2020

ENVIRONMENTAL REPORT

TECNIPLAST

Tecniplast S.p.A. – Environmental Report 2021
Independent Assurance Statement

Introduction

DNV Business Assurance Italy S.r.l. ("DNV") was commissioned by the Management of Tecniplast S.p.A. ("Tecniplast") to undertake an independent assurance of the company's Environmental Report 2021 ("the Report") in accordance with the International Standard ISO 14016:2020 Environmental Management – Guidelines on the assurance of environmental reports.

For details on the composition of Tecniplast and its reporting boundary, reference should be made to the information in the relevant section of the Report.

Tecniplast is responsible for the collection, analysis, aggregation and presentation of the information contained in the Report. The assurance engagement assumes that the data and information provided in good faith by Tecniplast are complete, sufficient and authentic.

Our responsibility in conducting the work commissioned from us, in accordance with the terms of reference agreed on with Tecniplast, is solely towards the management of Tecniplast.

This Independent Assurance Statement is intended solely for the information and use of Tecniplast's stakeholders, and isn't intended to be and should not be used by anyone other than these specified parties.

Scope of Assurance

The scope of work agreed on with Tecniplast included the following aspects:

- Analysis, according to a *moderate level* of Assurance, of the Environmental data and information for the period January 2020 to December 2020, as contained in the Report.

Our audit was conducted between July and September 2021, both remotely and on site at the Tecniplast production plant in Buguggiate (VA), Italy.

Audit methodology

Our assurance engagement was planned and conducted in accordance with the VeriSustain audit protocol of DNV, which is based on our professional experience and international assurance best practices, and on ISO 14016:2020 provisions.

In accordance with the Protocol, available on request from our website*, the Report has been evaluated according to the following criteria:

- Adherence to the principles of Materiality, Completeness, Accuracy and Reliability
- ISAE 3000, for the audit of non-financial information.

We have examined and subjected to review the data and other information made available by Tecniplast.

We have obtained information and technical data from certified management systems.

We have conducted audits on a sample basis of:

- the mechanisms adopted by Tecniplast for implementation of its sustainability policies, as described in the Report;
- the processes for determining the materiality of the contents to be included in the Report;
- the processes for the generation, collection and management of the quantitative and qualitative data included in the Report.

We interviewed 9 company representatives involved in the operational management of the aspects described in the Report.

Conclusions

In the opinion of DNV, the Tecniplast's Environmental Report 2021 provides an accurate and impartial representation of the environmental strategies, management systems and performance of the Organization.

Based on the work undertaken, nothing came to our attention to suggest that the Report is not prepared in a material, complete, accurate and reliable way.

Further conclusions and observations on the adoption of the reporting principles and information on specific areas of performance are given below.

Materiality: The Report reflects Tecniplast's commitment to providing information and data that allow its stakeholders to assess the economic, social and environmental performance of the Organization.

* https://www.dnv.com/services/sustainability-report-assurance-11176

An opportunity for improvement has been raised, in order to strengthen Tecniplast's ability to identify environmental aspects deemed material for the external stakeholders.

Completeness: The Report enables stakeholders to evaluate Tecniplast's sustainability performance in 2020 and to understand its sustainability strategies and goals. The information contained in the report refers to the structure defined in the boundary; in the case of data attributed to a more limited boundary, the document identifies such restrictions.

Accuracy: From our analysis of the data and the company processes which generate it, the data contained in the Report are the result of stable and repeatable activities. The information contained in the Report is therefore sufficiently detailed and accurate.

Reliability: The data included in the Report which is the subject of our audit were shown to be identifiable and traceable; the personnel responsible were able to demonstrate in a convincing manner the origin and interpretation of the data. During our audit, we identified a limited number of non-material errors, which were corrected before the final version of the Report.

Improvement opportunities

Below is a summary of the observations and opportunities for improvement communicated to the management of Tecniplast which, in any case, do not affect our conclusions on the Report:

- evaluate the opportunity to define a documented procedure for primary data collection, codifying respective data sources and documents *or, as an alternative*, to acquire or develop a digital solution for the same purpose of improving efficiency in data collection and elaboration.
- evaluate the opportunity to develop and schedule stakeholder's engagement sessions in order to strengthen Tecniplast's ability to identify environmental aspects deemed material for the external stakeholders with the final purpose to develop a "materiality matrix" including, for each environmental aspect:
  - degree of relevance for the stakeholders
  - degree of relevance for Tecniplast

  This will allow to identify those environmental aspects perceived as particularly relevant, in order to validate Tecniplast's current strategies and to activate new strategic initiatives, ultimately leading to a more strategic value of the environmental reporting.

Competence and independence of DNV

DNV is a leading provider of sustainability services, including the verification of sustainability reports. Our environmental and social assurance specialists operate in over 100 countries.

DNV was not involved in the preparation of any statements or data included in the Report except for this Assurance Statement. DNV maintains complete impartiality toward stakeholders interviewed during the verification process.

DNV expressly disclaims any liability or co-responsibility for any decision a person or an entity may make based on this Assurance Statement.

For DNV Business Assurance Italy S.r.l.

Riccardo Arena
Lead Verifier

Alessia Segalini
Reviewer

Vimercate (MB), 08.10.2021

Tecniplast has renewed the publication of its Environmental Report covering the years 2017, 2018, 2019, and 2020, referring to its business activity of "Designing, Manufacturing and service for Laboratory Animal Products and equipments for the housing of laboratory animals; industrialization, moulding and assembly of technical items in plastic materials and Eco Design process according to the ISO 14006".
The Marketing Function, in collaboration with the QEHS department, has the responsibility of the design of this Environmental Report, other Functions and Departments have made their contributions, where required.
This Environmental Report Describes the Tecniplast Group as it is today, with a short projection of the coming years. Technical data are referred to the Buguggiate Headquarters (HQ).
All the data presented in this report are regularly monitored under industrial accounting with reference to the E.R.P. system or are somehow derived from them. The full list of environmental data and indicators is presented together with a short explanation.
Specific environmental analyses are performed with the technical support of external laboratories, as in the case of air emissions. Wherever analytical data are used for some elaboration the fill method of calculation, or its understanding, will be provided.
The data published are referred to the period 2017 - 2020 and each diagram or figure is completed with some comments.
Issued with reference to EU Regulation 2009/1221.
All the Acronyms and definitions are listed in the appendix "Acronyms and Definitions".

(First Issue: June 2021).

Tecniplast S.p.A.
Via I° Maggio, n. 6 - 21020 Buguggiate (VA) - Italy
Activity EA Codes 14 - 17 NACE codes 25.2 - 28.7

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PAPER
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CHAPTER 1

TECNIPLAST'S COMMITMENT TO THE ENVIRONMENT AND SUSTAINABILITY

The new Emerald IVC cage, or the new DVC® Analytics are just a couple of the company's many continuous, progressive actions aimed at overall innovation. Innovation for Tecniplast means also being the leader in improvement in levels of environmental awareness and respect in all activities, and particularly, all those aspects which, directly or indirectly, concern us, our manufacturing site and all our corporate activities. The Assurance and Compliance Statement of the eco-design process according to UNI ISO 14006:2020 is just an example. Tecniplast's focus on environmental issues is increasingly concrete, as demonstrated by all the activities that are described in this report. In addition, since achieving ISO 14001 Environmental Certification for Buguggiate main production site in 2006 (renewed in 2009, 2012, 2015 and 2018), all our people have helped in its consolidation and in building a common future. The personal efforts of each one of us in terms of mutual respect, flexibility and understanding ensures that individual objectives coincide with those of the company. Among our values and ethical code, a place of vital importance is occupied by sustainability. Sustainability is something we have always believed and invested in throughout the local territory, through concrete actions of solidarity and responsibility towards local communities. At Tecniplast sustainability has always been inherent in our dealings with the entire community of our stakeholders, by providing quality products and services and developing innovative technologies adapted to social and economic needs, as well as the environment. We have always been aware of our accountability in this context, fostering a viable, liveable and equitable environment. This updated Environmental Report is a key document to share with all stakeholders, a record of results achieved, and future commitments undertaken as we strive for continuous improvement. We work with courage and optimism so that future generations can be proud of the environmental awareness and the social respect that the people of our group have incorporated into their projects, achieving tangible and demonstrable results.

Those results, those facts, demonstrate Tecniplast's commitment to assuring that future generations will be able to inherit a favourable environment.
Our strategy of sustainable development is based on 5 magic words: eco design, circular economy, high quality plastics, recycling and sustainability.
Our strategy also translates into high efficiency in manufacturing, end-use efficiency and research and development of innovative technologies. With the international expansion of the Group we can leverage our skills, know-how and experiences to meet and exceed regulatory requirements. In this way Tecniplast is improving its ability to serve customers and communities wherever it operates, respecting the environment and the safety and wellbeing of all those involved. We intend to be an internationally recognized model for managing the environment and ensuring the health and safety of people. This report is an indispensable tool for you, to understand us, our vision and our mission, in which we are investing many resources. We monitor operating performance at various levels to identify, analyse, control and reduce the environmental risks related to our activities, defining focused improvement plans.

We believe in a circular economy and we think that a sustainable world does not mean a drop in the quality of life for consumers and can be achieved without loss of revenue or extra costs for manufacturers. We know that circular business models can be as profitable as linear models, allowing us to keep enjoying similar products and services with fantastic benefits for Us, for our Customers and for Society.
A model that is increasingly gaining traction among the countries of the European Union, determined to implement a new agenda of measures to protect the planet from all the waste we are drowning in, due to population growth, lack of raw materials and the evolution of the production process.
Our circular economy concept is not a "me-too" simple statement, but it covers a broad scope, from our industrial operations to products and services, including infrastructure, equipment and services, bearing in mind our customers' industry sectors.

The Environmental Report is the triennial publication through which we communicate, in a thorough and transparent way, the evolution of our performance in the environmental field. The report is the product of comprehensive monitoring of the performance of the Buguggiate site and it will be extended in the near future to all Group Production entities. It provides for the fixing of targets and the final statements of results based on a large number of parameters and indicators. 2020 saw a positive trend in our environmental performance thanks to the know-how that we have built up. The magnitude of the portfolio of technologies we have and the international dimension of recent years make our commitment to the environment a major asset for global, sustainable development. It is a responsibility that we are well aware of, a challenge that we willingly and proudly accept.

Ermanno Baj, Tecniplast President

1.1 - PRESIDENT COMMUNICATION

We believe that Innovation and passion have played and continue to play an important role in our company life, and is an increasingly important role year after year

We are fully aware that our Innovation and Passion style provides benefits for both our customers and our family of workers. We think that they are essential to creating better jobs, building a greener society and improving our quality of life, but also to maintaining Tecniplast competitiveness in the global market.

Each time we hire a new employee we seek to assess his or her propension to Innovation and consistency of passion because for us innovation together with passion are the interface between R&D and industrial processes in order to bring ideas to market.

Our 2 last innovations (both with a series of patents), the new IVC Emerald Line and the DVC® Analytics, were recently presented on the market and confirm our payoff *"Innovation through Passion"*.

Both projects have been developed through continuous exercises of both incremental and radical innovation, and thus develop new business model innovation, define product Innovation through manufacturing and management processes Innovation.

Our innovation is developed with a passion for new technologies, thanks to a strong and consistent customer collaboration and careful evaluation of strategic partnerships.

We can see that Innovation and Passions have created and maintained our market leadership and have led to well defined sustainable competitive advantages, which we can summarize in the following points:

- Fast reaction to changing conditions
- Important Product line Differentiation
- Global Development of new markets and target groups
- Consistent processes efficiency and competitive costs
- Added value for society

Innovation and Passion explain our commitment to environmental awareness too:

We obtained in 2020 the assurance and compliance statement of the eco-design process according to UNI ISO 14006:2020 *"Environmental management systems - Guidelines for the integration of eco-design"*.

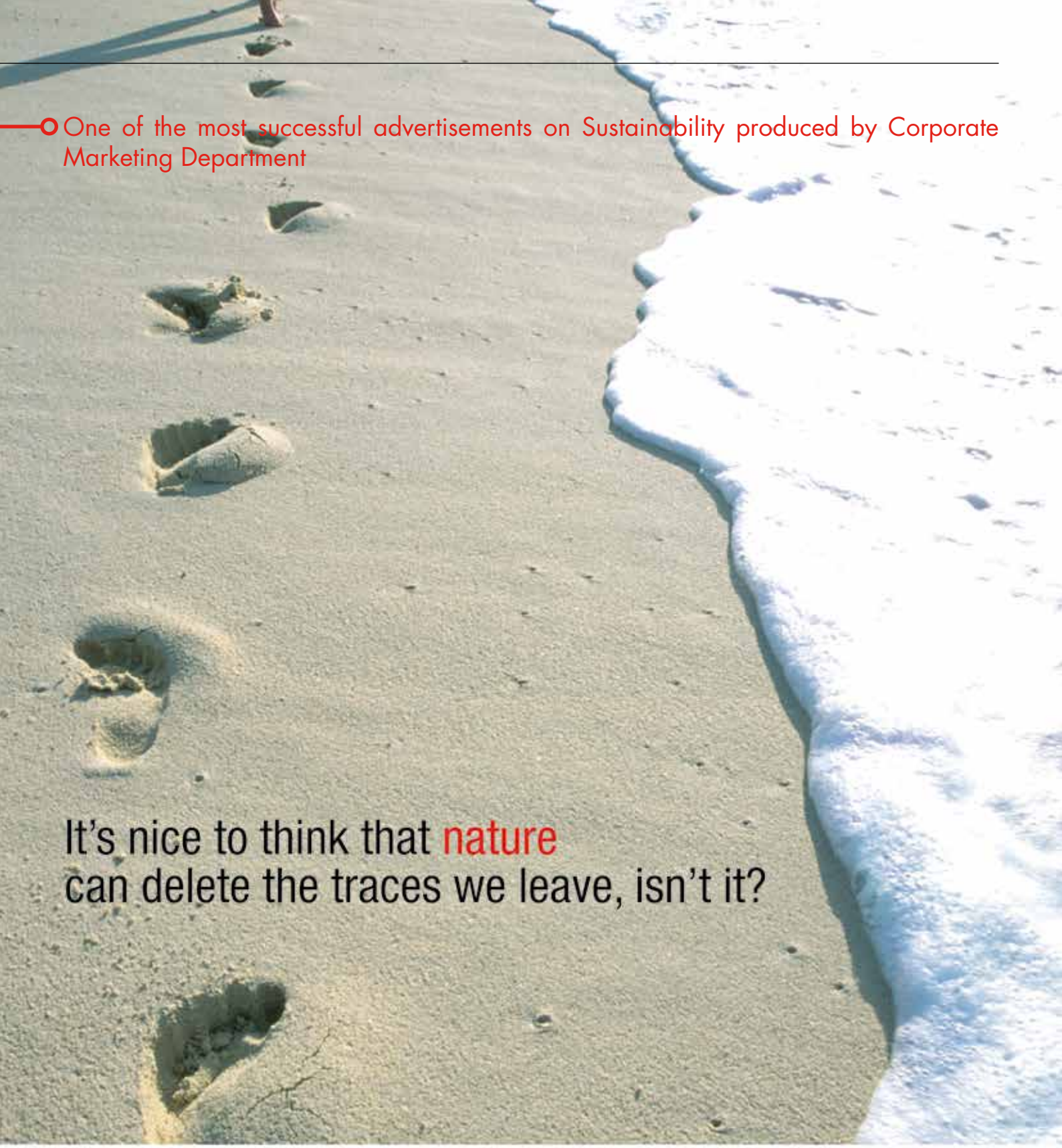
"We are the first and only company in the LAS, to have obtained this assurance and compliance statement that together with the ISO 14001 define the leadership of Tecniplast in environmental awareness."

This standard provides guidelines to establish, document, implement, maintain, and improve continuously our eco-design management as part of the environmental management system. We know that each product or service has an impact on the environment during all stages of its life cycle, from the extraction of raw materials to end-of-life treatment.
We have reached the goal, with this extended certification of eco-design, to integrate environmental aspects into the design and development phases of products, in order to reduce their negative environmental impact and improve environmental performance throughout their life cycle, without compromising the quality and application of our products and services.
The benefits obtained apply to the customer/user, producer, supply chain and, ultimately, to the Earth itself.

Innovation and passion are our daily drivers.
Our market leadership is generated by innovation. Innovation secures tomorrow's revenue, lowers costs, and differentiates us in the mind of customers.
We believe that innovation and passion are indispensable in order to create a market advantage over the entire duration of the company, professionally implemented to bring benefits for us, our stakeholders, society and the planet Earth.

One of the most appreciated posters on Sustainability produced by Corporate Marketing Department

One of the most successful advertisements on Sustainability produced by Corporate Marketing Department



Our strategy of good growth: to design and manufacture eco-effective products that leave their mark on scientific research, in co-operation with nature.

Tecniplast aims to arrive at guaranteeing products with zero CO2 emissions, creating a virtuous model for the Laboratory Animal sector. This entails adopting the appropriate technologies and processes which will positively impact the quality of life of millions of people. Tecniplast's drive to measure and cut CO2 emissions constitutes a point of reference on a worldwide scale.
Tecniplast is the first company in the sector to certify the CO2 footprint on its products – an ambitious sign of respect for the environment in manufacturing.

www.tecniplast.it

TECNIPLAST
innovation through passion

1.2 - TECNIPLAST ENVIRONMENTAL POLICY

Tecniplast implemented an Environmental Management System according to the requirements of the UNI EN ISO 14001:2015 standard, with the Eco Design process according to ISO 14006:2020, at the Buguggiate site where the following activities are performed: "Designing, manufacturing and service for Laboratory Animal Products and equipment for the housing of laboratory animals. Industrialization, moulding and assembly of technical items in plastic".

During 2012, interventions of expansion and renovation were completed allowing the transfer of part of the activities carried out at other sites. During the period 2017 and 2020 another planned expansion was completed with the construction of offices, satellite warehouse and new assembly lines. We plan to continue our expansion in 2021/2023 period, as soon as the COVID-19 emergency is over.

Tecniplast has defined an integrated Policy: QUALITY AND ENVIRONMENT POLICY (Annex "A" sec.5 IMS).

Tecniplast S.p.A. has among its priority objectives, to the same extent as profitability, the quality of the product and service, the safeguarding of the environment and the compatibility of its business with the territory it operates in.

This is why the Company Management has implemented an Integrated Management System for quality and environment in compliance with the requirements of UNI EN ISO 9001:2015 and UNI EN ISO 14001:2015 standards with the Eco Design Process according to ISO 14006:2020 (this latter applies to Buguggiate site) and has defined this Integrated Policy that it commits to implement and to make it available to anyone who might require it.

- Keep in compliance with current laws on environment, and applicable to its business.
- Accept and meet the customers' explicit and implicit requirements.
- Manufacture a reliable product, technologically advanced, defining, during design stage, the methods to correctly use it and dispose of it in order to minimize the environmental impact, and in compliance with applicable requirements, thus offering an efficient and effective service.
- Enrich the competences of the organization identifying new possible business development.
- Periodically evaluate the Company Management trend through the Integrated System, update and redefine the Policy, define the objectives consistently with this Policy and have required resources available to meet such objectives.
- Analyse the causes of non-conformity as the starting element to define and implement adequate corrective and preventive actions.
- Reduce the environmental impact of its business, keeping the right balance between environmental, social and economic responsibility; in particular pursuing the decrease of defects, waste, and energy consumption and minimising the use of natural resources and raw materials.
- In view of preventing and improving environmental impacts, preventively evaluate new plants and systems or changes to existing ones, adopting possible and financially sustainable solutions, which can offer better environmental performances.
- Make employees aware of quality and environmental issues with adequate information and training programs.
- Inform resellers, during meetings and training sessions, of the company quality and environmental culture.

Tecniplast is committed to ensuring compliance with scheduled objectives, which are analysed by the Management every year. This document of Integrated Policy is updated according to Tecniplast objectives and it is made available to the personnel through the company information system and in departments showcase boards. It is sent to suppliers and contractors by the Purchasing Department and every time a new revision is made. It is communicated to resellers and customers every time meetings and seminars are held and it is enclosed in use and maintenance manuals.

1.3 - TECNIPLAST INTEGRATED MANAGEMENT SYSTEM

Tecniplast, being a flexible multinational company, is looking for effective and efficient management tools.
Effective management in the globalized world requires an effective, efficient, and flexible management system.
Effective system could be interpreted as addressing all relevant stakeholder concerns in a context of Corporate Social Responsibility (CSR). Efficient system would mean that it does the job with low resource use. Flexibility requires that changed conditions and new requirements can easily be included.

Tecnipast adopted an Integrated Management Systems (IMS) with the objective of:

- Unifying audits: internal ones and certification ones.
- Simplifying system documentation.
- Reviewing the documentation and feasibility of application.

We know that there are advantages in integration, but that the scope and level of integration is often limited. An integrated management system (IMS) combines all related components of a business into one system for easier management and operations. Quality, Environmental, and Safety management systems are often combined and managed as an IMS.
These systems are not separate systems that are later joined, rather they are integrated with linkages so that similar processes are seamlessly managed and executed without duplication.
It is important to have a good quality management system that not only meets the standards of the certification but will also improve business processes. We know that an Integrated Management System can benefit your organization through increased efficiency and effectiveness and cost reductions while minimising the disruption caused by several external audits. It also shows your commitment to increased performance, employee and customer satisfaction, and continuous improvement. Our objective with an integrated management system, is to work together, with each function aligned behind a single goal: improving the performance of the entire organization.
We are seeking a coordinated effort which is greater than the sum of its parts and is not only more efficient but more effective. An integrated system provides a clear, uniform image of our entire organization, how they impact each other, and the associated risks.
Efficiency is gained from less duplication, and it becomes easier to adopt new systems in the future. An IMS allows our management team to create one system that can help to deliver your organization's objectives effectively and efficiently.
From managing employees' needs, to monitoring risks and hazards, from reducing inefficiencies and maximizing resources, an integrated approach helps us achieve our objectives.

We expect the following benefits from integration:

- Better integration.
- Increased efficiency.
- Possibility to link quality related and environmental related aspects with ethics and organizational profitability.
- Possibility to develop management systems better matching stakeholder interests.
- More benefits than downsides and problems when management systems are integrated.
- Integrated audits and common documentations system with common structure of routine.

1.4 - IMPLEMENTING THE ENVIRONMENTAL MANAGEMENT SYSTEM

The implementation of Tecniplast Environmental Management System (EMS), according to ISO 14001:2015 standard, including the Eco Design process in accordance with ISO 14006:2020, is intended to contribute to improving the global environmental performance and give more credit to environmental management by means of independent third-party EMS certification

Initially, Tecniplast established its position about the environment at local and global scales by means of a context analysis identifying risks and opportunities associated with its environmental aspects and activities, considering the needs and expectations of the stakeholders including the local communities, the public authorities and competitors.
The context in which TP operates presents some peculiarities, in that the first sector of in vivo pharmacological research is very contained and also the players in the sector are few and distributed internationally.
In recent years, this particular market segment has also started to move on some fronts of sustainability, requiring certain environmental characteristics of the products.

Tecniplast had developed its own environmental management system immediately after the issue of the first version of the ISO 14001 standard and has continued over time to carry out important environmental initiatives at company and product levels and using communication channels to inform the market of the important steps realised on the environmental / sustainability front.

Given this situation, TP is positioned in first place with respect to its competitors and, for example, the choice to adopt the eco-design process is part of its path of expansion of the ways in which to structure sustainability by adding other pieces to what has already been done previously.
Therefore, the levers for the adoption of eco-design should not be sought by the need to engage a competitor, by mandatory legislation, by pressure from customers from the LAS world, but are only by an autonomous and conscious internal drive connected to Tecniplast's vision of sustainability.

After such strategic assessment, and following the requirements of the ISO 14001:2015 standard Tecniplast continued:

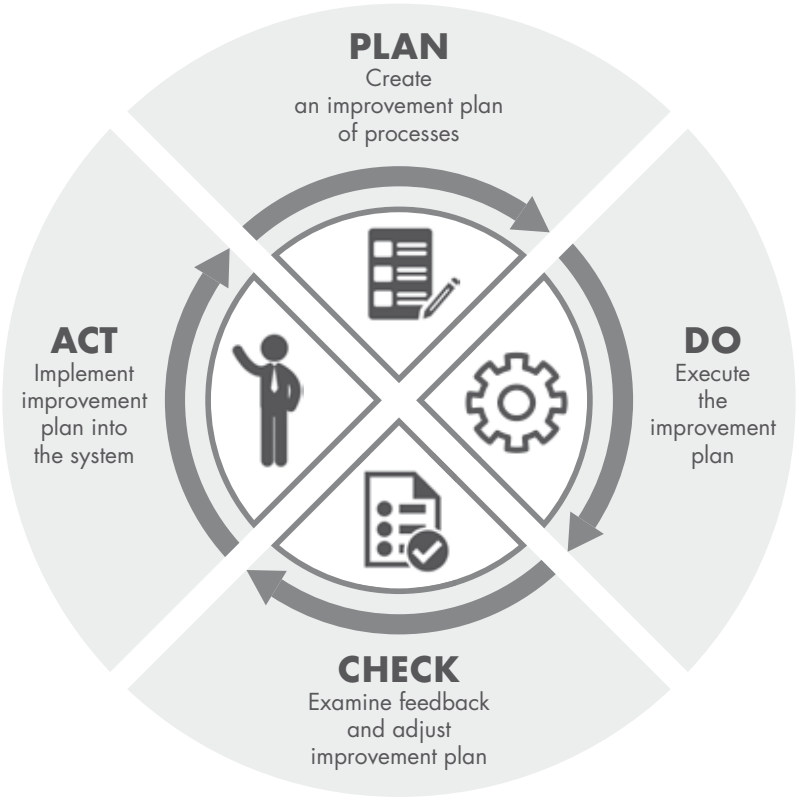
- Identifying all environmental aspects.
- Identifying all applicable legal requirements.
- Examining already existing environmental management practices and procedures.
- Evaluating previous emergency situations and accidents.

Tecniplast, as required by ISO 14001 (and EU Regulation 2009/1221 and following updated regulations 2017/1505 and 2018/2026), periodically review and evaluate its EMS, assess the Environmental Aspects, identify improvement objectives and define implementation programmes.

Tecniplast Environmental Policy, issued according to ISO 14001 Standard is presented in Chapter I.2 and shows the most important scheme of the EMS standard with common structure of routine.

The approach described above is in line with the methodology known as **Plan-Do-Check-Act** (or the Continual Improvement Circle):

- **Plan:** establish the objective and processes necessary to deliver results in accordance with Tecniplast's Environmental Policy.
- **Do:** implement the objectives and processes.
- **Check:** monitor and measure processes against Environmental Policy, Targets, Legal Requirements and document the results.
- **Act:** take actions to continually improve performance of the Environmental Management System.



The new ISO 14001 standard inserts the PDCA process within a well-established framework that is the results of the context analysis as detailed in this picture.

1.5 - TECNIPLAST ENVIRONMENTAL MANAGEMENT SYSTEM BACKGROUND

During 2005 Tecniplast Top Management decided to start with the implementation of the Environmental Management System according to ISO 14001:2004 Standard

At that time, completing the Environmental Initial Review, a programme was set up for issuing and implementing all the required procedures, either operational or management, necessary to fulfill the Standard requirements and control the site's Environmental Aspects.

2006: Tecniplast succeeded in receiving the EMS certification according to the ISO 14001 standard encompassing the following scope: *"Design, manufacture and service of equipment for housing of laboratory animals through the activities of mechanical machining, thermoplastic moulding, laser cutting, bending and TIG welding of steel sheets and profiles and assembly. Design and construction of steel moulds for thermoplastic materials through the activities of mechanical machining. Moulding, assembly and packaging of plastic products for third parties through the activities of thermoplastic moulding, finishing and assembly (EA: 17, 14)"*.

2008: Hoping to give more credit to Tecniplast commitment to Sustainability, Tecniplast started an LCA/carbon footprint project. Focused on assessing the environmental impacts of the cages, (GM500 and recently the Emerald) during the full Life Cycle and to inform the customer about the product environmental profile. A similar study was performed for the 2 GM160 rack during 2009. The main results of the studies gave a full understanding of the product environmental profile and, according to the continuous improvement approach, the definition of products improvement objectives to reduce the Product Carbon Footprint.

2009: Tecniplast decided to produce its First Environmental Report (the first one in the industry), at the end of 2015 the second one for the years 2013, 2014, 2015 and 2021 a third version of the years 2017, 2018, 2019 and 2020 (still the sole Environmental report within the LAS industrial sector).

2018: The EMS was completely reviewed and re-certified for the fourth time, according to the latest available edition of the ISO 14001:2015 standard. The choice to be certified by an accredited certification body gives an added value to the certification process. Other international organization like IQNet allows the possibility of reciprocal recognition of a certification obtained by an Accredited Certification Body, meaning the certificates of a Certification body in Country A is considered valid worldwide for all the other certification bodies accredited by other accreditation organizations

2020: Tecniplast obtained the assurance and compliance statement of the eco-design process according to UNI ISO 14006:2020 *"Environmental management systems - Guidelines for the integration of eco-design"*. (ECODESIGN)

DNV·GL

VERIFICATION STATEMENT

Statement No: 10000372541-Assessment Services-DNV GL-ITA | Initial date: 16 september 2020 | Valid: 15 september 2023

TECNIPLAST S.p.A.

TECNIPLAST

Via I Maggio, 6 - 21020 Buguggiate (VA)

Upon request of Tecniplast S.p.A, DNV GL conducted an independent Assessment of the Organization's adherence to the principles and approach of the ISO 14006:2020 Guidelines "Environmental management systems - Guidelines for the integration of Ecodesign" and their implementation into the Environmental management system ISO 14001:2015 "Environmental management systems - Requirements and guide for use".

The activity was carried out following the criteria set out in the "DNV GL Ecodesign Protocol rev.1", according to a double perspective: **Strategies** with an approach oriented to the life cycle and **Processes** providing operational indications on how to implement Ecodesign in the Environmental management system.

The Ecodesign process is applied to the following scope of the ISO 14001:2015 Environmental management system:

Design, manufacture and service of equipment for housing of laboratory animals through the phases of mechanical processing, thermoplastic molding, laser cutting, bending and TIG welding of steel sheets and profiles and assembly.

Design and construction of steel molds for thermoplastic materials through the phases of mechanical processing.

Molding, assembly and packaging of plastic products for external clients through the phases of thermoplastic molding, finishing and assembly.

The Ecodesign process has been verified for the product "Unità di trasporto IVC" Code TSN130500.

The outcome of the Assessment is the following*:

☆☆☆☆☆ **Strategies: 82%** ☆☆☆☆☆ **Processes: 70%**

The full findings are described in the document "SC189358-20200916-Tecniplast-Ecodesign_Assessment Report_rev.1" issued on 16 September 2020.

Place and Date: **Vimercate (MB), 16 september 2020**

For DNV GL Business Assurance Italia S.r.l.

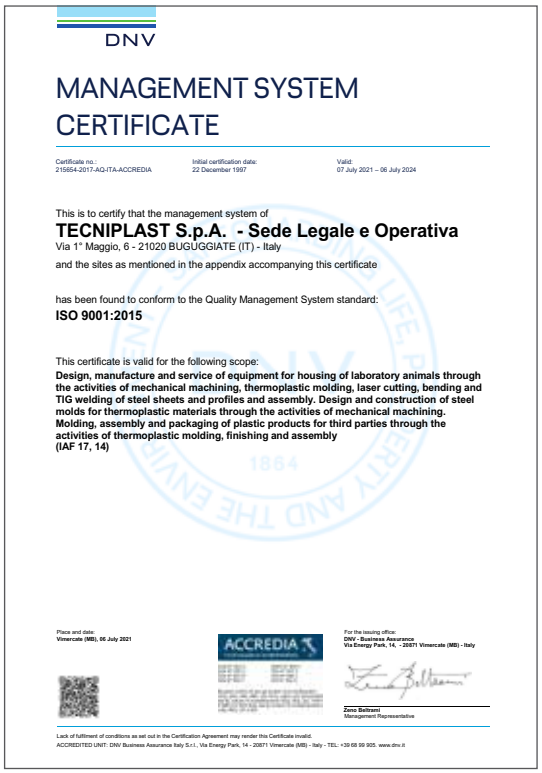
Zeno Beltrami
Management Representative

* The minimum percentage necessary to pass the Assessment is 60%
The validity of this Statement is subject to compliance with the conditions contained in the Assessment Agreement.
Lack of fulfilment of conditions as set out in the Assessment Agreement may render this Statement invalid.
DNV GL Business Assurance Italia S.r.l. Via Energy Park, 14, 20871 Vimercate (MB), Italy. Tel: 039 68 99 905. www.dnvgl.it

PANORAMA NEWS
WINTER 2020/2021 **N°76** QUARTERLY NEWS SHEET

TECNIPLAST OBTAINED, BY DNV GL, THE EXTENSION OF THE FIELD OF APPLICATION OF EMS CERTIFICATION TO THE ECODESIGN PROCESS ACCORDING TO ISO 14006

This QR code in the first of many other in this report. They will help you to download a copy of the articles mentioned in the red area.



