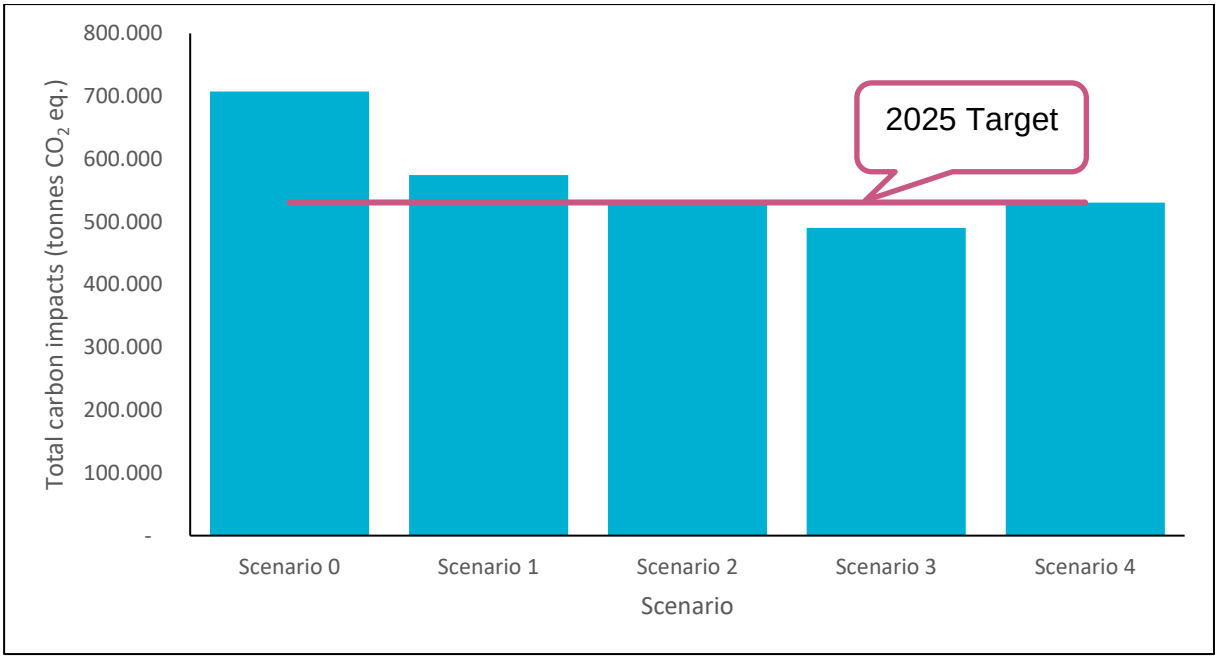


Figure 12 Results of the scenario analysis.

Results, presented in Figure 12, suggest Genoa can meet the 2025 carbon reduction target by adopting one of the following strategies:

1. Reduce the amount of textile and food waste by 30%, and other targeted waste materials (i.e., plastics, paper and cardboard, mixed metals, and household and similar waste) by 20%; or
2. Introduce a waste reduction target of 20% for **all** materials.

It is worth mentioning that our analysis is based on waste reduction strategies without considering any improvements in recycling activities (diverting materials from landfilling and

incineration to recycling). What's more, we only looked at a number of scenarios that prioritise waste reduction over improvements in waste disposal and treatment activities. Genoa seems to have a great opportunity to increase recycling rates, in particular for food waste. For example, our analysis suggests that nearly 17,000 tonnes of food waste are currently landfilled or incinerated in Genoa (see Appendix 2). In addition, collecting high-quality recyclable materials, either by a dedicated waste collection service (such as dedicated paper and cardboard collection round), or introducing measures to reduce contamination, will increase the quality of recyclable materials collected. These actions would ultimately lead to high carbon savings. In any case, reducing the carbon impact by 25% requires very significant efforts regarding waste prevention and re-use.

The paucity of data is a key limitation to this study. The Zero Waste Scotland Environmental Analysis team used default assumption and data based on the Scottish Carbon similar analysis carried out for Pays de la Loire[8]. Assumptions made by the analysis team include contamination rate, waste-to-energy efficiency rate, substitution rate (amount of virgin material offset by recycling), the composition of mixed waste stream (e.g., residual waste), and transport distances.

It is also strongly recommended to undertake further work to gather Genoa's specific granular data, in particular for high-carbon materials. This will help the analysis team to develop bespoke carbon factors to accurately quantify the carbon impacts of waste generated and managed in the city.

Finally, identifying key actions and instruments focusing on the highlighted fractions, along with benchmarking information regarding the potential for waste reduction, seems to be a relevant next step to translate the 25% target into more operational, resource-related objectives.

CONCLUSION

The 2019 carbon impacts of municipal waste in Genoa are assessed by the Carbon Metric at 708,000 tonnes of carbon dioxide equivalent (t CO_2eq.), or 1.2 tonnes CO_2eq./capita. To achieve a 25% reduction by 2025 as part of the ACR+ 'More Circularity Less Carbon' campaign, the city must reduce its waste carbon impacts by approximately 177,000 tCO_2eq, to a total of 530,000 tCO_2eq.

