

Sustainability
report

2021

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1. Letter to the Stakeholders

Dear Stakeholders,

I am proud to present you the Sustainability Report 2021 from Sermag, that in the last year has been able to:

- **increase revenue by 61%;**
- **increase net result by five times;**
- **accomplish an ROE of 28% for the financial year ended on December 1st 2021.**

Such results represent the quality of the work completed by those who directly and indirectly work for Sermag.



I have always been certain that corporate activity, other than reach earnings' targets, must fulfil a necessary social function as well.

We have always dealt in circular economy because we believe that giving a second life to plastic is an exciting and ethical challenge, which is why environmental sustainability must always be the guideline of our daily choices.

In the financial year ended on December 31st 2021, Sermag was able to generate a Global Added Value equal to 1.8 million euros, of which:

- **44,7% was distributed to Human Resources;**
- **38,9% remained under the jurisdiction of the “Sistema Impresa”;**
- **15,8% went to the State;**
- **0,6% was transferred to charity.**

This result increases the responsibility we feel towards the community in which we operate as our growth must always be sustainable and our efforts dedicated to obtain a change to benefit society.

To operate in our market following a logic of long-term company continuity, it is necessary to contribute in order to actively support a circular economy and put people, the environment, health and wellness as the focus of our way of working.

For the second consecutive year Sermag publishes its Sustainability Report: a document that presents the Objectives of Sustainable Development and all the social and environmental aspects of the company's activity following the Standards from the Global reporting Initiative (GRI).

I thank you all sincerely and wish you a good reading.

Andrea Rosmino



2. The company

Over the last three years, Sermag has evolved its original model of circular economy with the goal of producing polyolefin and elastomeric compounds with recycled raw materials with strong technical and innovative content, thought and developed with a green perspective in mind and in full compliance with the most recent Italian and European regulations.

To achieve these goals, Sermag has created an industrial network and signed a business network contract with an Italian company with which it shares not only the production stage but research and analysis activities as well.

Sermag has been able to assert itself with authority in the recycled plastic materials field thanks to the remarkable expertise acquired in the last three years and the meticulous attention dedicated to each phase of the product's manufacturing, from planning to production.

Products made by Sermag have technical specifications and mechanical properties that are as good as their virgin raw material counterparts, establishing an excellent and more sustainable alternative in terms of circular economy.

Much has been invested following this direction, especially in the development of Polypropylene from post-consumer plastic. There are many companies on the market producing it already

but Sermag is actively trying to distinguish itself by developing a polypropylene compound made 100% from post-consumer plastic and with a superior level of quality, performance and safety standards, able to meet different applications' requirements.

The outcome from this course of action is the formulation of polypropylene mixtures coming from several plastic recycling chains, to guarantee technical and mechanical properties equals to those of plastic products with post-industrial origin. For a few of these mixtures, we are in the process of filing for patent application.

The attention and effort focused on research make Sermag a company unique in its field, capable of transforming and adapting recycled secondary raw materials to a wide range of different applications, from films for packaging to injection and extrusion moulding, from construction to automotive industries.

In Sermag's vision for the company, research and development are essential prerequisites for a strong commercial future. Connections to universities and with accredited research institutes increase the possibility of creating an innovative start up to develop post-consumer polyolefin with a specific focus on environmental sustainability.

Registered office address

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Operative office address

Casale Monferrato (AL)
Via Corte D'appello 3 - CAP 15033

PEC address

info@pec.sermagsrl.com

REA Number

MI - 1858021

Fiscal code and registration number in the Business Register

02019310065

Legal status

Limited liability company

Sole Director - Dott. Andrea Rosmino

Sole Auditor - Dott. David Fordred

Number of employees (2022)

7

3. The Sermag method

The main activity of Sermag, as well as what has distinguished it since the beginning, is the trade of plastic materials, initially only for the bituminous and synthetic membranes' sector to later expand to the printing, film and compounding sectors.

At a later time, Sermag started to produce compounds and mixtures with its own know-how through manufacturing third-party associates who became, after years of collaboration, essential partners.

The percentage of recycled plastic overall has considerably increased over the years and this has resulted in the need to change the method of buying and selling the material.

Given that for raw materials there is always a material that accurately reflects the related technical sheet, providing the client with the correct product based on specific requests becomes easy and immediate. This is not the way for recycled materials, that based on the origin and the processing that they undergo during the recycling procedures, cannot be perfectly unvaried and homogeneous and so may present big differences even within batches coming from the same source.

This is an aspect that must be taken into consideration or it can otherwise become a problem for the client, who expects a certain quality and performance from that type of material.

Hence the necessity to inspect every batch of recycled material, to confirm properties and characteristics and in order to help during the sales stage.

An accurate analysis of the material allows an even better value, economic as well, satisfying the client asking for those specific characteristics.

Sermag has implemented a specific procedure for recycled materials from the moment they are bought to the sales stage.

Every batch is analysed as they are when they arrive in the storage facility to verify the conformity to the material actually ordered from the supplier and they are later categorised and branded.

The inspected batch of material is directly sent to sale or to necessary processing.

The analysis are made following regulations from technical laws that control the sector of secondary raw materials (MPS) and plastic by-products, the UNI 10667 norms, that are classified based on polymer type and use.



The Sermag method

These regulations require the MPS manufacturer to supply a certificate of analysis that guarantees compliance to the related law with the information and characteristics of the polymeric material batch, such as Melt Flow Index, density, polymeric composition, aspect, colour, mechanical properties and the absence of SVHC substances or, if present, that these are within pre-established limits.

Sermag always tests the incoming materials and if these are processed, conducts tests again on the finished product, to monitor the outcome of treatment and the new properties and characteristics that the material has acquired.

Following the analysis, the material is juridically classified by attributing the correct regulation and designation.

On the basis of this procedure, the Sermag brand and the commercial name are assigned. The final step is the writing of the test report, specific for every single batch of product.

Only after this last stage, the recycled product can be considered ready to be sold and delivered to the client.

This way Sermag always has a detailed overview of the properties of the batches of plastic to recycle that are currently in its storage facility, with the added bonus and safety given by testing internally for the information and being able to deliver to the client a product with a certificate of analysis that verifies its quality.

The only materials that are not subjected to this specific procedure are the raw virgin materials and the off grades, that have consistent properties that are already verified by the manufacturers.

The great care and attention that Sermag reserves for its materials has been appreciated more and more over the years and recognized by clients, who are aware that when they buy Sermag products they are certain to receive materials without compromises on matters of safety and quality.





4. Italy of Recycling 2021

To give an overall and more complete outline on the sector of recycled plastic, we report some paragraphs from the “Italy of Recycling 2021” report, edited by the Foundation for Sustainable Development, a research facility for the green economy, that every year publishes a review on the progress of recycling, not only focused on plastic, in Italy.

The data reported here always references the year prior to publication, therefore 2020, but still it shows relevant and indicative numbers and statistics.

Trend of the plastic sector on a national level

The year 2020 has been defined by the Covid-19 pandemic that has influenced some decisions that truly affected the economic sector, such as the stop of company’s activities for non-essential supply chains. On the economic front, the result was a crash of PIL (-9.2%), a rapid contraction of final consumption and industrial production, that was affected by both the closing and the slowing down of international markets, especially the European ones in which Italian exports have the most turnover.

In this context, the decrease of consumption of plastic materials has been moderately contained, thanks to the consistent growth of the medical and sanitation sector, the determined relaunch of the packaged food sector and an overall upswing in the second half of the year, that has involved different supply chains in an irregular way.

The supply chain of plastic packaging

On the subject of supply chains for plastic packaging, collection happens on two different tracks, based on used packaging’s origin: urban stream (for packaging meant for final consumption and coming from public areas) and

industrial stream (for waste coming from private areas). The urban stream is from recycling waste and it refers to the collection of packaging waste from the consumers done by municipalities or delegated subjects.

We have to consider that to the quantity of garbage originated from domestic use must be added an amount of packaging waste which, though it originates from commercial and industrial sectors, due to the effect of hazardous waste assimilation with the urban ones (decided by the single municipality) ends in urban waste.

Once the material has been collected, if the municipality/delegator has chosen to adhere to the “Accorda Quadro ANCI-CONAI”, COREPLA provides the selection and begins the recycling process, for the amount under its authority.

In Italy, in 2020, 33 selection plant have been active on average. The selected streams were allocated to 88 recycling plants, placed mainly on national soil (74%).

Packaging waste from economic activities (secondary and third packaging or primary industrial), if we exclude the amount assimilated by municipalities to urban waste (however variable for different regions), is mainly under the jurisdiction of hazardous waste management.

In this case, as a matter of fact, the garbage collection is a responsibility of the user enterprises that, usually, operate by contacting spe-

cialized recovery and recycling companies that work independently and that are frequently dealing with homogeneous streams of packaging waste more easily recycled.

COREPLA, however, has more of a secondary role, providing assistance on the more heterogeneous streams by giving access to a network of platforms (PIFU, PEPS and PIA) on a national level, thus upholding their subsidiarity role in the market.

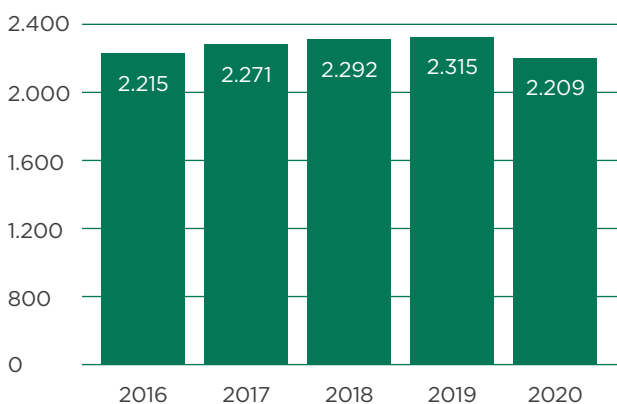
From recycling centres, the packaging is then sent to recycling companies (when the recovery centre does not have a recycling plant) where the operations of grinding, washing and occasional regranulation are made and therefore the actual recycling process.

Release to consumption of plastic packaging

Packaging, which is the main application for thermoplastic raw polymers, has had a decreased trend in 2020.

The overall quantity (including autonomous systems) of plastic packaging released to consumption on national territory is equal to 2.209kt (-5% then 2019), represented by 43% of flexible packaging and 57% by rigid packaging.