DNV

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 215654-2017-AQ-ITA-ACCREDIA | Initial certification date: 22 December 1997 | Valid: 07 July 2021 – 06 July 2024

This is to certify that the management system of

TECNIPLAST S.p.A. - Sede Legale e Operativa

Via 1° Maggio, 6 - 21020 BUGUGGIATE (IT) - Italy

and the sites as mentioned in the appendix accompanying this certificate

has been found to conform to the Quality Management System standard:

ISO 9001:2015

This certificate is valid for the following scope:

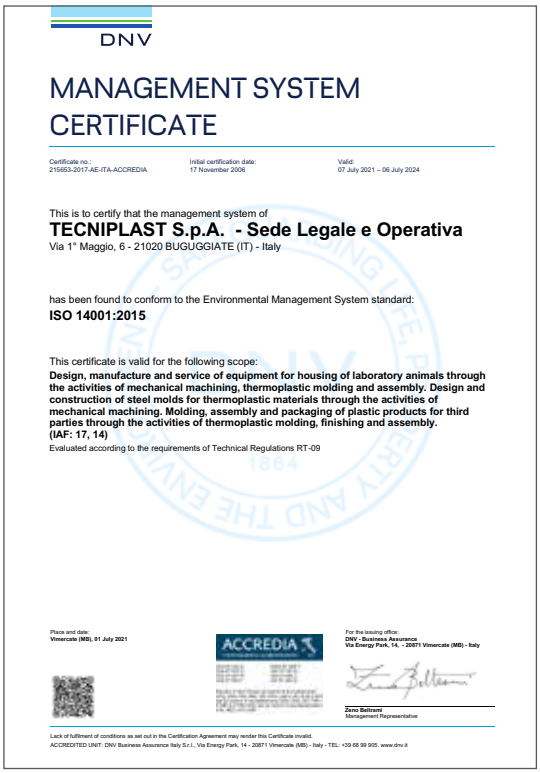
Design, manufacture and service of equipment for housing of laboratory animals through the activities of mechanical machining, thermoplastic molding, laser cutting, bending and TIG welding of steel sheets and profiles and assembly. Design and construction of steel molds for thermoplastic materials through the activities of mechanical machining. Molding, assembly and packaging of plastic products for third parties through the activities of thermoplastic molding, finishing and assembly (IAF 17, 14)

Place and date: Vimercate (MB), 06 July 2021

For the issuing office: DNV - Business Assurance Via Energy Park, 14, - 20871 Vimercate (MB) - Italy

Zeno Beltrami, Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV Business Assurance Italy S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) - Italy - TEL: +39 68 99 905. www.dnv.it



DNV

MANAGEMENT SYSTEM CERTIFICATE

Certificate no.: 215653-2017-AE-ITA-ACCREDIA | Initial certification date: 17 November 2006 | Valid: 07 July 2021 – 06 July 2024

This is to certify that the management system of

TECNIPLAST S.p.A. - Sede Legale e Operativa

Via 1° Maggio, 6 - 21020 BUGUGGIATE (IT) - Italy

has been found to conform to the Environmental Management System standard:

ISO 14001:2015

This certificate is valid for the following scope:

Design, manufacture and service of equipment for housing of laboratory animals through the activities of mechanical machining, thermoplastic molding and assembly. Design and construction of steel molds for thermoplastic materials through the activities of mechanical machining. Molding, assembly and packaging of plastic products for third parties through the activities of thermoplastic molding, finishing and assembly. (IAF: 17, 14)

Evaluated according to the requirements of Technical Regulations RT-09

Place and date: Vimercate (MB), 01 July 2021

For the issuing office: DNV - Business Assurance Via Energy Park, 14, - 20871 Vimercate (MB) - Italy

Zeno Beltrami, Management Representative

Lack of fulfilment of conditions as set out in the Certification Agreement may render this Certificate invalid.
ACCREDITED UNIT: DNV Business Assurance Italy S.r.l., Via Energy Park, 14 - 20871 Vimercate (MB) - Italy - TEL: +39 68 99 905. www.dnv.it

PANORAMA NEWS AUTUMN 2018 **N°67** QUARTERLY NEWS SHEET

TECNIPLAST OBTAINED THE LATEST GENERATION OF CERTIFICATION ISO 9001:2015

LCA study

The Carbon Footprint of the IVC GM 500 Cage (using the LCA methodology)

Tecniplast S.p.A.
www.tecniplast.it
(edited by Vito D'Innocente - Take Care International)

Verification of compliance with the requirements established by International Standards ISO 14040:2006 and ISO 14044:2006

Verifier

Maurizio Fieschi, as independent external expert.

Review Scope

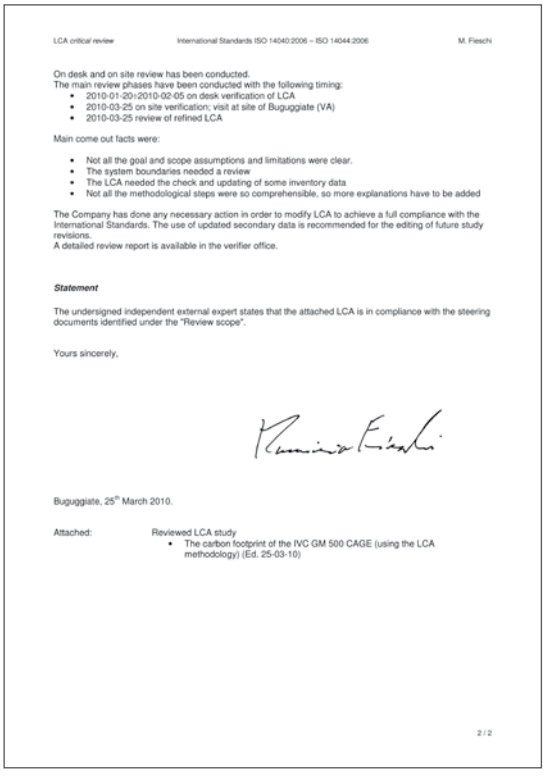
The task of the verifier was to review the LCA model, the LCA report and the underlying data, in order to verify full compliance with ISO 14040:2006 and ISO 14044:2006.

Review Process

The validation has been focused on ensuring that:

- the methods used to carry out the LCA are consistent with the International Standards ISO 14040:2006 and ISO 14044:2006;
- the methods used to carry out the LCA are scientifically and technically valid;
- the data used are appropriate and reasonable in relation to the goal of the study;
- the interpretations reflect the limitations identified and the goal of the study;
- the study report is transparent and consistent.

The validation has been conducted by sampling activities. Main unit processes, inputs, outputs and data processing for reporting have been sampled, with specific attention to: system boundaries, allocation rules, material and energy resources, wastes, raw materials, transports, impact categories and characterisation factors.



LCA critical review — International Standards ISO 14040:2006 – ISO 14044:2006 — M. Fieschi

On desk and on site review has been conducted.
The main review phases have been conducted with the following timing:

- 2010-01-20÷2010-02-05 on desk verification of LCA
- 2010-03-25 on site verification; visit at site of Buguggiate (VA)
- 2010-03-25 review of refined LCA

Main come out facts were:

- Not all the goal and scope assumptions and limitations were clear.
- The system boundaries needed a review
- The LCA needed the check and updating of some inventory data
- Not all the methodological steps were so comprehensible, so more explanations have to be added

The Company has done any necessary action in order to modify LCA to achieve a full compliance with the International Standards. The use of updated secondary data is recommended for the editing of future study revisions.
A detailed review report is available in the verifier office.

Statement

The undersigned independent external expert states that the attached LCA is in compliance with the steering documents identified under the "Review scope".

Yours sincerely,

Buguggiate, 25th March 2010.

Attached: Reviewed LCA study
- The carbon footprint of the IVC GM 500 CAGE (using the LCA methodology) (Ed. 25-03-10)

2 / 2

MEANING AND UNDERSTANDING THE ISO CERTIFICATION

By Vito D'Incognito - Take Care International - Italy

1) BUSINESS APPROACH TO CERTIFICATION

The business approach to certification, occasionally, goes behind the actual situation and the truth, with the aim of getting greater advantages from "overloaded" messages. If we consider the growing relevance given to communication strategy, from many organizations, a consumer could be "over influenced" from good messages and bad products, despite the effort of other organizations for producing products of high quality. This is valid within many commercial spots and advertisements and, in some extent rate, it is also distributed among messages related to System or product certifications. The intent of this paper is to discuss and fix few points for helping the decision process among decision makers and the area of discussion will cover the management system certifications of organization according to the applicable standards like Quality and Environment Management Systems. After a brief reconstruction of the certification process the attention will be addressed to the field of application of the organization management certification or, in other words, "how shall be read a certificate of certification and how shall the be compared the ISO certificates of different organizations, often competitors, in case of international tenders. The principles that will be exposed are valid for all the industrial and service sectors but in this paper the focus will be the husbandry laboratories and the hits could be really effective for the decision makers and the selector committees of international tenders.

2) PROCESS OF THIRD PARTY CERTIFICATION

The implementation and certification of a management system is a channel of communication for telling the organization's stakeholders that the organization have embarked on the journey of continuous improvement with regard to quality, environment or safety related issues. External certification, by third party experts, helps an organization to continually improve its strategies, operations and levels of service. During the certification process the organization should be able to show clear and measurable benefits from engaging Management Systems in the field of Quality or Environment or Safety complying with all the clauses of the applicable standard.

Choosing an accredited certification body gives more value credibility and reliability compared to an unaccredited one and helps assure clients will get the business benefits and value they pay for. Accredited certification bodies operate in each Country and since the beginning of the ISO 9001 emission in 1987 the need of mutual recognition was recognized as a must.

3) MUTUAL RECOGNITION OF CERTIFICATION

The objective of the Mutual Recognition of Certification is to develop a global network of conformity assessment bodies. This includes certification bodies, testing and calibration laboratories, and inspection bodies, which can be relied on to provide competent services, such as certification activities, testing, calibration and inspection. Key to international trade, the Mutual Recognition of Certification promotes cross border stakeholder confidence and the acceptance of accredited conformity assessment bodies. Among the most known organization operating for the Mutual Recognition of Certification there are IQnet and IAF (International Accreditation forum) IQ net is an international network of partner certification bodies, established in 1990 is till now the world's largest of leading certification bodies spanning hundreds of offices throughout the world. Similarly IAF is a global association of accreditation bodies and other organization involved in conformity assessment activities in a variety of fields including management system, products and personnel.

4) STATE OF CERTIFICATION IN THE WORLD

The certification of Organization growth continuously in the global market.
ISO yearly releases the results of Its survey and in the 2020 annual report the international certification scenario was as follows:

Standard	Description	Nr. of Certificates 2020
ISO 9001	Quality Management Systems	1.500.000
ISO 14001	Environmental Management Systems	500.000

Table 1 Number of certified organizations during 2020- worldwide. The actual number of certified organizations would be over 1.500.000 for ISO 9001 and more the 500.000 for the ISO14001 standards.

The figures give evidence of a general growth despite the economic crisis, in all the field of the management system like Quality, Environment energy and new area like social accounting, sustainable events and so on. Also the new edition of the ISO 9001 and 14001 of 2015 are expected to contribute in an additional growth of management system certification.

5) FIELD OF APPLICATION OF THE CERTIFICATE

Talking of certification the concept of field of application needs to be clarified. An application field is a specific kind of field: perhaps the field or domain which is covered by a particular application, or the field or domain in which something is applied. Applying the concept to management system that means the application of the standard, let's say ISO 9001. to the activities performed by an organization in one or more site and for being more clear the main processes implemented are focused and described in the field of application and are reported in the organization's certificate of the management system For example, for a company who produces and designs equipment for the dimensional control

during the manufacturing of other items the scope must be expressed as Design, manufacturing and servicing of machinery and electronic equipment for dimensional control. During the certification process the phases of design, manufacturing and testing will be assessed at the organization site and the servicing activity will be assessed at the site of one or more customers where the electronic equipment are used for measuring bars, gears or other items. If part of the design and of the manufacturing is performed outside the organization site, but under specific contracts managed by the organization, additional assessment activities could be externally required. ***If another company performs only the installation and servicing of equipment the ISO certificate is applicable only to Installation and servicing of machinery and electronic equipment for dimensional control.*** *If we read the 2 certificates we must pay attention and fully consider the great differences: The first organization having more and significant processes like design and manufacturing and the second one only the installation process.*

6) ADDITIONAL INFORMATION FROM THE CERTIFICATE

An additional information could be kept from the number of certification that, generally, is followed from a / and a number that identifies the triennium of validity of the certificate. So, if the certificate n. 429 is followed by nil this only means that the organization get the certification but it is in the first triennium with a limited experience of the Management system If on the other and we find another certificate number 143 followed by /4 this means that the organization received the certification more than 9 years ago and is now in the fourth triennium of application of the certification.

Generally the certification contains also the reference to:

- *The applicable standard ISO 9001 or 14001 or other standard.*
- *EA code of the activity (EA 14 stands for Rubber and plastic products; EA stands for Electricity supply and so on).*
- *The field of application.*
- *The accreditation body (example UKAS, Accredia and so on).*
- *The membership to IQnet network.*
- *The date of the first issue and the expiring date of the late certificate.*

All this information give shall be carefully examined in case of comparison between competitors in international tender.

7) CERTIFICATION AMONG THE HUSBANDRY SUPPLIERS

A recent worldwide survey among the husbandry laboratory suppliers shown that ***only in one case one European Organization has the Quality management system certified since about 15 years and the EMS certificate since about 10 years*** *for the following field of application: "Design, manufacturing, installation and service of laboratory animal equipment. Design and manufacturing of steel mould for technical articles made of thermoplastic material. Injection moulding, assembly and packaging of technical articles of plastic materials; installation and service for animal husbandry laboratory". On the other end only few months ago another competitor of the north America get the QMS certificate only for sales and service for systems for animal laboratory in few subsidiaries in Europe.*

8) CONCLUSION

The most important conclusion for purchasing managers, facility managers and stakeholders is that Environmental claims, like "My cages or my product is better or greener than yours" should be fully supported by evidence, certification or peer review obtained according to internationally recognized standards. Self - declaration is rarely acceptable and even when supported by data, this should be examined critically. The paper gave important hits for improving the understanding of the Management System certification and for choosing the suppliers on the base of actual and significant data available and reported in the certificates. The same information could be organized and used as a selection filter in an international tender for furniture among husbandry suppliers.

References:

1) *ISO 14001 "Environmental management systems - Requirements with guidance for use" Ed. 2015*
2) *ISO 9001"Quality management systems - Requirements" Ed. 2015*
3) *Regulation EU 1221/2009 "Environmental Management and Audit Scheme Regulation " Ed. 2009*
4) *ISO 14025 "Environmental labels and declarations - Type III environmental declarations - Principles and procedures" Ed. 2006*
5) *US Federal Trade Commission: Guides for the Use of Environmental Marketing Claims: Part 260: 1998*
6) *David B. Anderson 2007 "Standards of accommodation and care for animals used in scientific procedures in Europe" 6th World Congress on Alternatives & Animal Use in the Life Sciences*
7) *H. Stripple , R. Westman , D. Holm "Development and environmental improvements of plastics for hydrophilic catheters in medical care: an environmental evaluation" JCP 2008*
8) *V. D'Incognito "Environmental impact of disposable and reusable cages" Animal Technology and Welfare, 2010*
9) *ISO "The ISO survey of Management system standard certifications 2014"*
10) *EA code*
11) *www.accredia.it/certificates.*

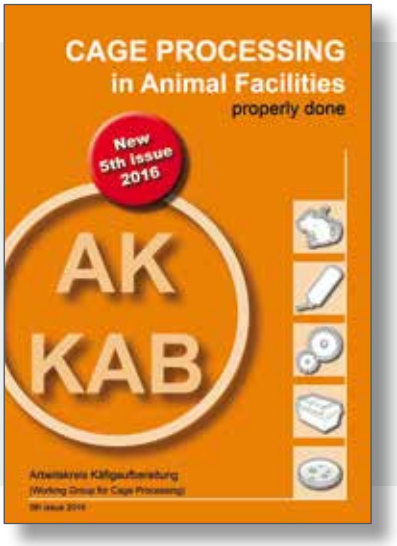
HIGH QUALITY PRODUCTS

We design products to offer smaller life cycle costs, extended product life cycles, higher productivity, reduced operator risks, location security, the most sophisticated preservation of resources, with the goal of providing the best sustainable laboratory technologies, defining new boundaries in the WW Leadership

We are proud to say that our products can be certified by EGNATON reaching the GOLD level; we are the first company which has certification from Egnaton.

The Egnaton certification process is a big commitment and achievement for us, because it involves the collection of several data, it implies multiple audits and everything goes beyond the pure consumptions, requiring also to demonstrate: equipment modularity and usability, parts availability and recyclability, machinery life-span, company general organization about quality assurance, safety, R&D, documentation, training.

Our washers in LAS market to demonstrate incontestably the "green soul" of our products!



The EGNATON has a strong correlation with that of the AK KAB. The figures metered and provided during the execution process are required to calculate the LCC (Life-Cycle-Cost) foundation of the EGNATON certification itself. Those consumptions data must relate to the washing program used and declared in the performance certification according to AK KAB protocol mandatorily released by a third-party testing laboratory.

Egnaton (www.Egnaton.com) is a no profit organization - The European society for sustainable laboratory technologies pursues the promotion of environmental protection, health protection and sociocultural goals. The voluntary undertaking towards high quality goals of laboratories and the applied technologies aim at maximizing positive effects for society and nature by the enterprise on the part of laboratories and of minimizing negative effects. EGNATON is committed to serving the public in their action and promotion of these. EGNATON particularly represents the goals of its members, i.e. resources-protective of establishing and of operating pollution free and economical laboratories, taking special account of the safety, health and comfort of the laboratory users and their interactive requirements, as well as expectations from the surrounding social field. EGNATON sets itself the goal of providing for sustainable European laboratory technologies international Leadership. The initiative promotes the location Europe as a high-efficient science place with excellent and sustainable laboratory buildings, which represent a maximum attractiveness for high end scientists.

1.6 - TOWARDS CIRCULAR ECONOMY AND EARTH SUSTAINABILITY

The circular economy system was adopted by Tecniplast many years ago, with the aim of eliminating waste and continual use of resources

We have trained our management to adopt circular philosophy in our systems by employing various practices such as: reuse, sharing, repairing, refurbishing, remanufacturing and recycling to create a closed-loop system, minimizing the use of resource inputs and the creation of waste, pollution and carbon emissions. Our objective is to keep products, equipment and infrastructure in use for longer, thus improving the productivity of our products.

Our waste is really *"food"* for another industrial process: either a by-product or recovered resource for another industrial process, these are the principles of industrial ecology.

We believe in a circular economy and we think that a sustainable world does not mean a drop in the quality of life for consumers and can be achieved without loss of revenue or extra costs for manufacturers. We know that circular business models can be as profitable as linear models, allowing us to keep enjoying similar products and services with fantastic benefits for Us, for our Customers and for Society.

A model that is increasingly gaining attraction among the countries of the European Union, determined to implement a new agenda of measures to protect the planet from all the waste we are drowning in, due to population growth, lack of raw materials and the evolution of the production process. Our circular economy concept is not a *"me-too"* simple statement, but it covers a broad scope, from our industrial operations to products and services, including infrastructure, equipment and services, bearing in mind our customers' industry sectors.

Tecniplast is the only firm in the market to have organized a circular service for reusing plastics through our famous recycling project!

We, intuitively, perceived years ago that the circular economy appeared to be more sustainable than the current linear economic system because it reduces the resources used, and the waste created on the one hand, and conserves resources, reduces environmental pollution on the other.

We believe so much in this that we have developed the first Sustainability plan in the Lab animal Science industry!

As a multinational company that firmly believes in sustainability, Tecniplast is committed to contributing to the achievement of the goals published in the 2030 Agenda for Sustainable Development signed by the 193 member states of the United Nations (UN).
The Sustainable Development Goals (SDGs) set out the priorities for contributing to global development, promoting human wellbeing, and protecting the environment. The SDGs call for joint global action between governments, businesses, and society, and aim at mobilising all efforts around a common set of goals to be achieved by 2030. The Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all. They address the global challenges we face, including those related to poverty, inequality, climate, environmental degradation, prosperity, and peace and justice. The Goals interconnect and to leave no one behind, it ís important that we achieve each Goal and target by 2030.

Together with the UN, we are committed to making a difference and achieving our goals.
One of our mission components is *"Deliver Solutions that enhance animal wellbeing"*. Then, too, we are one of the most motivated supporters of scientists to improve animal welfare with the implementation of the guidelines such as the 3Rs for more ethical use of animals in testing.

SUSTAINABILITY PLAN

Through the Sustainability Plan, we at Tecniplast share our medium/long-term sustainability strategies with our stakeholders.

- Promoting employee wellbeing
- Improving Occupational Health and Safety
- Fostering Responsible supply Chain
- Mitigating environmental Impacts
- Increasing client satisfaction
- Promoting the social and economic development of local communities

The 3Rs became recently one of the most important drivers for science and for guidelines.

- Replacement: methods which avoid or replace the use of animals in research.
- Reduction: use of methods that enable researchers to obtain comparable levels of information from fewer Animals, or to obtain more information from the same number of animals.
- Refinement: use of methods that alleviate or minimize potential pain, suffering or distress, and enhance animal welfare for the animals used.

We are strong believers of sustainability, business ethics and customer relations, we work clearly with our international customers to ensure the 3 "P"s of a sustainable growth: Planet, People and Profit, while continuing on our path towards innovation and guaranteeing innovative solution to our customers.

3Rs + 3Ps = Animal Welfare and Scientific quality

We sustain a broader scope than simply encouraging alternatives to animal testing, but aim to improve animal welfare and scientific quality where the use of animals cannot be avoided.

Tecniplast business principles maintain that *"There is no real progress without Sustainability"*

Tecniplast has well clear in mind that Sustainable Development becomes more and more important day after day. The awareness of resource use to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for future generations, is the driving factor of a responsible Company. A Successful Responsible Company must link the economy with basic ecological support systems in an *"equilibrium"*.

TP has done so, aware that the field of sustainable development is constituted by three parts: environmental sustainability, economic sustainability and social sustainability. TP has developed products and processes that contribute to sustainable development, through exercises of Eco-innovation and related ideas, from environmentally friendly technological advances to socially-acceptable innovative paths towards sustainability.

Since the beginning of Tecniplast, continuous attention has been paid to:

- Customer requirements and needs
- Quality of products
- Efficiency in manufacturing

Tecniplast implemented an environmental policy almost a decade ago to reduce the environmental impact of its activities at all stages of the product life cycle: production, use and recycling. Tecniplast has taken into account three criteria that match external certifications (ISO 14001, Environmental Report) and objectively measurable data (emissions of CO_2, LCA and quantity of recycled plastics via specific initiatives). Production is carried out in an ISO 14001 certified factory. This certification attests to the efforts deployed to reduce the impact of production on the environment. It concerns, for example, reducing the use of water resources and energy, but also visual and sound pollution, emissions into the atmosphere and wastewater, CO_2 Emissions.

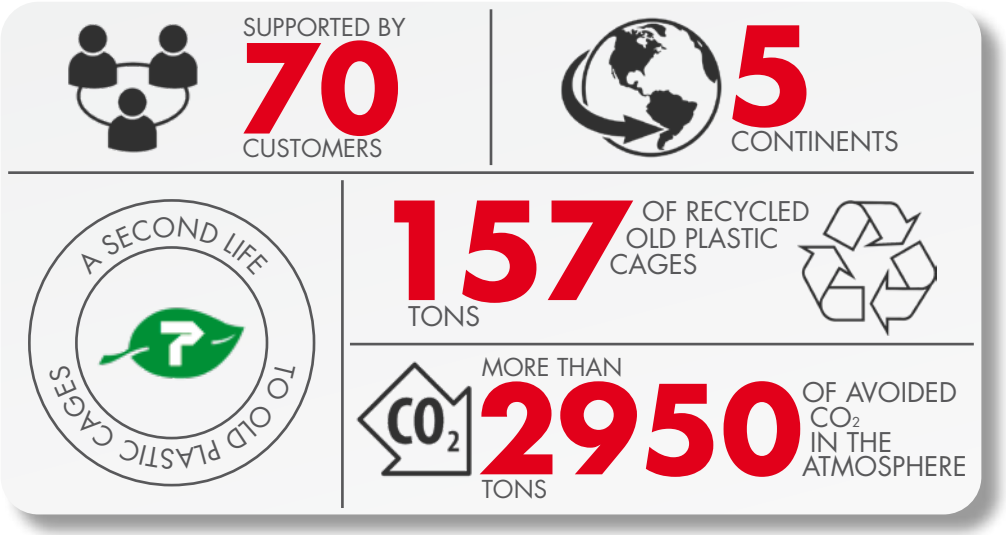
Tecniplast products are the only ones which can offer customers a statement of CO_2 emissions extracted from a peer reviewed LCA analysis.

Tecniplast products are designed to allow the exploitation of 100% of their mass at the end of the life (recycling and energy recovery).

Tecniplast offers an exclusive project of recycling old plastic cages for a second life to plastic and thus do something together for the environment.

TECNIPLAST RECYCLING PROGRAM: "FAST FACTS"

Tecniplast started in 2009 a Recycling Program to give a second life to old plastic cages, recycling them into automotive parts, furniture, household appliances, office & urban equipment. Tecniplast collects autoclaved old plastic cages offering an incentive against purchase of new ones, adapting the program to different realities in different countries (for example in Italy we supported the definition of a specific Framework agreement with the Environmental Ministry of Italy).

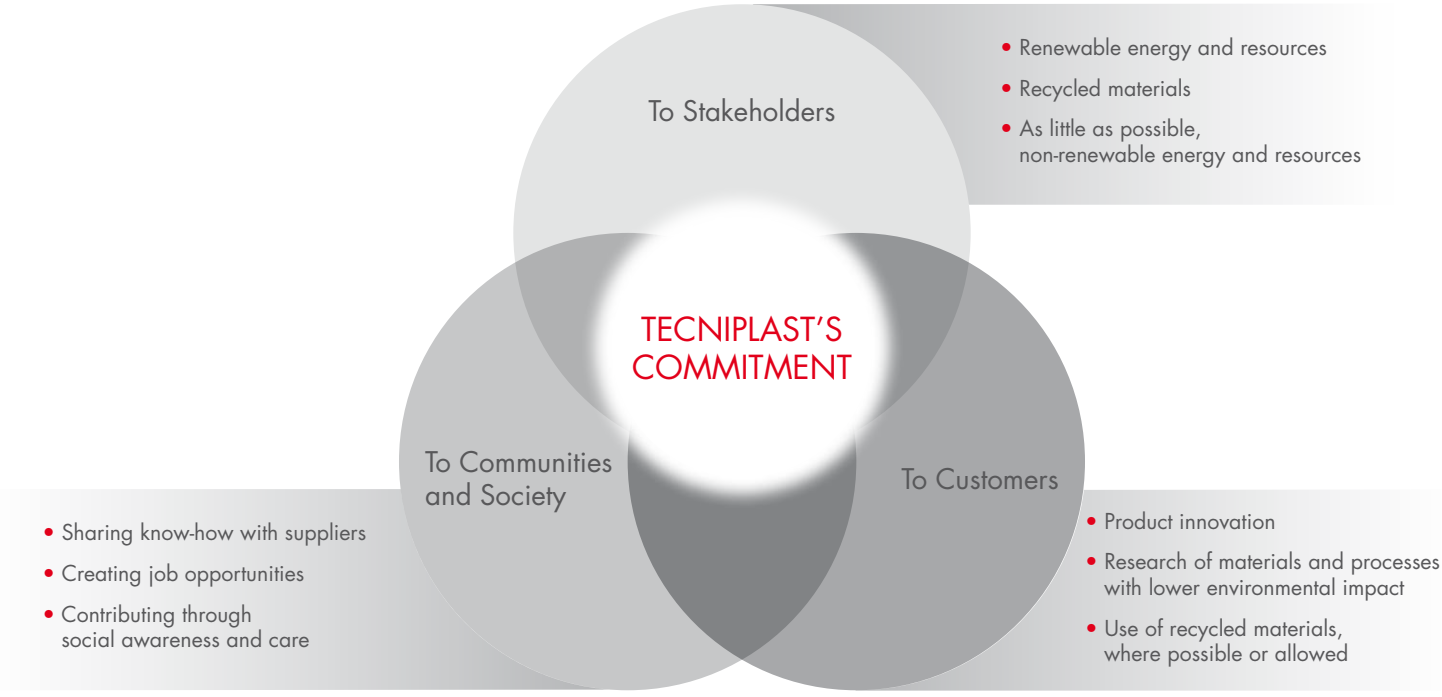


TECNIPLAST'S COMMITMENT TO ENVIRONMENTAL CARE

In the mid '90s we started with a cultural change, working on people's training and motivation and striving to reach excellence in all our activities:

- 1997 - we implemented our Quality Management System getting the First Certification, (ISO 9000), 2001 vision 2000
- 2005 - we issued and communicated our Environmental Policy
- 2006 - we implemented the Environmental Management System receiving the relative certification (ISO 14001)
- 2008 - we implemented LCA/carbon footprint calculation of products (GM 500 Cage)
- 2009 - we published our First Environmental Report
- 2009 - we started a plastic cage recycling program
- 2010 - we implemented LCA/carbon footprint calculation of products (2 GM 160 Rack)
- 2011 - we are member of IPPR (Institute for Recycled Plastics Promotion)
- 2012 - we began a project for training and employing disabled people
- 2013 - we started to contribute to credits under the LEED rating system
- 2014 - we implemented the CO_2 footprint calculation in all new products
- 2015 - we implemented Environmental Education supports for both employees and customers (Advertising)
- 2016 - we implemented a specific programme to focus on high quality plastics to maximise circular usage
- 2017 - we implemented a specific programme entitled "Towards zero single use plastic" to eliminate single use plastic products in our offices
- 2018 - we obtained the Environmental and Social Sustainability Award
- 2020 - we obtained assurance and compliance statement of the eco-design process according to UNI ISO 14006:2020

Despite the world economic-financial recession Tecniplast has not changed its approach towards Earth Sustainability, enjoying responsible participation on the part of all the employees, dealers, customers, communities and stakeholders.

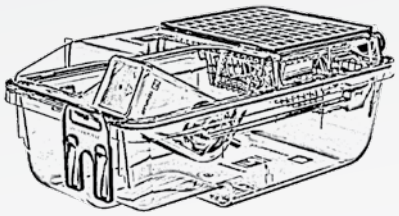


We have the ambitious aim to arrive at guaranteeing products with lowest CO_2 emissions, creating a virtuous model for the Laboratory Animal Sector

This entails adopting the appropriate technologies and processes which will positively impact the quality of life of millions of people.
Tecniplast's drive to measure and cut CO_2 Emissions constitutes a point of reference on a worldwide scale.

Through balanced consideration for Social, Environmental and Economic factors, pillars of Sustainable Development, Tecniplast is making its contribution to Earth Sustainability.

CORPORATE RESPONSIBILITY



AT PRODUCT LEVEL

- Sustainable Design
- Energy consumption reduction
- Water consumption reduction
- From Recyclability to Cradle to Cradle approach
- CO_2 Footprint

AT MANUFACTURING LEVEL

- Eco Design Buildings
- Safety & Prevention
- Prevention of global warming: reduction of energy used in Logistic,
- Sales and Service
- Environment Risk Management
- Waste Reduction
- Management of Chemical Substances
- Recycling of the product at end life proposing a second life for the plastic

THROUGH:

Eco Design

LCA Analysis

CFD Exercise (Computerized Flow Design)

CO_2 Footprint

The European Commission has approved an agreement that will force member countries to recycle at least 70% of urban waste and 80% of packaging waste, in addition to the prohibition of letting biodegradable and recyclable waste be thrown into landfills. These rules should be enforced starting 2030 and are now being examined by the European Parliament. MEPs are trying to find an efficient balance between waste and recycling.

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THE NEW EMERALD: THE FIRST CAGE DESIGNED TO SUSTAIN THE ENVIRONMENT

PANORAMA NEWS
AUTUMN 2020 **N°75**
QUARTERLY NEWS SHEET

TECNIPLAST RECYCLING PROJECT: 10 YEARS OF SUCCESS

PANORAMA NEWS
SUMMER 2020 **N°74**
QUARTERLY NEWS SHEET

TECNIPLAST GROUP: TOWARD A ZERO SINGLE USE PLASTIC WORKPLACE FROM 2020

1.7 - TECNIPLAST INITIATIVE FOR SOCIAL RESPONSIBILITY

Customers recognize Tecniplast Social responsibility as an important sustainable competitive advantage, contributing to the welfare of society and the environment

Tecniplast has always wanted, in addition to maximizing shareholder value, to act in a manner that benefits society. If you observe Tecniplast industrial behavior you will identify the following key takeaways:

- Tecniplast operations act in a manner that benefits society
- Tecniplast has adopted policies that promote the well-being of society and the environment while mitigating negative impacts on them

Tecniplast has perceived, since the beginning of its operations, a duty to act in the best interests of both the environment and society. Social responsibility has become one of the most prominent areas of focus within business for Tecniplast.

Tecniplast has made social responsibility an integral part of its business models, without compromising profitability, with the result of having been named the top socially responsible company in the world for Lab Animal Science.

Tecniplast perceived immediately from the beginning, the moral imperative, as well. Actions, or lack thereof, will affect future generations. Put simply, being socially responsible is just good business practice, and a failure to do so can have a deleterious effect on the balance sheet.

Tecniplast did not wait for any such regulation! We took it on voluntarily, boosting company morale, which has led to a sense of belonging.

Social Responsibility in Practice at Tecniplast

As the International Organization for Standardization (ISO) emphasizes, a business's ability to maintain a balance between pursuing economic performance and adhering to societal and environmental issues is a critical factor in operating efficiently and effectively. And as for Tecniplast, it decided years ago to blend social responsibility into the core of its operations and embraced social responsibility, including philanthropy, promoting voluntary work and environmental changes for the better, looking to reduce our carbon footprint, and limiting waste. Lastly, Tecniplast social responsibility takes into account clear ethical practices for employees, which can mean offering a fair wage, aligned to the Market.

Tecniplast commitment to social responsibility

- A special work island for special students (Center of Excellence for Social Responsibility coordinated with the Province of VARESE)
- Annual assignment of study grants to deserving children of employees
- Transfer of values to the new generations (regular meetings in elementary schools)
- Activation of Solidarity programs through "Solidarity Bank" (internal organization)
- Construction of a new football and training field at Parco Don Gnocchi Loc. Bergora (Buguggiate)
- Arrangement of playground equipment in green areas in the Municipality of Buguggiate (Don Gnocchi Park Loc. Bergora, Via Costituzione Park and Via Triestre Park)
- Construction of rainwater sewer collector and financing for aerial purchase for the construction of the Buguggiate industrial zone rolling basin
- Green areas maintenance (V. Montello and V. Valle Peschiera)
- Support to the Civil Protection of the Municipality of Buguggiate (supply of clothing, PPE, pickup maintenance)
- Annual support and sponsorship of the Fire Fighters national association activities
- Sponsorship of disabled transport vehicles - sponsored by the Municipality of Gazzada Schianno
- Sponsorship of emergency SOS associations (Azzate Red Cross)
- Annual donations to foundations, non-profit associations in support of biomedical research and hospitals engaged in research and / or assistance / care of complex neurological pathologies of children - autism - childhood oncohematology - diabetes - disability
- Sponsorship and annual support for the initiatives of the FAI (Italian Environment Fund)
- Initiatives to protect cultural heritage: support for socio-cultural associations by sponsoring events and making donations (Music, Art, Cultural Heritage, etc.)
- Restoration of the church of S. Apollinare (Crosio della Valle)
- Support for the educational and social activities of the Villa Cagnola Higher Institute of Religious Studies (Gazzada Schianno)
- Sponsorship of amateur sports associations (Football, Rugby, Volleyball)

Towards a better world: Tecniplast sets an example for the community

Tecniplast's final aim is to produce ecologically sustainable products, investing with ethical criteria and assuring respect for humankind with a final aim of producing ecologically sustainable products, investing with ethical criteria and assuring respect for human rights and of the environment.

MINIMUM ENVIRONMENTAL IMPACT

Almost a decade ago Tecniplast implemented a strategy to reduce the environmental impact of its activities at all stages of the product life cycle: production, use and recycling.