A number of scenarios, that focus on waste prevention measures, have been investigated in this report to explore pathways for Genoa to achieve the 2025 target.

Follow-up activities might include further investigation on the actual composition and current management of the 5 targeted materials, as well as the identification of actions and policies that could contribute to reach the aforementioned reduction targets. Comparing these figures with those of the other participants to the MCLC campaign will also help to put them in perspective.

[7] Zero Waste Scotland (2020) The Carbon Footprint of Scotland's Waste Technical Report [Online]. Available at: www.zerowastescotland.org.uk/

[8] Zero Waste Scotland & ACR+ (2021) The Carbon Footprint of Waste – Pays de la Loire [Online]. Available at: www.acrplus.org/

APPENDICES

Appendix 1 Waste Data: sources and limitations

Waste data

The amount of waste collected and managed in 2019 is reported by AMIU Genova S.p.A., ACR+ members and partner in this project. Section 4 provides a brief summary of waste data compiled by AMIU Genova S.p.A. and shared with the Zero Waste Scotland Environmental Analysis team.

Life cycle assessment modelling data

In order to develop bespoke carbon factors to quantify the impacts of waste generated and managed in Genoa, the Zero Waste Scotland Environmental Analysis team needs to establish good understanding of the type of waste generated (detailed breakdown) and how it is managed throughout the city. The paucity of data was a critical barrier to develop bespoke factors based on local conditions in Genoa. Instead, we utilised our 7-year experience in managing the Scottish Carbon Metric and our latest project for Pays de la Loire to choose general assumptions that can work for Genoa.

AMIU Genova S.p.A. is strongly encouraged to work with local experts and partners to collect data required to develop bespoke carbon factors that reflect waste generated in Genoa and how it is managed, in particular for high-carbon waste materials: textile, food, plastic, metals, and paper.

Appendix 2 Total amount of waste generated in Genoa (2019). Unit: tonnes

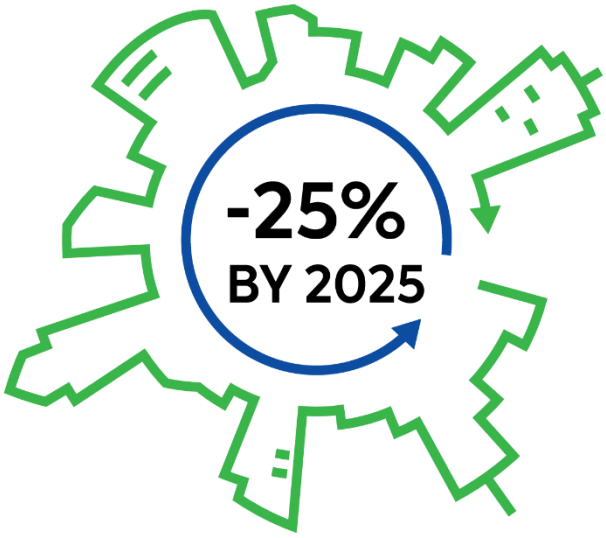
Waste category	Generated	Recycled	Incinerated	Landfilled	Other diversion
Acid, alkaline or saline wastes	4	4	0	0	0
Food waste	47,443	16,388	3,758	13,250	14,047
Animal faeces, urine and manure	0	0	0	0	0
Batteries wastes	144	144	0	0	0
Chemical wastes	143	143	0	0	0
Combustion wastes	0	0	0	0	0
Common sludges	0	0	0	0	0
Discarded electronic equipment	4,223	2,396	221	779	826
Discarded vehicles	0	0	0	0	0
Dredging spoils	0	0	0	0	0
Glass wastes	22,443	15,136	884	3,118	3,305
Health care and biological wastes	20,132	37	2,432	8,573	9,089
Household and similar wastes	20,608	5,994	1,769	6,235	6,610
Industrial effluent sludges	0	0	0	0	0
Ferrous wastes	0	0	0	0	0
Mixed ferrous and non-ferrous wastes	6,665	1,185	663	2,338	2,479
Non-ferrous wastes	0	0	0	0	0
Mineral waste from C&D	6,116	6,116	0	0	0
Mineral wastes from waste treatment and stabilised wastes	0	0	0	0	0
Mixed and undifferentiated materials	0	0	0	0	0
Other mineral wastes	0	0	0	0	0
Paper and cardboard wastes	78,090	28,768	5,969	21,043	22,310
Plastic wastes	42,502	11,447	3,758	13,250	14,047
Rubber wastes	47	47	0	0	0
Sludges and liquid wastes from waste treatment	0	0	0	0	0
Soils	199	199	0	0	0
Sorting residues	0	0	0	0	0
Spent solvents	2	2	0	0	0
Textile wastes	17,898	1,457	1,990	7,014	7,437
Used oils	69	69	0	0	0
Garden wastes	166	166	0	0	0
Waste containing PCB	0	0	0	0	0
Wood wastes	16,158	10,678	663	2,338	2,479
Grand Total	283,053	100,377	22,107	77,938	82,631

Appendix 3 Whole-life carbon impacts of waste generated in Genoa (2019). Unit: tonne CO_2 eq.