Plastic packaging released to consumption (kt) - 2016/2020

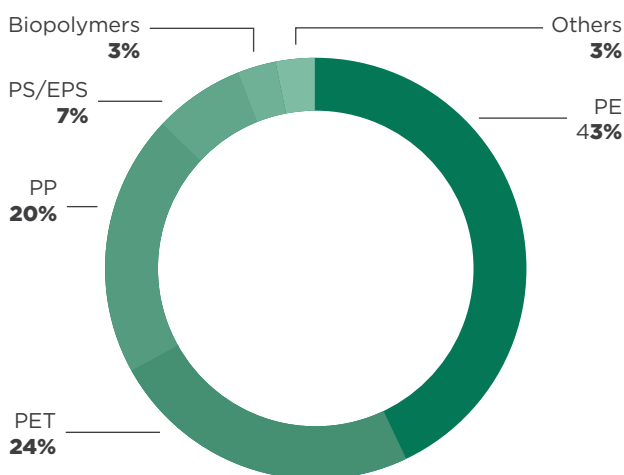


Source: PGP CONAI 2021

Regarding polymers, most of what is put into consumption is polyethylene, mainly used for flexible packaging, where its share reaches 74%. There are considerable amounts of PET and PP used as well, that are in relation primarily, on the other hand, to rigid packaging. The domestic channel is clearly dominant among the ones of waste creation (64%), whereas the amounts from industry and commerce reach overall 36% of the total.

We must consider, however, that, through the various forms of assimilation, a substantial share of packaging destined to industries and commerce ends up migrating to domestic waste handled by urban waste collection.

Composition of plastic packaging put into consumption (%) - 2020



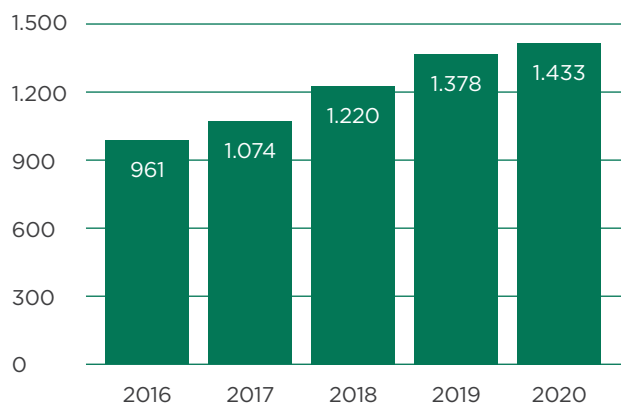
Source: PGP CONAI 2021

The collection of plastic packaging waste

Due to their growing complexity and heterogeneity, to this day there are still many difficulties when recycling a portion of packaging coming from urban recycling.

In 2020 the recycling given to Selection Centres (CSS), including what is under the control of autonomous systems such as CONIP, PARI and CORIPET, has been 1.433 kt, with an increase of 4% from 2019.

Raccolta rifiuti di imballaggio in plastica in convenzione (kt) – 2016/2020



Fonte: *Relazione sulla gestione 2020 COREPLA*

Recycling of plastic packaging waste

Every part of the supply chain related to final users working in the food sector (equal to about 25% of what is recycled by COREPLA), that uses MPS, has recorded a rise in the demand of provisions. In this situation there has been a great demand for some products (for example, plastic water bottles, detergents, produce in containers, non-woven fabric, ect.) and it was otherwise feared an excess of demand impossible to fulfil given available material. As a result of this, different recyclers found themselves in the situation of insufficient provisions for the concurrent slowing of logistics (especially with international clients) and the slowing of selection operations (for issues with available space and operability at CSS). This scenario is specifically connected to clear blue PET products.

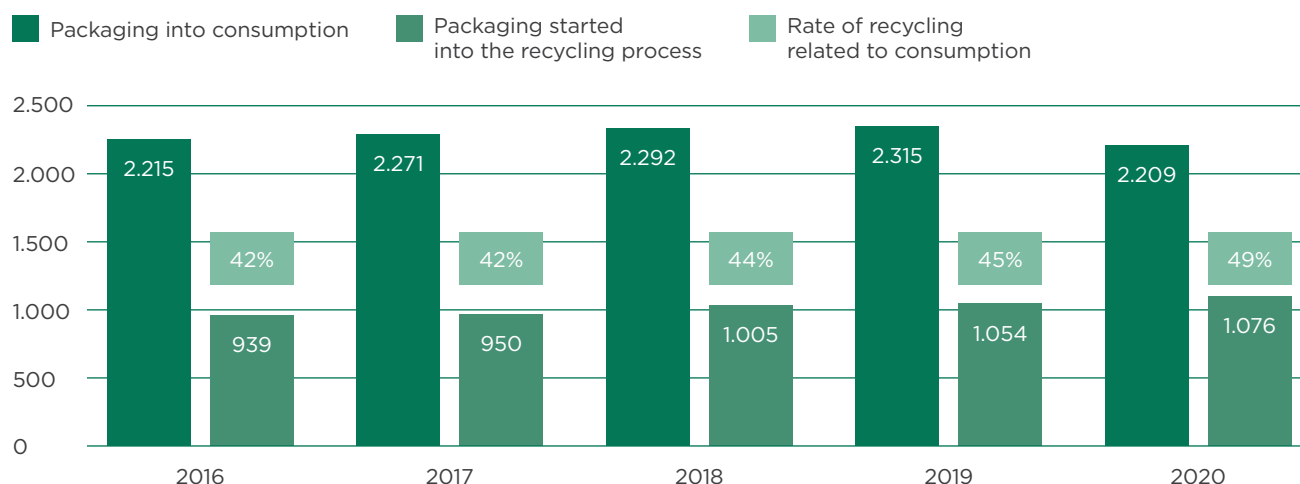
On a completely different trajectory were the markets not related to the food and health sectors and therefore subjected to lockdown measures (where the remaining 75% of the COREPLA recycling goes to). These markets, that had already lower demand before the crisis, have seen with the stop of using sections (more than anyone automotive and construction) the zeroing of demand for a few months. The major

difficulties in this regard have been with the selected streams of polyolefin matrix. To further worsen the situation, there was the close competition with virgin polymers (with prices at their historic lowest), in industries where, differently from some PET applications, the recycling choice is not strategic but a mere economic compromise. For the march-august period, in order to avoid overrun of selection centres and consequently stopping the collection of recycling, COREPLA used every incentive, particularly the economic one, to encourage recyclers to retrieve polyolefin-based waste (LDPE, PP, MPO, etc.). Although without active demand, but wanting to support the supply chains, recyclers volunteered to collect selected waste to transform in secondary raw materials (EoW) to keep as provisions in stock.

Similar faith for the selective stream of bottles and containers in coloured PET (CTC), hit by the sector crisis that drastically reduced the demand of such material leaving unsold quantities at monthly auctions. The easy availability of materials coming from closed auctions without buyers and the persistence of unfavourable conditions brought COREPLA to the decision of offering the unsold and part of future production by issuing an auction of supplies from August to December that allowed to reduce stock in selection centres. However, the effects of the pandemic have not stopped, starting from September, an evident growth in the recycling volumes, bringing 2020 to a close with an increase of over 4 point percentile of recycled quantities.

To reach the final result in the supply chain overall, other than the activity of the COREPLA Consortium, which mainly works with plastic packaging waste in urban recycling, there is also the part done by autonomous systems and the sector of independent recycling, as in contractors that separately work to start the recycling process of all the packaging that based on value and simplified logistics can be handled in good part according to market logic.

Comparison of packaging waste for recycling – COREPLA management and independent contractors – and what is put into consumption (kt and %) – 2016/2020



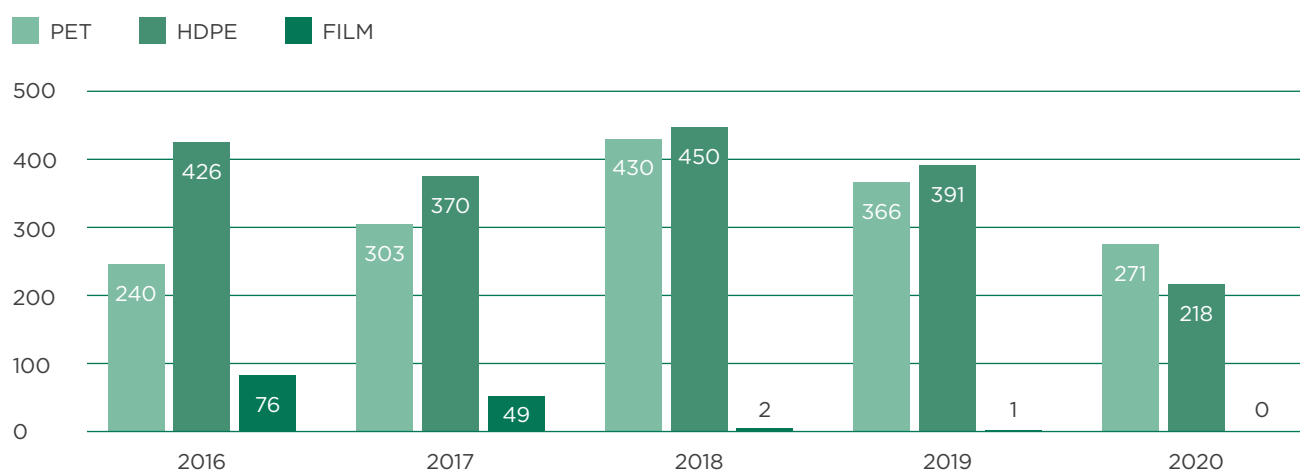
Source: *PGP CONAI 2021*

The market: COREPLA auctions

Data on the average price at assignment auctions for selected products from recycling, related to COREPLA management of PET, FILM and HDPE, shows over the course of 2019 and 2020 a trend of devaluation for different sets of

products. This trend is attributed to the market crash of the 2019-2020 as a collateral effect, whereas the first data from 2021 shows a rising trend once again. Il prezzo medio per le vendite PET ha visto un sensibile decremento (-26% nell'anno), superato anche dall'HDPE (-44%). In calo l'LDPE (i prodotti FIL/M e FIL/S) che è stato ceduto con contributo. In calo del 31% il prezzo di vendita dell'IPP/C.

Comparison of average sale prices at COREPLA auctions (euro/t) – 2016/2020



Source: *Report on COREPLA 2020 management*

Market outlet channels for EoW materials

Products from the CPL family (Containers in plastic for liquids) in PET and HDPE are characterised by proven quality and have solid, widespread and trustworthy applications.

The new technologies and over a decade of experience in recycling make the market of EoW materials obtained from processing (flakes and granules ready to be “put into production”) at this point essential to some applications. In particular, PET-based CLP recycling is used nowadays even in technologies for food packaging production (bowls and bottles).

The recycling industry has developed processes of decontamination and restoration of characteristic in order to make these recycled materials safe for the consumer even when used in contact with food. A different story is for all the other applications, still in the packaging sector, but in which it is not required compliance due to direct contact with food.

The number of applications is wide and includes, as the origin of recycled polymer, many of the products selected from COREPLA, from bottles of detergent or for non-food products made with different percentages of rPET or rHDPE to bags made with PE, from recycling of packaging film to printed boxes with mixed polyolefin and so on. Other than packaging, recycled plastic materials have numerous applications.