CUSTOMER SATISFACTION

A team of dedicated Project Managers, both at a Corporate Level and at a country Level, are at the disposal of our customers to propose comprehensive Sustainable Solutions and Services, supporting customers.

LOCAL COMMUNITY

We work together as a solid team, managed and coordinated by a very dedicated team of people in our organization with the common objective of changing things for people going through difficult times and offering the opportunity to experience human kindness.

GOOD WORKING CONDITIONS FOR COLLABORATORS

At Tecniplast we create employment: the workforce has constantly grown in Italy and in all of our sister companies.

OUR COMMITMENT FOR A BETTER WORLD NEVER STOPS!

Minimum Environmental Impact

Tecniplast has made a public commitment to:

- Reduce Energy consumption per head
- Optimize of the use of natural resources and raw materials
- Reduce total paper consumption
- Reduce water consumption per head
- Reduce CO_2 emissions caused by company transport/employees' travels
- Reduce the quantity of materials used during production
- Reduce production waste

The main day-by-day activities require:

- Energy efficiency
  - The use of energy from renewable sources
  - The use of environmentally friendly materials and devices for company buildings.
- Paper
  - Growth of use of certified ecological paper
  - Standard print on both sides of paper
  - Manuals are produced as a standard as digital files
  - Adoption of new packaging solutions
- Waste management
  - Maximization of recyclability
  - Waste separation applied also to raw materials
- Transport/travel management
  - Automated warehouse to optimise transportation of products, reducing weight, volume, layout, truck paths and number of containers involved
  - Reduction of employees' working travels also thanks to a more intense use of videoconferences
  - Preference for transport means with a low environmental impact
  - Travel by train chosen if possible instead of travel by air
- Green Purchasing Policy
  - Initiative to design products with Eco Design Concept

Integrate sustainability issues into the dialogue with stakeholders

ACTIONS	TODAY RESULTS	TARGETS
Reporting of sustainability performance and targets to stakeholders	Frequency of contacts increased Production of the Environmental report	Continuous integration of sustainability issues into company communications renewal of the Environmental Report
Collaboration with LAS companies to share best practices and enhance sustainability in the sector	Roundtable focusing on sustainability practices attended	Continuous participation in working groups focusing on Sustainability issues
Closer dialogue with key stakeholders on environmental and social issues	Animal Welfare & LAS guidelines promotion	Regular meetings with key stakeholders focusing on relevant environmental and social issues
ISO 14001 Certification	Maintain Certification and set new Objectives	Improve our environmental performance through more efficient use of resources and reduction of waste, gaining a competitive advantage and the trust of our stakeholders
ISO 14006 Certification	Maintain Certification and set new Objectives	Integrate environmental aspects into the design and development phases of products, in order to reduce their negative environmental impact and improve environmental performance throughout their life cycle, without compromising the quality and application of our products and services
ISO 9001 Certification	Maintain Certification and set new Objectives	Focus on the important areas of our business and improve efficiency. The management processes that are established throughout our business will provide a sound foundation, leading to increased productivity and profit

PANORAMA NEWS SPRING 2020 **N°73** QUARTERLY NEWS SHEET
TECNIPLAST IS THE GREEN LEADER IN THE LAB ANIMAL INDUSTRY

PANORAMA NEWS SPRING 2020 **N°73** QUARTERLY NEWS SHEET
4 MAGIC WORDS: CIRCULAR ECONOMY, SUSTAINABILITY, HIGH QUALITY PLASTICS AND RECYCLING

Customers

To gain and retain our customers' trust:

- We listen to their needs to identify together the best products for them
- We constantly train our sales force to assure the quality, fairness and transparency of our consultancy
- We constantly update our product range to respond to the continuously evolving needs of our customers
- We manage customer relations by means of a widespread presence worldwide

A team of dedicated Project Managers, both at a Corporate Level and at a country Level, are at the disposal of our customers to propose comprehensive Sustainable Solutions and Services, supporting customers with:

- Product design and improvement
- Ergonomic planning
- Efficiency best practices
- General technical support
- Liaison between customers and A&E firms

Focus on:

- Space Planning
  - Room Layout and Drawings
  - Room Capacity Planning
  - Goal Specific Housing Recommendations
- Ergonomic Operations
  - Airflow Strategies; mechanical interface expertise
- Environmental Responsibility
  - Analysis in terms of LEED, LCA, CO_2 footprint
- Budgetary evolution
  - Analysis on ROI; PNV analysis and other methodologies

PANORAMA NEWS SUMMER 2019 **N°70** QUARTERLY NEWS SHEET
TECNIPLAST OBTAIN THE "ENVIRONMENTAL AND SOCIAL SUSTAINABILITY AWARD 2018"

Redefine the overall sales organisation to enhance client-centricity

ACTIONS	TODAY RESULTS	TARGETS
Enhancement of sales people skills, engagement and sense of belonging to improve alignment with client expectations	Training activities also started for service personnel.	Alignment driven by culture for an organizational health. We want to have our teams aligned to be better able to set and manage expectations for our customers and our organization. Aligned and integrated organizations create a sustainable competitive advantage in the market by transforming our customer associations from vendor/client relationships into true partnerships. Ultimately, customers are more likely to place greater trust in a vendor when they witness the teamwork and collaboration efforts going into managing the relationship
Provide clients with a consistent and integrated knowledge through salespeople	Continuous improvement of client satisfaction through sales training	Provide intelligent, fast, and personalized customer answers and service through: - Delivering consistent answers - Helping customers to solve their problems in a pro-active way - Maximizing sales productivity - Streamlining our selling process
Sharing of Tecniplast commitment to a sustainable future with clients	Training, Roundtables, Promotions	Communicate Our Sustainable Future, informing about the measures we have implemented along with ensuring that the vision set out in the policy document is translated into clear and effective action. Promote our Sustainable Future and explain how it sets out the challenges facing us and proposes actions to promote clean energy, more sustainable approaches to manufacturing and transport to ensure their sustainability for future generations. It also charts progress achieved since sustainable development became the global focus of attention
Recycling Program	Continue the recycling program started in 2009, to give a second life to old plastic products, recycling them into other products offering incentives	Maximize the recyclability of our plastic products, minimizing the CO_2 footprint of our products
Co-Design of the products with OEM customers, to support the recycling of the plastic material at the end of the Life Cycle of the products	Support Customers in choosing the best options to recycle the product at the end of the product life cycle	Identify the best choices with our OEM customers to save energy; conserve resources; reduce pollution; Cut waste disposal costs; save valuable raw materials and reduce trash in landfills
IPPR Membership	Continue to be part of the organization to promote green purchase of recycled plastics	Become a reference of education and promotion making a culture of recycled plastics
TTC	Continue in the organization of training courses which can transfer our knowledge, our experience and our recommendations to each participant, to let them fully exploit the potential or our products, maximizing our payoff: "we match your needs sharing our knowledge with you"	Provide extensive training opportunities and hands-on sessions in order to develop and refine best practices on the use of our products, delivering exceptional quality training that is relevant and has a measurable impact and practice

Environmental Communication	Continue to contribute consistently and constantly to support Environmental Communication, confirming Tecniplast's strong commitment to sustainable development through: - A clear, transparent advertising campaign - Corporate Communication on Industry magazines, Corporate newsletter - Specific Presentations during Symposia, workshops and conferences.	Maximize Environmental Communication planning and its strategic use of communication processes to support effective policymaking and project implementation geared towards environmental sustainability, fully integrated in development cooperation programs as a strategic tool. Maintain the leadership in Sustainability which represents one of the variables that define the economic scenario where Companies are performing and competing. We want to maintain the interest and attention on our environmental and social aspects which represents a strategic element to create value and the perception we are the leading company
Support the definition of new Centres of Excellence which will be added to our list of 32 Centres. A Centre of Excellence must have all our product lines	Identified a new one in India	Continue to identify a WW network of CoE to promote and develop our product lines, our technical options, offering assistance to potential new users in terms of experience and learning curves

Local Community

We are a successful company and we would like to share with all our employees a Social responsibility as main ethical program. We feel an interior obligation to act for the benefit of society at large. We believe Social responsibility to be a duty for every individual but also for good companies. We want to drive the trends to maintain a balance between the economy and society and we want to sustain the equilibrium between the two.

This responsibility can be passive, but we want to be mainly active, by performing facts that directly advance social goals. We do not feel that this commitment distracts us from the fundamental economic role of our business; we think that this attitude is strongly positive and it helps company performance in the long-term vision with an outstanding and exciting positive message to our stakeholders.

We have many programmes established for many years. We are practical people and we want to explore concrete ways to be more and more responsible every new year, raising the bar in social opportunities for less fortunate people, helping them to gain access to a better dignity.

We work to change things, we coordinate actions within our organization, within our communities and beyond, for more effective, equitable and inclusive social changes.

We are proud to sustain social challenges to people, communities, organizations through charity programmes, fund raisings, training, networking.

Our employees are fully participating in supporting internal projects, sharing information and donating resources. We are committed to helping unlucky people, in a dedicated way for peace and social justice on a healthy planet, through a process which can change living conditions, attitudes and beliefs.

Passion does not only seep from our innovative spirit: we are proud to invest time and efforts to promote those values that make Tecniplast a centre of excellence also as far as Social Responsibility is concerned.

Some Initiatives:

- A special island for original students
- A coherent presence in the territory
- Beyond the Business: Solidarity programmes
- We support, maintain and curing public green areas
- In 2020 we spent more than 100.000 Euro:
  - 20.000 Euro on charity programs
  - 80.000 Euro on sponsorships of no-profit organizations

PANORAMA NEWS WINTER 2016/2017 **N°61** QUARTERLY NEWS SHEET
A SOUL IN A COMPANY

Promote the social and economic development of local communities

ACTIONS	TODAY RESULTS	TARGETS
Promotion of initiatives fostering the growth of local communities, also via partnership with associations and non profit organizations	We believe in Social Responsibility and we continued our different programs established for many years with the common objective of changing things for people going through difficult time and offering the opportunity to experience human kindness	Ongoing support for initiatives to promote the social and economic development of the local communities in which Tecniplast operates, sustaining social challenges to people, communities, organizations through charities programs, fund raising, training, networking for more effective, equitable and inclusive social changes. We want to maintain our position of leader in sustaining social challenges to people, communities and organizations, improving their standards of living by raising the absolute level of per capita incomes and improving social conditions in a sustainable way
Sharing Social and Economic Development Programs	- 30.000 Euro invested in social support - 36 foster children adopted in Tanzania - Sponsoring the studies of a nurse in Tanzania - Financial Support to the poor families with children reported by the local schools - Distribution of Shopping Vouchers for needy families in Varese - Donation to the Addolorata Soup Kitchen of Varese - Coherent Presence in The territory - Beyond the Business Solidarity Programs - Public Green Area - Specific Charity Programs - Sponsorship of non-profit Organizations	Ongoing support for initiatives to promote the social and economic development of the local communities in which Tecniplast operates, sustaining social challenges to people, communities, organizations through charities programs, fund raising, training, networking for more effective, equitable and inclusive social changes. We want to maintain our position of leader in sustaining social challenges to people, communities and organizations, improving their standards of living by raising the absolute level of per capita incomes and improving social conditions in a sustainable way
Sharing Social and Economic Development Programs	- Support the Stanza Solidale, a charity program to provide food to poor families, within the Cappuccini Brothers in Varese - Transfer of values to new generations (regular meetings in elementary schools) - Activation of Solidarity programs through "Banca Solidale" (internal organization) - Realization of a new soccer and training field Don Gnocchi park in Bergora (Buguggiate) - Playground equipment for the green areas in the Municipality of Buguggiate - Sponsoring the sewage collector construction and financing the construction of the Buguggiate Industrial Area lamination basin	Ongoing support for initiatives to promote the social and economic development of the local communities in which Tecniplast operates, sustaining social challenges to people, communities, organizations through charities programs, fund raising, training, networking for more effective, equitable and inclusive social changes. We want to maintain our position of leader in sustaining social challenges to people, communities and organizations, improving their standards of living by raising the absolute level of per capita incomes and improving social conditions in a sustainable way

Support medical and scientific research and innovation

ACTIONS	TODAY RESULTS	TARGETS
Organization of initiatives and funding of research grants to raise awareness and support associations working in the field of research and innovation	Support provided to various research initiative for cancer and other prevention research projects	Ongoing support to scientific research (SDG 13)
Guido Bernardini Foundation	Support FGB courses dedicated to continuous education and training of professionals involved in the care, welfare and use of laboratory animals	Help FGB to become the most considered organization in education and training of professionals involved in the LAS Arena, identifying the highest standards of knowledge and competence in scientific and technical staff

Employees

The opening of subsidiaries in the USA and China meant employing new people. We offer our workforce training courses to improve their professional, managerial and commercial skills: in 2020 on average every worker attended 14 training hours.

To allow our employees to better accommodate their family life with their working duties, we offer flexible working hours, part-time contracts and a canteen.

Tecniplast achieved the WCA (Working Conditions Assessment) award that certifies the optimal working conditions of his employees.

A Success Story:

Tecniplast has signed an official agreement with the Province of Varese (VA) for the creation of a work Island used for Training Disabled Workers at its headquarters in Buguggiate. Tecniplast is staging an important training project with a local school for diversely-able people. In one of our workshops a dedicated *"work Island"* has been set up for 7 people who, under the supervision of a trained coach, can gain real working experience by assembling parts and components for our products and making friends with the other workers, who treat them with love and respect. The local authorities visited Tecniplast premises and expressed their official appreciation for this important project which has become a reality in the sensitive and fertile ground of a Company that genuinely feels the importance of its Social Responsibility.

Tecniplast supports the Renato Piatti NGO, a charity that designs, builds and manages services for people with intellectual disabilities in the Varese area. Whilst the 7 learners manage their diverse disabilities with jobs featuring graded levels of difficulty, the coach assesses their natural aptitude.
At the end of the six-month period the *"special workers"* are ready to enter the real world of work, leaving the facilities of the *"Island"* available for a new group of special trainees.

During their period of training the diversely-able people not only learn about the working procedures and routines but also familiarise and build for the purchase of major equipment installed in a rehabilitation facility in Besozzo (VA) - and to fund the vacation centres equipped to foster social interaction which such people need so much.

Foster a culture of sustainability within the Group

ACTIONS	TODAY RESULTS	TARGETS
Implementation of an integrated sustainability management system incorporating environmental and social aspects into business decisions	Sustainability Committee constituted	Complete the integration of sustainable practices into all processes and internal steps of our organization, allowing us to set up a systematic management of environmental and social risks. We plan to have Continuous in-depth analysis of sustainability issues at meetings with Sustainability Committee
Introduce the concept of the 3 Ps for a sustainable company growth: Planet, People and Profit	Management Decision driven by the 3 Ps concept through Eco Design; Eco Innovation; net environmental Technologies. Set regular Meetings to discuss outcomes and results	Create common Define and Communicate Company Goals and Performance Objectives. Utilize Performance Management Software. Offer Frequent Performance Feedback. Pre-emptive Management and Recognition. Extend training and information for employees
Tecniplast Social Responsibility for a better world through: - Minimum Environmental Impact - Local Community Benefits - Good Working Conditions for Collaborators	- Environmental Policy - Environmental Report - LCA Analysis - CO_2 Footprint Certification - Plastic Cage Recycling Program - Member of IPPR - Sustainable design - Energy and Water consumption - Reduction - Eco designed Buldings	Assume responsibility for the impact generated by the Group's activity on society and the environment, through proper management of environmental, social and governance (ESG) risks and promote the Group's active involvement in environmental issues in order to help preserve the environment within which it operates with clear and well defined policies such as: - Building Certification - Safety and Prevention - Prevention of Global warming - Environmental and Risk - Waste Reduction - Management of Chemical Substances - Recycling of products at the end of their life by proposing a second life for the plastic
Provision of Classrooms and /or online training to raise employee awareness of sustainability issue	Designers and Engineers are trained on Industry Risk analysis at 360°, from Assembly line phase to Installation, Usage and Service phases	Ongoing information and training on sustainability for employees maximizing awareness on social progress and equality, environmental protection, conservation of natural resources and stable economic growth. Everybody has the right to a healthy, clean and safe environment, to be achieved by reducing pollution, poverty, poor housing and unemployment

Engage employees and meet their expectations

ACTIONS	TODAY RESULTS	TARGETS
Knowledge of employees' expectations and needs to improve the working environment	- Employee satisfaction survey - Results of the survey analysed, and an action plan implemented	- Repeat the employee satisfaction survey at global level - Launch of a study for the development of an employee satisfaction survey
Strengthening of internal communication	Group intranet	Ongoing consolidation of internal communication actively by region
Development of Digital workplace and implementation of new technologies to foster ngreater collaboration of work and work-life balance	Introduction of the latest tools to maximize inter functional communication	Launch of the new ways of working pilot project dedicated to agile work
Promote and share the TP Green Strategy	Meeting and trainings explaining objectives, results and next action plan	Continue to organize meetings with the objective to share with 100% of employees the Green Policy
Adopt the WCM methodology, involving the entire organization, from safety to environment, maintenance, logistics and quality. The primary objective of WCM is continuous improvement in all areas of production in order to guarantee the quality of the final product and meet customer expectations, eliminating all forms of waste and loss with the ultimate objective of achieving zero accidents, zero waste, zero breakdowns and zero inventory	- Implementation in specific areas, Meetings, Audits. - Meetings to inform employees about results, where we are and where we will be in short terms.	Improve the cycle of production and logistics. The main objective of the method is to increase quality and reduce production costs. The main rules of the WCM are: - Zero waste. Achieve in short term: - Safety as a basic value - Get the customer's voice in the plant - Waste and loss are no longer acceptable - Apply rigor in operations Methods - Make visible all anomalies - People involvement is the engine of change

Offer equal opportunities

ACTIONS	TODAY RESULTS	TARGETS
Enhancing internal skills	Internal Job Posting Programme implemented WW	Maximize interaction with Sister Companies
Implementation of initiatives promoting work life balance	- Flexible parental leave - Flexible working hours for students - Absence due to force majeure flexible working arrangements - Remote work (Home) and part time - Minimum employment rights and protection against dismissal of employees	Continue to focus on how to successfully combine work and personal life, family relations assessing current state of balance and develop it throughs specific actions to allow our employees to better accommodate their family life
Participation in associations and roundtables focused on enhancing the role of women in the workplace	Support provided to Italian associations dedicated to promoting women's leadership and talent	Participation in working groups to empower women in the workplace
Promotion of an inclusive work environment that respects fundamental rights at work	Monitoring that none of the following rights is infriged (freedom of association, elimination of forced or compulsory labour) with the assurance that there is no child labour issue and the elimination of discrimination in respect of employment and occupation	Continue to be consistent in the control and eventual definition of a to do's action plan to eliminate eventual exceptional situations
A Special Island Program for disabled workers group, from 7 to 12 per year who under the supervision of a trained coach can gain real competence in a production organization	Continue the program reduce social exclusion and to achieve integration of the diversely able people into society	Continue to be consistent and make it a reality in the community with the following Objectives: advocate the rights, freedoms and interests of persons with disabilities; provide proposals to local authorities when considering and adopting new legislation. Organize and provide professional training services for people with diversely able participants; organize various seminars and conferences. Promote professional skills of diversely able people; encourage responsible authorities and society to help solve problems and emerging issues relating to persons with disabilities involved in manufacturing processes; disseminate information about the project organization's activities, projects and their results
Support Renato Piatti NGO a charity that designs, builds and manages services for people with intellectual disabilities in Varese Area	Continue the program with the objective that diversely able people can learn about the working procedures and routines but also familiarize with mechanical realities	Continue the program to foster social interaction
WCA Award	Certify the optimal working conditions from an external Auditor in the areas of: - Labour - Wage and Hours - Health and Safety - Management System - Environmen	Be consistent in improving workplace conditions efficiently and in accordance with widely accepted industry standards and best practices

Nurture talent and human capital

ACTIONS	TODAY RESULTS	TARGETS
Extension of the performance assessment programme	- 100% Sales and marketing Function - 100% of the management	Launch of further training courses for employees
Definition and implementation of training and development programmes	More than 3.400 hours of training	Be consistent in the adequate training programs with the objective to create added value and consider it part of the value proposition of Tecniplast for potential new employees
Participation in specific Conferences	Participation in different Seminars, Conferences and Symposia to maximize the professionalism of employees, capabilities in communication and management values	Maximize employees' awareness of how to improve their own professionalism. Implement values for bridging and harmonising your employees. Learning about personal and communication styles for team building. Learning from history, art and music from natural human life. Learning management of values
Welders training course	Improve professional skills and support relocation of workers	Be consistent and avoid lack of professional welders
Apprentices and Internships	Support each year a specific number of young workers and students	Be consistent with the objective to identify people with high talent skills
Annual assignment of scholarships to deserving employees		

Promote employee wellbeing

ACTIONS	TODAY RESULTS	TARGETS
Definition of an employee welfare Plan	Welfare plan defined for employees	Continuation of welfare initiatives for employees
Enhancement of employee wellbeing during working hours	Company Cafeteria and its Sw; Coffee areas	Creating of aggregation venue for the local employees
Promotion of a culture of wellness, through targeted programmes aimed at encouraging healthy lifestyles and an increasing awareness of issues such as nutrition, smoking and prevention	Various healthy nutrition awareness initiatives through the Cafeteria	Continuous implementation of awareness initiatives
Creation of programmes to ensure access to the best health services	Supplementary health Funds	Continuation of medical check-up programmes
Smoking Policy	Definition of specific areas and promotion of communication against smoking attitudes	Reduction of Smoking areas and strong communication against smoking attitudes
Integrative Accident Insurance H24	Extended to all workers	
Seasonal Vaccine Campaign	Extended to all workers	Promote to increase participation
Employees Contribution for integrative health insurances	Paid by the company	Promote to increase participation
Benefit of the Canteen and its SW to prevent obesity	Communication about light food underlining the healthiest choice in the menu	Continue the communication and keep the political cost for employees
Preventive check-up Policy	Agreement with a specific Company with the objective to prevent health problems	Be consistent in prevention

Continue to improve occupational health and safety

ACTIONS	TODAY RESULTS	TARGETS
Definition and implementation of a certification process for the occupational health and safety management system	Organizing training at the first day of employees in the company and repeat the training periodically	Avoid accidents and minimize the risk of injury and illness, through identification, assessment and control of risks to workers in all workplace operations
Promotion of a culture of health and safety in the workplace	More than 3,200 hours/year of trainings	Ongoing promotion of health and safety training and information tools for employees
Pursuit of high standards of prevention with a view to zero accidents and injuries at work	Implementation a new policy for PPI for workers and Visitors	Further reduction in the number of accidents
Distribution of PPE in all departments with a clear policy for visitors too	Reduction of Accidents	Protect our people against health or safety risks at work. Arrive at "0" accidents
Adoption of External Heart Defibrillators	Complete Prevention of Cardiac Arrests, heart attacks or sudden deaths	Help those experiencing sudden cardiac arrest. Chosen a sophisticated, yet easy-to-use, medical device that can analyse the heart's rhythm and, if necessary, deliver an electrical shock, or defibrillation, to help the heart re-establish an effective rhythm
First Aid Training	Periodical training to specific employees in each department gives the information and the skills they need to help colleagues during many emergency situations. It combines theory with hands-on skills sessions, delivering the latest information and techniques	Emergency or immediate care you should provide when a person is injured or ill until full medical treatment is available. For minor conditions, first aid care may be enough
Fire Prevention and Fire Sensors in All Departments	Periodical training to educate employees to take precautions and to prevent potentially harmful fires and be educated about surviving them. It is a proactive method of reducing emergencies and the damage caused by them Designed a complete network of fire sensors to cover all department	Detect: - One or more of the products or phenomena resulting from fire, such as smoke or heat - Gas: reduce the risk of damage caused by fire to the buildings the environment, contain, control and suppress fire and explosion in the compartment of origin and provide adequate and readily accessible means of escape for employees

Prevent work-related stress

ACTIONS	TODAY RESULTS	TARGETS
Monitoring of work-related stress and definition of prevention plans	Work related stress reassessed at Corporate office	Assessment of work-related stress of employees

1.8 - GREEN STRATEGY

Our commitment is for a better world tomorrow creating value through sustainable business practices and services, focusing on environmental and social responsibility

Tecniplast has the ability to look ahead Implementing a complete environmental policy proven by many international certifications, consistent investments made into tangible projects to create a better world through sustainability, creativity and solidarity.

The commitment to sustainability requires more than just good intentions. It takes promises of action and promises fulfilled! When those actions are fulfilled, it is important to take a moment to celebrate. Tecniplast is proud to have a complete strategy on Sustainability which pays attention to environmental concerns.

These concerns embrace environmental sustainability as a core belief and understand the importance of environmental health and social responsibility. Every TP employee shares our pledge of sustainability, our dedication to protecting all the elements crucial to this world: carbon, oxygen, hydrogen and human beings.

TP has contributed to a better world and to a greener future for laboratory animal industry for almost a decade, when we implemented a strategy to reduce the environmental impact of our activities at all stages of the product life cycle: production, use and recycling.

Tecniplast works with commitment and optimism so that future generations can be proud of the environmental awareness that TP has incorporated into its projects, achieving tangible and demonstrable results.
The TP strategy of sustainable development also translates into high efficiency in manufacturing, end use efficiency, research and development of innovative technologies.

Tecniplast has defined the following Environmental Policy:

- Maintain compliance with environmental legislation and regulation.
- Reduce the environmental impact resulting from our activities.
- Achieve a reduction in waste production, reducing energy consumption and optimizing the use of natural resources and raw materials.
- Consider in advance the environmental impact of new equipment and processes.
- Enhance employees' awareness of environmental issues.
- Define how to properly use and dispose of the product in order to minimise environmental impact.

Tecniplast business principles maintain that "There is no real progress without Sustainability".

Environmental sustainability is perfectly at home within Tecniplast and forms an integral part of company culture. We want to grow along with our customers and the community within which we operate, since we believe that sustainability is the hinge on which company development depends. Sustainability is reflected in every aspect of whatever is linked to our business and we are well aware of the leadership role which is ours in both product innovation and the values inherent in our brand.

Tecniplast considers environmental sustainability an essential starting point for a new business approach, from product planning to the organization of company processes. The Tecniplast concept of sustainability is intrinsically linked to the idea of safeguarding the environment.

This, of late, has undergone a significant development, encompassing a much wider understanding that takes account not only of the environmental aspect but also those of an economic and social nature. We have taken on board the notion of sustainability as a development model able to satisfy present needs without compromising the ability of future generations to deal with their own. This has come about through the realization by all of us in Tecniplast that the planet's resources are not infinite and need to be conserved with care, avoiding waste and respecting the ecosystem and biodiversity.
The meaning of environmental sustainability thus points the way to one of the key aspects of environmental sustainability in a much wider sense. From this stem all the actions that can be introduced by both institutions and firms and individuals.

The Tecniplast environmental sustainability model is that of one able to maintain the balance between respect for the environment and socioeconomic progress. Whenever we develop a new product, service and process, we ask ourselves how we can contribute to environmental sustainability and reduce the impact on our planet.

This self-questioning helps us to define long-term projects that bear in mind:

- Promotion towards a circular economy transformation.
- The intrinsic value of environmental resources.
- Species biodiversity and ecological dimension.
- The well-being of productive ecosystems.
- Energy transition towards renewable energy sources.
- Products, goods and services based on care for the environment and eco-design.
- Climatic effect.

In more detail, we have consolidated the adoption of environmental policies which are translated into environmental sustainability actions that are increasingly widespread, such as:

- Adoption of cutting-edge technologies and practices based on a circular economy.
- Adoption of exclusive, stimulating and safe work environments that reduce environmental impact.
- Conservation and safeguarding of our territory and its biodiversity.
- Pushing for renewable energy sources and efficient energy use.
- Optimal waste management and recycling by both maximising recycling and minimising volumes (a practical example here is the 'zero plastic' project, undertaken by our firm to reduce mono-use plastic use - beakers, bottles - to zero throughout the company).
- Promoting sustainable mobility.
- Innovative eco-friendly technological developments.
- Economic value together with environmental sustainability.

Our company's environmental policy (adopted in the '90s and constantly updated) provides for actions across all these aspects, with goals that measure the effectiveness of actions carried out in order to group them into different types, especially:

- Descriptive indicators: these describe the real situation as regards environmental issues and are expressed in physical units (CO_2 emissions).
- Performance and effectiveness indicators.
- Efficiency indicators.
- Overall welfare indicators which measure total sustainability (e.g. ecological impact).

Including sustainability within growth strategy today represents a competitive edge: a business that places squarely in the centre of its decisions environmental, social and sustainability factors is considered more trustworthy, less risky, and thus able to create long-term value by adding value without depleting resources. In short, the most profitable form of investment.

Environmental Tools

In Tecniplast, sustainable development meets social and environmental sustainability.
Discover all the Tecniplast's actions on Sustainability.

ENVIRONMENTAL MANAGEMENT

- Sustainability report (Cat 186/Ing)
- ISO 14001 Certificate
- ISO 9001 Certificate
- ISO 14006 Assurance and Compliance Statement
- Environmental Report (Cat 118/Ing)
- Environmental Policy
- Global warming Initiatives

CORPORATE RESPONSIBILITY

Sustainability Operations

- Impact on business operations
- Environmental management: Ecodesign Strategy
- LCA Design Methodology
- Product management
- Sustainable purchase policy
- Recycling program
- "Tecniplast Environmentally friendly Products" catalogue (n.142/Ing)
- LEED:
  - General Catalogue (n. 119/Ing)
  - Data Sheet Cages (n. 119-1/Ing)
  - Data Sheet Changing Stations (n. 119-2/Ing)
  - Data Sheet Aquatics (n. 119-3/ing)

Social Sustainability

- Social Sustainability
- *"Towards a Better World"* Catalogue (n. 137/Ing)

Environmental Sustainability Prizes

2018: Sustainability Award

1.9 - INNOVATION

During 2020 Tecniplast celebrated its 71st year of life confirming commitment to the payoff *"Innovation Through Passion"* and introducing a new generation of IVC

The Emerald IVC, with 3 patents offers:

- Clear View to ease daily health check thanks to Vision+ concept. The daily cage inspection has never been so easy: EMERALD full visibility is guaranteed by the latch free innovative design.
- Optimal protection for both animals and operators ensured by Tecniplast PATENTED cage sealing: simply place the top on the cage to achieve perfect sealing.
- A step forward for animal welfare in-bedded in the cage, thanks to the *"In-richment"* system. This innovative and patented system Increases animal welfare thanks to the raised section in-bedded in the EMERALD cage base that provides an area for resting, nest building, exploring, social contacts and exercise. The benefits of this innovative idea are more reliable scientific outcomes, promoting expression of positive behaviour patterns and minimizing potential contamination by not having the need to purchase and separately process additional cage inserts.
- The Easiest, most Ergonomic and Safest way to access your animals thanks to the patented SmarTop system. This system:
  - Increases in a consistent way the Ergonomics for Operators who can access mice in an easier way than ever.
  - Streamlines cage changing procedure: SmarTop features an easy, reproducible, standardized motion that guides the operators through the process of cage changing.
  - Controls contamination: always under control by minimizing the working area occupancy, a crucial aspect when applying aseptic techniques.
- A revolutionary rack which can be chosen in different configurations, offering High density or specific comfort. Indeed, we offer 3 options: High density (12 Rows), Comfort (11 Rows) and Ergo (10 Rows) which satisfy all the users' needs in terms of:
  - Capital investment and running cost savings: thanks to the increased cage density that optimizes floor space.
  - Versatility: three different IVC rack styles, select the one that suits your Facility's needs.
  - Best ergonomics: a rack design with operator ergonomics in mind.

The Emerald IVC, a real *"Gem"* of innovation: this new product, designed following the indication of users through complete Focus Group and Brainstorming exercises, brought onto the market important innovation with exclusive features and important benefits for customers.

The DVC® is really the best example of innovation in Tecniplast. DVC® is the most important product in TP's product portfolio, identifying new boundaries for research and for lab animal science

Tecniplast launched the first Digital Ventilated Cage - DVC® able to transform cage data collection into improved animal care thank to a particular proprietary technology.
In our day and age, technology is omnipresent and an integral part of our lives, but since the introduction of the Individually Ventilate Cage (IVC) into the European market in 1994, the way in which we house animals and the technology involved has not changed much in the last twenty years…until now!

Tecniplast has worked tirelessly to incorporate technology into the IVC to improve animal welfare, improve animal facility efficiency and productivity and incorporate modules capable of collecting research data so it created the Digital Ventilated Cage (DVC®). Some of the key features of the DVC® are that the technology is modular and can be retrofitted onto the current GM500 cages meaning there is no requirement to replace any of your current cage stock. The current SOP's and working practices can remain the same, the equipment can be washed and autoclaved and can be gradually introduced into the animal facility one rack at a time.

DVC® bring the most innovative set of solutions for vivarium in terms of data management, data reproducibility and operator interaction. DVC® projects users into a new era, enhancing the threshold in animal welfare, providing standardization in housing, sustaining care of users' ergonomics while improving management of lab animal facilities. DVC® is composed by different flexible technological solutions designed to best fit into customers' needs and to strengthen performances.

The future of research in the lab animal industry begins today!

With the new DVC® system, laboratory animal monitoring activity 24/7 approaches an innovative, revolutionary digital turning point.

The DVC® system introduces continuous Digital Intelligence into the daily management of laboratory animal facilities.

Through a network of sensors GM500 IVC cages are connected to a verification module that provides critical information essential to the efficient care and welfare of the animals.
A system of seven functions reduces the possibility of error, optimizes efficiency and maximizes safety.
The DVC® 24/7 monitoring system reduces undesired research variables, increases comparison of data sets and achieves consistency of care.

How DVC® works

By incorporating a range of different sensors into a new rack mounted base plate and new cage runners, Tecniplast has been able to create seven modules within the existing space of the GM500 rack to bring many benefits to the animal technician, the facility manager and the research staff. Animal cages spend roughly 99% of the day on a rack not being observed, so if further information can be collected whilst the cage is in situ on the rack, then this can only lead to a positive effect on animal welfare.

The design and development of DVC® was driven by two main targets:

- Improve research quality
- Streamline facility management

These two goals were even more ambitious since, in order to effectively promote a culture of care, we wanted to collect information and data directly from the home cage, without stressing the animals.
DVC® - Digital Ventilated Cage is the powerful result of our efforts and commitment!

The system is composed of three main components:

- The plate (an integral part of the rack, positioned in correspondence to each cage slot)
- The hardware
- The software

DVC® significantly improves animal welfare, as well as facility efficiency and productivity, by checking and tracking 24/7 the status of all the cages and animal in the cages, offering the following exclusive benefits:

IMPROVED ANIMAL WELFARE

24/7 monitor food and water availabilities, evaluate bedding condition and animal activity for a complete and automatic continuous animal welfare check. Prevent any loss due to unexpected water floods.