Waste category	Generated	Recycled	Incinerated	Landfilled	Other diversion
Acid, alkaline or saline wastes	9	0	0	0	0
Food waste	119,701	138	-288	8,329	7,996
Animal faeces, urine and manure	0	0	0	0	0
Batteries wastes	1,037	-133	0	0	0
Chemical wastes	455	768	0	0	0
Combustion wastes	0	0	0	0	0
Common sludges	0	0	0	0	0
Discarded electronic equipment	18,634	-2,019	-16	15	91
Discarded vehicles	0	0	0	0	0
Dredging spoils	0	0	0	0	0
Glass wastes	20,259	-12,322	22	33	217
Health care and biological wastes	0	0	-262	5,311	2,100
Household and similar wastes	41,930	-11,776	386	3,930	0
Industrial effluent sludges	0	0	0	0	0
Ferrous wastes	0	0	0	0	0
Mixed ferrous and non-ferrous wastes	32,368	-4,806	-488	44	-2,043
Non-ferrous wastes	0	0	0	0	0
Mineral waste from C&D	2,216	15	0	0	0
Mineral wastes from waste treatment and stabilised wastes	0	0	0	0	0
Mixed and undifferentiated materials	0	0	0	0	0
Other mineral wastes	0	0	0	0	0
Paper and cardboard wastes	89,642	-954	-1,975	22,322	2,032
Plastic wastes	119,153	-33,458	6,621	126	-19,274
Rubber wastes	129	-107	0	0	0
Sludges and liquid wastes from waste treatment	0	0	0	0	0
Soils	2	0	0	0	0
Sorting residues	0	0	0	0	0
Spent solvents	2	0	0	0	0
Textile wastes	295,266	-13,730	-541	4,407	-208
Used oils	84	-49	0	0	0
Garden wastes	0	7	0	0	0
Waste containing PCB	0	0	0	0	0
Wood wastes	11,278	-6,796	-225	1,940	58
Grand Total	752,165	-85,220	3,233	46,458	-9,031

Appendix 4 Carbon factors for of household waste generated in Genoa (2019). Unit: tonne CO_2 eq. per tonne of waste.

Waste category	Generated	Recycled	Incinerated	Landfilled	Other diversion
Acid, alkaline or saline wastes	2.01	0.00	2.20	0.00	0.00
Food waste	2.52	0.01	-0.08	0.63	0.57
Animal faeces, urine and manure	0.00	0.00	0.00	0.00	0.00
Batteries wastes	7.21	-0.92	0.39	0.09	0.00
Chemical wastes	3.18	5.36	2.03	0.11	0.00
Combustion wastes	0.00	0.00	0.00	0.01	0.00
Common sludges	0.00	0.00	0.00	0.00	0.00
Discarded electronic equipment	4.41	-0.84	-0.07	0.02	0.11
Discarded vehicles	6.57	-2.38	0.00	0.00	0.00
Dredging spoils	0.00	0.00	0.00	0.00	0.00
Glass wastes	0.90	-0.81	0.03	0.01	0.07
Health care and biological wastes	0.00	0.00	-0.11	0.62	0.23
Household and similar wastes	2.03	-1.96	0.22	0.63	0.00
Industrial effluent sludges	0.00	0.00	0.00	0.00	0.00
Ferrous wastes	4.49	-3.83	-0.80	0.02	0.00
Mixed ferrous and non-ferrous wastes	4.86	-4.06	-0.74	0.02	-0.82
Non-ferrous wastes	10.01	-8.39	-2.17	0.02	0.00
Mineral waste from C&D	0.36	0.00	0.02	0.01	0.00
Mineral wastes from waste treatment and stabilised wastes	0.00	0.00	0.00	0.00	0.00
Mixed and undifferentiated materials	1.70	-0.55	0.22	0.63	0.00
Other mineral wastes	0.00	0.00	0.00	0.00	0.00
Paper and cardboard wastes	1.15	-0.03	-0.33	1.06	0.09
Plastic wastes	2.80	-2.92	1.76	0.01	-1.37
Rubber wastes	2.76	-2.29	1.16	0.01	0.00
Sludges and liquid wastes from waste treatment	0.00	0.00	0.00	0.00	0.00
Soils	0.01	0.00	0.00	0.02	0.00
Sorting residues	0.00	0.00	0.24	0.56	0.20
Spent solvents	0.97	0.00	1.92	0.00	0.00
Textile wastes	16.50	-9.42	-0.27	0.63	-0.03
Used oils	1.22	-0.70	1.81	0.00	0.00
Garden wastes	0.00	0.04	-0.14	0.60	0.52
Waste containing PCB	0.00	0.00	0.00	0.00	0.00
Wood wastes	0.70	-0.64	-0.34	0.83	0.02



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