The more notable ones are the use of coloured PET flakes obtained from the recycling of bottles for the production of PET fibres and that of polyolefin (alone or in compound with wood fibres) to make items for street furniture.

Equal to virgin plastic, in theory, the applications for polymers obtained from plastic packaging recycling are potentially infinite.

In practice, three fundamental factors come into play: availability (actual quantities obtained from selection and recycling processes), performance (quality and characteristics of recycled polymers) and cost. This last one continues to be an essential parameter to consider: for many applications, especially those related to low value objects, the use of a recycled polymer is considered an option to take in order to reduce the cost of the raw material, often in alternative to a mixture of virgin polymers of f-specifications and therefore sold on discounted price from suppliers or their intermediaries.

The necessity to contain the recycled polymer cost clearly sets limits to the sophistication of the selection and recycling processes that are used to obtain such a product.

On a European level, Italy is among the few countries that handle the beginning of the recycle/reuse process of all plastic packaging. Other European organizations are limited to only ones with greater market value, like PET bottles and HDPE containers. This choice was specifically made based on the performance of Italian companies working with mechanical recycling, true global excellence in quality of MPS produced and even in systems technology used to convert packaging waste into secondary raw material.

Regarding the European Commission Packet on Circular Economy, the new directive for packaging and packaging waste has been approved.

This revision resulted in higher recycling goals, forcing these countries to review their own systems of collection and selection. Consequently, if other countries, in order to increase collection to new types of plastic packaging, must rethink and eventually intervene with substantial investments on the collection and selection processes, in Italy the widespread collection and the presence of selection centres of medium to large size with automated technology,

allow to select more products than those with higher added value (PET and HDPE).

The journey to a full circularity for these products is ongoing. Domestic packaging film is characterised by a market that suffers from more irregularities related to different collection sources of similar materials, for example the industrial film and/or agricultural sheets, and it is particularly subjected to offer shock.

Rigid polyolefin packaging and polypropylene packaging are streams not yet consolidated, characterised by a reduced number of recyclers and fluctuating demand.

An even more impervious road to full circularity is that of other packaging available to recycle, often made by more than one polymer, either for insufficient amount of demand and number of clients, due to value and quantity, or because they are still in an experimental phase of selection.





5. Added value produced and distributed in 2021

Revenue	20.051.532 €
Consumption	-18.263.628 €
Global added value	1.787.904 €

Divided amongst:

Human resources	799.835 €	44,7%
Cost of direct labour	679.939 €	
Cost of indirect labour	119.896 €	
State, Authorities and Institutions	283.141 €	15,8%
Taxes on income	268.817 €	
Taxes and indirect property taxes	14.324 €	
Community	10.425 €	0,6%
Charity	10.425 €	
Sistema Impresa	694.503 €	38,9%
Amortisation	199.837 €	
Undistributed earnings	494.666 €	



6. Amount sold and revenue from 2020 and 2021

Table of amount sold 2020 - Kg

Month	Recycled (except PCR)	Virgin Off grade	MPS from PCR	Plastic from by-product	Recycled content	Total
January	1.033.250	27.500	157.190	37.865	187.000	1.442.805
February	1.303.202	27.500	-	-	194.560	1.525.262
March	941.589	27.500	-	102.365	-	1.071.454
April	563.775	-	-	41.236	145.230	750.241
May	393.268	54.900	-	89.652	-	537.820
June	909.887	82.500	-	87.560	-	1.079.947
July	1.342.681	201.950	23.100	169.850	12.250	1.749.831
August	532.399	55.000	11.000	62.320	1.000	661.719
September	1.356.107	145.750	58.590	201.352	116.200	1.877.999
October	1.330.487	86.100	9.240	162.032	12.000	1.599.859
November	1.263.559	192.475	43.000	135.210	46.200	1.680.444
December	860.563	162.150	70.210	75.400	39.520	1.207.843
Total	11.830.767	1.063.325	372.330	1.164.842	753.960	15.185.224
	77,91%	7,00%	2,45%	7,67%	4,97%	

Table of amount sold 2021 - Kg

Month	Recycled (except PCR)	Virgin Off grade	MPS from PCR	Plastic from by-product	Recycled content	Total
January	1.348.512	207.055	27.500	192.448	249.700	2.025.215
February	1.167.076	280.875	1.250	157.740	148.270	1.755.211
March	1.148.506	184.945	54.160	191.570	191.300	1.770.481
April	1.331.103	287.141	105.600	26.000	220.000	1.969.844
May	1.147.656	219.640	119.080	77.696	167.060	1.731.132
June	1.109.528	206.353	135.104	40.265	88.000	1.579.250
July	1.080.316	99.134	151.615	66.610	210.990	1.608.665
August	449.894	129.474	64.239	76.000	70.750	790.357
September	1.023.936	156.881	138.430	95.490	203.290	1.618.027
October	860.136	49.500	157.321	101.317	150.860	1.319.134
November	1.069.682	133.970	106.612	104.457	230.830	1.645.551
December	804.622	60.505	51.050	21.180	102.825	1.040.182
Total	12.540.967	2.015.473	1.111.961	1.150.773	2.033.875	18.853.049
	66,52%	10,69%	5,90%	6,10%	10,79%	



Amount sold and revenue from 2020 and 2021

Diagram of amount of product sold in 2020

Kg

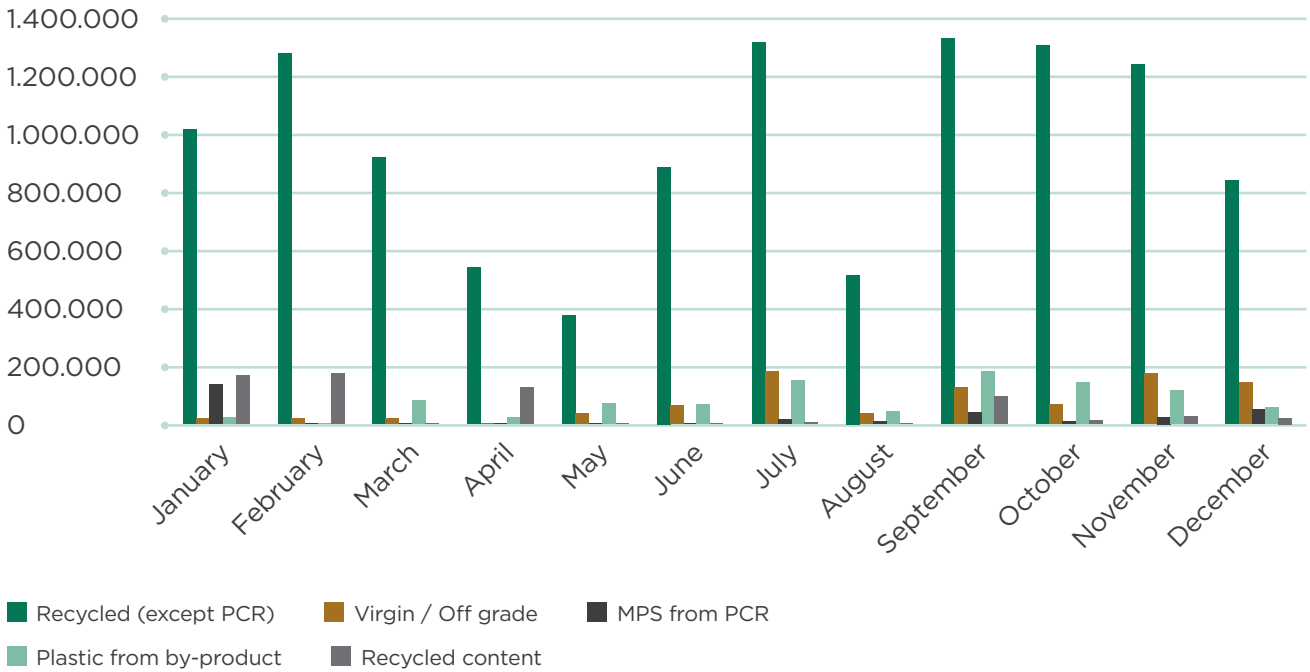
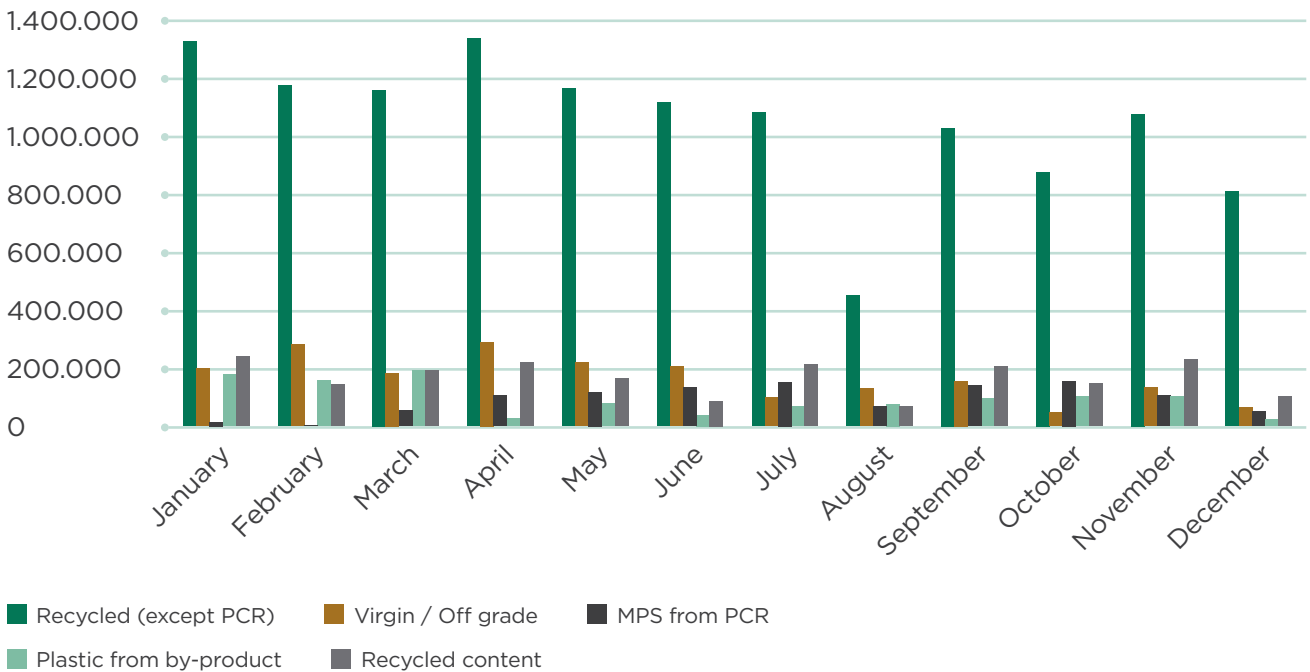