STREAMLINE YOUR JOB

The DVC® system suggests when cage change needs to be performed. This standardizes cage conditions and reduces animal stress, the number of cage changes as well as ergonomic issues related to repetitive actions, while cutting running costs and autoclave cycles. DVC® flexibility allows the system to be customised according to your needs and SOPs and automatically balance your Vivarium workload to reach its maximum efficiency.

REAL TIME CAGE TRACKING SYSTEM

No more need to manually count your cages. DVC® features an automatic cage tracking system that in real time collects these data for you: all the information you need for billing purposes are just one click away! Moreover, it provides clear reports regarding any cage history, it helps you to easily find cages and animals, as well as giving information regarding the real occupancy level of your animal rooms for a better logistic management.

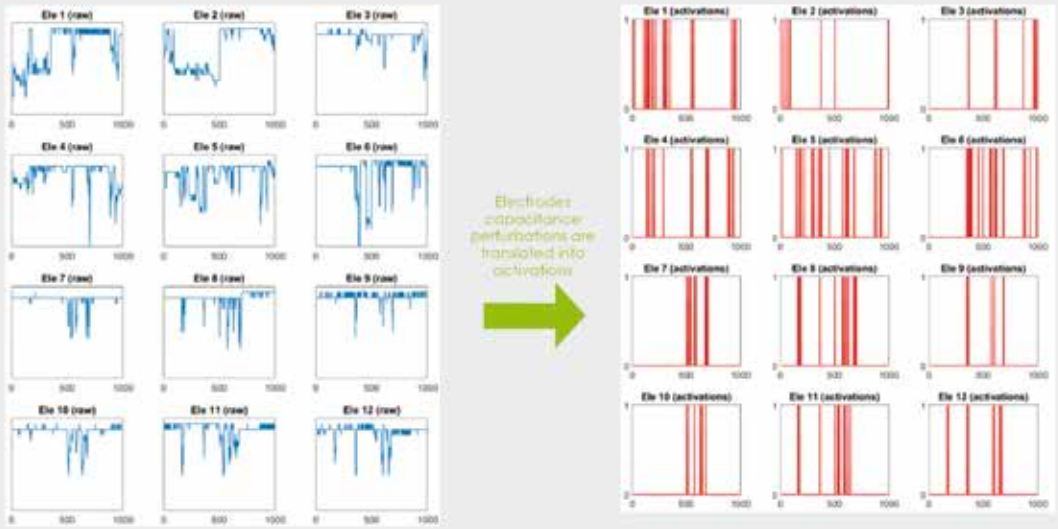
DVC® Analytics:

DVC® Analytics is the scientific cloud-based portal developed by Tecniplast in order to access and analyse DVC® board raw data generated by the DVC® system installed in the Vivarium, transforming them into valuable animal activity information for study (essentially gives the opportunity to take the utmost from any experiment where spontaneous locomotor activity is scientifically valuable information).

This portal can be easily remotely accessed through Internet from any web-enabled device allowing researchers and Lab managers to take a deeper look inside active and completed experiments, providing complementary animal locomotor activity coming directly and automatically from the home cages.

The DVC® Analytics offer the following benefits to the research community:

- OBTAIN NEW INSIGHTS - Thanks to automatic 24/7 data collection, you will be able to capture more information from subjects when they are most active (e.g. in the night) without interfering with them.
- INCREASE STUDY SENSITIVITY AND REPRODUCIBILITY - Automatically collecting animal activity data, as well as related environmental conditions, lead to deeper understanding of experimental outcomes and enhance study comparison.
- HIGHER AVAILABILITY OF DATA THROUGHPUT - Directly working at (DVC®) Rack level drastically improves the number of available experimental samples in terms of time (animals in their environment and no need to move in specific equipment for a limited time) and space (several available cage positions).
- MORE ROBUST DATA - Automatically apply validated Tecniplast's metrics in parallel with all the experimental units without interfering with animals leads to more robust and fully unbiased data.
- EASE EXPERIMENT START-UP - No human intervention required to install experimental set up. Simply house animals in the standard IVC cages in the DVC® rack.



Example: raw data are transformed into understandable parameters applying Tecniplast's validated metrics.

...Digital Ventilated System allows non-invasive remote home cage monitoring of animals in regards to general activity (behavior focused), the specific velocity and angulation of movements of the animals (as needed), the predictability of welfare concerns and parturition, the ability to monitor the extent of cage soiling and wetness, and the placement of the cage on the rack with an accurate description of the cage occupants.

John Hasenau, DVM, DACLAM

Welcome to the future

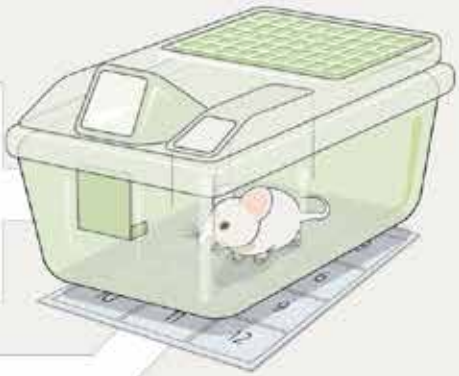
The possibilities of this product are seemingly endless and the software and technology involved will continue to be developed. With a system that is not only customisable to each facility's requirements, but can also compare data throughout the world the benefits to animal welfare and research data is astounding.

It is clear to me that Tecniplast's passion for innovation and its focus on delivering outstanding care and welfare to animals has led to the development of the next generation of animal housing. The DVC® is the future and has huge benefits for the whole facility by enhancing the service of the animal technicians and helping the research staff deliver better quality.

DVC® system uses a non-disruptive capacitive-based sensor board externally located under the standard individually ventilated home cage to collect data on spontaneous animal activity within the cage every 250 milliseconds, 24/7. The sensor board was made up of 12 capacitive-based planar sensing electrodes that measured changes in capacitance as animals moved across the cages and generate different activity metrics for overall cage activity. Thanks to its effortless plug&play essence, you can easily obtain unlimited observation time simply housing animals in their standard IVC cage and automatically recording data from the most natural environment, their home-cage.

MICE ON THE MOVE

Stress-free tracking
Tecniplast's DVC® lets scientists track mouse activity without disturbing the animal.



Electromagnetic detection
Electrode sensors throughout the cage bottom detect mouse movement above them.

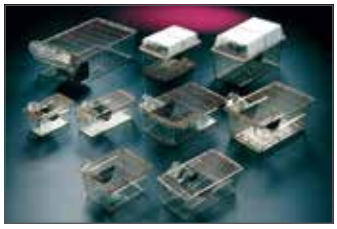
Analog to digital
Hardware digitizes electrical signals.

Data processing
Digital signals reveal when and where a mouse moved.

Complex behaviors
Computer analysis reveals subtle changes in mouse behavior.

CHAPTER 2
TECNIPLAST: A SHORT HISTORY

Our history



1961 FOCUS ON THE LAB ANIMAL INDUSTRY

Tecniplast focuses on what is also today's core business: the production of equipment for housing laboratory animals.

1962 THE FIRST HOUSING CAGE

Tecniplast develops the 1144B model, still in production, on request of the Italian Health Institute.

1974 THE FIRST PLASTIC METABOLIC CAGE

A proper revolution, breaking away from traditional glass and superseding the poor performance of stainless steel.

1980 THE FIRST FILTER TOP CAGE

First level of protection from contamination at cage level.

1988 SOLUTIONS FOR RATS

Tecniplast starts producing rat cages with controlled access to diet.

1992 THE FIRST VENTILATED CABINET

Technology steps into the Housing world.

1992 **RESEARCH AND WELFARE**
Tecniplast introduces its first model of activity wheel:
the “culture of care” is in our DNA.

1994 **THE IVC REVOLUTION**
Individually Ventilated Cages are introduced
in the Lab Animal market:
in the original design, air supply was at animal level.
The Sealsafe cage quickly becomes the benchmark
for housing small rodents.

2006 **SEALSAFE PLUS,
BETTER KNOWN AS GREEN LINE**
The Green line is a success:
a new Tecniplast achievement in the evolution of IVCs.

2008 **DOUBLE DECKER:
LIFE IS BETTER ON TWO FLOORS!**
Double Decker, Green Line IVC on two levels for rats,
is developed with animals’ behavioural needs and welfare in mind.

2015 **DVC®**
Tecniplast launches the revolutionary Digital Ventilated Cage.

2018 **NEW EMERALD IVC, A GEM OF INNOVATION**
Vison+, SmarTop, In-richment and All-in-one racks:
revolutionary features for Tecniplast new revolutionary cage.

2.1 - THE FIRST STEPS

The origins and story of Tecniplast is somehow parallel and linked to plastic evolution

During 1949, Tecniplast founder Renato Giuliani had a great intuition connected to the "revolution" that was underway in the field of plastic materials and industrials applications.

Tecniplast site, winter 1949, year of Tecniplast foundation

The first, very limited thermo-setting plastics were being replaced by the development of thermoplastics and all sorts of items could have been moulded with these new polymers.

He therefore founded Tecniplast, a little enterprise at that time, working in a small basement premises.

In 1956 Eng. Carlo Bernardini joined Tecniplast contributing to its development looking for new business opportunity outside the household appliance producers.

A few years later he attended a meeting at Bayer headquarters in Leverkusen, (Germany) during which their new polycarbonate dubbed Makrolon® was presented, the purpose of the meeting was to encourage manufacturers to find new fields of application for this material.

Tecniplast immediately identified the area of cage production for housing rodents in Laboratory Animal Research and worked hard on this opportunity.

This "timeless plastic" is what your CDs and DVDs are still made of today!

2.2 - THE INITIAL GROWTH

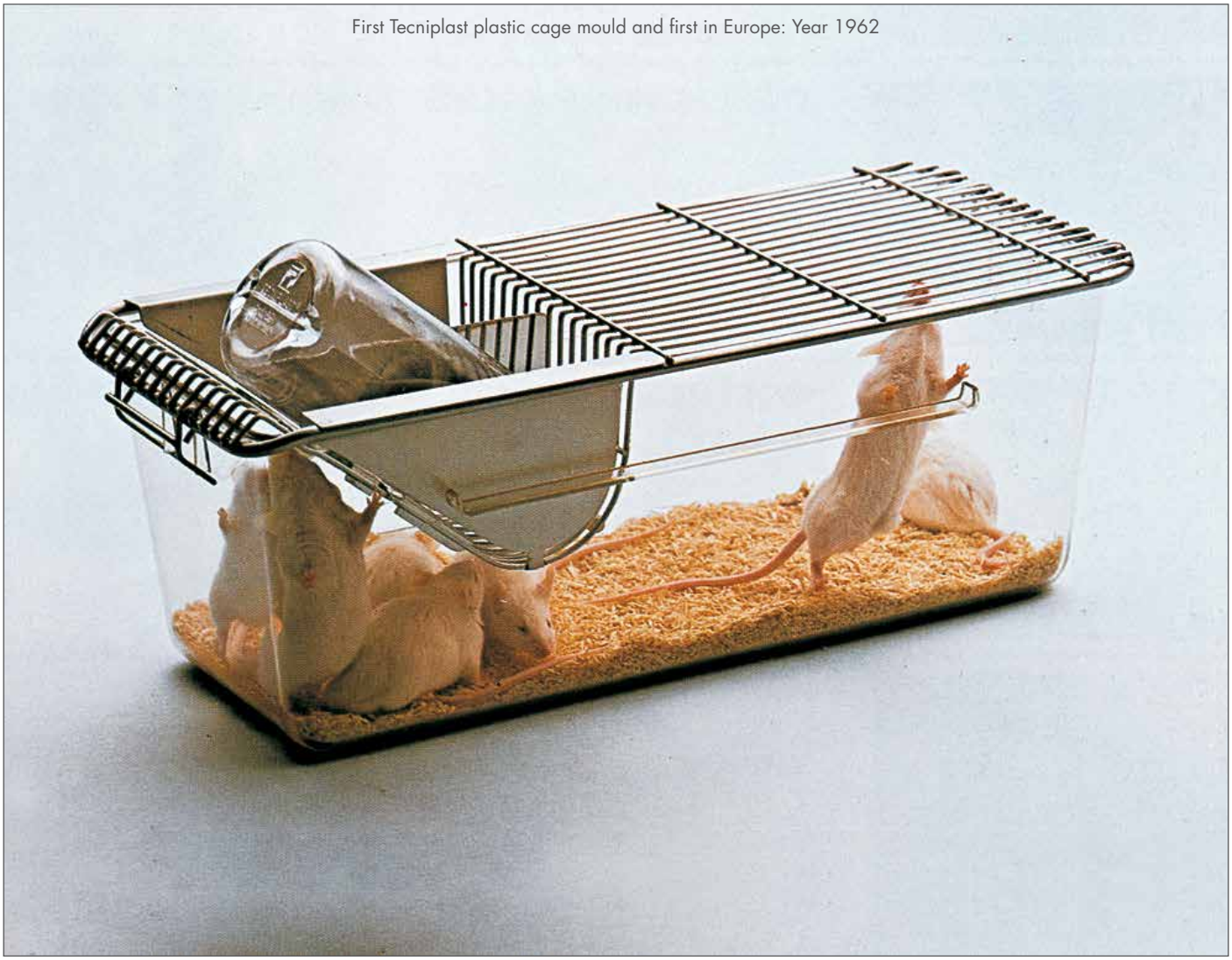
The 1960s were devoted to consolidating know-how, experience and seeking market expansion

Tecniplast after the first decade in Varese moved to the Buguggiate site during 1962.
At that time the company moulded technical items in plastic with 25 employees organised in three working shifts and used 2 warehouses.

With Bayer support Tecniplast succeeded in developing the first moulding cycle, in Europe, for plastic cages and the first Tecniplast polycarbonate cage was produced in 1962, the 1144 polycarbonate cage model is still in production.

The cage was developed for the Advanced Health Institute (Istituto Superiore di Sanità) in Rome (Italy) and replaced wooden crates or galvanized iron crates; the shelves for housing cages were made of painted iron and produced by a Tecniplast supplier.

First Tecniplast plastic cage mould and first in Europe: Year 1962



2.3 - FROM SMALL BUSINESS TO INDUSTRIAL SCALE

During the '70s Tecniplast made the big breakthrough, from small business to industrial scale

The 1970s were devoted to increasing the production, expanding the cage models (metabolic cage, model 1354), to finding new products and services to offer and to reinforce Tecniplast's presence inside the domestic market and to start exporting cages into Germany, Scandinavia, then U.K. and USA.

In the early '70s the Tecniplast workforce was about 40 employees.

Due to the water contamination problems arising from washing cages and feeders and other metal items (made from hot coated iron), Tecniplast designed and installed a plating system for the wastewater treatment, demonstrating its flair for innovation and, very rare at that time, a great environmental awareness.

The process was able to separate and remove all metal ions of copper, nickel and chromium; and sent them to metallurgical industries.

- In '72 the innovative metabolic cage was conceived, engineered and produced: a complex product that required about 30 metal and plastic moulded items that, even today, is sold and copied around the world.
- During the mid '70s Tecniplast decided to produce by itself the moulds, and became renowned for manufacturing high quality cages and other metalworking (bars and coils) and introduced, furthermore, the first plastic ultrasonic welding.
- In 1978 Tecniplast "landed" in the United States, participating for the first time in the AALAS exhibition in New York.

AALAS

The Annual Meeting of the American Association for the Advancement of Science (AALAS is the most important general science venue for a growing segment of scientists and engineers who are interested in the latest advances as well as multidisciplinary topics and the influence of science and technology on how we live today. Thousands of leading scientists, engineers, educators, and policy-makers interact with one another and with hundreds of members from national and international media attend the conference every year in November, in a different city every year. The growing number of international attendees attests to the growing international nature of this gathering. The program is designed to include topics relevant to the entire membership. Exhibitors have an opportunity to interact with AALAS members from the academic community, research institutions, government organizations, and commercial companies.
The AALAS National Meeting is the largest gathering in the world of professionals concerned with the production, care, and use of laboratory animals. The meeting is a growing success.
The last conference had more than 4,600 attendees and over 500 exhibitors. It offered nearly 400 sessions on a range of educational topics which can really provide ideas to stimulate Innovation. Tecniplast products are often mentioned in AALAS scientific seminars.

2.4 - LATE EXPANSION

The 1980s saw further expansion in both product range and market spread, but also relevant was the entry of the *"second generation"* of the Bernardini Family, as well as the investments in the new technology (robots) in line with industrial evolution towards a highly automated manufacturing process

Each innovation required high capital investments and new skilled collaborators, a combination which created a lot of difficulties for Tecniplast competitors. Great efforts continued during the following decades and still continue today.

Tecniplast Headquarter houses all those departments and functions required to serve the market: R&D, Product Service, Product Design and Development, Mould Design, Plastic Moulding, Stainless Steel workshop, assembly, quality assurance and control, packaging and logistics.

Tecniplast currently employs some 1.155 employees; about 400 of those in Italy (Balance Sheet 2020).

The manufacturing site in Buguggiate followed a constant evolution, expanding with the objective of ensuring adequate support for the growing demand.

2007 - Tecniplast Training Center

2009 - Cafeteria for all employees. A sophisticated software monitors food consumption with the objective of reducing to *"zero"* the waste of food, creating awareness about how important it is to save waste of food through rational decisions

2010 - New Building for 40 Designer (R&D)

2011 - New Fully automated Centralized Warehouse

2015 - New Building for Production (Moulding Department and New Rack Assembly Department: 1,000 sqm)

2016 - New Building for Service Offices and Training Center: 600 sqm and for warehouse Expansion 3.000sqm

2017 - New Offices for OEM team

2018 - New buildings for CBS site

2019 - New offices for Tecniplast Production System team

2020 - Complete Renovation of the Products Show Room in the Corporate Training Center

Tecniplast Corporate Headquarters in Buguggiate

Vertical Manufacturing: What does it mean?

Vertical manufacturing refers to vertical integration of a value chain that a manufacturer undertakes to gain a strategic advantage. Manufacturers achieve vertical integration when they control or own elements within a value chain beyond the central manufacturing component (e.g. Tecniplast owns exclusive know-how in plastics, metals, sensors, electronics, moulding production).

ELEMENTS

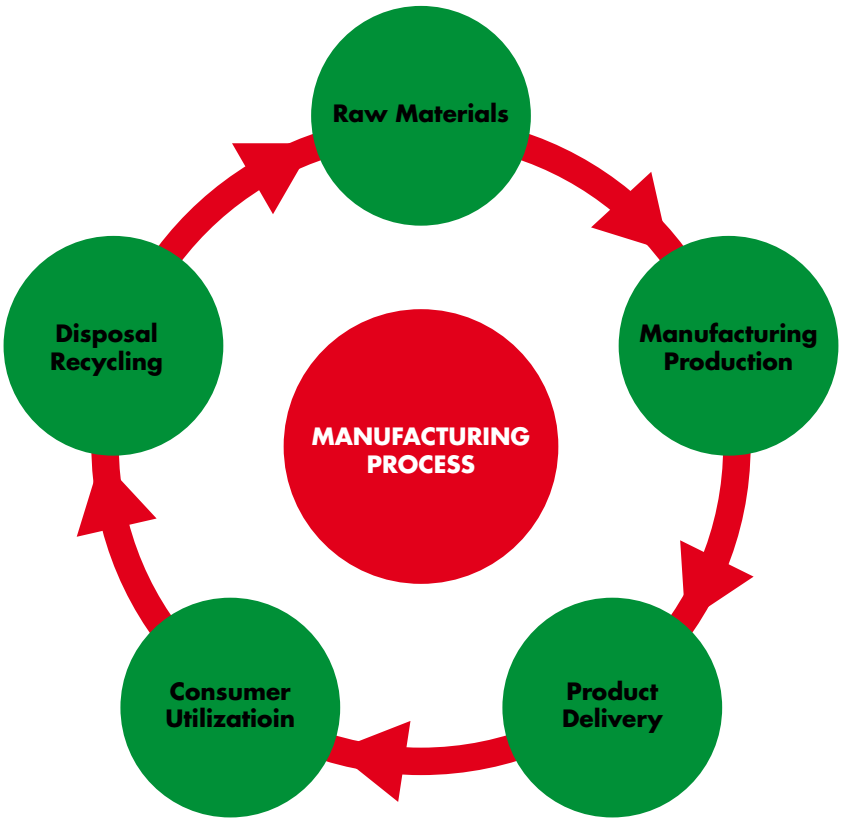
Vertical manufacturing can take place any time a manufacturer takes control of elements that are closer to its suppliers or customers than its main manufacturing operation. Control of value stream elements toward the supplier is known as upstream, or backward, integration. Control of elements closer to consumers is known as downstream, or forward, integration. The elements include raw materials, suppliers, intermediate manufacturing steps, components, the assembly phase of manufacturing, distribution networks.

ADVANTAGES

Vertical manufacturing has several distinct advantages over manufacturing without any form of vertical integration.
It allows customers to have better product quality and more effective distribution, ensuring steady access to components and raw materials. It can also ensure that distribution networks are ready to move products, especially during periods of high demand, save on costs and reflecting it in a more competitive end user price.

All the constructions have been built bearing well in mind sustainability concepts.

- It means that all are:
  - Green Building class
  - Certified by Casa Clima (Lombardia Region)
- The constructions:
  - Have Passive Solar Energy
  - Have Reclaimed water
  - Use Local Natural Materials



Tecniplast opened its second manufacturing site in USA in 2011, with a workforce that reached 80 people in 2020

It has been operative since November 2010 in the production of racks and changing stations.

- 57.000 sqf for Production (Welding, Glass blasting, Peening, Assembling) and Warehouse (Shipping and Receiving)
- 20.000 sqf for Offices and for Tecniplast Activity Center (TAC)

The reasons for a production site in USA:

- TP local resources and staff have grown substantially in the last four years
- TP has installations across the greater part of the country.
- TP supports its customers with a complete organization, from sales to project management to service.
- TP forecasts indicate that the USA market will continue to grow, requiring more sophisticated products, meaning greater value and better service.
- The expanding base of customers requires faster lead time, better inventory of finished products, and complete spare parts availability.
- For a smaller CO_2 footprint sustainable development in USA.

Tecniplast USA Headquarters, West Chester, Pennsylvania

Tecniplast USA Factory Building

IWT started in 1992 as a small division of Tecniplast

Today it is an important reality in the lab animal industry focused on designing, producing and distributing washing, decontamination and automation systems.

1993 - IWT produced their first Rack Washer in 1993

1999 - Developed the integration with robotics for pick-and-place

2001 - Develop integration with H_2O_2 generators

2005 - Obtained ISO 9001:2000 certification

IWT occupies an 8.000 m^2/86.000 ft^2 overall facility including 2.000 m^2/11.000 ft^2 for show-room and training programs.

- 4.000 m^2 production and office facilities
- 1.400 m^2 adjacent building dedicated to R&D and Automation line assembly and tests
- 1.600 m^2 highly automated warehouse
- 1.000 m^2 show-room and training facility
- Bio-room lab for tests/validation.

IWT Corporate Headquarters in Casale Litta

IWT follows a sophisticated and effective promotional policy, applying automation payback tools such as ROI to demonstrate that automation delivers better quality, safety and ergonomics.

The company has recently completed an extensive program of innovation of the production plant which includes tate-of-the-art laser cutters, orbital pipe and robotized tubular welders.
A fully automated warehouse system and 3D design technologies complement our advanced operations and make IWT an innovative partner, combining quality and flexibility.

With more than 120 people employed, including 25 designers, 5 project managers and 3 biologists, you will find that IWT is the strongest partner in the field in terms of skills, know-how and resources to develop and validate innovative high-performance washing and decontamination solutions.

All IWT washers reflect our remarkable commitment to manufacturing quality, from the gleaming cabinet work, the consistent care in assembly, to finely polished welds, rounded edges and self-draining pipe-work preventing dirt traps and water stagnation.
Only the finest components on the market are chosen, including industrial PLCs, flow meters, pneumatic valves, tri-clamp connections and sanitary pumps, as required.

From America to Oceania, from Europe to Asia there is no continent where, over the years, IWT has not installed and supported installations of washing and decontamination equipment with a standard 2-year warranty policy.

CBS (Carlo Bernardini Steel) was founded in 2017 combining the skills of different metal carpentry companies with several decades of history behind it

Dedicated to TP, its main specialization is processing of stainless steel (pipes and sheets), but the professional knowledge, the production processes allow the processing of all metallic materials. The experience in the construction of products that require high reliability and operating in severe operating conditions allow us to produce high quality components and with excellent aesthetic finishing.

Co-engineering: Your ideas, CBS skills! Together we transform your projects into successful products

Production Processes strictly controlled, integrated logistics and quality: from the beginning to the end of the process: CBS production processes and workers' skills allow CBS to develop specific customers' ideas starting from the raw material and arriving through the various stages to the finished products.

The production process can be completed with the assembly and testing of complex products. More, the solid skills in managing the entire supply chain allow us to punctually plan the flows of materials, while a World Class Lean Manufacturing experience guarantees the best value flow efficiency.

A strict quality management system guarantees total process reliability and constant compliance with the specifications of the product.

The CBS capabilities in production processes allows us to offer an effective support in the co-design of the product, in its industrialization and in the choice of the most suitable finishes for the various applications. A fruitful team work to identify the winning customer's choices that maximize the quality / cost of the product, optimizing the efficiency of the value stream added.

New sheet metal laser plant:
the biggest investment made by the Tecniplast group to date

Loading warehouse

- 250 m² of space recouped
- Safety/Ergonomics: gravity 0 elimination for sheet metal loading and no forklifts in working area
- Competitivity: reduction NVA activity

Fibre Laser

- Competitivity: 50% more cutting speed and possibility of cutting new materials
- Maintenance: lower management costs as against a laser

Automatic Unloading

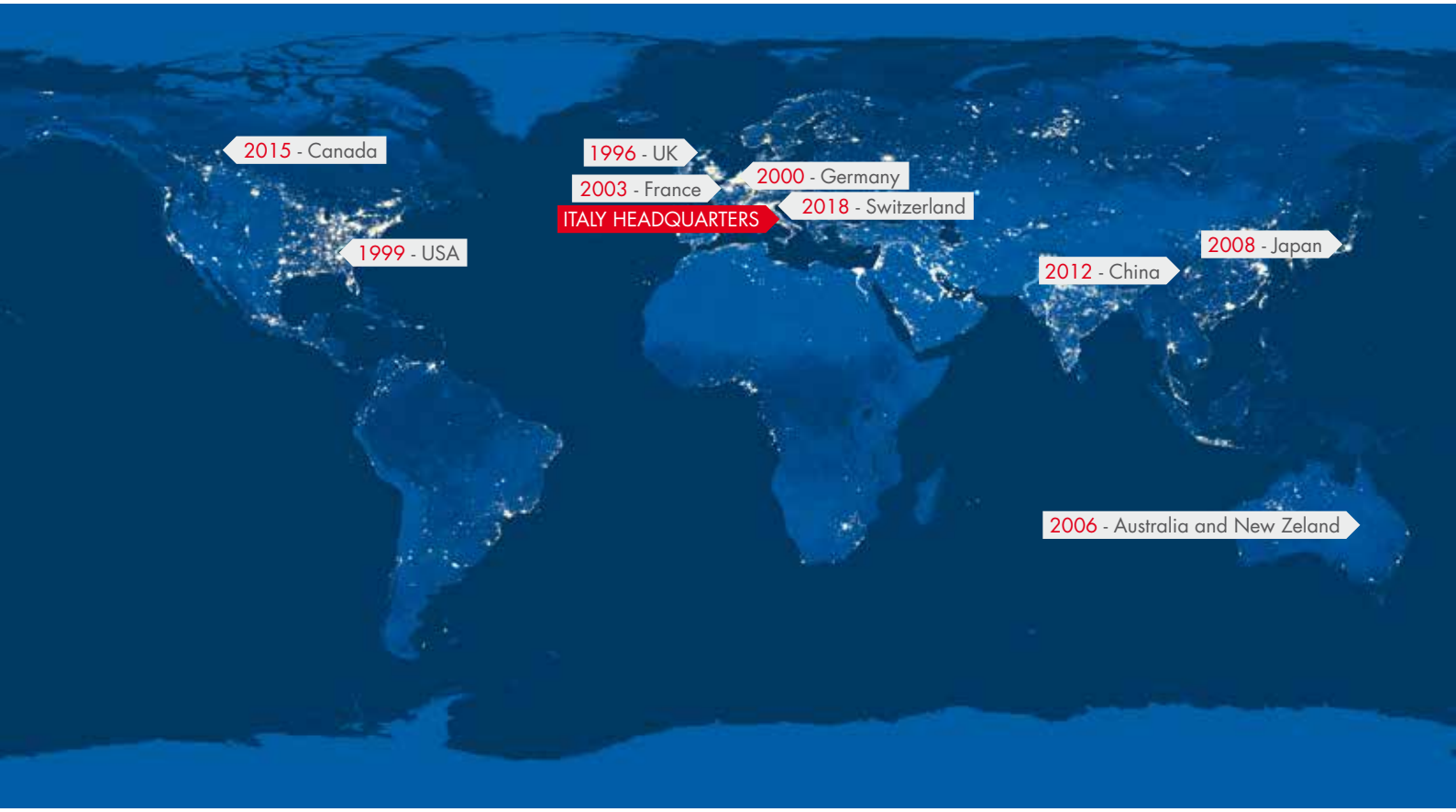
- Safety/Ergonomics: unloading of pieces simplified
- Competitivity: Reduction in NVA activity

CBS Manufactury Plant in Albavilla (CO)

2.5 - TECNIPLAST IN THE WORLD

Starting in the late 1990s, Tecniplast began a strategy of globalization leading to a direct presence in important markets worldwide

Tecniplast operates in the Biotech industry. Biotech demand has grown continuously in recent years with alternating results. Today a number of industry analysts have expectations of an upturn in preclinical demand reaffirmed following an economic downturn that has seen sponsors shelving early R&D plans. Pharma business, which has focused its energy on late stage development for the past several years, is beginning to refocus on early development to backfill their pipelines.



Production is focused on Italy at the Corporate headquarters and in USA. The other sister companies offer Marketing, Sales, Service and Project Management.

Starting in the late 1990s, Tecniplast began a new technology (robots) in line with the industrial strategy of globalization leading to a direct presence evolution toward highly automated manufacturing in important markets worldwide.

Strong investment in automation brought the following advantages:

- Higher Productivity
- Production Process stability
- More time for the operator to check the quality of the product
- Higher product quality
- Improved sustainability in the process reducing waste

Today Tecniplast has:

- 33 injection moulding machines
- 2 blowing machines for bottles
- 3 latest generation electric moulding machines, ranging from 15 to 2.000 tons offering a high flexibility, consistent time to market and sense of urgency in answering customers' needs

The 9 sister companies employing some 299 people (source: 2020 Consolidated Balance Sheet), together with a network of more than 70 dealers, are constantly committed to the local care functions such as sales and marketing, project management, installation, testing, service and training.

All dealers and sales representatives periodically (every 18 months) attend international meetings held at Buguggiate headquarters with sessions dedicated to training, marketing and research, updated information and, most important of all, to creating a team feeling among all of them.

In recent years, the environmental goals and results have systematically become part of the communication: information about recycling programs, material consumption, environmentally friendly product design and commercial action for end-of-life product recycling are routinely presented during the meeting sessions. The same information will be progressively introduced into sales communication to sister companies, dealers, agents and customers. Some of the sister companies are already directly involved in the end-of-life product recycling programs.

14th felasa congress 2019

What is the felasa EUROGUIDE?

The Guide on the accommodation and care of animals used for experimental purposes has been produced by FELASA (Federation of European Laboratory Animal Science Associations) in conjunction with EPAA (European Partnership for Alternative Approaches to Animal Testing). This user-friendly guide is designed to help scientists assimilate the core aspects of the care of laboratory animals set out in the revised Appendix A of the European Convention for the Protection of Vertebrate Animals used for Experimental and Other Scientific Purposes (ETS 123) which came into effect on the 15th June, 2007. It is also aimed at anyone working with laboratory animals and those who have activities in services related to their housing and care.

How to use the felasa EUROGUIDE?

The purpose of this book is to provide an abbreviated version of the revised Appendix A of the European Convention for the Protection of Vertebrate Animals used for Experimental and other Scientific Purposes (ETS123: http://conventions.coe.int/treaty/en/Treaties/Html/123.htm). The list includes the following animal groups: rodents and rabbits, dogs, cats and ferrets, non-human primates, birds, farm animals (including minipigs), fish, amphibians and reptiles. The authors have prepared proposals (called Parts A) based on scientific evidence, wherever possible, or on established good practices. In addition, supplementary documents (Parts B) have been prepared containing scientific, technical and other information in support of the proposals, with a view to facilitating their understanding and use.

2.6 - TECNIPLAST AND INNOVATION THROUGH PASSION: THE DIGITAL REVOLUTION IS NOW!

The new products and in particular the DVC® introduce continuous Digital Intelligence in the daily management of laboratory animal facilities

Tecniplast presented during Felasa Conference in Prague, in 2019, the new IVC Emerald Cage and the DVC® Analytics, identifying new boundaries in the Lab Animal Industry, for a Culture of Care, which creates a positive attitude to animal care, provides optimal Housing & Welfare, complies with the guides, encourages and promotes correct behavior and practice care.

Nowadays, technology is more and more part of our life. From sending in real time pictures of wonderful landscapes to our friends living on the other side of the world, to sharing experience with a community of people with just one click on our devices. There is no good or bad technology, but there is always a good or bad usage of it. It can improve our welfare, facilitating some aspects of our life or it can be an obsession and waste out time or even be unreliable.