Diagram of amount of product sold in 2021

Kg





Amount sold and revenue from 2020 and 2021

Table of 2020 Revenue

Month	Recycled (except PCR)	Virgin Off grade	MPS from PCR	Plastic from by-product	Recycled content	Total
January	735.804,00 €	43.175,00 €	175.109,00 €	30.121,00 €	229.250,00 €	1.213.459,00 €
February	1.095.099,00 €	43.175,00 €	- €	- €	247.600,00 €	1.385.874,00 €
March	822.290,00 €	43.175,00 €	- €	81.239,00 €	- €	946.704,00 €
April	529.751,50 €	- €	- €	38.952,00 €	181.537,50 €	750.241,00 €
May	312.515,00 €	60.938,00 €	- €	70.582,00 €	- €	444.035,00 €
June	723.835,00 €	89.925,00 €	- €	60.259,00 €	- €	874.019,00 €
July	984.024,50 €	174.830,00 €	25.300,00 €	112.033,00 €	15.557,50 €	1.311.745,00 €
August	399.780,00 €	67.925,00 €	12.100,00 €	41.252,00 €	1.260,00 €	522.317,00 €
September	992.635,00 €	121.068,00 €	67.723,00 €	126.351,00 €	148.736,00 €	1.456.513,00 €
October	942.267,00 €	110.522,00 €	10.533,00 €	103.562,00 €	16.440,00 €	1.183.324,00 €
November	858.018,20 €	240.212,00 €	49.450,00 €	95.026,00 €	62.932,80 €	1.305.639,00 €
December	644.791,00 €	213.622,00 €	80.039,00 €	55.625,00 €	52.640,00 €	1.046.717,00 €
Total	9.040.810,20 €	1.208.567,00 €	420.254,00 €	815.002,00 €	955.953,80 €	12.440.587,00 €
	59,54%	7,96%	2,77%	5,37%	6,30%	

Table of 2021 Revenue

Month	Recycled (except PCR)	Virgin Off grade	MPS from PCR	Plastic from by-product	Recycled content	Totale
January	1.070.707,20 €	248.406,25 €	18.425,00 €	156.163,60 €	267.365,70 €	1.761.067,75 €
February	912.505,52 €	345.059,45 €	1.250,00 €	138.821,65 €	165.807,00 €	1.563.443,62 €
March	976.849,08 €	266.847,80 €	43.328,00 €	165.135,40 €	214.370,00 €	1.666.530,28 €
April	1.244.915,78 €	452.391,23 €	93.720,00 €	25.480,00 €	235.950,00 €	2.052.457,01 €
May	1.154.183,83 €	355.229,40 €	100.079,50 €	67.112,40 €	198.100,00 €	1.874.705,13 €
June	1.157.930,12 €	343.074,99 €	106.456,40 €	38.472,30 €	108.800,00 €	1.754.733,81 €
July	1.170.094,07 €	170.115,52 €	145.202,55 €	60.449,60 €	242.031,00 €	1.787.892,74 €
August	492.024,35 €	220.084,70 €	60.254,67 €	60.000,00 €	78.635,00 €	910.998,72 €
September	1.139.011,37 €	268.364,43 €	114.096,45 €	95.487,45 €	238.160,00 €	1.855.119,70 €
October	991.739,22 €	85.140,00 €	151.469,35 €	101.956,01 €	208.564,00 €	1.538.868,58 €
November	1.233.784,54 €	229.157,60 €	93.652,25 €	99.222,10 €	266.014,00 €	1.921.830,49 €
December	1.044.631,45 €	105.723,75 €	50.029,00 €	21.180,00 €	129.405,00 €	1.350.969,20 €
Total	12.588.376,50 €	3.089.595,12 €	977.963,17 €	1.029.480,51 €	2.353.201,70 €	20.038.617,00 €
	62,82%	15,42%	4,88%	5,14%	11,74%	



Amount sold and revenue from 2020 and 2021

Diagram of 2020 Revenue

Euro

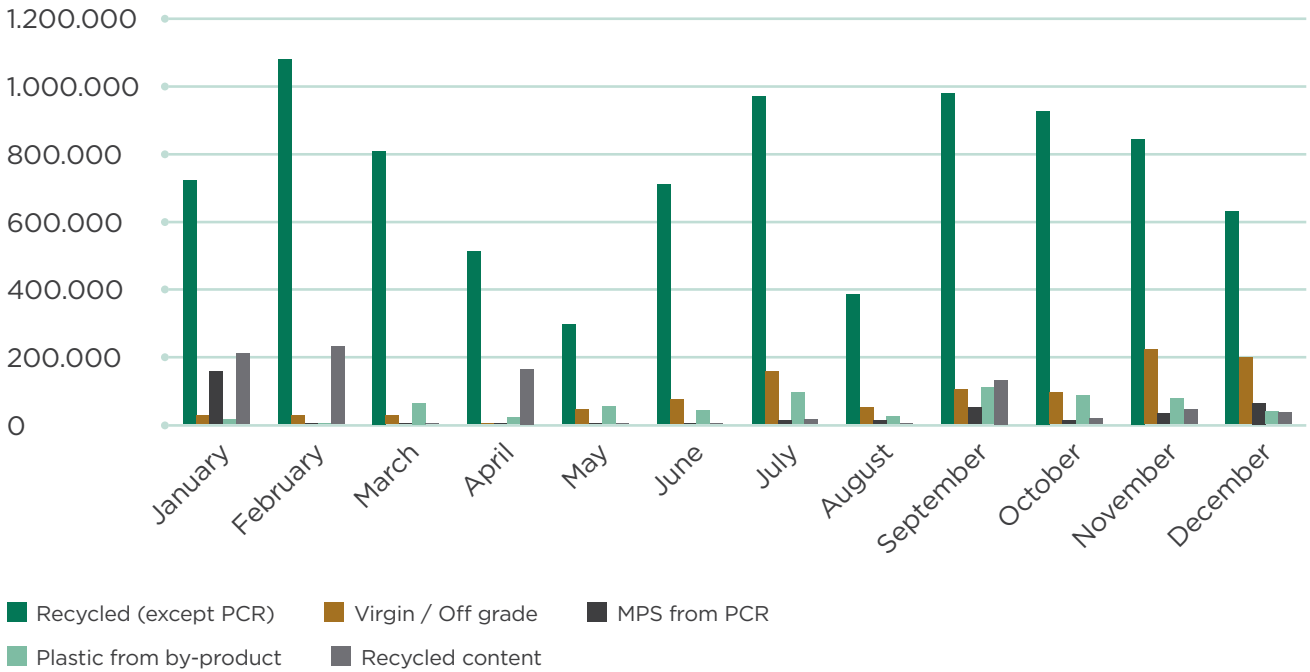
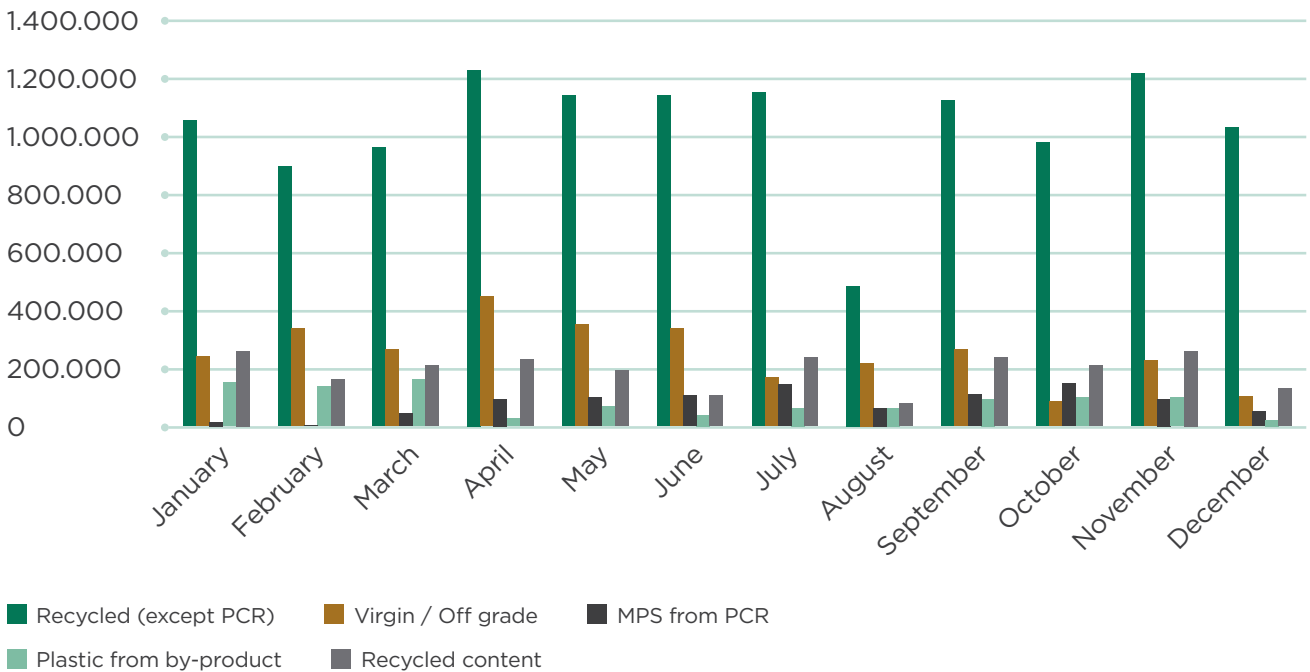


Diagram of 2021 Revenue

Euro



Progression of demand and overall trend of the markets

Every supply chain related to final users, that uses Secondary Raw Material, by-products or products with recycled contents, which are products that represent 84% of Sermag's 2021 revenue, have recorded an increase in demand for provisions. In this situation, there was a lot of demand for some products and there was worry that an otherwise excess of demand would not be fulfilled by available material.

Considering this, different recyclers found themselves in a situation of insufficient stock while there was a concurrent slowing of logistics.

The European business of polymeric compounds is destined to grow even in the coming years, based on a number of observations:

- The global use of polymers is on an overall constant upward trend, despite some slowing to the development of more traditional synthetic polymers derived from petrol because of the pressures of the "green economy", regarding situations about specific sectors. Besides, this phenomenon is partly compensated by the establishing of recycled plastic compounds with biopolymer of natural origins, that still require to be compounded, even if with different ways and procedures;
- Polymeric compounds, compared to base polymers, have greater performing characteristics: greater resistance to wear, to flame, to temperature etc. properties that widen the possibility of use in a range of applications ever growing, especially in more advanced sectors (such as aviation, aerospace and defence, ICT etcetera), which require more sophisticated compounds with greater added value;

- The progressive improvement of the production cycle of the compound and later processes of transformation are drivers of the market.

On a global level, the polymer compounding business is expected to grow with an average yearly rate of 4,5%, slowly inferior to that registered over the last decade, with the contributing factor of the not particularly favourable international circumstances, and reach 117 billion dollars in 2023.

Countries with higher growth rate will still be the "emerging" ones, in particular India and China: other countries however, still in economic difficulties more or less dire, (as the countries in South America, Turkey, Iran etcetera) still display high market development potential, even if not immediate.

Automotive

The popularity of electric cars forces producers to use lighter materials such as plastic compounds, to optimize the vehicle weight with the weight set by the battery-powered motor. The internal components and car body register higher levels of plastic materials, suitable to maintain elevated standards of safety, durability and customisation during the design phase.

Packaging

The e-commerce sector is in constant growth, leading the use of plastic materials used to obtain a packaging that is light, nontoxic and robust for shipment. The compounds are the main component of plastic bags and food film too.

Amount sold and revenue from 2020 and 2021

Construction

In addition to save a lot cost-wise, installation and maintenance, the use of plastic compounds has found wide applications in construction projects with reduced environmental impact. In many areas with weather risks, the compounds found large use in structure waterproofing.

Electronics and electric

Telecommunications and Digital industries require more and more use of polymeric and plastic materials, for example in covering electric and phone lines. Even the medical sector, in high growth, recorded a large use of compounds in the production of hospital machinery, in laboratories' analysis and in production of single use medical supplies.





MARKET OVERVIEW

Global market of polymeric compounds – 2021

60%

of production comes from small/medium companies

5,6%

rate of yearly growth

\$ 98 bn

dollars market

Polymeric compounds are obtained by mixing resins with the most different types of additives, essentially in 2 physical forms.

1. Granules:

obtained by fusion of the polymer mixture and additives and later a passage through an extruder from which the fused blend has to be cut and cooled, in order to have the shape of a granule.

2. Dry blend:

In this case the polymer is simply mixed with the additives, sifted and packaged as dry powder.

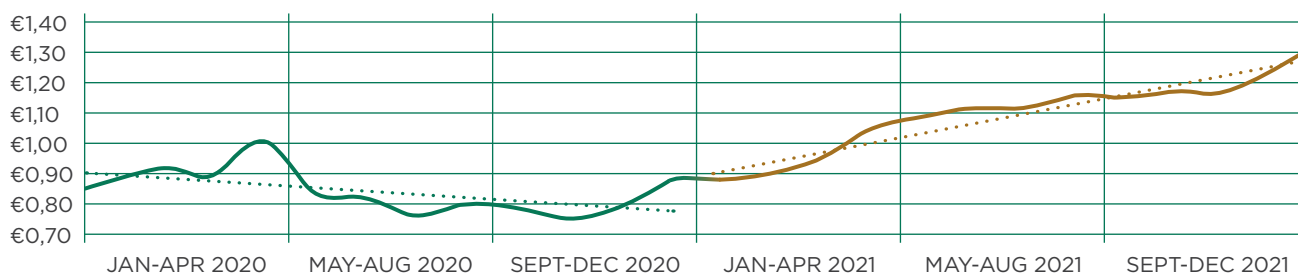
The applications of polymeric compounds:

- **Packaging:** first sector in order of importance.
- **Construction:** civil, industrial and commercial sector, public works etcetera: it represents the second applicative sector in order of importance as dimensions.
- **Automotive components.**
- **Internal design:** residential sector, private non-residential sector (banks, offices, hotels, etcetera), public non-residential sector (schools, Government's offices, hospitals, etcetera).
- **Electric and electronics.**
- **Medical sector:** instruments for medical-chirurgical use, transfusion bags, machinery for laboratories' analysis, machinery for odontology work, etcetera.
- **Agricultural applications:** films and covers, tubes, different structures.
- Items for **sport** and **free time** activities.
- **Others:** shipping industry, aviation, defence and aerospace etcetera: sectors of more limited dimensions, but with high added value.

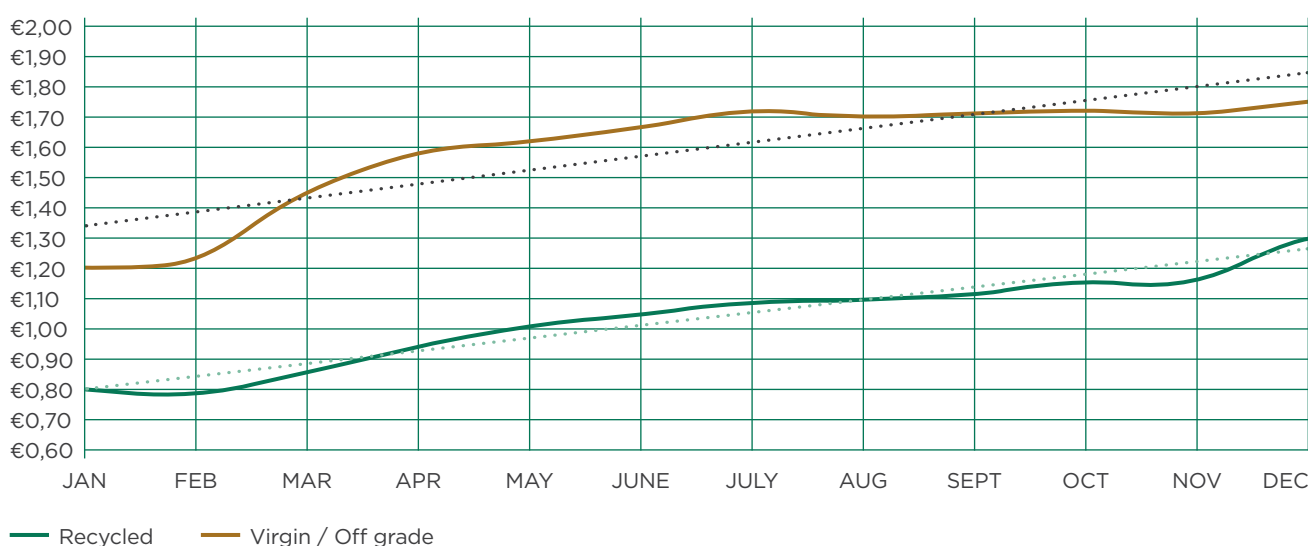


Amount sold and revenue from 2020 and 2021

Trend euro/kg 2020 - 2021



Trend euro/kg 2021



In the first trimester of 2021 the business turnover has been positively influenced by the increase in revenue due to the sale of part of the stock as well, intentionally established at the end of 2020 according to the rate of demand that was beginning to rise for recycled products.

Following the rising trend for the price of secondary raw materials occurred in the final months of 2020, more significant orders have been requested at the end of the financial year that needed further appropriate provisions to honor the fulfillment of orders of the first trimester 2021.

The business turnover of the second, third and fourth trimester of the 2021 financial year have been characterised by a constant and intense rise in demand of recycled products, that allowed to notably increase the volume of product sold to 18.853.049 kg for a revenue equal to 20.038.617 euros of which 67% is recycled product, 12% is product with recycled content, 5% is by-product, 5% is recycled post-consumer and only 16% is raw materials.

More than 84% of Sermag's 2021 revenue comes from products in the circular economy sector.



2021 in numbers

3

Patents

1 granted / 1 pending

1 European extension granted in 2022

9

Trademarks

16

Certifications

19

Million

Kg sold

(2021)

20

Million

Revenue

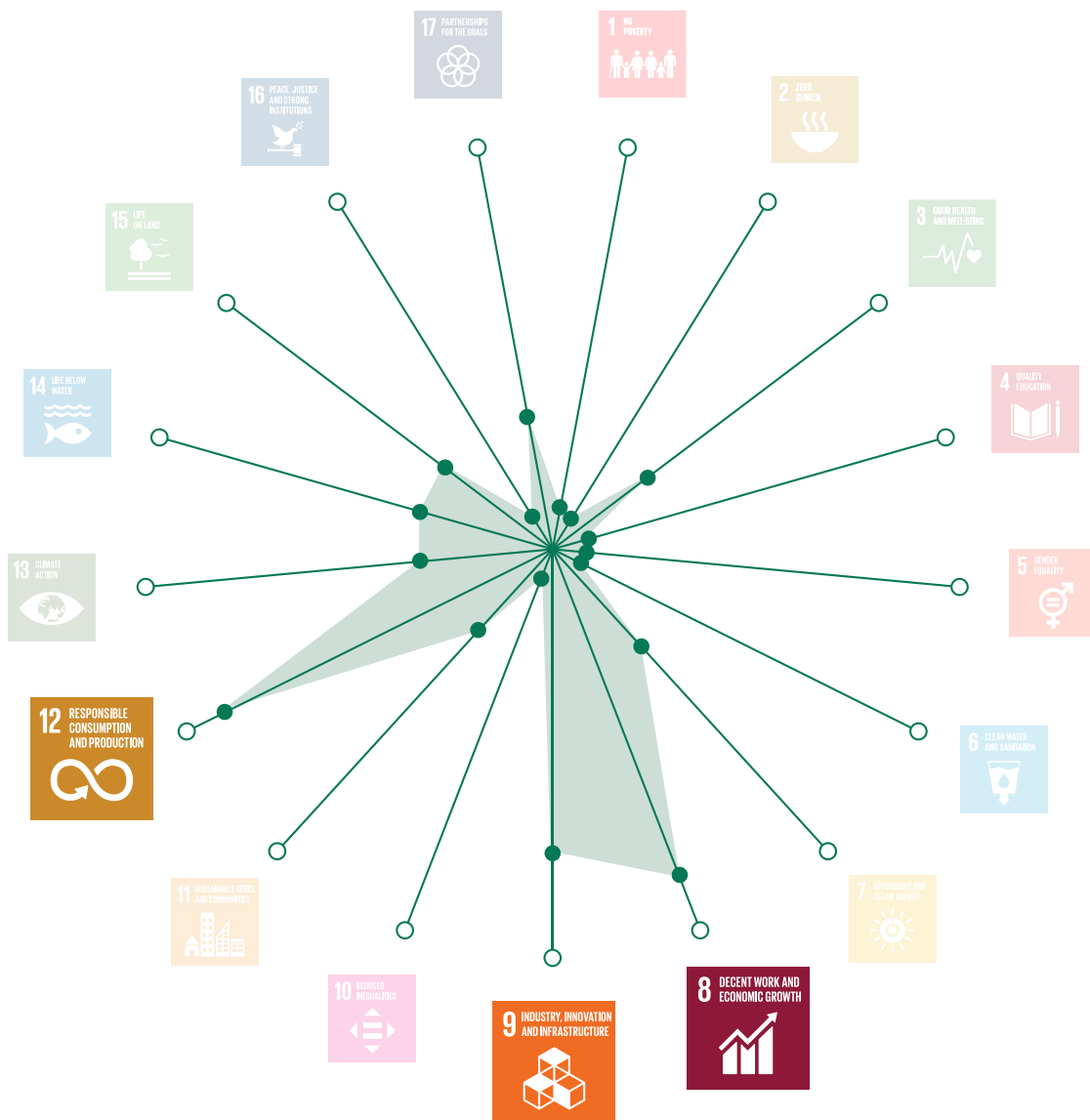
(2021)



7. Goals for sustainable development



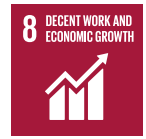
THE GLOBAL GOALS
For Sustainable Development



With the 2020 sustainability report in mind, Sermag has identified its annual objectives, for **2021** and for the **2020-2030** decade.