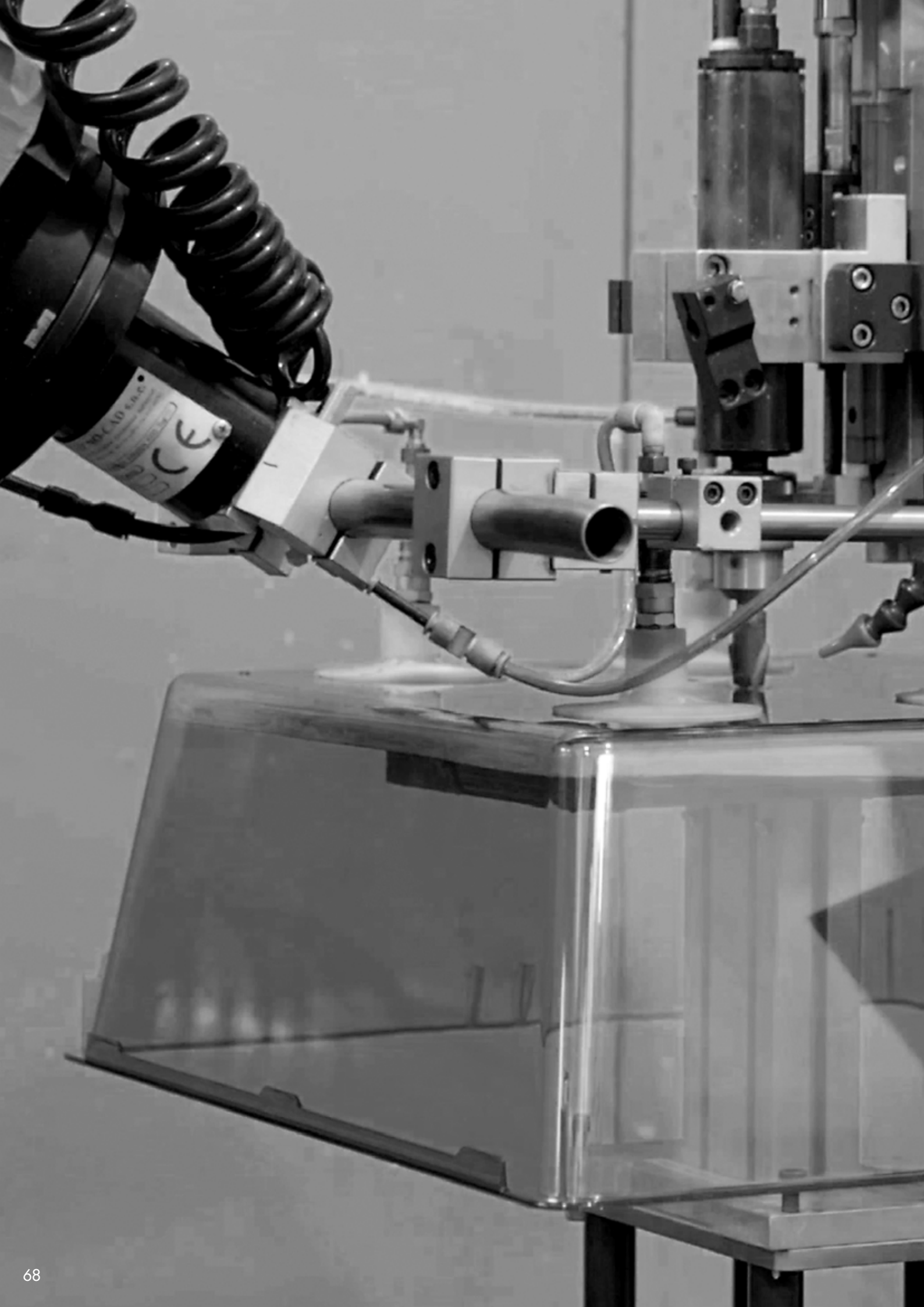
In Tecniplast we strongly believe, considering our LA Industry, that technology should not scare people but it should be used to fit needs and improve workflows. This is the reason why we have developed products intended to work WITH you, which is aimed at improving YOUR processes and YOUR scientific results.

The new products and in particular the DVC® introduce continuous Digital Intelligence in the daily management of laboratory animal facilities. Providing the best environmental conditions for animals and standardization of the environment are prime factors in the delivery of high-quality animal care and consistent research data: improved model translation, animal welfare and data replicability, all in one. Through a network of sensors GM500 IVC cages are connected to a smart system that provides critical information essential to the efficient care and welfare of the animals. A System of seven modules reduces the possibility of error, optimizes efficiency and maximizes safety. The DVC® 24/7 monitoring system reduces undesired research variables, increases comparison of data sets and achieves consistency of care.

The future of research in the lab animal industry begins today. With the new DVC® system, laboratory animal monitoring activity 24/7 approaches an innovative, revolutionary digital turning point. The DVC® system changes the management of laboratory animal facilities forever!

The DVC® is a revolutionary system that has been developed to utilize micro EMF to improve both scientific outcome and animal welfare. More specifically, the micro EMF used by the DVC® are comparable to, or below, normal background situations. Ask your local Tecniplast representative to show you how data are much lower than other EMF sources generated by common electrical equipment already present in Animal Rooms, and which have not been shown to affect animal welfare.

As a solution provider, we take a caring approach to business in everything we do. We strive to understand our clients' needs and expectations; we are committed to producing and delivering the finest quality products, and we constantly strive for customer satisfaction.



CHAPTER 3
TECNIPLAST ACTIVITIES

3.1 - TECNIPLAST ACTIVITY

Tecniplast is the world's leading company in the Lab Animal Industry in designing, manufacturing and distributing patented equipment for laboratory animals since 1949

Tecniplast has the most complete product portfolio of the industry, ranging from IVC systems, Laminar Flow, Bio containment IVC systems, Rack and Cage washers, Bedding handling systems, Bedding Disposal systems, Aquatics, Analysis systems, IVC monitoring and RFID census solutions to Decontamination Automation systems and a complete range of Accessories.

We continuously invest with the objective of providing you with the most reliable and relevant product range.
Our constant investment in tooling, technologies, automation, production capability, stock availability, staff recruitment and training together with the ISO certified quality (ISO 9000) and environmental (ISO 14001 with the Eco Design process according to ISO 14006) management systems certifications, offers the most dynamic innovation in the market, the most complete range of products with the highest level of quality.

We offer comprehensive solutions and services in Product Design, Ergonomic Planning, Environmental Responsibility, Space Planning, LEAN Audit and Budgetary Evolution. We assist clients in installation, training and service with a direct presence in ITALY, USA, Canada, France, UK, Germany, Switzerland, Australia, Japan and China and with a network of 70 International representatives in the rest of the world.

Tecniplast is committed as a contributor to a better society, investing time and efforts to promote those values that make Tecniplast a center of excellence for Social Responsibilities, setting an example for the community by striving to achieve:

- Minimum environmental impact
- Customer satisfaction
- Good working conditions for collaborators

Tecniplast has been awarded the WCA which certifies the optimal working condition of our employees!

Tecniplast's final aim is to produce ecologically sustainable products, investing with ethical criteria and assuring respect of human rights and of the environment.

Tecniplast Corporate Training Center in Buguggiate

3.2 - FROM LEAN TO TECNIPLAST PRODUCTION SYSTEM

Tecniplast Production System is the result of adopting the best Lean and WCM rules, representing a real success case at industrial level, creating a competitive sustainable advantage at ww level

Tecniplast can be seen as a real "lean enterprise": from Top Management commitment to the different areas involved, the results in production shopfloors and the constitution of an internal team of Lean Engineering to follow up the project, keep it alive over time in all areas, identify lean opportunities during new products start-up and spread the Lean approach also into the Group Sisters Companies.

We at Tecniplast know very well that going Lean have reduced our Wastes! We know that Lean (and the associated Six Sigma) are just two of a number of management tools that can be used systematically to analyze and improve work processes; improve efficiency and reduce waste. These, and other systems, have found wide application in Tecniplast.

Lean manufacturing (or lean production), is a production practice that considers the expenditure of resources for any goal besides the creation of value for the end customer.
Working from the perspective of the customer who consumes a product or service, *"value"* is defined as any action or process that a customer would be willing to pay for. Basically, lean is centered around preserving value with less work. Lean manufacturing is the set of *"tools"* that assists in the identification and steady elimination of waste (muda). As waste is eliminated quality improves while production time and cost are reduced. Examples of such "tools" are Value Stream Mapping, Five S, Kanban (pull systems), and pokayoke (error-proofing).
There is a second approach to Lean Manufacturing, which is promoted by Toyota, in which the focus is upon improving the *"flow"* or smoothness of work, thereby steadily eliminating mura (*"unevenness"*) through the system and not upon 'waste reduction' per se. Techniques to improve flow include production leveling, *"pull"* production (by means of kanban) and the Heijunka box. This is a fundamentally different approach to most improvement methodologies which may partially account for its lack of popularity. The difference between these two approaches is not the goal itself, but rather the prime approach to achieving it. The implementation of smooth flow exposes quality problems that already existed, and thus waste reduction naturally happens as a consequence. The advantage claimed for this approach is that it naturally takes a system-wide perspective, whereas a waste focus sometimes wrongly assumes this perspective.

We at Tecniplast understand that the demand on facilities to reduce costs and maximize throughput is constantly increasing. The right answer is LEAN. We know about the Impact of LEAN Management in Facilities from Design to LEAN Transformation in small and large Animal Facilities. As more organizations introduce lean practices, the requirement for system-wide approaches for developing and implementing lean project plans is increasing.

LEAN highlights the importance of continuous improvement in facility operations, equipment and planning, specifically:

- Building a culture of continuous improvement for better efficiency and productivity
- Getting the best in terms of science, management and welfare outputs
- Sharing the latest experiences

We started partnership with customers to propose solutions in process and product improvements, using an *"independent eye"* for flow, and to identify and propose both immediate and long term solutions to increase equipment utilization.

Tecniplast Production System supports our production organization towards excellence

It is difficult to understand the birth and affirmation of World Class Manufacturing without analyzing the period in which it developed. We are obviously talking about a very recent period of time that we know very well, in which competition is increasingly *"fierce"* and economic trends are generally not very positive. The challenges to be faced, especially for those involved in manufacturing, are multiple and complex and all involve increasing efficiency, quality, reducing waste and investing in innovation and research. Given this scenario, achieving Tecniplast Production System (TPS) means totally rethinking the production process so that the optimization of waste takes place not only in the transformation of the product, but also at other "moments" of the production chain: even and above all at those moments in which no added value is created for the customer.

The concept of value therefore changes radically: all the phases that accompany the product, from start to finish, must contribute to "creating value", that is, to create something for which the customer is willing to pay.

"At each phase, in essence, the Tecniplast Production System philosophy is to try to create a product that can win on the market and how?"

"High quality at a competitive price! Competitive because it is the result of a reduction in costs, the result of the reduction in waste."

WCM: Background

The WCM method was developed in the United States in the 1990s. In Italy it was introduced by the FIAT group (now FCA) around 2005 and is considered the basis of the recent positive turnaround. The WCM method is a coherent set of methodologies that have been implemented since the second half of the 1900s. A methodology that will certainly need to be mentioned is lean production or Toyota Production System which, through its principles, constituted a sort of revolution compared with Henry Ford's mass production. What lean production brings to WCM is certainly customer orientation, producing only what the customer asks for (pull logic), creating a continuous flow that allows the product to leave the factory as soon as possible. The bond to the customer allows output to be generated only when the customer requests the product, thus avoiding creating excesses in the warehouse. The other lean principle that WCM has mastered is the pursuit of perfection: WCM wants to improve the performance of the production process by eliminating waste and improving quality. But it must not only be quality that improves: safety, people's working conditions and respect for the environment are also part of the improvement program. This means that a WCM approach involves strong interaction with the entire organization of the factory, and with all the staff, who, it is important to motivate.

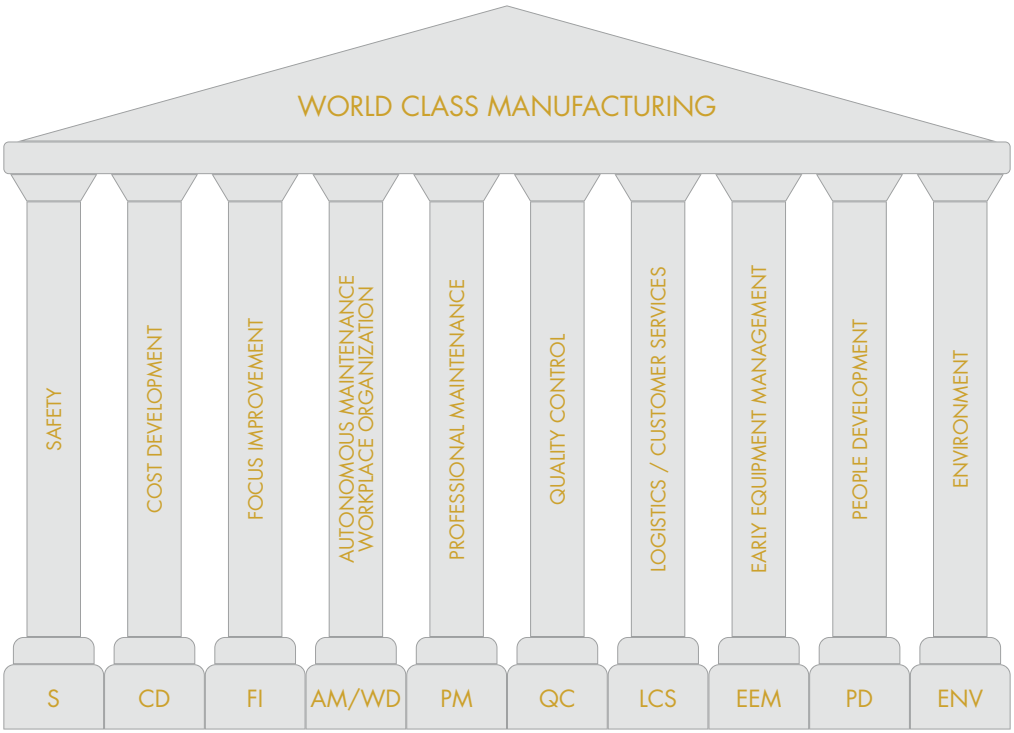
Tecniplast Production System: Methodology

The involvement of people also concerns the emphasis that the we place on the importance of safety: the injury of a person becomes a huge damage for the company. So, we will say, in summary, that Tecniplast Production System applies to all areas of production.
The aim is to optimize results by leveraging the idea of continuous improvement:

- Processes
- Product quality
- Reduction in production costs
- The reduction in waste
- The involvement and motivation of workers
- The safety of the same.

Tecniplast Production System and Six Sigma

In addition to lean production, another methodology absorbed by TPS is Six Sigma. It is a statistical term and indicates a quality management based on the control of the mean square deviation (indicated with the Greek letter Sigma).
The goal is to decrease the variability on production processes that can cause waste and defects, thus trying to achieve the highest possible quality level. Another important methodology for TPS, also inherited from Toyota, is TPM, Total Productive Maintenance. This method aims to prevent machine failures, rather than correcting them at the time of the failure. In this way, machine stops and consequently production blocks are drastically reduced.



The TPS is represented as a temple supported by 10 technical pillars (pilar). Each of these pillars addresses a theme and represents an area of intervention in the technical area:

- Safety - Workplace safety
- Cost Deployment - Sources of economic loss
- Focus Improvement - Focused improvement of a specific problem
- Autonomous Maintenance - Workplace Organization
- Professional Maintenance
- Quality Control
- Logistic / Customer Services
- Early Equipment Management, Early Product Management - Work tools / process acquisition strategy
- Environment - Environment and exploitation of energy servos
- People Development - Development of staff skills

Objectives

The objectives of the TPS is to achieve "zero" value in various areas: defects, stocks, inefficiencies, downtime, bureaucracy, customer dissatisfaction, etc ... Obviously, to reach zero, improvement must be continuous.

"But what is it that drives continuous improvement?"

"The client."

The world-class company, as already mentioned, is customer oriented. It is aggressively focused on the customer to eliminate their dissatisfaction. For this it is necessary to know them and to offer an excellent service. Also, for this reason, improvement must be continuous: the customer is a dynamic entity. He changes constantly, his desires, his questions, his standards change. And the world-class company must change together with the customer and his requests.

As a corollary of the objectives that the TPS sets itself, there is the necessary involvement of the staff: everyone must have clear objectives. And act accordingly. Therefore, we can deduce that, if there is a concept that TPS teaches us, perhaps indirectly, it is that the greatest resource for a company is not linked to technology, but is made up of people: TPS comes to involve all staff at all levels, from the worker, to the manager, to the pillar leader. To summarize what we have said, we could say that the TPS method is a work on people and on their potential. It means adapting its products to customer specifications. It means adjusting your goals to the client's TPS goals.

TECNIPLAST PRODUCTION SYSTEM

Thanks to **Tecniplast Team Progress**, in 2020 a number of improvement activities went ahead involving lay-out of spaces, machinery and production activities - all with an eye on optimising times and costs, cutting to a minimum both waste and risks.

- **Safety first:** guaranteeing effectively health, safety and the environment.
  ZERO accidents through 2020 across the whole facility.

- **Autonomous maintenance:** to improve machine readiness and product price quality, Cutting down, measuring and remedying wear-and-tear. Standard maintenance cycles were carried out (cleaning and inspection), daily drawing up of efficiency and waste. Machinery efficiency from 2019 to 2020: from 54% to 81%.
  This means that there was a machinery saving every single day of 2020 of a work shift as against 2019.

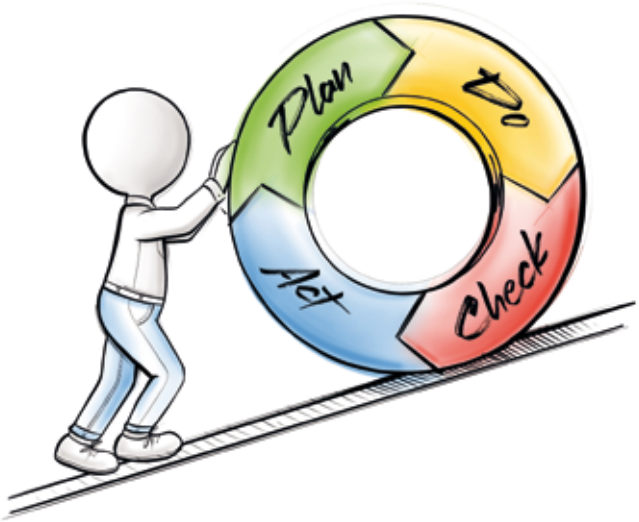
- **SMED:** this is a WCM tool born out of the need to take set-up times down to the minimum so as to shift rapidly from one type of production to another within the same plant.

- **Workplace Organisation and SCM collaboration:** production line organisation in getting hold of materials in the right quantities and in line with the required times and places.
  Also to up product quality through structured and fool proof production processes, thus cutting process costs and improving ergonomics and work safety.

- **Setup Academy:** a real training school able to prepare Tecniplast personnel to tackle every type of set-up with proficiency.
  80 hours of training carried out in classrooms and 43 on the shop floor.

- **Cost Deployment:** a finance pillar that analyses economic losses that weigh on production costs. In 2020, 15 projects were started aiming at resolving the most significant losses. The projects had a better outcome by 145% over what had been planned.

- **PDCA Procedures:** rigorous analyses of problems, in order to achieve excellence level.



Tecniplast Laminar Flow Production Area

Tecniplast Injection Moulding area

Tecniplast Blow Injection Moulding area

3.3 - BUGUGGIATE HEADQUARTERS

The key factors underpinning Tecniplast's success are an acute awareness of the continuous evolution of housing facility needs and the capability to design, develop and produce all products in-house

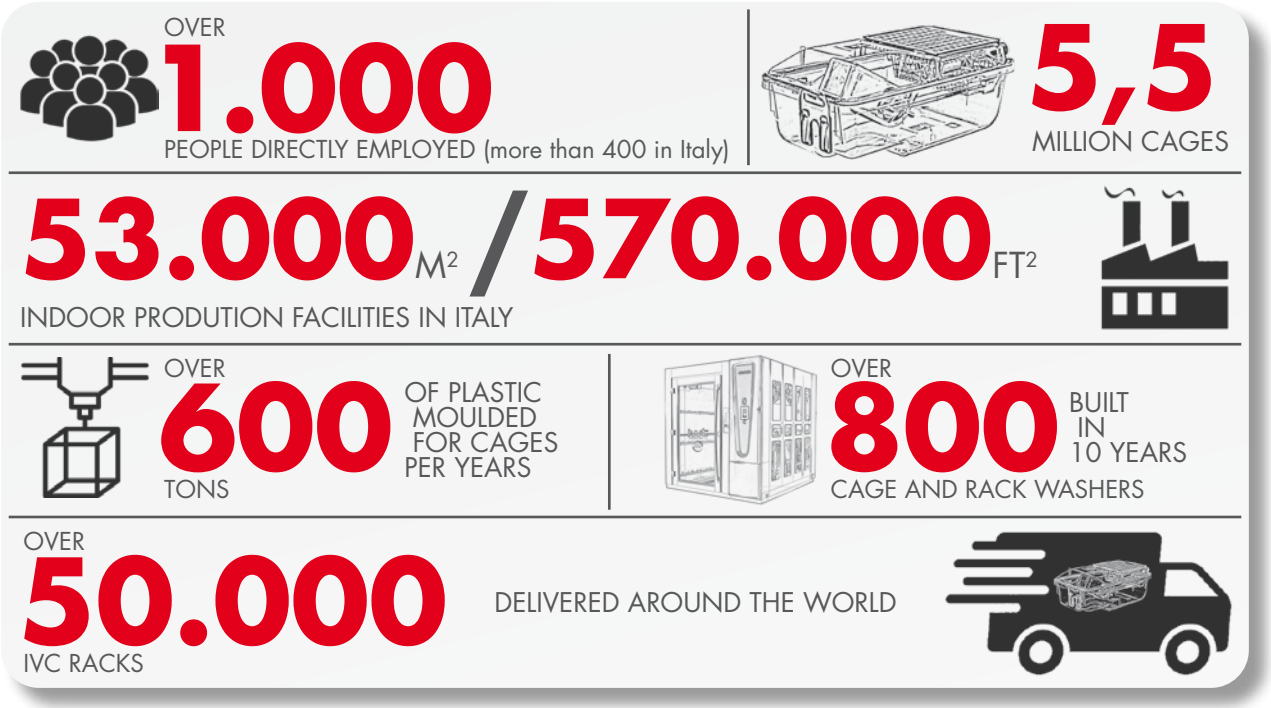
Tecniplast is an International Company dedicated for more than 70 years to the production and distribution of housing and related equipment for laboratory animals. Commitment, dedication and targeted investments in totally unique project and production assets has made Tecniplast a worldwide benchmark in the field of biomedical research laboratory equipment.

The headquarters and the manufacturing sites (Castronno and Buguggiate) are located close to Varese. They satisfy the worldwide demand for TP products with a workforce of more than 500 people in Italy.

Tecniplast, the first consumer of Polysulfone in the lab animal industry, is the only one to have complete control in-house of the complete process (vertical integration) while other producers have chosen outsourcing options with consequent reduction in control.

- Tecniplast was the first company to obtain TÜV certification of compliance (TIZBIFO) for IVCs.
- Tecniplast has obtained quality certification (ISO Vision 2000) for its production process since 1997.
- Tecniplast is the first and still the only company in the industry to achieve Environmental Certification UNI EN ISO 14001 with the eco design process according to ISO 14001 certification in 2006, renewed in 2009, 2012, 2015 and 2018.
- Tecniplast, thanks to its extremely sensitive strategic vision for the environmental impact of its operations, is the first company in the industry to obtain the 2009 Environmental Report Assurance Statement (in April 2010) from DNV, an external, independent Leading International Auditor, reapproved by BVI during 2016 for the years 2013, 2015.
- Tecniplast is the first company in the industry to obtain the ecodesign process certified according to the ISO 14006 standard.

At each step of the process, products gain exclusive value, which is not the case of largely outsourced products, especially those made of plastic.



Tecniplast received the Solvay Advanced Polymers *"Special Achievement Award"* in appreciation of 20 years of business partnership.
The Solvay Special Achievements Award is assigned periodically to those companies that have distinguished themselves by reaching outstanding performances, having come up with special applications of Solvay polymers or having made a particular contribution by the sheer volumes used. Solvay serves particularly highly specialized clients such as the automotive and aerospace industries. It is not by chance that the award itself is in the form of a column, symbolizing the strategic importance of the winner for Solvay.
In these difficult times for the world economy, Tecniplast is particularly important for Solvay, showing considerable growth in volumes purchased and representing a real point of reference within the Laboratory Animal Industry for Solvay.
The award was presented directly to Pietro Bernardini by The Vice President of Sulfone Polymers from Solvay Advanced Polymers during a ceremony held at Tecniplast Headquarters.
According to the Vice President, the award also highlights the fact that Tecniplast has managed to become a key reference for polysulfone at a world level, thanks to careful development of the product achieved through dynamic innovation and passion.
Pietro Bernardini had this to say: *"It is with great pleasure and satisfaction that we accept this award. It is a powerful message of hope also for all our customers who work with passion and dedication and who rely on our products to be able to conduct their scientific research, helping to diffuse the benefits of their scientific studies throughout the world."*

From Panorama N°32

The key factors underpinning Tecniplast's success are an acute awareness of the continuous evolution of housing facility needs and the capability to design, develop and produce all products in-house.

These factors, together with attention to product and process quality, enable Tecniplast to offer affordable, innovative, integrated solutions. Unique in the market, the whole manufacturing process is carried out in-house with extreme reliability and timeliness following the principles of lean management. This concept of full integration embraces all functions: R&D, product Design and Development, mould design, plastic moulding, metalwork, assembly, quality assurance/control, packaging and logistics.

Tecniplast Bugguggiate site is the historical and main site of the Tecniplast Group

- In Tecniplast we distinguish ourselves by our specific know-how in moulding high performance thermoplastic polymers (polysulfone, polyetherimide, polyphenylsulfone) and processing all our plastic products.
- All stainless-steel products are made in-house from electric welded wire grids to IVC and conventional racks, from bottle caps to ventilation boxes.
- Most production processes are automated using anthropomorphic and Cartesian robots.

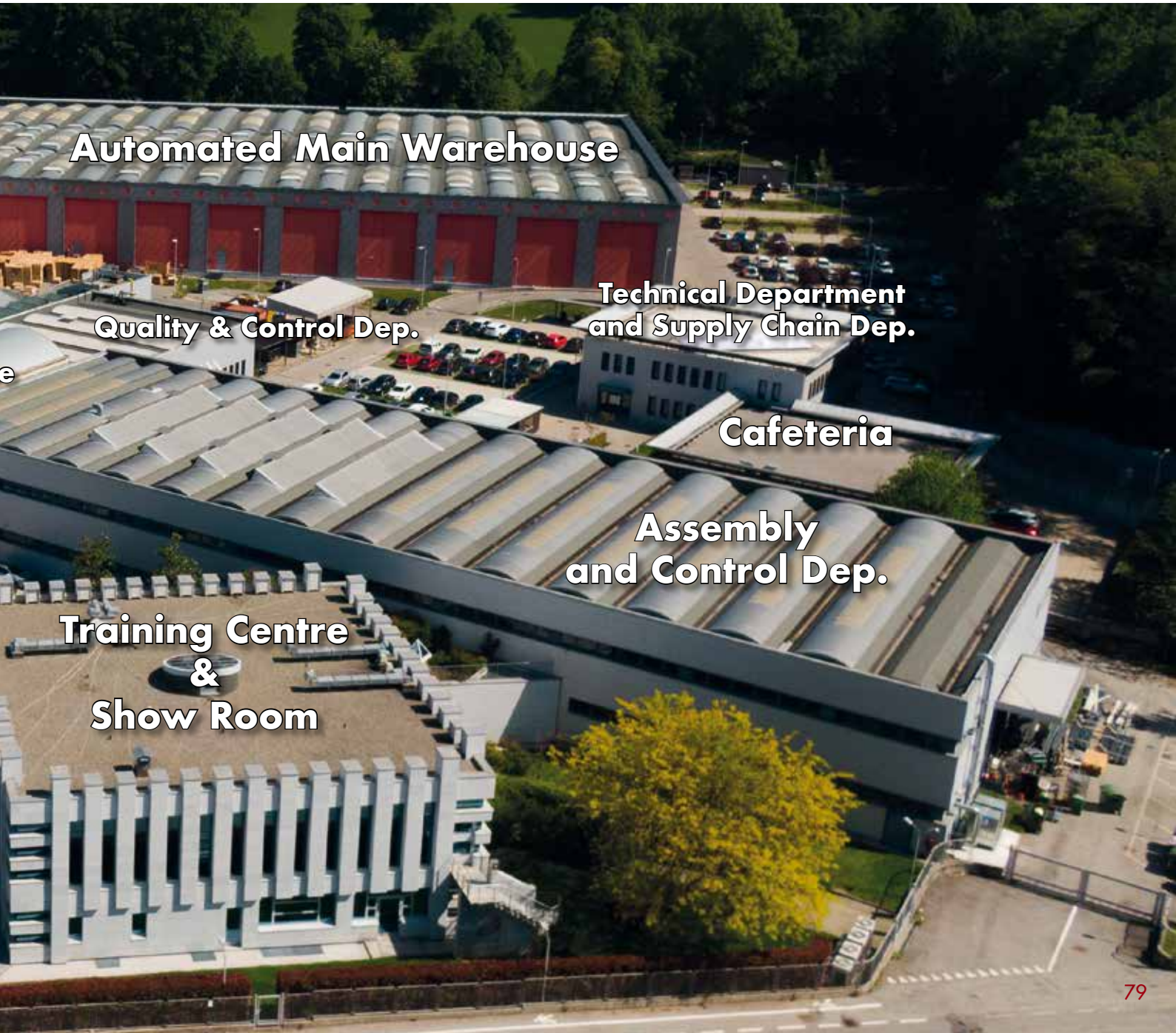
The site is located close to Varese and the Buguggiate exit of the A8 Milan-Lakes Highway.
This location is very convenient for the transport of materials and goods since the highway can be reached immediately.
Nevertheless, as the site is close to Varese and the nearby lakes, the area has some restrictions and requirements for industrial facilities.

Tecniplast Corporate Headquarters in Buguggiate

The site comprises:

- Injection moulding production departments
- Moulds production and maintenance and moulds warehouse
- Assembly and control department
- Offices for Marketing and Engineering departments
- Research and Development laboratories area
- Training centre
- Show Room
- Meeting rooms
- Automated Main Warehouse
- Rack assembly line

A full-fledged Supply Chain Management system drives materials and information flows along the supply chain, from Suppliers to Customers and from aggregate long-term planning to detailed daily scheduling.
Inbound and outbound transportation planning is executed maximizing load saturation and optimizing routes, so to minimize the environmental impact.



3.4 - R&D

Tecniplast R&D/UT Division with more than 48 engineers. R&D is one of the most important departments in TP with a constant growth in terms of number of people, following the growth in sales turnover

In the last 5 years R&D had a growth of 12%. R&D is divided into teams, organized to favor the constant interaction with customers through the support of highly skilled and qualified product managers. Thanks to continuous, direct contact with customers and constant Focus Group activities, the Product Managers guarantee a perfect "tuning" between the company and its market, thus between the product and its actual final use.

3D drawing, renderings, Stereo-lithography and prototype versions are commonly used to maximize constant interaction.

R&D designers follow constant training on sustainability.
They are trained on:

- Eco Design
- LCA Analysis
- CFD Exercise (computerized Flow Design)
- CO_2 Footprint Analysis

R&D designers design products with the following principles well in mind:

- Resource efficient design
- Energy efficiency
- Improved recyclability

With the aim of reducing power consumption per performance and contributing to reducing customers' CO_2 emissions.

R&D People are fully committed with Company Green Strategy and Customers' needs to:

- Reducing power consumption per performance
- Reducing water consumption per performance
- Eco Design concept for reduced material per product
- Maximization of recycling after life cycle
- Elimination of specific hazardous substances

Technical Office and R&D

ACTIONS	TODAY RESULTS	TARGETS
Implementation of the LCA and calculation of the CO_2 Footprint in the design of new products	Designers and Engineers are Trained on: - Eco Design on products and related packaging - LCA Analysis - CFD Exercise with the objective of optimization of the energy - CO_2 Footprint Analysis - Analysis of Emissions in specific usage situation (es. For example, Autoclaves)	Define a sustainable product portfolio, comparing the full range of environmental effects assignable to our products and services by quantifying all inputs and outputs of material flows and assessing how these material flows affect the environment and choosing the best solution to obtain products with the lowest level of footprint
Sustainability Design	Designers and Engineers are trained on: - Resources efficient Design - Energy Efficiency - Improved Recyclability	Have a product portfolio with reduced negative impacts on the environment, on the health and comfort of users and animals, thereby improving products' performance. The main objectives are: - Reduce consumption of non-renewable resources - Minimize waste - Create healthy working environment
Energy Conservation	Designer and engineers are trained on the Tecniplast Green Policy and related objectives, such as - Reducing power consumption per performance - Reducing water consumption per performance - Eco Design concept for reduced material per product - Eco design avoiding specific hazardous substances and evaluation of the origin of the components	Be part of slowing down the effects of climate change. Our products run on energy, most of which is supplied through the burning of fossil fuels that release harmful gases. Cutting back on energy use of our products and using energy more efficiently results in fewer emissions entering the atmosphere
Risk Analysis	Designers and Engineers are trained on Industry Risk analysis at 360°, from Assembly line phase to Installation, Usage and Service phases	Be able to identify and evaluate specific hazards in the usage situation of the product, then remove that hazard or minimize the level of its risk by adding control measures with the final objective to have a safe product portfolio from the manufacturing phase to the elimination
Eco Design process according to ISO14006	Obtain the assurance and compliance statement of the eco design process according to UNI ISO 14006:2020	Implement guidelines to establish, document, implement, maintain and improve continuously eco design management and part of the environmental management system

3.5 - R&D AND ECO DESIGN PROCESS - ISO 14006

Tecniplast is the only one in the industry to have obtained the Assurance and Compliance Statement of Eco Design Process according to ISO 14006:2020 *"Environmental management system - Guidelines for the integration of eco design"*

We are aware that climate change and global warming are of concern to everyone. All of us are witnesses of worldwide public opinion and Lawmakers' mindfulness to the circular economy and to new economic models whose objective is to produce goods and services in a sustainable way, by limiting the consumption and waste of resources (raw materials, water, energy) as well as the production of waste.

Recent laws and norms show this trend too, some example:

- The UN Sustainable Development goals (SDGs)
- The European Resource Efficiency Platform (EREP) - Manifesto and Policy Recommendations
- The EU Circular Economy Package
- The EU Single Use Plastic Directive
- The US Environmental Legislation
- and many other norms at regional level

Following these trends, Tecniplast, the sustainability trend-setter in the Lab animal Industry, has identified, again, new boundaries in environmental sustainability:
We are proud to inform you that Tecniplast obtained, from DNV GL, the extension of the field of application of EMS certification to the eco-design process according to ISO 14006 concerning all the Tecniplast organization. It is an exclusive leadership which identifies another sustainable competitive advantage we can use in any tender together with the other certifications.
ISO 14006 states that sustainable management begins with the eco design process. Then, customers must evaluate also the eco design parameter in the product evaluation and select eco designed products, if they care about a greener planet.