Being a company that operates in the context of circular economy, the goals regarding the environment, sustainability and innovation are those that naturally connects to Sermag's areas of interest. In particular, those are Objectives **8, 9** and **12**.

8



Promote a stable economic growth, sustainable and inclusive, a fulfilling and productive employment experience and dignified work conditions.

Objective 8 includes targets of supporting economic growth, by **increasing economic productivity** and creating jobs with **decent work conditions**; sustainable economic growth should not happen to the detriment of the environment, which is why Objective 8 seeks a better efficiency on global resources consumption and production, preventing environmental damage due to economic growth.

Specifically, Sermag with its 16.000 tons of recycled plastic sold in 2021 contributed to **reducing carbon emissions** in the air, guaranteeing economic growth with considerable environmental benefits. The use of 16.000 tons of virgin raw material was avoided, which would have come from fossil sources.

In 2022 the goal is to reach production and sale of 17.000 tons of recycled plastic of pre and post-consumer origin.

The **8.2 and 8.4 items** are the most **interesting** and **exciting** for Sermag, achievable in a medium-term time frame and capable of delivering great advantages and improvements in the production process.

8.2

Achieve **higher levels** of economic productivity through diversification, technological upgrades and innovation, while also aiming to increase added value in highly labour-intensive sectors.

8.4

Progressively improve, before 2030, **global efficiency of resources**, consumptions and production while separating economic growth from environmental damage.

Sermag **accepts responsibility** to continue training and valuing its employees, keeping the company competitive and updated on the development of products, available technologies and regarding laws.

In 2021, over 30 hours of technical and safety training were provided to employees, corresponding to an average of 6 hours per employee.

The aim for 2030, following the natural evolution of Sermag's company policy and vision, is to have all productions with zero environmental impact.

A very ambitious target that dignifies even more the process of enhancing secondary raw materials.

	2020	2021
N° of employees	5	5
N° of new hires	1	1
N° of dismissed personnel	1	0



9



Build robust infrastructures, promote inclusive and sustainable industrialization and promote innovation.

Objective 9 aims to build robust **infrastructures**, as well as promote **industrial development and innovation**. A higher efficiency in the use of resources and a wider implementation of clean environmentally-friendly technologies and necessary industrial processes to make all infrastructures and industries sustainable before 2030.

The **9.4 item** regards industry efficiency and related infrastructures, suppliers in particular, with specific reference to the responsible and **sustainable** use of resources and the implementation of even more **efficient processes** in terms of energy saving, in order to produce recycled compounds, as an environmental policy that Sermag has already been following.

The goal of Sermag for the next few years, through its production network, is to reduce the amount of electric energy used in recycled polymer production, with the help of more efficient and less energy-consuming machinery and **technologies**.

9.4

*Before 2030, to upgrade industries and infrastructures in order to make them more sustainable, with greater efficiency regarding resources to use and a wider implementation of clean, environmentally-friendly and industrial processes -friendly **technologies**, in compliance with the **respective countries' capabilities**.*

Sermag's goal is to fully transition towards using energy sources created entirely from **sustainable alternatives**, such as wind farms, solar panels and hydroelectric power.

The direct electric energy consumption of Sermag, partially from renewable sources, has been of 7099 kWh for 2021, against the 6652 kWh consumed in 2020.

Looking at 2030, the aim is to **reduce almost to zero** the use of virgin raw materials not sourced from recycled material, while keeping in mind that, at the moment, only less than 10% of all the material used by Sermag is not recycled.



12



Guarantee sustainable production and consumption models

Objective 12, following the 10-year plan of operations regarding **sustainable consumption and production models**, aims for a greener approach in managing chemical products and all its waste, as well as a substantial **reduction in waste production** using methods such as recycling. Objective 12 also has the goal to encourage companies to implement sustainable practices and to promote policies for sustainable public contracts.

Within **Objective 12**, the **items 12.2, 12.4, and 12.5** are without a doubt the more interesting for Sermag, as they directly discuss resources, waste and recycling.

12.2

In 2030, achieve **sustainable management** and efficient use of natural resources.

12.4

Before 2030, reach **eco-friendly management** of chemical substances and of all waste in every step of its life cycle, following international approved guidelines, as well as significantly reducing their release in air, water and soil, to minimize the negative impact on the environment and on human health.

12.5

Before 2030, **substantially decrease waste production** by means of prevention, reducing, recycling and reusing.

Sermag is already very active in this field, being in the trade of secondary raw material, meaning waste, as its primary business activity, directly contributing towards eliminating hundreds of tons of material from the waste cycle and mo-

ving it towards the production one.

The challenge for Sermag will be to try salvage and give value even to those kind of materials that to this day are difficult to process and recycle, attempting to **reduce even more** the amount of virgin plastic produced, replacing it with recycled plastic of equal quality and safety standards.

In this context, Sermag requires an ever increasing supply of material from manufacturers with a vision and business plans that are **eco-friendly and focused on respecting the environment**.





8. Test of Materiality


Matrix





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Pag. **31**

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 Laboratory
Pag. **39**

 Employees' value appreciation
Pag. **24**

 Relationship with the suppliers
Pag. **25**

 Environmental impact
Pag. **26**

* For Sermag, stakeholders here referred to are employees, clients, suppliers, Universities, partner companies and the local community.

9. The new concept of circular economy

The interest in the themes of environmental sustainability and circular economy is increasingly growing each day and every company is slowly embracing this vision that, other than the intrinsic value connected to the pollution aspect and respect for the environment, it gives a high return in terms of reputation and on a marketing level contributes to spread the culture of collection and recycling to all stakeholders.

Many companies have come to Sermag to find the recycled product most suitable to be added to their production line, even companies that never worked with recycled plastic and therefore chose to examine these materials for the first time.

The difference between virgin raw materials and recycled ones is evident, both for performance and for possible applications, however, based on client's necessity, Sermag can find the most fitting material, that can be used without issues in the process and in the client's manufacturing plant, leaving the quality of the final product unchanged.

For some companies this means a true revolution in this field in which Sermag is an active participant, that is the practical accomplishment of closing the waste cycle process.

Their waste is sent to Sermag's partner manufacturing plant, recycled, sold to Sermag, which inspects and certifies the result, to sell it back to the same company that made the waste in the first place, therefore completing the recycling and reusing process, in full compliance with the definition of circular economy.

This is a concept of recycling completely new for this sector. The company that makes the waste, gives it to be recycled and takes it back to reuse it in its productions, adding value when introducing recycled shares.

All this is made possible because of the expertise and the high quality of the recycling treatment on these materials, that must keep their mechanical properties and should not be unnecessarily put under stress during the process.

This way the company can be sure, with the Sermag traceability of materials' certification, to reinsert in its production cycle the same material that was produced as waste and it can be certain, by doing so, of using a material extremely similar to the original, unvaried in composition and properties, a not insignificant detail given the fact that they are recycled products.

On an environmental and marketing level, it is a great asset to certify that the waste created can be recycled and used again by those who made it, ensuring in advance an assured use and the total transformation from plastic waste to secondary raw material.

All of this would not be possible without Sermag's certifications' system and its partners, that allow to trace batches documenting to the client that the material they are buying is exactly what they supplied to be recycled, ensuring quality and safety, and it will be certified as recycled material for further processes.

10. Patents

2017

Sermag foresees an imminent change in how the Italian and European legislative institutions approach regenerated plastic material: recycled products will no longer be bought for their reduced price compared to that of virgin material but will be purchased in accordance to the new principle implemented by the European Union of “new circular economy” that is just starting to take shape and that will slowly change the nature and purpose of recycled products, qualifying them for sale in terms of quality, safety and innovation.

Therefore the idea came for Sermag to decide to study and experiment with mixtures and compounds with elevated amount of recycled polymer, improving technical and performance characteristics to make it an alternative to the use of virgin raw material.

To achieve this, Sermag creates a designated laboratory for research and development, able to test and analyse new mixtures to quickly receive performance feedback.

2018

From this outset of innovation, the project for a new blend made of recycled polyolefin and atactic copolymer polypropylene, specific for modifying bitumen used in the production of bituminous membranes, is born.

2019

Considering the excellent results from the planning and testing stages, in August of 2019 Sermag deposits the patent application for the production process and the blend named TPE-O.

2020

In 2020, MISE gives a favourable opinion about patenting this specific thermoplastic compound with recycled content certified up to 70% and its attainment process called TPE-O for the bituminous and synthetic membranes' sector. Shortly after, the stage of publishing the patent is completed. Subsequently, Sermag has requested for the validity of the patent to be extended to the European market.

In 2020, two new grades of the TPE-O product, 9020 P and 9020 P1, have been finalised, in addition to the improvement of the production process of the already three existing TPE-O grades, 9010 HP, 6010 P and 6010 HP.

From the deposit of the patent application back in August of 2019, over 3.000 tons of this product in its different grades have been sold to Italian and European clients.

2021

A new product under the RINNO-V-ENE brand, the TPO 5010 NA, has been successfully created, made and sold, similar to the 5010 N grade, but modified according to specific client's requests.

Following some of the clients' requests and with a growing awareness on the issue of smell of post-consumer recycled plastic, Sermag has begun to think of possible solutions.

Working with a company of recycling manufacturing plant for plastic materials, it has been created an industrial process for the smell of recycled polymers, for which it has been presented to MISE on November



12th 2021 a request for industrial patent application.

2022 goals

For the next year Sermag wants to actively test the process with a specific pilot plant to verify efficiency and how effective removing the smell is.

Confident in the positive outcome of the final tests, Sermag will also request a patent for this innovative test for scientific control of the smell of recycled plastic that quantifies the actual removal of substances that cause unwanted smells in recycled plastic.

Our patents

Italian Patent TPE-O

Application n. 102019000014919

Submitted on 22/08/2019

Status: Patent granted on 04/08/2021

European Patent TPE-O

Application n. 20191673.1

Submitted on 19/08/2020

Available to the public
with publication n. 3783050

Status: European extension granted in 2022

Italian Patent for industrial plant for smell

Application n. 102021000028754

Submitted on 12/11/2021

Status: Patent pending



11. Brands

2017

Sermag produces polypropylene and polyethylene raw materials, polyolefin and elastomer blends by means of third-parties productions regulated by partnership contracts. These materials are classified as secondary raw material, by-product plastic or as products with recycled content.

The products are sold as grounded, densified or in granule, ready to be used directly in the application of injection moulding, packaging films, extrusion and compounding, automotive and construction.

At the end of 2017, seeing the notable amount of products classified and sold for their specific characteristics, the idea of creating designated brands for each line of recycled products is born, each identifiable by its own brand name on the basis of market characteristics.

2018

In 2018 the first Sermag brand, RINNO-V-ENE, is established, with the goal of producing high performance polyolefin blends according to specific Sermag's proprietary formulations.

The first products with the Rinnovene name are polypropylene-based compounds and blends of elastomerised polyolefin.

2019

Several thousands of tons of RINNO-V-ENE branded products have been sold successfully in these years, including other blends later created. The brand has always been dedicated exclusively to recycled materials. Following the success of the first brand, in

2019 four new other brands were born, for which the EUIPO European certification has been obtained in 2020, each brand specific for different polymeric families and following the European guidelines UNI 10667 and UNI EN 15343/4/5 regarding recycled plastic material and by-products.

RIPLASTENE™: polyolefin-based (polypropylene and polyethylene) products made with 100% recycled plastic from post-consumer PCR film, extrusion, injection, thermoforming, TNT, raffia. Product is available as granule, densified or grounded.

RILETILENE™: polyethylene-based products made with 100% recycled post-industrial material (PIR) from film, extrusion and injection. Product is available as granule, densified or grounded.

RIMAGLENE™: polypropylene-based products made with 100% recycled post-industrial plastic (PIR) from film extrusion, injection, thermoforming, TNT, raffia. Product is available as granule, densified or grounded.

BYSERPLENE™: products in polypropylene or polyethylene deriving from by-products, recycled plastic 100% PIR. Product is available as granules, densified or grounded.

The brands have been conceived to be able to better categorise Sermag's products and to illustrate the range of available polymers and grades to clients.

2020

During 2020, brands were refined, re-assigning some of the over 30 specific products to the most pertinent brand according to base polymer and the origin of the material.

2021

The Sermag logo and four new brand have been successfully trademarked:

STIRPOMIX™: styrene-based products made with variable percentages of recycled plastic.

PCRPOMIX™: polyolefin-based products made with variable percentages of post-consumer plastic.

PIRPOMIX™: polypropylene-based products made with variable percentages of post-industrial recycled plastic.

POMIXOIL™: polypropylene-based products made with mineral oil and variable percentage of recycled plastic.

2022 Goals










The focus for 2022 is to focus on the new compounds and blends of the newly trademarked brands to make Sermag's catalogue even more complete.





Brands

Our Trademarks

Trademark	Registration date	Number
	10/07/2020	3020000056623
	16/01/2020	18131233
	10/03/2020	18157831
	10/03/2020	18157835
	31/07/2020	18226315
	24/06/2021	018426096
	25/06/2021	018426089
	25/06/2021	018426095
	25/06/2021	018426095

12. Certifications

The certification process had already begun in 2017, when the concept of recycled raw material was still relegated to specific sectors and it was only used because of its low cost, but foreseeing a future in which the recycled product would be an essential component, Sermag decided to move in this direction.

Sermag therefore acquired distinguished certifications for its own products and processes, with the goal to guarantee total transparency for its clients about their recycled materials as well.

Sermag, in 2017, requested and obtained from CSI IMQ Group important certifications for its own products, “**Recycled plastic - Secondary Raw Material**” and “**Recycled Plastic - Plastic from Byproduct**”.

The first one certifies and guarantees the true juridical nature of secondary raw material (following the Environmental Code and technical regulations of the UNI 10667 sector), while the second certifies compliance of the polymers obtained from the by-products’ manufacturing to the UNI 10667-1 regulation.

In accordance with the growing attention to quality, safety and eco-sustainability, Sermag was the first company in Italy able to proudly obtain in January 2020 the illustrious certification “**Recycled Plastic - Traceability of Materials**” given by CSI IMQ Group.

The licence certifies the efficiency of the materials’ incoming and outgoing traceability system and the actual use of recycled plastic materials. Traceability allows to have the history of all polymers, recreating and determining the journey of every material chosen to be part of a compound or another Sermag mixture, tracing every phase of production, transformation and distribution.

The latest certifications given in 2020 by CSI IMQ Group to Sermag are “**Recycled Plastic PIR - PCR**” on the origin of recycled polymer (PIR or PCR) and the percentage of recycled polymer present inside a product or a blend.

The PIR acronym refers to Post Industrial Recycling that is, according to the definition of the UNI EN ISO 14021 regulation, “Material removed from the waste disposal stream during the manufacturing process”, whereas the PCR acronym means Post Consumer Recycling that is, according to the definition of UNI EN ISO 14021 regulation, “Material generated from domestic settlements or from commercial, industrial manufacturing plants chains and institution in their role of final users of products, that can no longer be used for its intended purposes”.



Certifications

In 2021, Sermag obtained the **KIWA Covenant** certification, given from the European institution KIWA, named “Riplastene & Riletylene & Rimaglène recycled agglomerates, flakes and granules purchased from manufacturing plants chains certified EuCertPlast”.

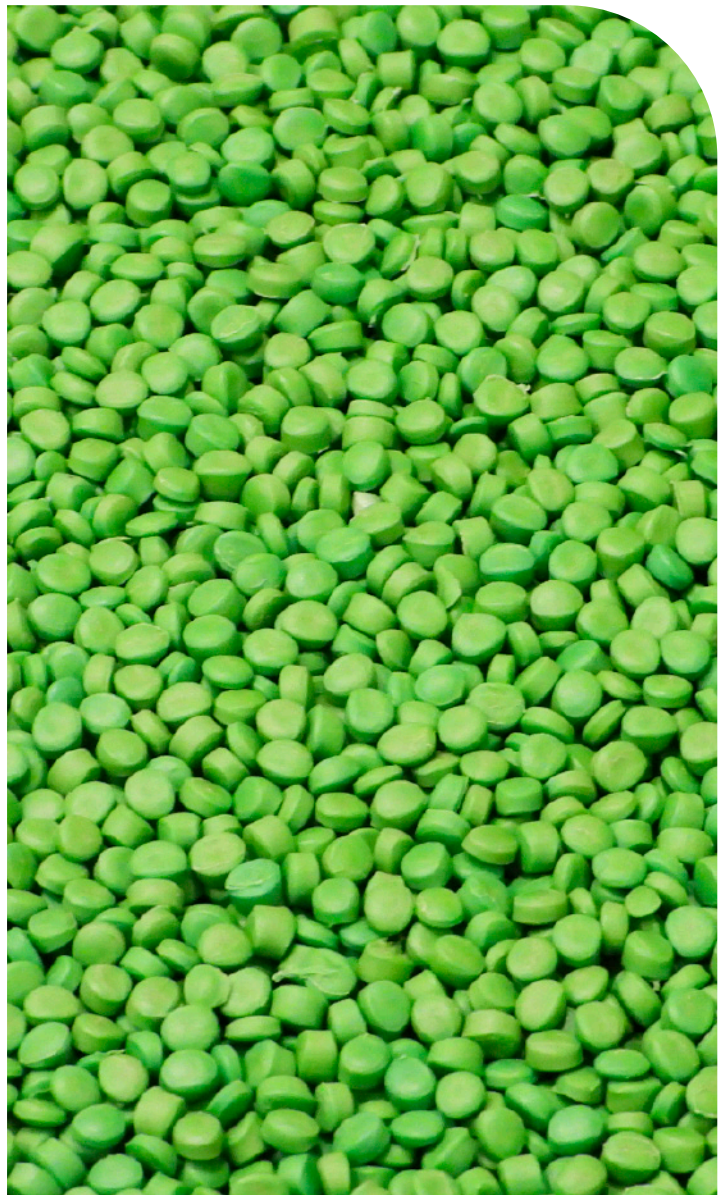
This certification is about Secondary Raw Materials that are created in EuCertPlast certified manufacturing plants, where Sermag sources its supply and that attests the material’s origin.

The KIWA system was created with the goal to certify even those companies that do not directly produce MPS, but still rely on manufacturing plants chains that obtained the prestigious European certification EuCertPlast, which can only be granted to recyclers with manufacturing plants and permits for garbage disposal, like Sermag’s partners.

It is a very important achievement, considering the complexity of the certification process and the level of required standards, for both the recyclers, our suppliers, and Sermag itself.

The certification process, started by Sermag in the last few years, conveys transparency and safety to its clients, who deliberately choose to buy recycled raw materials over virgin ones knowing they are buying products which are inspected, tested and with high quality standards.

After many requests from clients, the certification “**Plastica Seconda Vita**” is being considered for 2022, made by IPPR, Institution to promote recycled plastics, very popular in Italy.





Certifications

Cert. agency	N. Cert.	Date	Expiration date	Description
	MPS170038	07/06/2017	06/06/2023	Secondary raw material in polypropylene (PP)
	MPS170039	07/06/2017	06/06/2023	Secondary raw material in polyethylene (PE)
	MPS190053	17/09/2019	16/09/2022	Secondary raw material in blends of PE and PP
	PFB170054	07/06/2017	06/06/2023	By-product polypropylene
	PFB170055	07/06/2017	05/07/2023	By-product polyethylene
	RPP200074	06/07/2020	06/06/2023	Products in 100% post-consumer recycled PP
	RPP200075	06/07/2020	05/07/2023	Products in 100% pre-consumer recycled PP
	RPP200076	06/07/2020	05/07/2023	Products in 100% pre-consumer recycled PE



Certifications

Cert. agency	N. Cert.	Date	Expiration date	Description
 RECYCLED PLASTIC 100% PIR Licence RPP200077	RPP200077	06/07/2020	05/07/2023	Mixtures of polypropylene and polyethylene 100% pre-consumer recycled
 RECYCLED PLASTIC 100% PCR + PIR Licence RPP200078	RPP200078	06/07/2020	05/07/2023	Products in 100% pre-consumer and post-consumer recycled polypropylene
 RECYCLED PLASTIC 100% PCR/PIR Licence RPP200079	RPP200079	06/07/2020	05/07/2023	Products in polypropylene or polyethylene or blends of 100% pre-consumer and/or post-consumer recycled polypropylene and polyethylene
 RECYCLED PLASTIC min. 70% Licence RPP200080	RPP200080	06/07/2020	05/07/2023	Products in polypropylene or polyethylene or blends of minimum 70% pre-consumer and/or post-consumer recycled polypropylene and polyethylene
 RECYCLED PLASTIC min. 50% Licence RPP200080/1	RPP200080/1	06/07/2020	05/07/2023	Products in polypropylene or polyethylene or blends of minimum 50% pre-consumer and/or post-consumer recycled polypropylene and polyethylene
 RECYCLED PLASTIC 100% PCR Licence RPP200107	RPP200107	09/12/2020	08/12/2023	Products in 100% post-consumer recycled polyethylene (PCR)
 RECYCLED PLASTIC Traceability of Materials Licence TRB200001	TRB200001	27/01/2020	26/01/2023	Traceability system for recycled plastic materials
 EU RECYCLED PLASTIC	K108790/01	01/06/2021	Yearly renewal	Densified recycled material, ground and granules named Riplastene, Riletylene and Rimaglène bought from EuCertPlast certified manufacturing plants chains

13. The business network contract

The year 2020 finished for Sermag with the stipulation of an important business network contract with a partner company, a strategic partnership agreement that has been fully implemented in 2021.