The purpose of eco-design is to identify during the planning stage how each of the life cycle phases of a product or service will impact on the environment in order to try to reduce such impact to a minimum without compromising the quality and application of the product or service.
Important: a company which wants to certify the Eco Design Process according to ISO 14006 standard must be ISO 14001 already certified! (*)

Internal benefits for our organization:

- It is a guarantee that our organization complies with the environmental legislation that applies to it, including the legal environmental requirements referring to our products and/or services.
- It is a guarantee that our organization manages the design and development of our products and/or services in such a way that they continue to improve as regards their impact on the environment.
- Cost reductions (consumption of materials, improvements to containers and packaging, etc.)

Benefits for our clients:

- Reducing energy consumption during the usage phase
- Reducing other utility consumptions (water, heat, auxiliary products) during the usage phase
- Product innovation leading to differentiation within the relevant market
- Responding to clients' needs and expectations. For example, in bidding for tenders
- Improving the image of the product and of the organization itself
- Satisfy the need to do something for a greener earth

(*) Then, pay attention to the misleading and *"greenwashing"* competitors.

Rationale:

ISO 14006 is part of the 14000 family. This Standard provides guidelines to help any organization to establish, document, implement, maintain and improve continuously the eco-design management as part of the environmental management system.

At Tecniplast we are aware that each product or service has an impact on the environment during all stages of its life cycle, from the extraction of raw materials to end-of-life treatment.
We have reached the goal, with this certification of eco-design, of integrating environmental aspects into the design and development phases of products and services, in order to reduce their negative environmental impact and improve environmental performance throughout their life cycle.

Thanks to the Eco Design processes, we identify during the design stage how each of the life- cycle phases of a product or service will impact on the environment in order to reduce it to a minimum without compromising the quality and application of our products and services. In brief, our R&D designers, each time they develop a product, evaluate materials, energy and toxicity in consideration of the product life- cycle phases, following this matrix:

	MATERIALS (M)	ENERGY (E)	TOXICITY (T)
Raw Materials	• Use of materials having the highest percentage of recycled raw materials in order to reduce primary energy and minimise environmental impact • Use of materials with highest percentage of biomaterials (renewables) • Use of lightest possible materials so as to reduce emissions due to transport • Use of materials requiring lowest possible energy consumption during manufacture		
Production	• Methods that cut components • Methods that cut material variety • Methods that cut both mass and volume of components • Methods that facilitate recycling of raw materials (without dis-assembly)		
Distribution	• Use of recycled packaging and re-usable for finished goods • Cutting right back packaging for transport of finished goods • Lengthening product life-cycle		
Life-cycle of the Product	• We use cutting-edge technology to ensure modular product set-up • Energy consumption and other resources are cut to a minimum during product use • The least possible environmental impact during product use, and greater product longevity		
Product at End of Life-cycle	• Ease of dis-assembly to facilitate component dis-assembly so as to recoup raw materials • Identification of material-type to facilitate materials recognition at end of life-cycle and optimise separation of components without diminishing the quality of materials		

The benefits of the above process are dedicated to our customers/users and ultimately, to the Earth with cleaner products and services for a greener planet.

3.6 - PLASTIC MOULDING DEPARTMENT

The plastic moulding department is the pillar of Buguggiate headquarters, with its 33 injection moulding machines, ranging from 15 to 2.000 tons and 2 blow moulding machines plus one injection blow moulding machine for bottle production

We recently installed the latest generation of electric moulding machines. These machines are powered by digitally controlled high-speed servo motors rather than hydraulics, allowing for a faster, repeatable, more precise, and energy-efficient operation. Electric machine operation is highly predictable, so once a desirable injection process has been reached, it can be replicated very consistently, resulting in higher quality parts. Once a job has been programmed into an electric machine, its digital controls allow it to run virtually unattended, which lowers labor costs and boosts profits. The choice was driven by certain clear advantages. Since it poses no risk of oil contamination, electric injection moulding is well-suited for cleanroom applications. Because of its high precision, this process is also ideal for small- to medium-sized parts and medical products such as Petri dishes and syringes.

Other advantages include:

- Strict precision and repeatability with reduced scrap rates
- Cleaner process that never leaks fluid
- Lower downtime commonly associated with hydraulics
- Energy savings from 30% to 70%
- Quieter operation; reduced motor noise below 70 dB
- Higher rapid injection speeds up to 800 mm/sec and faster clamp motion
- Shorter startup time and up to 20% faster cycle times
- Lower unit cost with less material waste
- Requires no consumables such as oil that would need to be replaced or cleaned
- Lower power requirements result in significantly lower operating cost

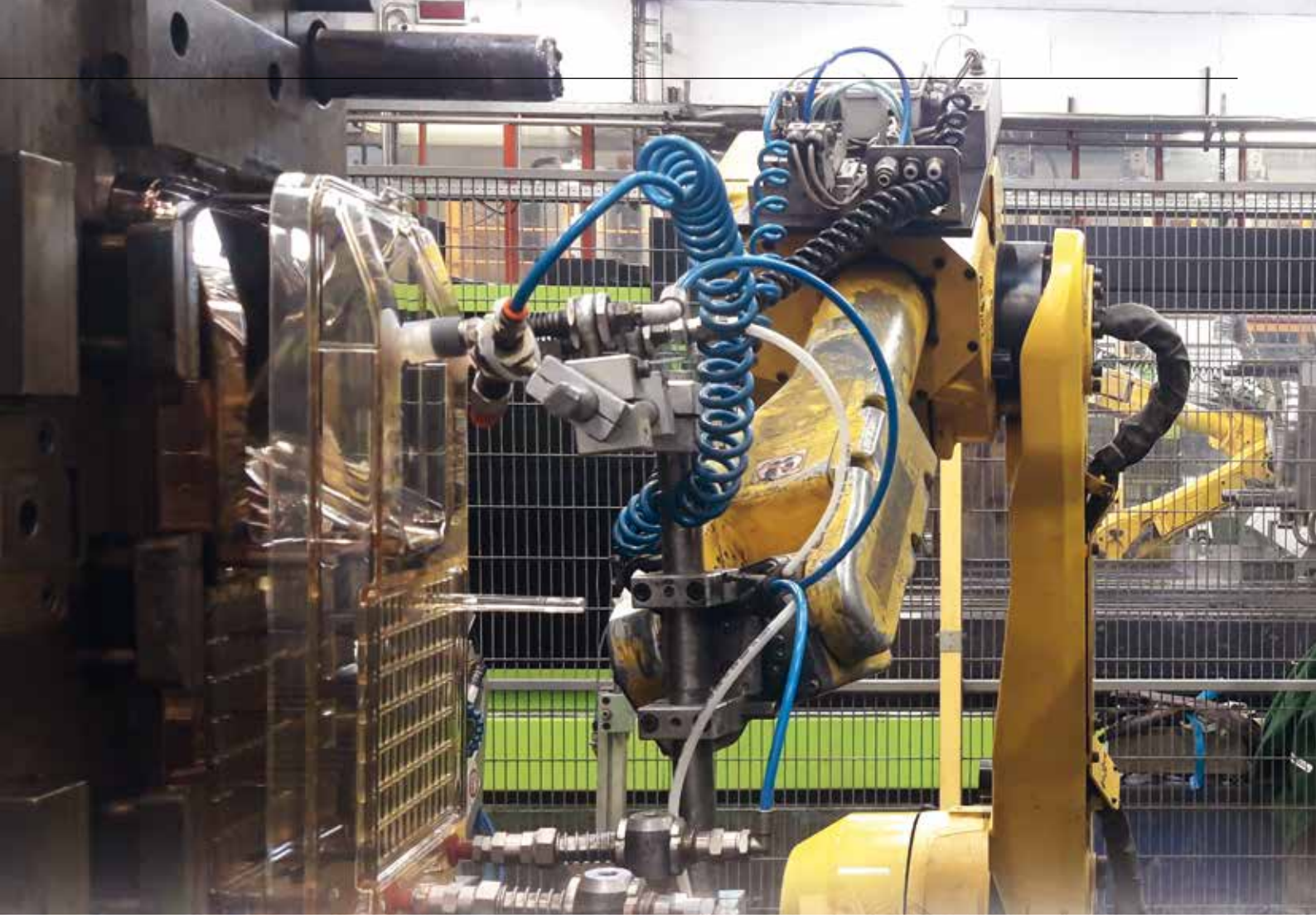
Hydraulic vs electric injection moulding machines.

Our engineers have various options when choosing a plastic injection molding process to best suit their specific application. We have three primary methods - hydraulic, electric, and hybrid - featuring unique benefits and drawbacks. To make the right selection for our projects, we evaluate each time the methods having a full understanding of how these methods differ and what they can offer us.

Hydraulic Moulding Injection Advantages

Hydraulic injection molding is the preferred option for actuating core pulls, ejectors, and valve gates, as well as thick-walled parts that require long hold times. Some of its benefits over all-electric machines include:

- Greater clamp force for large parts
- Better injection rates
- High resistance to wear and tear
- Larger shot size
- Better ejection capability
- Available with gas accumulators to make up for slower clamp movements
- Lower initial purchase price
- Low cost and high availability of replacement parts, resulting in lower maintenance costs
- Easier to control for high-level projects
- There are many units available on the used market because of this method's popularity



Tecniplast Plastic Moulding Department

Electric Moulding Injection advantages

- Tight precision and repeatability with reduced scrap rates
- Cleaner process that never leaks fluid
- Lower downtime commonly associated with hydraulics
- Energy savings from 30% to 70%
- Quieter operation; reduced motor noise below 70 dB
- Higher rapid injection speeds up to 800 mm/sec and faster clamp motion
- Shorter startup time and up to 20% faster cycle times
- Lower unit cost with less material waste
- Requires no consumables such as oil that would need to be replaced or cleaned
- Lower power requirements result in significantly lower operating cost

The plastic moulding department is organized in 2 lines:

- One line for production of cages and other components for medical research.
- One line for production of household items, electronics, and sports goods.

The first line represents about 70% of the production capacity.
Dedicated moulding machines are used for some products like lamps or metabolic cages. All the products for the medical research line are fully designed and engineered by Tecniplast while the other products are engineered starting from customer drawings. The plastic material, ordered by the ERP system, arrives at the central warehouse in 25 kg bags or in 300 kg octabins; when scheduled, the moulding department requests the plastic material to produce the cages or other products according to the work order delivery times. When the order is in progress the appropriate mould is removed from the mould warehouse and fitted on the plates of the injection moulding machine where the program of moulding parameters is retrieved from the memory of the machine to complete the fine tuning of the working parameters.

The plastic granules are vacuum loaded into silos, and when required are extracted from there via a pneumatic system, arriving at the hoppers of the injection moulding machines where, the plastic material is dried out with hot air, heated in a heating chamber to reach the fluid state and then injected into the mould through the injection channel.
At the end of the injection cycle, an anthropomorphic robot picks up the moulded parts from the mould, deposits them on the jig where the injection channel is trimmed. Some plastic components are then deposited on the conveyor where an operator inserts additional items, like gaskets, locking handles and carries out a visual check and packages the pieces in boxes that are transferred to the assembly department and/or to the central warehouse for final packaging and delivery.
All production plastic scrap is recycled by grinding in a soundproof room. The recycled material may be reused at a maximum rate of 25% for industrial products (but effectively only 3% of recycled plastic is used, due to the low percentage of scrap achieved in production. See chapter 6.1). Only the moulding department operates 3 shifts per day.

Blow Moulding Technologies - Advanced technologies.

In general, there are three main types of blow moulding: extrusion blow moulding, injection blow moulding, and injection stretch blow moulding.

The blow moulding process begins with melting down the plastic and forming it into a parison or, in the case of injection and injection stretch blow moulding (ISB), a preform. The parison is a tube-like piece of plastic with a hole in one end through which compressed air can pass. The parison is then clamped into a mould and air is blown into it.
The air pressure then pushes the plastic out to match the mould. Once the plastic has cooled and hardened the mould opens up and the part is ejected. The blow moulding technique completely changed the manufacture of plastic products. With the blow moulding method manufacturers can make various plastic products according to market as well as products that help people in their daily routine life. The blow moulding makes production fast and cheap for a manufacturer and produces greater numbers of products. Some famous products made with blow moulding are plastic bottles, trays, plastic containers and some toys also. Most of the plastic bottles which are used to store liquids and other items are made with blow moulding process and recently with injection blow moulding process, which represents the latest technological innovation. Both processes have pro and cons.

Blow Moulding system

The most common system with many years of experience.

Advantage:

- Cost Efficient
- For particular extrusion blow moulding needs low-pressure air which makes this machine cheaper the process is simple and easier. High skill is not needed to operate but with simple training, anyone is able to control it. One operative can operate this machine so it minimizes the labour cost
- Multiple Production methods
- The blow moulding uses different methods to complete the process
- High Productivity
- Low maintenance
- High Flexibility in terms of different materials in productions and variety of products, size and shapes

Disadvantages:

- Low Strength: the diameter of the mold increases, the corners and areas with the thinnest walls have close tolerance
- Long Manufacturing Process to settle the plastic
- Longer cooling times
- High level of plastic waste

Blow Injection moulding system

it is a more recent system, with a faster process, lower plastic waste and higher productivity.

Advantage:

- Accurate shaping of the neck
- A High level of dimensional accuracy
- Mini weight tolerance
- The highest quality surface finish
- Production absolutely free from waste
- Crystal clear containers for pharmaceutical application
- Finished bottle without weld line and scrap
- Secondary /finishing operation can be avoided
- Multi-cavities can be operated

Disadvantages:

- The preform design generally establishes the core rod length & diameter
- The process is more expensive than extrusion blow moulding
- Compromise between preform wall thickness and blow up ratio
- The ratio of the maximum wall thickness to minimum wall thickness across a preform cross-section should be less than 1,5 to prevent weld lines
- Preform thickness greater than 6 mm is unstable during blowing, since the thick section cannot be properly conditioned
- The technique is not suitable for manufacturing of bottles with handles such as those used for detergent bottles
- Since the injection moulds are required for each preform type of shape, the process is more expensive than the extrusion blow moulding

3.7 - FINISHING PLASTIC PRODUCTS

The plastic components of cages, bottom and top, are sent to the finishing department for completion by inserting manually inlet and outlet valves for ventilation in the lids, inserting filters and filter retainers on the top or, for example, inserting eyelets for automatic watering valves, if required

When completed, the plastic components are packed manually into cardboard boxes. The pallets of packaged components are transported to the main warehouse and then prepared to be sent to customers by sea or by truck.

Tecniplast, since 2009, offers 2 options for cage shipments: a separated shipment for racks and cages or cages shipped together with the rack. In this second option, the finished cages are sent, to the assembly department to be assembled directly on the rack, thus reducing transport and packaging materials (main results and benefits will be given in the next environmental report).

Dedicated operations like laser or ultrasonic welding are required, for example, for chair production, but generally only simple assembly operations are needed to complete the products or their main components which, once assembled, are sent to the main warehouse.

3.8 - PRODUCTION OF STAINLESS-STEEL FRAMES

The stainless-steel racks are produced at the Castronno facility and completed at Buguggiate headquarters

The stainless-steel bars arrive at the warehouse in Castronno in 6 m length bundles of rods or on pallets in the case of steel sheets. The sheets are stored in a computerized dispenser warehouse; rods and sheets are cut with laser beam CNC machines following a work program defined in the machine planning office.

The bases of the structures are manually assembled on a jig and then automatically TIG-welded with an anthropomorphic robot. The welding process makes use of argon gas to prevent the oxidation of the welded areas. The remaining part of the structure is manually assembled and welded. All scrap is sent to steel mills for recycling. The welded structures are sent to an external supplier for surface treatment using glass bead blasting. The glass bead blasting process uses high quality glass that is continuously drawn from the sieve and filtration system to be returned to the blasting cycle. The finished structures are sent to final assembly in Buguggiate.

3.9 - FINAL ASSEMBLY (BUGUGGIATE SITE)

The structures from the warehouse are labelled with coordinates, numbers and letters, using a special pneumatic punching machine, inside a special sound-proof cabin

The structures are placed on pallets that are then pushed manually on a roller conveyor through the various stages of completion.

First, the cage runners are fitted, then plenums for ventilation and auto-watering systems (when required) follow.
Casters are then fitted and the racks undergo a final cleaning operation.

In the final operation, the finished racks are protected with bubble-wrap, the corners with EPS and the casters with wooden blocks. The whole structure is then wrapped in cling film.

The finished racks are transported to the warehouse to be shipped to the customers by sea or truck.

3.10 - PRODUCTS FINAL ASSEMBLY (BUGUGGIATE SITE)

Air-handling units, Laminar Flows Products and Aquatics are fully designed inside the design and engineering department in Buguggiate

The final result is a list of components for which 3D drawings and technical specifications are also available.
All the components are generally outsourced or purchased directly on the market.

When all the items are available at the unit assembly department the fan motors and plenums for the ventilation circuit are fixed to the frame.

- The units are electrically cabled with the electronic boards and the control panel
- The units are moved from one work station to another on special trolleys
- The housings are then screwed in place
- HEPA filters and pre-filters are inserted and each unit is then tested in the testing department where tests are performed on electrical safety and air flow
- Finally, the unit is placed in a sealed cabinet to check for any leakages in the air-flow system
- The units are then cleaned and packed in carton boxes and transported to the central warehouse to be sent to customers by sea or by truck

Laminar Flow assembly line

Innovation goes on…Workplace organization

The CS product (FLOW line ventilated hoods) has been chosen as a model area for the technical pillars of W.O and SCM.

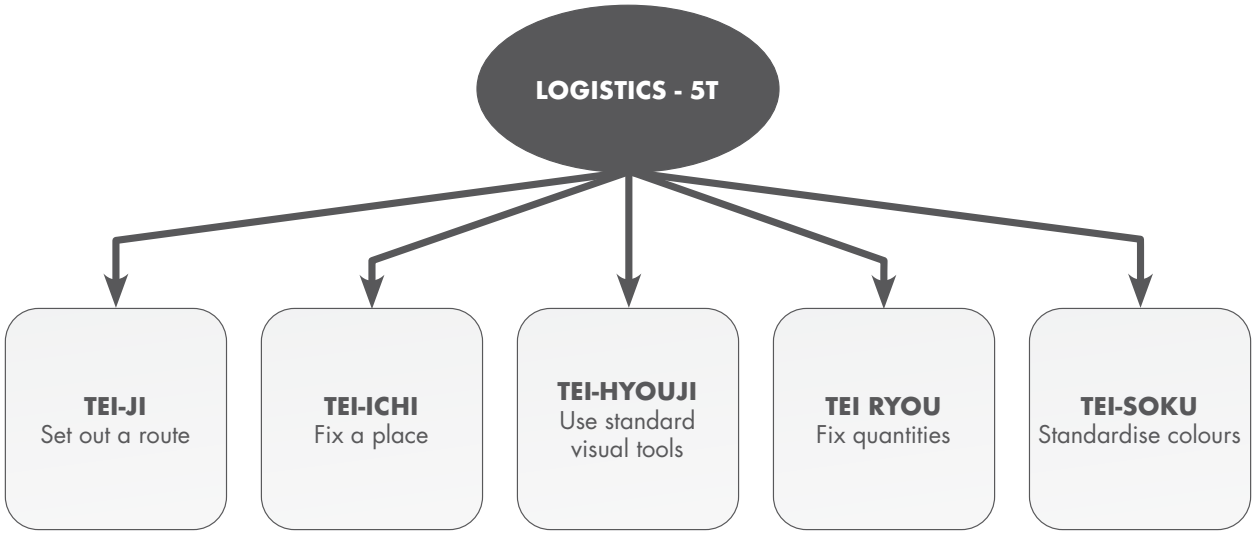
The first step taken in this area was the application of the 5S method.
This is a Japanese method that allows optimisation of work standards through 5 stages.

The group that carried through 5S was made up of Industrial Engineering and Production entities.
The activities were carried out over several days and the result has been to create a neat, tidy and well-organised work area, along with more pleasing work stations.
During 5S application brainstorming sessions were held between the various entities in order to try to reorganise material.

The SCM team (at various times entities from Planning and Procurement, Logistics and Supply Chain Engineering collaborated) supported the project in parallel by carrying out analyses aimed at finalising the definition of the most efficacious and efficient ways of managing materials (both as physical and I.T. flows) along the supply chain.
Up to now, the analyses of the definition of "internal" logistics have been concluded: materials have been subdivided into three macro-categories: bulky and costly; small and medium in size and value.

Accordingly, the first prototypes of carts within which there are all bulky materials were developed.
So far, 7 have been made and their duplication is under way, which will be used to carry the material directly from the warehouse without using pallets.

In parallel, the SCM group carried out the 5T analyses but dedicated to logistics and thus the ordering and definition of material movement.



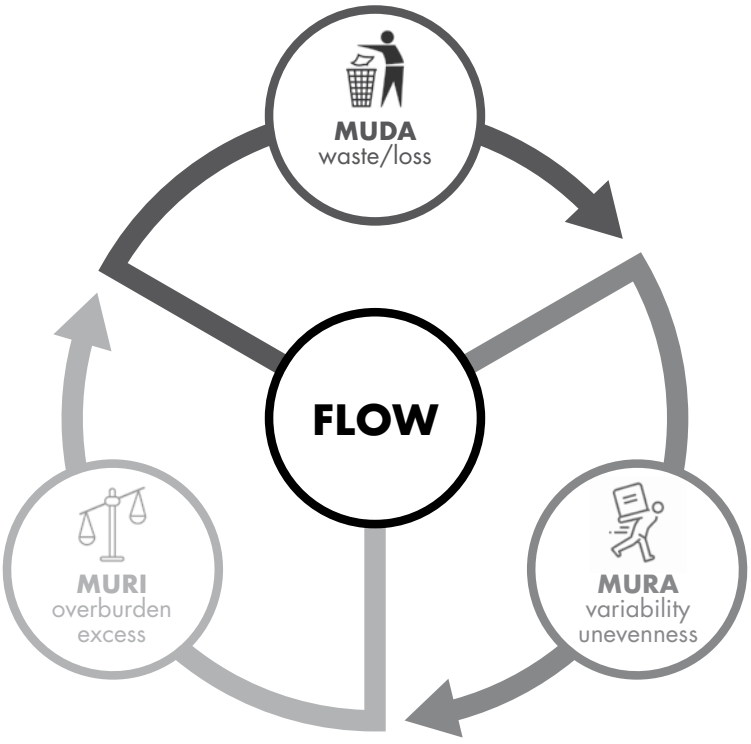
Accordingly, all materials were divided up and movement-type defined:

- Large materials on the carts
- High turnover small and medium materials on the Kanban (Japanese term meaning)
- Literally "card", indicating an element of the J.I.T system involving reintegration of stocks as they are consumed) stations

The first Kanban prototype dedicated to the first CS assembly station thus came into being and material recognition labels were defined.

In the meantime, production came up with "technological" assembly carts which will replace those that are work tables. These carts were created to facilitate operators during assembly and to make operations more ergonomic.

Today the team is going on with the realisation of the remaining carts and Kanban while, at the same time, moving towards the end of an analysis termed 3M.
This will allow assessment of all assembly operations from the productive and ergonomic viewpoint.



3.11 - MOULDS WORKSHOP DEPARTMENT

The Moulds workshop could be considered a strategic area of the Buguggiate site since this is where moulds are designed by Tecniplast and other components, designed by customers, are produced

The process begins with a design phase consisting of an analysis of two-dimensional (2D) or three dimensional (3D) drawings, in some cases, the drawing is generated from a prototype provided by the customer.

Particularly complicated moulds may require the use of Mould Flow Analysis software. Mould flow analysis makes it possible to evaluate several processes including the mould filling cavity, advanced analysis of the melt, mechanical stability and fiber orientation of the plastic.

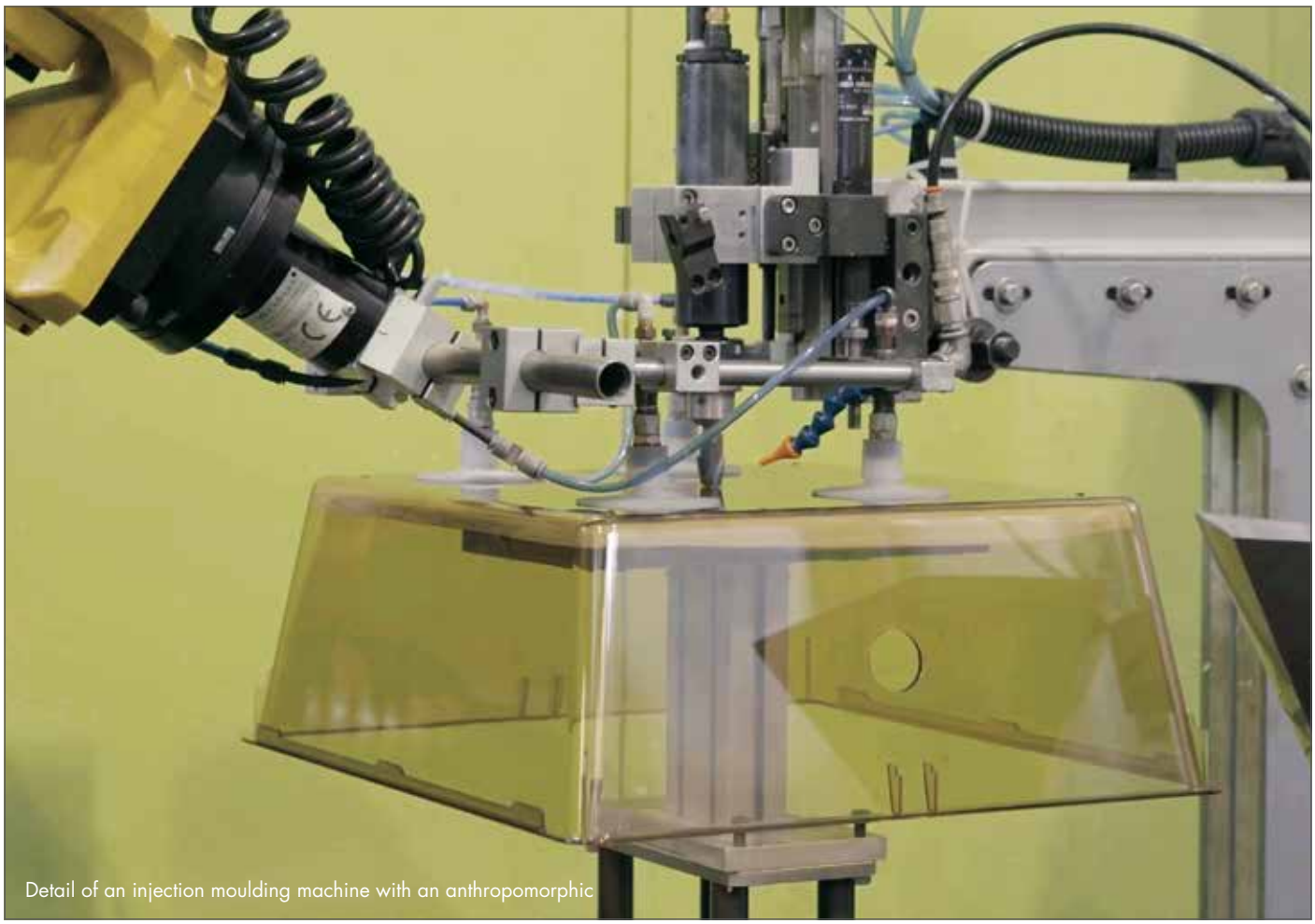
Once the design is completed and approved, the activity of buying materials for the realization of the mould begins. The second phase is mould manufacturing, which for many components is performed via CAD - CAM systems or by means of other CNC machines.

The machining of the mould body begins with roughing. Finishing processes are then carried out with Computer Numerical Control (CNC) and EDM electrodes.

The manufactured components are sent to the manual assembly department, where the moulds are assembled and 3D robot controls are performed for approval.

The finished mould is delivered to the moulding department for functional testing and moulding and when performance and validation tests are concluded, the mould is stored in the mould warehouse to be used whenever required.

All moulds are under a scheduled preventive maintenance programme. Preventive maintenance consists of disassembly of the mould components, verification of tolerance and wear of the moving parts, the effectiveness of the OR of the air conditioning and polishing and protecting the external surface.



Detail of an injection moulding machine with an anthropomorphic

Tecniplast Innovation in the manufacturing process

Our desire is to be the benchmark for innovation, including the manufacturing process so as to be able to meet our customers' needs from the greater flexibility viewpoint as well as that of cutting down times. Last, but not least, cost cutting.

With this in mind, the Tecniplast board of management in July 2020 approved the purchase of a new five-axis work centre, trademarked Mikron (fig.1) with a rotobascula technology (Fig.2), to be installed in our mould construction workshop.

(Fig.1) + GF MILL P 800 U

(Fig.2) Roto-bascula System

Machine characteristics

- Greater precision and reducing working times
- Better surface finishing of piece, maximum precision as regards surface and shape
- Greater ergonomics (tool-carrier loader)
- Significant increase in unsupervised activities (operation reliability (anti-collision etc.)
- Energy saving (lower running cost - power, cooling liquids, air etc.)

To this new investment should be added the DMG Mori Seiki 4-axis milling machine and the GF Cat 550 erosion, purchased over the last two years, and the Automatic injection-moulding island (electric-type press servo-assisted by anthropomorphic robot, both Fanuc) purchased in July 2020.

In a market where to high quality there is the addition of the need to reduce working times, the Mikron machinery offers considerable advantages due to a reduction to the minimum of re-tooling procedures.
The key phrase is:

"Complete working in one only tightening operation."

The new installation, besides being added value seen from a company technological advance viewpoint, will allow an increase in bench working productive capacity and in the milling shop (surface quality enhanced up to Ra 0.15).

The choice of the work centre came about following the 7 steps of Early Equipment Management (EEM), as it had been for the automatic moulding island.

EEM is one of the 10 technical pillars on which World Class Manufacturing rests and aims at getting new plant up and running on schedule, optimising costs and guaranteeing the required quality.

The goals are:

- To get new equipment going without any delays
- To cut the LCC (life-cycle cost, a system that allows costs to be assessed through the entire life of the product, from production to disposal)
- To project equipment so as to guarantee ease of maintenance and inspection
- Vertical start-up and anticipation of modifications

3.12 - WAREHOUSE

Tecniplast has made an important investment with its centralized automated warehouse.

The centralized automated warehouse has been built because we are aware of the need to stay abreast of customer expectations, not only in terms of state-of- the-art products but also in service level and timely delivery. The new building stands on the same site as the company headquarters, with added logistical advantages as compared with peripheral location, as we had in the past.

Some numbers:

- 14.800 mt^2/140.000 ft^2
- 17.000 pallets overall capacity
- Up to 1.200 pallets handled per day

Tecniplast operations underwent outstanding growth, which is vividly apparent in warehouse statistics:

	2017	2018	2019	2020
Warehouse Capacity (Stocking Cells)	16.000	16.000	16.000	16.000
Square Meters	13.000	14.800	14.800	14.800

The warehouse is designed to sustain company growth, supporting operations with a number of sustainable competitive advantages:

- Reduction in operating costs
- Increased delivery speed
- Reduction in shipping mistakes
- Enhanced safety
- Reduction in stock availability
- Reduction in time-to-deliver orders from batches

Here some figures related to how the new warehouse boosted the efficiency and effectiveness (data average for the years 2017-2020):

Total Pallets	From 161.000 to 343.041
Pallets handled per year	From 165.000 to 231.000

The increase in number of pallets handled is due to specific requests of some new customers who have chosen TP for its attention to corporate sustainability.

The centralized warehouse incorporates docks to load and unload goods from trucks. Cranes and forklifts move goods on ISO Standard pallets loaded into pallet racks. Two thirds of the warehouse is totally automatic with operators simply overseeing all tasks. Pallets and products flow along a system of automated conveyors cranes and automated storage and retrieval systems, coordinated by programmable logic controllers and computers running logistics automation software. Slotting defines which storage medium a product is picked from (pallet rack or carton flow), and how it is picked.
With the New Centralized Warehouse TP has improved inventory rotation requirements, controlled labor costs and increased productivity.

Temperature and humidity are kept under control especially for electronic components, to avoid any damage to the parts. Automated storage systems can use vertical space more efficiently and reduce the CO_2 footprint of the building.

The objective of the warehouse was to achieve optimal cost of timely order fulfillment by managing the resources economically while enhancing the service and the flexibility to the benefit of the user. It is clearly beneficial for us to have one large warehouse located centrally, to create an international hub serving the whole market to ensure value added services.

The centralized warehouse is managed by a warehouse management system - WMS. The WMS is a key part of our Supply Chain and primarily aims to control the handling and storage of materials within our new Centralized warehouse and process the associated transactions, including shipping, receiving, stocking and picking. The systems also direct and optimize stocking based on real time information as to the status of bin utilization. The new Warehouse utilizes Auto ID Data Capture (AIDC) technology, such as barcode scanners, mobile computers, wireless LANs and Radio Frequency Identification (RFID) to efficiently monitor the flow of products. Once data has been collected, there is a real time transmission to a central database. The database can then generate useful reports on the status of goods in the warehouse.

The Centralized Warehouse is organized with a set of computerized procedures to handle in the most effective way the receipt of stock and returns, model and manage the logical representation of the physical storage facilities, manage the stock within the facility and create a seamless link to order processing and logistics management in order to pick, pack and then ship products out of the facility.

The warehouse management system is a module of Tecniplast's ERP system. The WMS data track products through the production process and act as an interpreter and message buffer between the existing ERP and WMS systems.
The TP warehouse management is not limited to managing within the boundaries of a warehouse, it is much broader and goes beyond the physical boundaries. Inventory management, inventory planning, cost management, IT applications & Communication technology used are all related to warehouse management. Container storage, loading and unloading are also covered by warehouse management.

Warehouse management, with a team of more than 30 people is part of Tecniplast's SCM and demand management.
The new efficient Centralized Warehouse Management gives a cutting edge to distribution, Warehouse Management does not just start with receipt of material but it actually starts with initial planning of product container design.

The Centralized Warehouse brought the following benefits to TP:

- Green Building with a lower environmental impact
- Reduced maintenance
- Improved control of products
- Reduced and maintained accurate inventory records
- Reduced stock level and increased service
- Increased productive capacity of floor space
- Improved labor productivity
- Reduced handling of products
- Reduced product damage caused by multiple handling, location errors and shrinkage
- Reduced energy consumption

And the following benefits to customers:

- Better response time to customer demand
- Accelerated timing for the delivery
- Increased Service Level
- Reduced quality problems in deliveries
- Reduced product damage
- Increased flexibility

Tecniplast has approved a *"Train"* project that is soon to become operative in order to boost production line efficiency

What has been undertaken will set up new efficiency standards and will make supplying production lines even leaner than now. The "train" will bring to the TP production facility all the advantages of lean production, but will also be in line with the new WCM ideas leading to significant benefits from the viewpoint of reliability, timeliness and cost-saving. This transport and recovery system guarantees maximum flexibility, whilst offering greater comfort to the operator and cutting costs, above all, it means cutting CO_2.
The common denominator - right across TP production - is the cutting down of internal traffic and, accordingly, cost saving as well as greater safety. The project was carried out along with the supplier, and was customised to our logistic requirements. It is now able to satisfy the most demanding standards, up to and including in the future a complete automation of the entire distribution process involving raw materials, semi-worked pieces right up to the final product. The project, which forms an integral part of modern intra-logistics that TP intends to adopt, is perfectly in line with WCM projects and, within the lean production context, will become an irreplaceable aid. The *"train"* will be set up with the maximum efficiency in mind, right up to the complete automation of the supply chain, and will thus live up to the highest expectations as regards functionality and quality - and even more especially to the highest standards of environmental sustainability with a significant diminishing of CO_2.