The business network contract allows the creation of a network of companies that promise to collaborate to reach common objectives such as:

- share expertise and know-how;
- exchange industrial, commercial and technological performances;
- practice business activities together;
- develop projects jointly.

The main goal of the agreement was establishing a laboratory for the two companies to share information and knowledge and increase efficiency and tests' accuracy.

Therefore the "Laboratorio Materie Plastiche Circolari" was born, a modern laboratory specialized in analysis and classification of polyolefin and elastomeric plastic materials.

The laboratory analyzes every batch of product from both companies and publishes reports with test results and materials' classification.

The laboratory's activities are executed synergistically by the analysts of the two companies that, because of the peculiarity of the business network contract, can work in both locations (one for each company) of the Laboratory and therefore have access to all machinery and instruments.

This shows one of the great advantages for companies that are in a network such as this - shared performances and instruments - opti-

mizing costs and time to achieve better results that would not have been possible without collaboration.

To add value and importance to the Laboratory, the two companies have signed a contract with the Department of Science and Technological Innovation of the University of Piemonte Orientale, with the goal to train and improve analysts' preparation and study possibilities of upgrading the Laboratory.

The contract introduces, as added value, a research and development project on regenerated polyolefin-based mixtures, combining Sermag's experience in the field of recycled plastic with the production capacity of their partners, and with the theoretical and analytic knowledge of the University's researchers.

The investment was made together with the companies in the network, which chose the University to give a strong boost towards innovation and research, fundamental pillars to keep up with the times and face the future's challenges at the best of their abilities.



14. Laboratorio Materie Plastiche Circolari

Laboratorio

Materie Plastiche Circolari

After a brief period of adjustment and preparation, the “Laboratorio Materie Plastiche Circolari” has become fully operational and in complete synchrony.

The new instruments have been complementary to the analysts’ skills and are helpful in classifying and characterising plastic materials.

Shared within the Sermag network, the laboratory is supplied with the most modern instruments available on the market and owned by Sermag (Spectrometer IR and XRF, Differential scanning Calorimeter DSC, Gas Chromatography machine), as well as related procedures. It allows to perform a constant monitoring on each batch of recycled product, to ensure the precise correspondence to predetermined legal and production standards.

Specifically, the Laboratory’s equipment allow to execute every test required by the technical guidelines of the recycled plastics sector, UNI 10667.

Compliance to these guidelines is compulsory for the commercialization of secondary raw materials and the Laboratory guarantees it through tests executed on every batch managed by Sermag.

All materials from the Sermag catalogue are also tested to check compliance to the Reach and RoHs European regulations.

The necessary analysis to declare Reach and RoHs conformity are very complex and we can

proudly state that the Laboratorio Materie Plastiche Circolari is able to conduct them with great precision and professionalism.

The consistent supervision overseeing every phase of the production process and the advanced technologies devoted to material management, allow for products to achieve and satisfy the high quality standards required from clients as well as the normative and technical standards required by law.

Testing reports also provide clients with an overall and detailed view of physical and mechanical properties and a quality and safety standard guarantee of the bought materials.

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Test reports conducted in 2021

The creation of a Laboratory dedicated uniquely to the analysis and categorisation of recycled polymeric products is one of the characteristics that distinguishes Sermag from every other competitor in the same field and it adds a great commercial advantage.

The Laboratory has become essential for the Research and Development department as well, as the new mixtures are actually a product of study and planning later used in the production phase.

The instruments allow to quickly acquire feedback on the performance of new materials, simplifying the process of refining mixtures

and obtaining the correct compounds. In particular, the real-time control done on tailor-made mixtures is important as they are made according to specific clients' requests, and as such must comply with requirements and parameters given during the designing

Equipment

Spectrophotometer XRF Thermo Scientific

Extrusion Plastometer Twelvindex

Extrusion Plastometer Cflow Zwick Roell

DSC Diamond Perkin Elmer

DSC25 TA instruments with wrapper

Ultrasonid shaker Jeken

SAPE Muffle (furnace)

Acquati Dynamometer

phase. Here as well, to have a dedicated laboratory is the best solution that allows great results in a fraction of the time, optimizing every phase of the Research and Development of products.

IZOD Charpy CEAST Pendulum

AMSE Automatic notching machine
Gas chromatography machine

Nexis GC-2030 Shimadzu

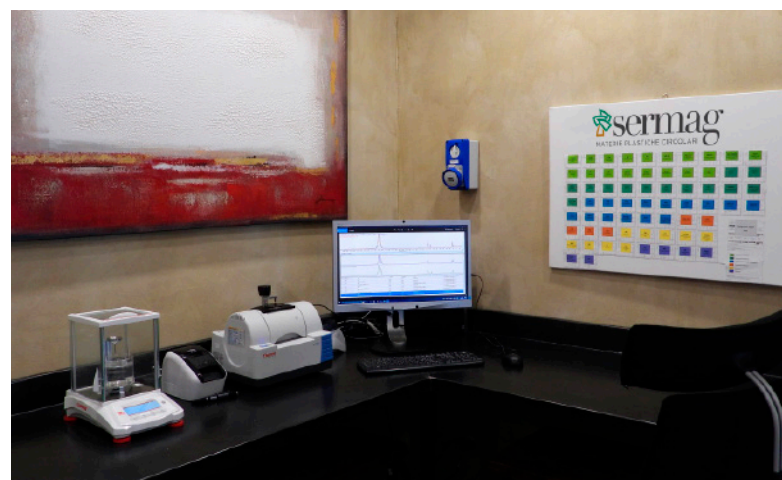
Spectrometer IR Nicolet IS5 Thermo Scientific

Analytical scale Mettler

Analytical scale Ohaus

Precision scale Orma

Vogt laboratory press



15. Awareness on the issue of smells

In the last few years a trend stands out, still on the rise, about the use of post-consumer plastic materials, as in secondary raw materials created from waste coming from final users, to produce goods/products more and more specific and of higher quality.

If earlier PCR material were used solely for economic production and of lower level (dumpsters, fruit crates, pallets, etcetera), now they are wanted and employed even for products of more notable use such as benches, chairs, vases, furniture and secondary packaging objects.

For these applications, material with great properties is necessary, both mechanical and aesthetic ones, that can be adjusted and improved by adding virgin materials and additives. This way high performance mixtures with high amounts of recycled material can be obtained.

However, an issue that still limits use and it is not easy to overcome, is the smell. Being regenerated materials from waste strictly coming from consortiums that handle recycling disposal, they are initially exposed to food waste and dirt.

Once it is collected, the recycling is then examined and selected, grinded and then washed. Nevertheless, washing can only partially remove the residual dirt as the process cannot be too aggressive considering costs and water and detergent consumption.

After the washing stage, the plastic flakes are then dried and later extruded in granules. During the granulation, at high temperatures over 250 °C, organic residue develops, helped by the heat, vapours and unpleasant smells

that can get caught in the granules.

The resulting compound can have a smell more or less strong and when it is melted again to be extruded or printed could smell even in the final product.

This issue was raised by some of our clients as well, who wished for PCR secondary raw materials to lack smells when used in special applications.

Therefore, here arises the need to study different methods to remove smell in an efficient way that effects not only the surface of the granule but inside of it as well.

Sermag did not wait and, in collaboration with a partner company and the Department of Science and Technological Innovation of the University of Piemonte Orientale, signed a research contract to study practices to detect and identify odoriferous substances.

For the research study, different samples of post-consumer recycled plastic coming from different suppliers will be tested in order to obtain the broadest possible mapping and have consistency of results.

The project is not easy because new techniques will be studied and tested to extract and isolate substances that cause smell in plastic granules.

It is a very ambitious and complex challenge but highly motivating, as are the knowledge and effort that we are investing in this project, sure of the positive outcomes that will be achieved for Sermag and our clients.



16. Global Reporting Initiative Table

GRI 102: General Disclosures

GRI Indicator	Description	Page	Omissions/notes
102-1	Name of the organisation	4	
102-2	Activities, brands, products and services	5-29-31	
102-3	Location of headquarters	4	
102-4	Location of operations	7	
102-5	Ownership and legal form	4	
102-6	Markets served	14	
102-7	Scale of the organization	14	
102-8	Information on employees and other workers	4	
102-12	External initiatives	38	
102-13	Membership of associations	7	
102-14	Statement of company leadership team	3	
102-16	Values, principles, standards and norms of behavior	23	
102-18	Governance structure	4	
102-23	Chair of the highest governance body	3-4	
102-40	List of stakeholder groups	27	
102-42	Identifying and selecting stakeholders	27	
102-43	Approach to stakeholder engagement	27	
102-44	Key topics and concerns raised	39-41	
102-47	List of material topics	27	
102-50	Reporting period	13-14	
102-53	Contact point for questions regarding the report	44	
102-54	Claims of reporting in accordance with the GRI Standards	3	
102-55	GRI content index	42	

GRI 200: Economic performance

GRI Indicator	Description	Page	Omissions/notes
201-1	Direct economic value generated and distributed	13	
205-1	Operations assessed for risks related to corruption		Sermag did not report instances related to risk of corruption in 2021



Global Reporting Initiative Table

GRI 300: Environmental performance

GRI Indicator	Description	Page	Omissions/notes
301-1	Materials used by weight or volume	14	
302-1	Energy consumption within the organisation	25	

GRI 400: Social performance

GRI Indicator	Description	Page	Omissions/notes
401-1	New employee hires and employee turnover	24	
403-9	Work-related injuries	24	Sermag did not report any work-related injuries in 2021
404-1	Average hours of training per year per employee	-	
405-1	Diversity of governance bodies and employees	-	
406-1	Incidents of discrimination and corrective actions taken		Sermag did not report any episode related to discriminatory practices in 2021
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data		Sermag did not report any claim related to privacy violation and customer data loss in 2021
419-1	Non-compliance with laws and regulations in the social and economic area		Sermag did not report sanctions related to non-compliance to laws and/or regulations in 2021





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