Tecniplast is already prepared to face the challenges of Industry 4.0 through transport or convoys for the procurement of materials with reliable processes up to automatic guided trolleys and a complete digital connection.

We are implementing a specific project of Warehouse Navigation which will help us to increase our productivity by improving order picking accuracy and reducing costs.

We plan to reach the following objectives:

- Improvement of flexibility with logistics performance
- Reduction of our fleet and labor
- Optimization of our order picking and stacking accuracy

Automated guided trolleys

Shipping Office

Logistic

Goods Loading Zone

Goods Receiving Area

Tecniplast Centralized Automated Warehouse

3.13 - BUILDINGS

Tecniplast has made another important investment with its new buildings, in a period in which the business logic still favors the *"maintenance of positions"*

The courage of a company is also measured by the investments allocated to the future, to the need to stay abreast of customer expectations, not only in terms of state-of-the-art products but also in service level and timely delivery and, last but not least, in terms of sustainability.

This significant investment has been driven by important concepts of sustainability, ergonomy and LEAN management. The first competitive advantage will be the savings in transportation with all its related benefits in terms of environmental benefits, reduction in costs in terms of manufacturing processes and increase in flexibility.

About the environment: the recent law on energy from renewable sources enables us to install solar panels for over 60 kW in the new building!

Tecniplast Corporate Service Department

We plan a further future expansion of the new building for a 1.500 m^2 for production departments and 1.200 m^2 for offices with the objective of rationalising the production flow with consistent sustainable advantages in terms of Environmental Sustainability, Lean management and a final result to make a positive contribution to customers.

3.14 - TECNIPLAST MAIN PRODUCTION DATA

The idea of preparing this environmental report stems from conversations with several customers, surprised at the many environmental initiatives undertaken by the Buguggiate facility, have spurred the TP management to use this further communication tool in order to make more widely known the ground-breaking data that mark out Tecniplast's evolution. All technical data within the report refer to the Buguggiate site, as shown in the Methodology and Reference page immediately after the index. The Castronno site's activities have not been included since the Castronno site is being transferred to Buguggiate. Such activities will, however, most certainly be inserted into the next updating of the report.

The following table shows the main data, grouped in inputs (raw materials), natural resources consumed, and outputs (finished products) but also waste production and some indicators are referred to hours worked.

MATERIAL AND RESOURCES CONSUMPTION (INPUTS)					
DATA	**UNIT**	**2017**	**2018**	**2019**	**2020**
Plastic Materials	ton	1.657	1.447	1.476	1.716
Plastic Material Internal Closed Loop	ton	54,5	40,0	41,4	42,4
Electricity	MWh	6.412	6.010	6.069	6.297
Natural Gas	st m^3	261.725	274.292	236.079	234.428
Water Consumption	m^3	7.083	8.636	7.153	8.349

Plastic Waste refers to Buguggiate site only.

AND OTHER OUTPUTS					
DATA	**UNIT**	**2017**	**2018**	**2019**	**2020**
Plastic Scraps	ton	132,9	84,5	123,8	149,4
Recycled plastic Scraps	ton	66,2	25,4	54,2	81,2
Plastic Wasters (end of Waste)	ton	66,2	59,1	69,6	68,2
Total Wasters	ton	293,5	240,3	264,3	353,6

TURNOVER					
DATA	**UNIT**	**2017**	**2018**	**2019**	**2020**
Total Worked Hours in Buguggiate Site	x1000	657	654	630	660
Injection Moulding Departament Worked Hours	x1000	178	146	115	136

Production is supported by the planning function so that each work order is processed by the ERP system, generating the related worksheets.
An analysis of orders triggers the purchase order for plastic or other materials and components, if not available.

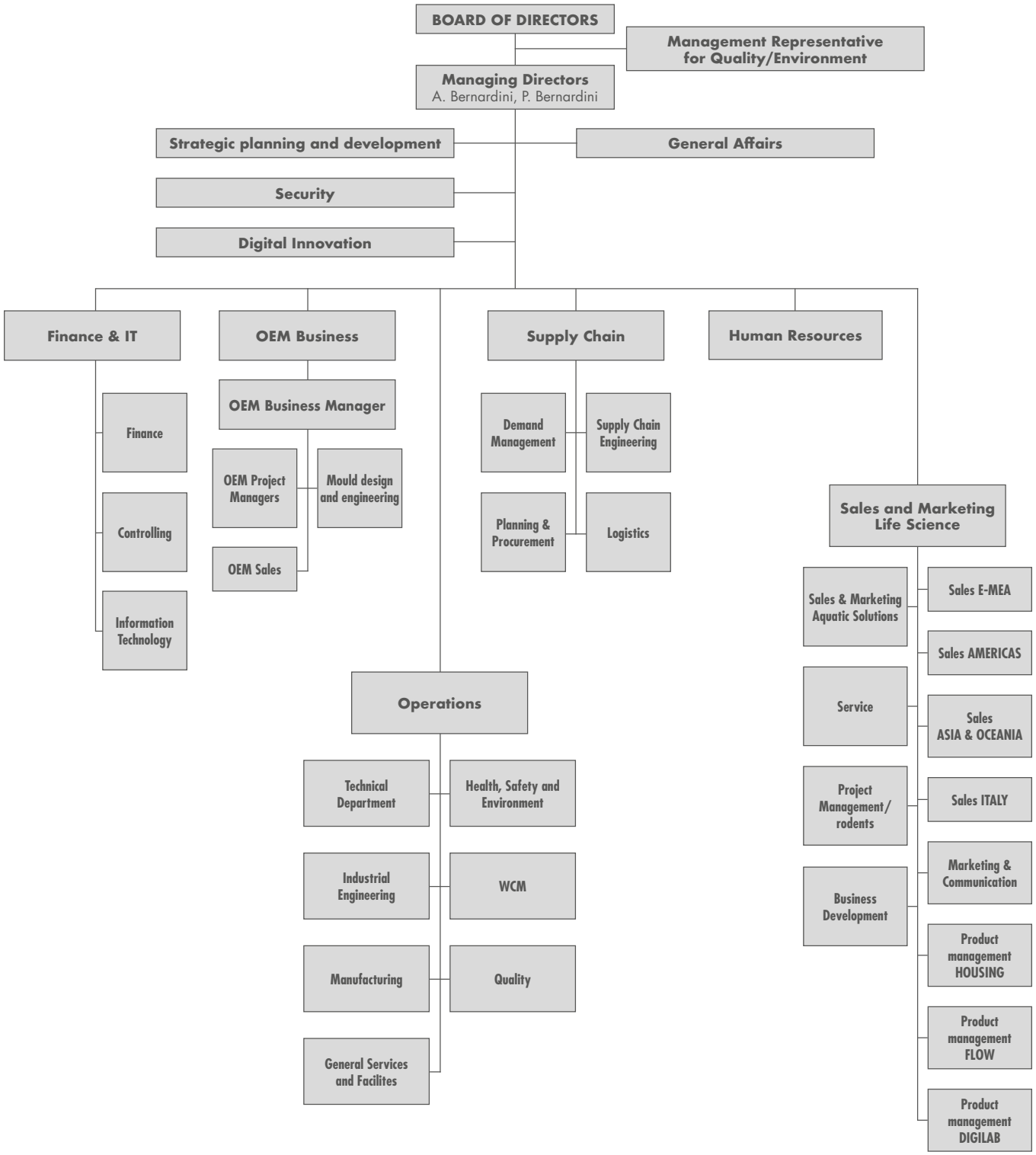

TECNIPLAST

CHAPTER 4

TECNIPLAST ORGANIZATION, TRAINING AND ENVIRONMENTAL INVOLVEMENT

4.1 - ORGANIZATION, STRUCTURE AND RESPONSIBILITY

In order to manage properly all Environmental Aspects of its Buguggiate site, Tecniplast adopted the general principal whereby each Manager, including Top Management, is responsible for the correct application of the requirements, rules and methods of the EMS regarding the operations and activities under his responsibility and for which he might be called to respond. For EMS management purposes, the site is divided into departments, but additional areas are considered, such as Logistics, Waste Management and Utilities, this last under the responsibility of the Maintenance Manager.
Each Manager communicates to the Environmental Management Representative the EMS monitoring results and periodically, by means of the EMS Management Review, EMS status is presented to Top Management.



2021 Tecniplast Corporate Organization Chart

From the last Environmental Report you can easily see that Tecniplast organization has grown in proportion to the turnover and uniformly in the various functions. However, you can see a particular expansion and attention in the following functions:

Supply Chain Organization

Tecniplast invested in the last 5 years strongly on its Supply Chain organization, in the Demand Planning with the objective to maximize profitability and improve efficiency as much as possible to satisfy customers' needs with added flexibility, lower time and competitive costs. Tecniplast understood that accurate demand planning is critical in ensuring supply chains are efficient for inventory and, ultimately, revenue. Today Demand Planning is a real competitive advantage for Tecniplast. Tecniplast demand planning ensure products can be delivered satisfying customers needs, forecasting, or predicting, the demand. Tecniplast today identified an optimal balance between having sufficient inventory levels to meet customer needs without having a surplus, considering a wide variety of factors that can influence demand, including labor force changes, economic shifts, severe weather, natural disasters or global crisis events.

Industrialization Organization

Tecniplast decided to invest in the industrialization, understanding that the transition from the design phase to the mass production phase is becoming critical, requiring the consideration of various constraints: technical, organizational, economic and human. Tecniplast decided to give the industrialization engineering a key role in the organization. Indeed, Tecniplast improved drastically, optimizing production technologies and adapted industrial tools, with appropriate organization, whilst taking into account the changing context. The industrialization became the right interface facilitating dialogue and the exchange of information between the design office, the production service and the purchasing unit.

4.2 - SUPPLY CHAIN

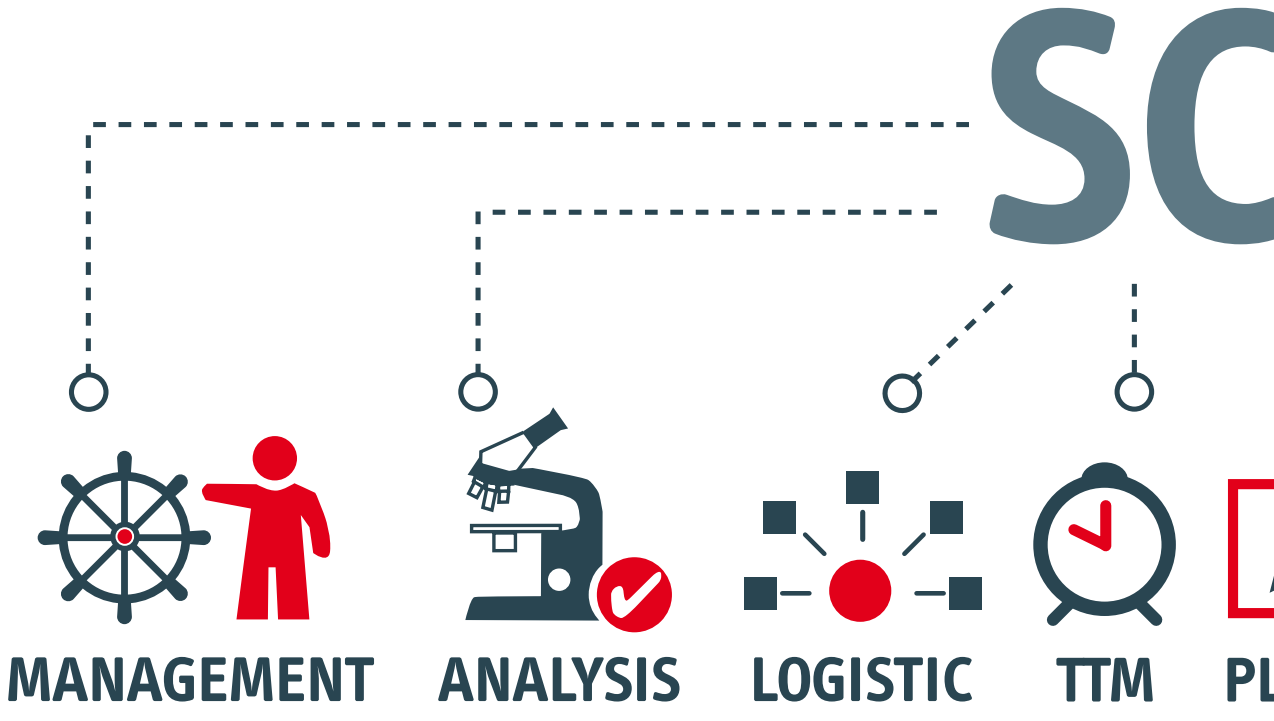
Supply Chain Management is the active management of goods and information flow processes (from product development, to sourcing, production, and order fulfilment) in order to maximize customer value while achieving sustainable goals from the business, as well as from the environmental, perspective

Since 2014, the Tecniplast Organization has encompassed an end-to-end Supply Chain Management Unit that contributes to the company's environmental footprint minimization in several ways:

- By partnering with Third Party Logistics providers that meet, and exceed, environmental regulations. Elements such as effective carbon emission control, fleet renewal and maintenance, are discriminating factors for vendor evaluation and selection. The Logistics Department makes sure that all Tecniplast companies apply these policies and procedures.
- By continuously reducing and rationalizing the satellite warehouse network, as well as carefully optimizing shuttling, and inbound transportation
- By optimizing the total amount of inventory, avoiding unneeded production, storage, and minimizing obsolescence risks.

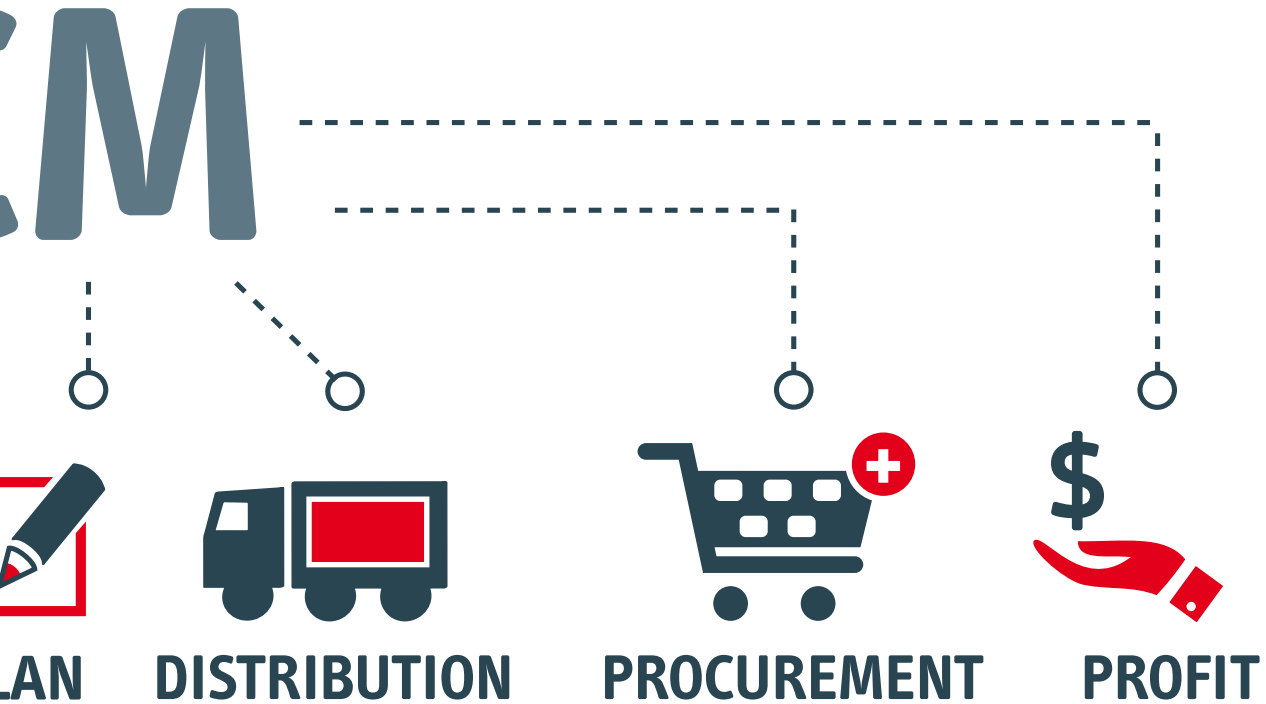
This goes beyond a mere "four walls approach": upstream and downstream supply chain collaboration initiatives are in place in order to share planning visibility, and replace inventory with information:

- By actively managing pallet reverse logistics and refurbishment, as well as fostering the use of reusable crates and environmental-friendly packaging
- By supervising the waste management process, as hereinafter explained in more details



Product and Supply Chain - Promote a responsible supply chain

ACTIONS	TODAY RESULTS	TARGETS
Promotion of good sustainability practices among Supply Chain Actors and Selected Suppliers	Internal Trainings to raise awareness on ethical principles to proper scouting, evaluate, select and improve our suppliers. Working closely with our suppliers, with the objective to decrease our environmental and social impact and position ourselves for strong growth	Continued increasing awareness of suppliers on responsible sourcing principles
Risk Analysis of the Supply Chain	Sustainability, Self-Assessment questionnaire developed as a tool for prequalifying new suppliers	Distribution and analysis of the Sustainability Self-Assessment Questionnaire
Conduct of audits on compliance with social ethical and environmental standards	A program which covers our key suppliers and aims to identify, assess, respond, and monitor third-party risks that could have an impact in our supply continuity, covering 4 elements: - Supplier Risk Assessments - Alert system - Material Risk Assessments - Risk Response Tracker	Complete Collaboration with our supply chain departments of each business sector, to protect the stability of our supply chains and always provide our customers with the best possible products and services at optimal quality. In this fast-paced world, we believe that secure supply chain is the key to our success. We expect our suppliers to adhere to the same ethical, social and compliance standards as we do
Management of Environmental Aspects are regularly updated taking into consideration changes in Tecniplast, the results of improvement objectives and the evolution of applicable environmental legislation	Evaluate all environmental aspects in the supply chain which can interact with the environment. Identify activities that are relative to any of these aspects and carefully control them to minimize or eliminate impacts to the environment	Have under control the following aspects which can have a significant environmental impact: - Hazardous materials and waste - Mixed waste - Storage, use, and transportation of chemicals Storage, use, and transportation



Product and Supply Chain - Promote sustainable and safe products

ACTIONS	TODAY RESULTS	TARGETS
Integration of innovative and sustainable solutions in the development of new products	Introduction of recycled materials situation (es. For example, Autoclaves)	Launch of a complete LCA project
Ongoing review and monitoring of banned or restricted substances in products and production processes	Supply contracts amended	Ongoing review of the list of substances banned
Sustainable Design. TP efforts include designing new products following sustainable design, rules, using green infrastructures, managing materials rather than creating waste, labelling green products	Selection of: - Materials - Shapes - Eco Design - Components - Recycling projects/programs - Reduced Packaging Objectives: - Material Contents - Waste Management - Transportation - Performance Cradle to Cradle concept, through: - Less costly to operate - Easier to use - Reduced wastes - Better conservation of natural resources - Leadership in CO_2 Footprint - Less Water - Less Washing - Less Detergents - Less Chemicals	Complete Collaboration with our supply chain departments of each business sector, to protect the stability of our supply chains and always provide our customers with the best possible products and services at optimal quality. In this fast-paced world, we believe that secure supply chain is the key to our success. We expect our suppliers to adhere to the same ethical, social and compliance standards as we do

Our raw materials purchasing policy helps our customer to build a sustainable advantage and contributes for LEED credits:

- Material Reuse: due to their durability, stainless steel and plastics can usually be reused.
- Reference Service Life: due to its durability our materials (both stainless steel and plastic) have a long life cycle and low maintenance
- Life Cycle Assessment (LCA) according to ISO 14040 and ISO 14044 Standards
- LCA Peer Review according to ISO 14044: 2006 standard
- Carbon Foot Print according to ISO 14067 : 2018 standard
- System Certifications:
  - Quality and Environmental Management Systems (EMS) complying respectively with ISO 9001 and ISO 14001 Standards
  - Environmental Declaration/Report according to European Regulation
- Life Cycle Assessment Categories: Tecniplast products have an impact below industry average in at least 3 impact Life Cycle Assessment Categories: Global warming Potential; Acidification Potential and Eutrophication Potential
- Raw Material Source and Extraction Reporting: an essential element in ensuring Tecniplast Sustainability is regular evaluation of our suppliers' sustainability policies, practices and related performance as well as maintaining a high level for our production. We have a well-defined policy for sourcing raw materials in a responsible way
- Recycled Contents: we guarantee the highest recycled content (pre and post-consumer recycled material) in the industry without lowering the quality level and the usage situation parameters.

- International Standards: Tecniplast products are produced with materials according to international standards (Material Safety Data Sheets (North America) or Safety Information Sheet (Europe) containing specific information regarding health and environment effects.
- Tecniplast Material Ingredient Optimization: our Materials do not contain any substance that falls within REACH criteria for substances of very high concern.
- Materials Supply Chain Optimization: through specific organizations such as for example ISSF, the International Stainless Steel Health Forum Tecniplast has actively supported studies on materials health effects as well as a comprehensive review on Toxicity.
- Diversion: Tecniplast materials (Stainless Steel and Plastics) have high value as secondary raw material and they are 100% recyclable without loss of quality.

The Supply Chain Management organization also plays a role in the new product introduction process, supporting complexity reduction and managing product phase-in and phase-out, so as to design a sustainable supply chain starting from the drawing board.

Sustainability planning process at Tecniplast

Tecniplast is one of the first companies to have implemented a Sustainability Plan. We, intuitively, perceived years ago that the circular economy appeared to be more sustainable than the current linear economic system because it reduces the resources used, and the waste created on the one hand, and conserves resources, reduces environmental pollution on the other. We believe so much in that that we have developed the first Sustainability plan in the Lab animal Science industry! Through the Sustainability Plan, we at Tecniplast share our medium/long-term sustainability strategies with our stakeholders. In order to enhance the integration of environmental and social considerations within Company operations, our Plan focuses on certain priority areas:

- Promoting employee wellbeing
- Improving Occupational Health and safety
- Fostering a responsible Supply chain
- Mitigating environmental impacts
- Increasing client satisfaction
- Promoting the social and economic development of local communities
- Respecting animal welfare in designing products

PLANNING STAGE
The Sustainability Unit works with the heads of all functions, coordinated by the Top Management to identify areas for improvement and related projects, on the basis of which it formulates a draft proposal for the Sustainability Plan.

FINAL STAGE
The Plan is then submitted to the Top Management, which analyses its contents and feasibility. The final stage verifies its consistency with the Team and gives its opinion to the Top Management, which is responsible for final approval.

OPERATIONAL STAGE
Responsibility for achieving the targets of the Sustainability Plan lies with the liaison officers of the departments involved, who have the necessary resources, tools, and know-how to implement the Plan.

MONITORING STAGE
To ensure adherence to the commitments made, the Sustainability Unit asks for regular progress reports on projects, and updates the Control, Risks, and Sustainability Committee accordingly.

4.3 - TRAINING AND INVOLVEMENT

Tecniplast considers the proactive involvement of employees as essential and as a driving force in order to reach continuous improvement in Customer Satisfaction, Product Quality, Environmental and Safety Performance

A recent advertising on TTC

Accordingly, all personnel are regularly trained and staff involved in environmental management activities have the appropriate competence to assure the best results and, in case of need, adequate training programmes are scheduled and provided. In accordance with the Quality and Environment procedure, on a yearly basis each Department Manager identifies employee training needs and informs the HR Manager who carries out a "weighting" operation considering priorities, the budget available and the provisional program, to arrive at the Yearly Training Program.

Since the initial EMS implementation, a good deal of training on Environmental and Safety subjects has been provided.

TRAINING TECNIPLAST' EMPLOYEES				
YEAR	**2017**	**2018**	**2019**	**2020**
Training hours (total)	7.034	10.182	7.612	4.180
Number of Employees involved (yearly average)	397	288	370	285
Training hour (per capita)	17	35	20	14

During the year 2018 the functions involved in the training were the Technical Management, (to meet the different skill needs required by the innovation process and the development of new products), and Production, (whose personnel were provided with technical courses eg. in-depth scientific moulding was carried out and in particular a course on Benjamin software, courses in the CAD / CAM software TEBIS design field) and a consistent number of hours of safety training (e.g. safety refresher course, first aid, fire prevention, forklift drivers ...).

Tecniplast includes dealers in its training activities so as to extend proactive involvement of employees to cover their after-sales and servicing activities.

Tecniplast considers the proactive involvement of employees as essential and as a driving force in order to reach continuous improvement in Customer Satisfaction, Product Quality, Environmental and Safety Performance and also to arrive at a homogenous approach Worldwide.

TRAINING TECNIPLAST' DEALERS				
YEAR	**2017**	**2018**	**2019**	**2020**
Training hours	6.815	6.348	6.825	3.258
Number of Dealers trained	25	42	42	60
Training hour per Dealer (average)	272	151	162	54
People trained	288	340	339	344
Training hour per person (average)	23	18	20	9

During the years 2018 and 2019 Tecniplast held the International Sales & Marketing Meeting, an event that allowed us to train all the main Dealers.
During the year 2020 many planned activities were changed, due to the pandemic situation and restriction in travelling. After the initial interruption the training were provided at distance, so having the possibilityt to involve more dealers than in past years.

4.4 - TECNIPLAST TRAINING CENTER TTC

Tecniplast realized and opened its TTC: Tecniplast Training Center during 2015, hosting on average more than 60 people a year

The program, developed through a constant interaction with our customers, features multiple training opportunities ranging from basic to advanced level, to satisfy the needs of a diverse audience and to provide extensive training opportunities and hands-on sessions, in order to develop and refine best practices in the use of our housing and cleaning equipment, striving to exceed customer expectations by delivering exceptional quality training that is relevant and has a measurable impact on practice.

"We match your needs sharing our knowledge with you".

We are passionate about our products and the work we do; we want you to have the same feeling in using our products!

"Then why not to attend our courses and take part in a challenging learning experience?"

More than 120 people can follow presentations with the support of all the latest technology, several training rooms and space for visitors with internet access, refreshment and catering facilities, ensuring a high degree of quality working life as well as health and safety, offering a pleasant, dignified working environment. The Training Center has been designed to the be dedicated to our customers too.

It allows them to see our products in the showroom, which is adjacent to meeting rooms, to participate in specially organized symposia and other events and to attend training seminars in order to be updated on our products. The same training needs apply to our own growing "Family" of collaborators.

- More than 10 international symposia/year with more than 500 registered people
- More than 400 people visiting Tecniplast in small groups.

We offer courses in our Corporate location but we are also able to tailor courses to your organization's exact needs, and host them onsite at your facility if preferred. In addition to the selection of standard courses available at our worldwide Corporate Centre.

Tecniplast Training Centre offers you on-site training with hands- on your own equipment. We can also customize courses based on your level of knowledge, your special requests, your needs - and your schedule. Our training staff has extensive experience in the Lab Animal market and products, as well as excellent teaching skills.

We at Tecniplast, are not merely a supplier of world-leading lab animal products and equipment. Our commitment to our customers also comprises first-rate training, not only of the staff you have today, but also in the future. Tecniplast offers a comprehensive training program to enable safe, accurate and reliable operation of all Tecniplast equipment and systems. Increasing worldwide demands on quality assurance means tougher demands on your staff to keep pace with new norms and standards. Consequently, Tecniplast Training Centre provides good basic knowledge in products and machine operation and the principles of good Culture of Care, thus helping to ensure that you get maximum operational efficiency and full compliance with the toughest standards.

The latest support to increase your department's learning and efficiency can now be found in our training courses. If you would like to propose something new that you don't find in our offer, please contact us and we'll seek to help you in any case with a special course developed for your specific needs.

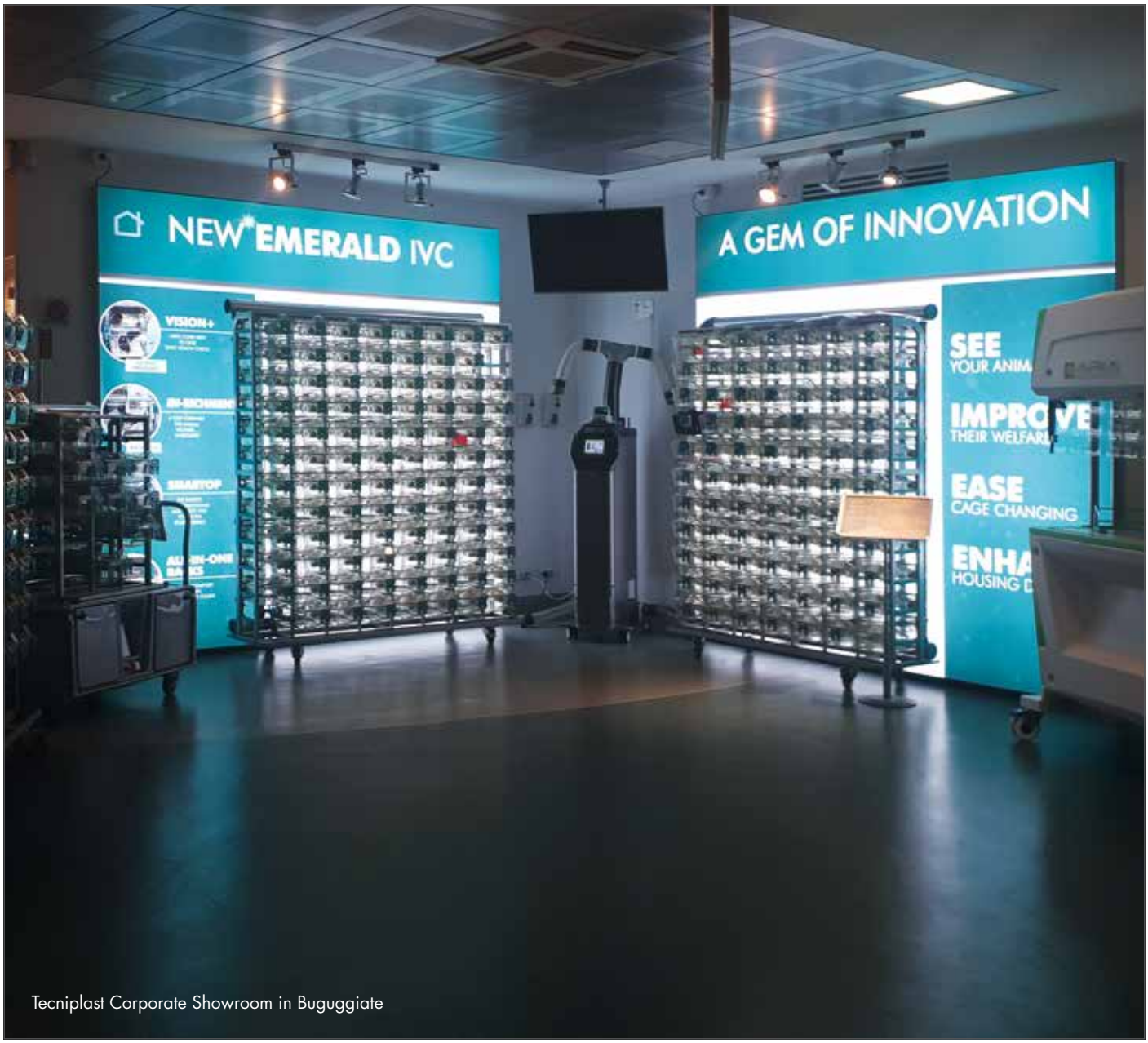
Customer Training

Tecniplast does not simply design, produce and distribute products to its clients. The process ends with training, which is an integral part of what we offer, and which is essential for guaranteeing the best productive performance of the products for our customers

Tecniplast Training Centre is at our Worldwide Corporate HQ; training activities are held in Buguggiate where we have a fully equipped area of over 35.000 sqm, with perfectly functioning equipment of all sizes, installed exclusively for training and demonstration purposes. Our objective is to transfer our knowledge, our experience and our recommendations to each participant, to let them fully exploit the potential of our products, with a complete awareness of all features of our products, to maximize related benefits. Tecniplast Training Centre courses match theoretical education and practical training. Participants have the opportunity to train on the same products which they will have in their facilities, giving them a competitive advantage in terms of experience. The courses are normally held within classrooms equipped with the most highly-advanced teaching equipment. Tecniplast Training Centre supplies all the material needed for the training and offers the participants logistic support for the training period.

Show Room

Tecniplast Training Centre has a wonderful large and permanent show-room with all the latest products available for hands-on description and training. We ensure they are always working and ready for a demonstration on request.



Tecniplast Corporate Showroom in Buguggiate

Ongoing Education

From the point of view of continuous professional training, Tecniplast Training Centre organizes a series of seminars which are dedicated to our personnel over the course of the year according to a detailed and growing plan of training needs, dealing with different technical, strategic and commercial issues each time. We have seminars already planned every year. Our salesforce represents the best channel to ask for more information on Tecniplast Training Centre.

Training in the Tecniplast Corporate Training Center

4.5 - SCIENTIFIC SYMPOSIA

We believe in training for employees but also for customers. Tecniplast organizes each year from 4 to 6 international Scientific Symposia together with national and international Lab Animal Associations, hosting up to 400 professionals each year

Those symposia are great opportunities to bring together colleagues from around the world, with outstanding courses, accredited by scientific organizations.

Tecniplast designs, together with the most important Scientific Associations, the contents of the Symposia, offers hospitality, making available the Training Center, its organization and its staff. The results are symposia with relevant, practical course contents, world class faculty, providing attendees with a perfect backdrop for learning and meeting with national and international colleagues.

Scientific Symposia attract the top professionals in the industry. Tecniplast aims to foster dialog and shared learning among participants. The day features keynote speakers, rapid-fire presentations of peer-reviewed papers: interactive methods sessions, and networking are the best added values recognized by participants. We collect opinions and suggestions and at the end of any Symposium we organize.

Our Scientific Symposia are greatly appreciated. We know from questionnaires that attendees:

- Share what has been learned from applying scientific methods
- Network with colleagues interested in using scientific methods
- Discuss challenges in applying and disseminating scientific approaches to lab Animal Science
- Create a common understanding of how to apply and disseminate scientific methods to improve Lab Animal Science

Our symposia are perceived as a unique opportunity for the scientific community to come together to exchange experiences and research on developments in Lab Animal Science.

Corporate Tecniplast Training Center Reception

4.6 - GUIDO BERNARDINI FOUNDATION

One of the most important and active foundations in the industry

Tecniplast considers continuing education and training of professionals involved in the care, welfare and use of laboratory animals an important column to promote the quality of biomedical research by encouraging high standards of knowledge and competence in scientific and technical staff.

With this strategic consideration we support, as we have done since the beginning of its activities, one of the most important and active foundations in the industry: Guido Bernardini Foundation.

Fondazione Guido Bernardini

The Fondazione Guido Bernardini (FGB) is an independent, non-profit organization in memory of Guido Bernardini.

FGB is devoted to continuing education and training of professionals involved in the care, welfare and use of laboratory animals; the overall mission is to support the humane and responsible use of animals in science and to promote the quality of biomedical research by encouraging high standards of knowledge and competence in scientific and technical staff.

The courses and scientific events are dedicated to an international audience to improve the harmonization of principles and attitudes. The syllabi of the courses are developed and regularly updated to include new subjects and innovative technologies.

The main objectives of the Fondazione are:

- To provide continuing and post-qualification professional training in laboratory animal science (LAS) by offering courses and scientific events such as symposia, seminars and workshops
- To collaborate with associations and organizations involved in the education and training of LAS.
- To contribute to the implementation of the Three Rs by spreading the culture of care and the knowledge of appropriate standards of animal husbandry and use
- To support and co-ordinate studies and research projects pertaining to human health and safety and new technologies in laboratory animal facilities
- To promote and disseminate emerging technologies applicable in a modern laboratory animal facility through the initiatives of the Leonardo Technology Forum

The FGB Scientific Committee is composed of international experts with different backgrounds in the LAS field so as to ensure the scientific excellence of educational and scientific programmes.

The training team includes professionals with extensive experience in LAS and covers a variety of topics, modulating the programme through constant interaction with the participants.

FONDAZIONE GUIDO BERNARDINI

BETTER EDUCATION FOR BETTER SCIENCE

4.7 - ENVIRONMENTAL COMMUNICATION

Environmental Sustainability has become an essential component in the strategy of a leading company

The need for *"sustainability"* is fast becoming a mandatory requirement as more and more environmental initiatives are being enacted in all levels of government and consumers. Customers, Architects, Contractors and Building Owners preferences are quickly changing to support green and energy efficient products because they see the advantages of lower environmental externalities, healthier lifestyles and reduced impact of environmentally friendly items.

Tecniplast wants to contribute consistently and constantly to this trend, confirming Tecniplast's strong commitment to sustainable development through a clear advertising campaign, showing facts and battling *"Green Washing"*, in which incorrect claims are made for processes or products to be environmentally friendly. *"Green Washing"* is becoming more frequent.

Tecniplast want to develop a sustainable competitive advantage of the popularity and transparency that it enjoys, high level of consumer confidence in maintaining leadership in environmental development and promoting legitimately high thresholds of sustainable design. Tecniplast products can contribute to sustainability, with their compatibility with economic efficiency, direct monetary benefits to stakeholders and ensuring long term economically sustainable building development.

Then the Environmental Communication is a key factor. It has to be clear, simple and with benefits. Tecniplast environmental policy is communicated to all employees, suppliers, subcontractors and clients, and it is available on the Tecniplast web site (www.tecniplast.it).

Tecniplast communicates internally its environmental commitment by means of:

- Printed documents displayed on bulletin boards: points located in each department and shopfloor.
- *"L'Eco di Tecniplast"*: an internal paper magazine, printed on recycled paper, with data regarding the ongoing projects of the whole group, including environmental activities. The paper magazine is free for all employees.

Tecniplast communicates externally its environmental commitment by means of:

- Advertising communication pages in major market-related technical publications.
- Panorama News, a magazine available as a PDF on Tecniplast website and distributed via market-related technical publications to all customers, sister companies and dealers (18.000 copies every 3 months). It presents new products, new technologies, customer interviews, organizational activities and environmental initiatives.
- Specific advertising and newsletters concerning specific projects (e.g. cages recycling campaign).
- Workshops, Seminars in the most important national and international conferences (AALAS, FELASA, IAT, LASA, etc.).
- Website and social media.

Environmental Campaigns

Environmental Communication Campaign 2017

- Additional environmental section inside the product instruction manual and product catalogue
- Updated environmental product presentation for customers
- Dedicate space for at least one article on Environmental Sustainability in each Panorama News issue
- Target successfully reached

Environmental Communication Campaign 2018

- Continued distribution of reports on analysis of the CO_2 Footprint on new products and on existing products
- Updated the environmental section inside Tecniplast Website
- Customers and dealers, environmental communication information and training
- Target successfully reached

Environmental Communication Campaign 2019

- Continue to calculate the Product lifecycle assessment analysis for new products
- Continue with the installation of the analytical detection system of energy consumption
- Evaluate investment for the purchase of the cardboard converting machine in filling material considering the potential use and the saving deriving from the purchase of the current filling materials
- In parallel, evaluate, where possible, use of collapsible plastic packaging to replace cardboard
- 2019 : Target Successfully reached

Environmental Communication Campaign 2020

- Communciation Campaign on ISO 14006 (advertising page, poster, web, social media)
- Communication Campaign on Sustainability Strategy (advertising page, poster, web, social media)
- Continue to calculate the Product Life Cycle Assessment analysis for new products
- Update all the communication material, promoting the ISO 14006
- Organize training on Eco Design and what does ISO 14006 mean for the Environment (training for internal and external people)

Tecniplast has set year by year and then for 2021 a range of objective to provide further improvements in environmental performance in line with the Continuous Improvement of ISO 14001 standard requirements and Tecniplast President Sustainabilty Commitment.
Prepare a New version of the Environment Report for the Years 2017, 2018, 2019 and 2020, improving and updating the environmental communication.

One of the most successful advertisements on Sustainability produced by Corporate Marketing Department

Our GREEN approach has solid roots


DNV·GL

VERIFICATION STATEMENT

TECNIPLAST S.p.A.

TECNIPLAST

ISO 14006

Tecniplast eco–design process has been approved according to ISO 14006

Tecniplast obtained the assurance and compliance statement of the eco-design process according to UNI ISO 14006:2020 *"Environmental management systems - Guidelines for the integration of eco-design"*. This standard provides guidelines to establish, document, implement, maintain and improve continuously our eco-design management as part of the environmental management system.

We know that each product or service has an impact on the environment during all stages of its life cycle, from the extraction of raw materials to end-of-life treatment.

We reached the goal, with this extended certification of eco-design, to **integrate environmental aspects into the design and development phases of products, in order to reduce their negative environmental impact and improve environmental performance throughout their life cycle,** without compromising the quality and application of our products and services.

The benefits obtained apply to the customer/user, producer, supply chain and, ultimately, to the Earth.

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =

COMPANY WITH ENVIRONMENTAL SYSTEM CERTIFIED BY DNV GL = ISO 14001 =

TECNIPLAST

visit **www.tecniplast.it** to find out more about our green policy

Clients - Redefine the overall retail organisation to enhance client-centricity

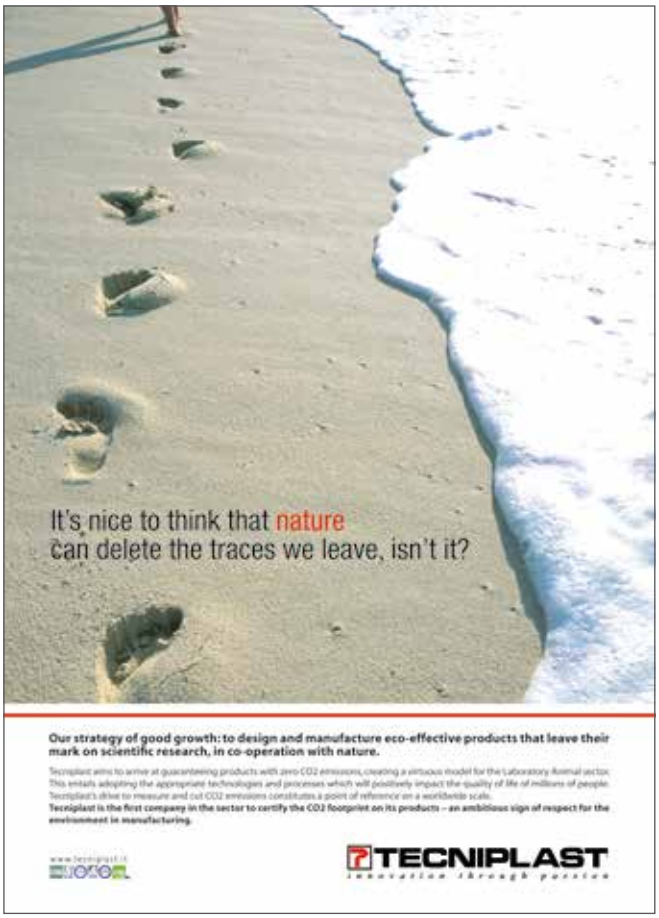
ACTIONS	TODAY RESULTS	TARGETS
Enhancement of salespeople skills, engagement and sense of belonging to improve alignment with client expectations	Training activities also started for service personnel.	Alignment driven by culture for an organizational health. We want to have our teams aligned to be better able to set and manage expectations for our customers and our organization. Aligned and integrated organizations create a sustainable competitive advantage in the market by transforming our customer associations from vendor/client relationships into true partnerships. Ultimately, customers are more likely to place greater trust in a vendor when they witness the teamwork and collaboration efforts going into managing the relationship
Provide clients with a consistent and integrated knowledge through salespeople	Continuous improvement of client satisfaction through sales training	Provide intelligent, fast, and personalized customer answers and service through: - Delivering consistent answers - Helping customers to solve their problems in a pro-active way - Maximizing sales productivity - Streamlining our selling process
Sharing of Tecniplast commitment to a sustainable future with clients	Training, Roundtables, Promotions	Communicate Our Sustainable Future, informing about the measures we have implemented along with ensuring that the vision set out in the policy document is translated into clear and effective action. Promote our Sustainable Future and explain how it sets out the challenges facing us and proposes actions to promote clean energy, more sustainable approaches to manufacturing and transport to ensure their sustainability for future generations. It also charts progress achieved since sustainable development became the global focus of attention
Recycling Program	Continue the recycling program started in 2009, to give a second life to old plastic products, recycling them into other products offering incentives	Maximize the recyclability of our plastic products, minimizing the CO_2 footprint of our products
Co-Design of the products with OEM customers, to support the recycling of the plastic material at the end of the Life Cycle of the products	Support Customers in choosing the best options to recycle the product at the end of the product life cycle	Identify the best choices with our OEM customers to save energy; conserve resources; reduce pollution; Cut waste disposal costs; save valuable raw materials and reduce trash in landfills
IPPR Membership	Continue to be part of the organization to promote green purchase of recycled plastics	Become a reference of education and promotion making a culture of recycled plastics
TTC	Continue in the organization of training courses which can transfer our knowledge, our experience and our recommendations to each participant, to let them fully exploit the potential or our products, maximizing our payoff: "we match your needs sharing our knowledge with you"	Provide extensive training opportunities and hands-on sessions in order to develop and refine best practices on the use of our products, delivering exceptional quality training that is relevant and has a measurable impact and practic

Scientific Symposia	Continue to organize from 4 to 5 Scientific Symposia each year together with national and international Lab animal Associations	Become the first reference for our customers in developing Scientific Symposia with the objective to increase awareness on latest innovations and technologies in LAS, on custom tailored and innovative solutions and make information widely available
Environmental Communication	Continue to contribute consistently and constantly to support Environmental Communication, confirming Tecniplast's strong commitment to sustainable development through: - A clear, transparent advertising campaign - Corporate Communication on Industry magazines, Corporate newsletter - Specific Presentations during Symposia, workshops and conferences.	Maximize Environmental Communication planning and its strategic use of communication processes to support effective policymaking and project implementation geared towards environmental sustainability, fully integrated in development cooperation programs as a strategic tool. Maintain the leadership in Sustainability which represents one of the variables that define the economic scenario where Companies are performing and competing. We want to maintain the interest and attention on our environmental and social aspects which represents a strategic element to create value and the perception we are the leading company
Support the definition of new Centres of Excellence which will be added to our list of 32 Centres. A Centre of Excellence must have all our product lines	Identified a new one in India	Continue to identify a WW network of CoE to promote and develop our product lines, our technical options, offering assistance to potential new users in terms of experience and learning curves

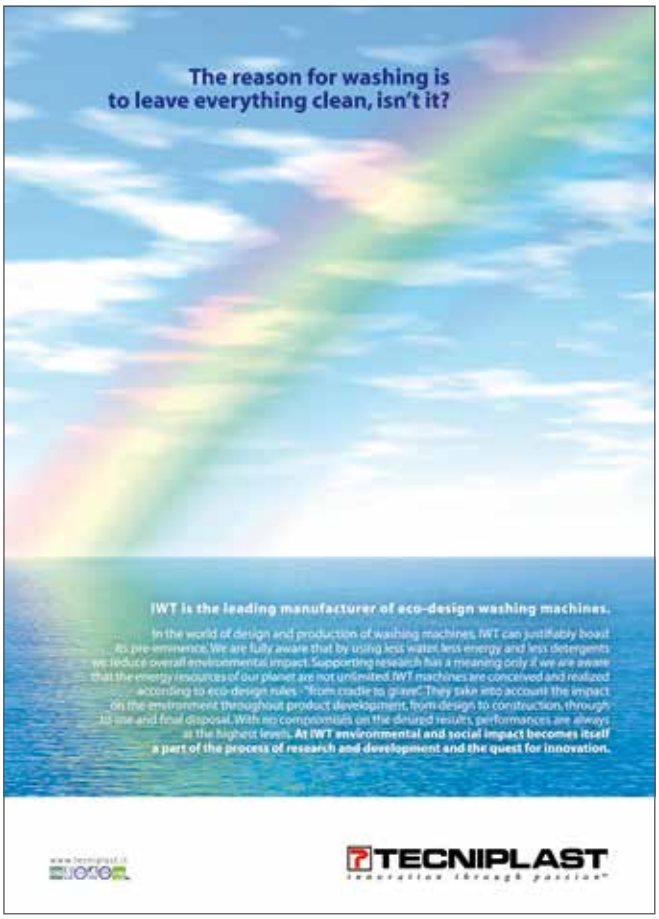
Earth Day 2020: be sustainable, be an example, be Tecniplast

We all know that our world needs transformational change.
Our continuous attention to the environment and to our customers at a worldwide level has led us to become the first company in the sector to be certified ISO 14001! We also have our eco design process approved according to the ISO 14006 standard, becoming one of the few selected companies that operates to the highest social and environmental standards.
We understand the importance of integrating environmental aspects into the design, production and distribution of our products and services in order to reduce their negative environmental impact and improve environmental performance throughout their life cycle, without compromising their quality and application.
The benefits obtained apply to the customer/user, producer, supply chain and ultimately to the Earth.


The greatest innovation
is to leave everything as it was.
Tecniplast is ISO 14001 certified for its environmental quality management system.
Since 2006 Tecniplast has chosen the environmental sustainability growth path.
The highest distinction in this commitment is the ISO 14001 certification, which involves
all the company's activities and rules all stages of product development for its whole
lifetime, from production to waste disposal including usage. Respect for the ecosystem
through eco-design and thence a concrete reduction in cost for laboratories.
An investment for our Planet's future that immediately pays back interest.
TECNIPLAST
innovation through passion


It's nice to think that nature
can delete the traces we leave, isn't it?
Our strategy of good growth: to design and manufacture eco-effective products that leave their mark on scientific research, in co-operation with nature.
Tecniplast aims to arrive at guaranteeing products with zero CO2 emissions, creating a virtuous model for the Laboratory Animal sector.
This entails adopting the appropriate technologies and processes which will positively impact the quality of life of millions of people.
Tecniplast's drive to measure and cut CO2 emissions constitutes a point of reference on a worldwide scale.
Tecniplast is the first company in the sector to certify the CO2 footprint on its products – an ambitious sign of respect for the environment in manufacturing.
TECNIPLAST
innovation through passion


Our commitment
for a better tomorrow.
ECO INNOVATION THROUGH FACTS
Tecniplast implemented an environmental policy almost a decade ago to reduce the environmental impact of its activities at all stages of the product life cycle: production, use and recycling. Tecniplast has taken into account three criteria that match external certifications (ISO 14001, Environmental Report) and objectively measurable data (emissions of CO2, LCA and quantity of recycled plastics via specific initiatives).
Production is carried out in an ISO 14001 certified factory. This certification attests to the efforts deployed to reduce the impact of production on the environment. It concerns, for example, reducing the use of water resources and energy, but also visual and sound pollution, emissions into the atmosphere and wastewater.
CO2 Emissions. Tecniplast products are the only ones which can offer customers a statement of CO2 emissions through a peer reviewed LCA analysis.
Recycling: Tecniplast products are designed to allow the exploitation of 100% of their mass at the end of the life (recycling and energy recovery). Moreover, Tecniplast offers an exclusive project of recycling old plastic cages for a second life to plastic and do something together for the environment.
TECNIPLAST
innovation through passion


The reason for washing is
to leave everything clean, isn't it?
IWT is the leading manufacturer of eco-design washing machines.
In the world of design and production of washing machines, IWT can justifiably boast its pre-eminence. We are fully aware that by using less water, less energy and less detergents we reduce overall environmental impact. Supporting research has a meaning only if we are aware that the energy resources of our planet are not unlimited. IWT machines are conceived and realized according to eco-design rules - "from cradle to grave". They take into account the impact on the environment throughout product development, from design to construction, through to use and final disposal. With no compromises on the desired results, performances are always at the highest levels. At IWT environmental and social impact becomes itself a part of the process of research and development and the quest for innovation.
TECNIPLAST
innovation through passion


EMERALD
Patented

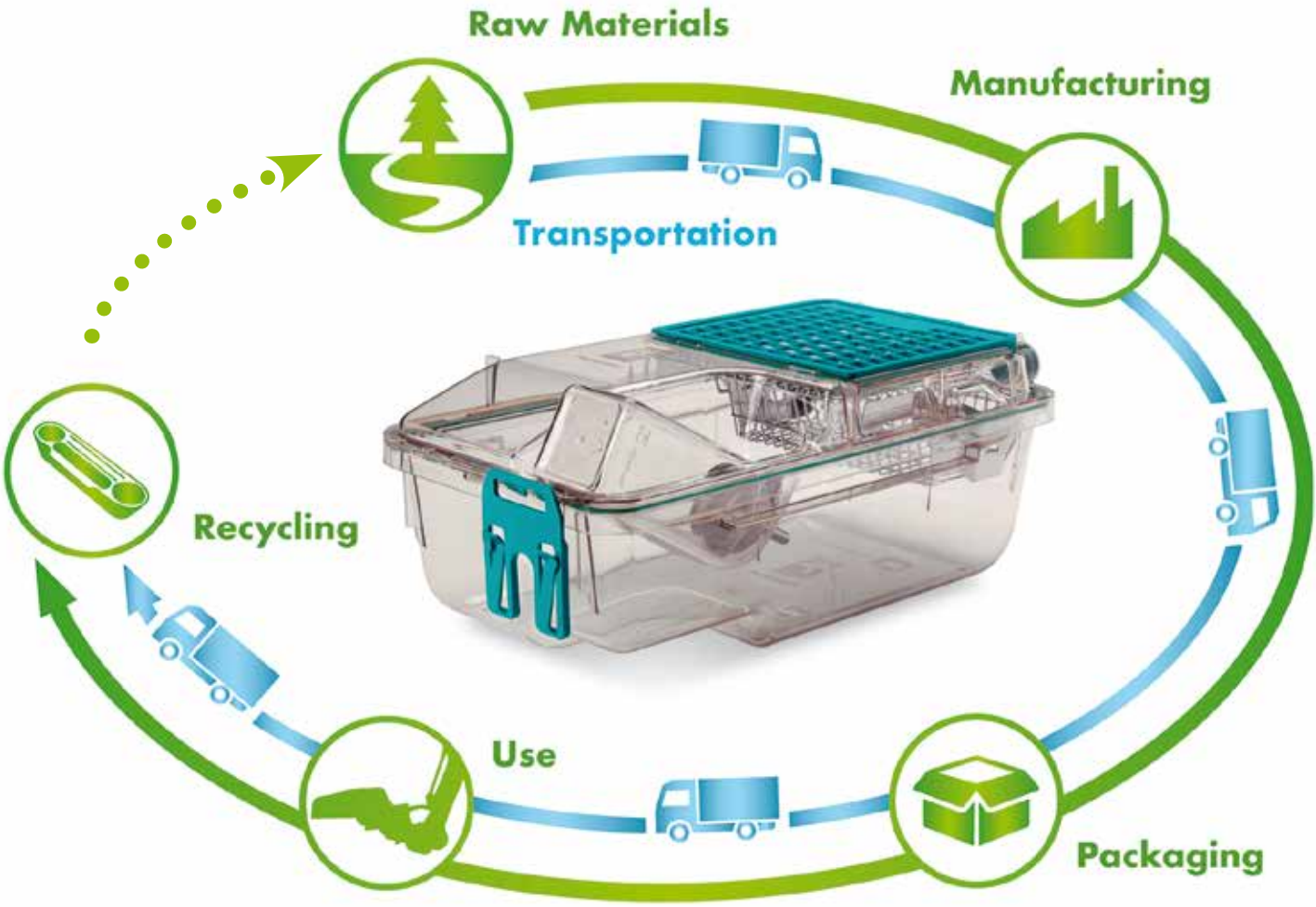
CHAPTER 5

TECNIPLAST ENVIRONMENTAL ASPECTS AND IMPACTS

5.1 - GREEN STRATEGY

Tecniplast environmentally friendly products do not wait for the future, the future is now, in our products

Tecniplast is a believer in sustainability leadership.
We are strong believers in sustainability, business ethics and customer relations.
We work clearly with our international customers to ensure the 3 "P"s of a sustainable growth: planet, people and profit, while continuing on our quest for innovation and guaranteeing innovative solutions for our customers.
We know how our customers' choice can contribute to their lab sustainability; we know how Tecniplast supports our customers' choice.



Improve energy efficiency and reduce CO_2 emissions

ACTIONS	TODAY RESULTS	TARGETS
Environmental Impact Assessment of corporate site and implementation of improvement and or offsetting measures	ISO 14001	Maintenance of ISO 14001
	LED lighting	Progressive replacement of traditional lighting system with LED lamps
Purchase of electricity from renewable sources	100% electricity consumption derived from renewable sources	Ongoing consumption of 100% electricity derived from renewable sources (SDG 7)
Contribution to the fight against climate change	Projects for: - Reduction of Energy consumption - Optimization of natural Resources - Reduction of paper consumption in the offices with adoption of green printers, with standard option of both side of paper printing and use of certified ecological paper - Reduction of Packaging material consumption - Reduction of generic waste - Increase of differentiated waste	- Reduction of CO_2 emissions at the production site (SDG 18) - Compensation of all CO_2 emissions generated by the corporate car fleet (SDG 7)
Integration of Sustainability requirements such as the use of Air conditioning, lighting systems with low environmental impact	Use of LED lighting in all manufacturing areas (SDG 7)	Completion of Assessment of existing air conditioning systems (SDG 13)
New Air Conditioners	We have changed all Air Conditioners, eliminating all old Conditioners R22	Elimination of threats for Ozone in the atmosphere
Photovoltaic Technology	We have a project to assemble a Photovoltaic system on the top of the Centralized Warehouse	We will obtain 100kW of energy. We plan to finalize the project in 2021
Water	We control the consumption of water periodically and in different sites with the objective to reduce water waste	We are reducing water consumption constantly from year to year, limiting waste and increasing the awareness of employees
Waste	We implemented a specific policy which is giving important results in terms of waste differentiation with a general reduction of waste	We define each year objectives related to waste and identify new activities to reduce quantity of generic waste and increase efficiency
Energy	We have eliminated underground tanks and converted all production of energy through gas	Elimination of possibility of oil leakage and maximization of sustainability
Air Emissions and Noise	We control Air Emission and noise in different sites of all Departments	Guarantee a safer environment
Plastic Bottles	Elimination of plastic bottles in the Beverages distributors and substitution with water dispensers and reusable water bottles	Elimination of more than 25.000 plastic bottles per year

Reduce the environmental impact of logistics processes

ACTIONS	TODAY RESULTS	TARGETS
Definition of a set of environmental key performance indicators (KPIs)	Feasibility study regarding the monitoring of CO_2 emissions from the directly managed finished products. KPIs defined each year and discussed at the end of the year	- Monitoring of CO_2 Emissions from raw materials to finished products - Gradual extension at global level of the monitoring of CO_2 emissions. - Introduction of CO_2 Footprint calculation in the management process analysis
Management of the environmental impact of logistics processes	Transport solutions with lower environmental impact through the adoption of reusable containers in the production departments but also from and to suppliers. Efficient Transportation system with last generation vehicles	Definition of KPIs each year and discussion about results at the end of the year and evaluation of alternatives to improve results (SDG 13)
New Fully Automatized Warehouse	We have reduced the CO_2 footprint vs 3 different warehouses	Reduce movements, fuell consumption of our vehicles and increase efficiency
New Building	All aligned to Italian Energy Certification standards (Casa Clima a Green Building Class Certification), with passive solar energy system, reclaimed water system and built with natural material	Reduction if not elimination of CO_2 Footprint in the construction and in the utilization
US Containers	We reduced by one third the number of containers shipped to USA with the adoption of a regional production site	Reduction of CO_2 Footprint in the products' transportation phase to USA

Reduce the environmental impact of the purchase experience

ACTIONS	TODAY RESULTS	TARGETS
Design and production of packaging with low environmental impact	Sustainability principles introduced among criteria for the selection of materials and packaging: We moved from wood crates to cardboard crates, maintaining the protection of products	Gradual introduction of additional packaging solutions with low environmental impact

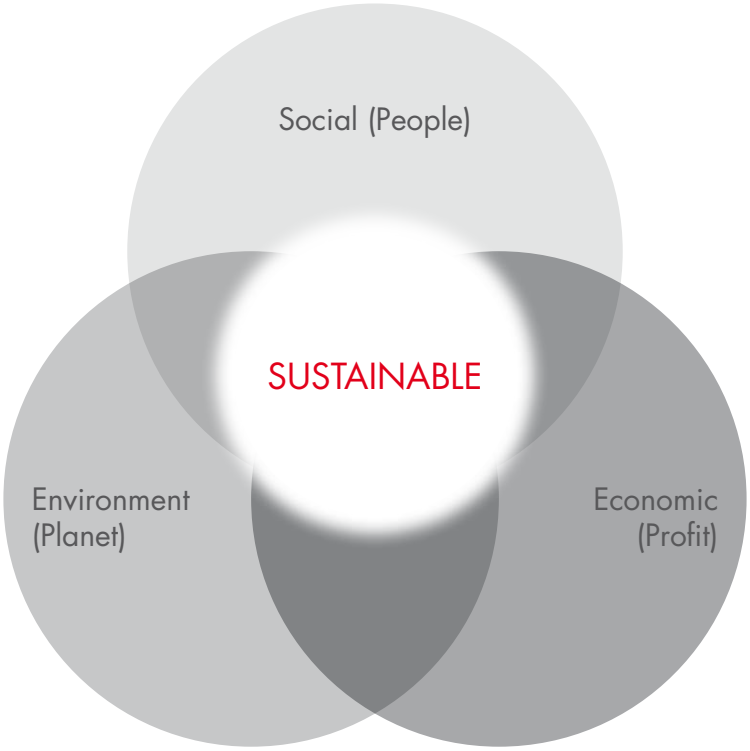
Increase employee awareness of the environmental impact of daily activities

ACTIONS	TODAY RESULTS	TARGETS
Promotion of ecological behaviour among employees: from the sustainable use of paper, toners and energy, plastic products, to the promotion of waste sorting and sustainable mobility	Training on how we can save water and energy consumption with simple activities. Steel bottle distributed to all employees, to raise the awareness of the need to reduce the use of plastic. Substitution of small plastic glasses and teaspoons from the beverage distributors with paper products	Ongoing promotion of good environmental practices through Periodical Trainings. Our Risk management training has always a section dedicated to the Environmental Sustainability. Launch of specific projects such as carpooling for employees
LEAN and WCM	Implemented LEAN concept and Started the implementation of the WCM concept	Optimization of the manufacturing process with reduction of waste and inefficiencies
TTC	TP Environmental initiatives on occasions of TP Trainings. We plan a session dedicated to Sustainability and to show what TP is doing to maximize it	Develop attention and interest in the mind of TP customers and build awareness and a consequent competitive advantage of TP selling proposition
Scientific Symposia	We push customer to plan a dedicated session to Environmental Sustainability and show what TP is doing to Maximize it	Develop attention and interest in the mind of TP customers and build awareness and a consequent competitive advantage of TP selling proposition
Environmental Communication	Issued and communicated our Environmental Policy in 2005 Iso Certification from 2006 Implemented and communicated the LCA/Carbon footprint calculation for new products from 2008 Publication of the first Environmental Report in 2009	Maximize Tecniplast exposition to its Commitment to Social Responsibility as well as top class Products Manufacturing and show our ambitious aim to arrive at guaranteeing products with lowest CO_2 Emissions

Sustainable Development

Tecniplast has clearly in mind that Sustainable Development becomes more and more important day after day.
The awareness of resource use to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for coming generations, is the driving factor of a responsible company.
A successful responsible company must link the economy to basic ecological support systems in an *"equilibrium"*: TP has done so.

Tecniplast has developed products and processes that contribute to sustainable development, through putting into practice Eco-innovation and related ideas, from environmentally friendly technological advances to socially-acceptable innovative paths towards sustainability.



Sustainable Design

Tecniplast is the Sustainable Design Trend Setter in the industry, charting the route for the philosophy of designing products and services to comply with the principles of economic, social and ecological sustainability.

The intention of Tecniplast is to eliminate negative environmental impact completely through skillful, sensitive design.

Manifestations of TP sustainable designs are the latest product generations that require less nonrenewable resources, have a minimal impact on the environment, and are more related to the natural environment. Applications of this philosophy range from products (cages, bottles, racks, washers) to services such as support for designing complete buildings.

Tecniplast has obtained the Assurance and Compliance Statement of the Eco Design process in accordance with the ISO 14006:2020 Environmental Management Systems Guidelines for the integration of Eco Design. This standard provides guidelines to establish, document, implement, maintain, and improve continuously our eco design management as part of the environmental management system.
We know that each product or service has an impact on the environment during all stages of its life cycle, from the extraction of raw materials to end of life treatment.

We have reached the goal, with this extended certification of eco design, of integrating environmental aspects into the design and development phases of products in order to reduce their negative environment impact and improve environmental performance through their life cycle, without compromising the quality and application of our products and services. The benefits obtained apply to the customer/user, producer, supply chain and, ultimately to the earth.

LCA

Tecniplast was the first company in the industry to investigate the IVC life cycle assessment in the industry (LCA, also known as life cycle analysis, and cradle-to-grave analysis).
Tecniplast wanted to identify and evaluate the environmental impact of the most important Product Line, from manufacture ("cradle") to use phase and disposal phase ("grave").
The IVC caused, or necessitated by its existence, an improvement in performances. Tecniplast decided to proceed through an external audit with the goal of comparing the full range of environmental and social damage assignable to an IVC, to be able to optimize the environmental performance of the IVC and choose the least burdensome one.

TP is the first in the industry to declare an emission carbon footprint caused directly and indirectly by the its product line with the objective of defining a clear and defined strategy to reduce it through the development of alternative projects such as reduction in energy used, fossil fuel energy, recycling used products). TP evaluates the LCA analysis of any product developed.

Life cycle Performance at Tecniplast

We conduct comprehensive LCA analysis for each TP product with the objective of offering a standard in terms of reduction in time, effort and cost in using it. Some cases of optimal balance of cost, environmental benefits and safety for workers. Reduce time, effort and costs in using TP products and water consumption.

Some cases with:

- Rack Washer
- Tunnel Washer
- Bedding Handling System

Added value for the customers:

- Less Methane
- Less Water
- Less Energy
- Long Term Sustainable Building Development
- Washing Dept Healthier & Environmentally Responsible
- Washing Dept Contributes to Economic Efficiency

All the above points contributed to LEED rating system with Innovation in Design Category.

An example of TP Eco design applied to a cage washer through EFDO (Energy Free Drain Option) technology compared with the traditional HO air tech underlines the following advantages for final user:

- 1% droplets after std wash cycle
- 50% less steam
- 10% time less electricity
- 5% times higher throughput
- -25% less running cost

Energy Conservation

TP is the trend setter in energy conservation design achieved through efficient energy use products by decreasing consumption while achieving a similar outcome, or by reducing consumption of energy services.
TP products then result in increased environmental value, but also in savings in terms of energy costs for our customers.
TP thinks that electrical energy conservation is an important element of the energy policy of our customers.
Energy conservation reduces the energy consumption and energy demand per capita and thus offsets some of the growth in energy supply needed to keep up with population growth. This reduces the rise in energy costs, and can reduce the need for new power plants, and energy imports.
The reduced energy demand can provide more flexibility in choosing the most favourable methods of energy production.
TP knows that 80% of the environmental impact of a product is determined during the Design Stage. Accordingly, TP adopted Computational Fluid Dynamics (CFD), which allows virtual simulation of conditions not easily feasible in a testing lab. TP uses CFD for the development of all products.

Water Conservation

TP cares about water conservation, reducing the use of water and reducing the waste of water used in the manufacturing processes and used by TP products in running activities.

TP has the following goals related to water conservation efforts:

- Sustainability - To ensure availability for future generations, the withdrawal of fresh water from an ecosystem should not exceed its natural replacement rate.
- Energy Conservation - Water pumping, delivery, and wastewater treatment facilities consume a significant amount of energy.
- Habitat Conservation - Minimizing human water use helps to preserve fresh water habitats for local wildlife and migrating waterfowl, as well as reducing the need to build new dams and other water diversion.

TP corporate water policy takes into consideration elimination, reduction, outsourcing/reuse and regeneration.
TP has defined options as elimination, followed by reduction in water demand and regeneration or treatment of wastewater before being reused. Freshwater will only be used when all water saving options have been explored.

Eco-design: What is it & what does it mean?

Eco-Design is an approach to the design of a product with special consideration for the environmental impacts of the product during its whole life cycle. In a Life Cycle Assessment the life cycle of a product is usually divided into procurement, manufacture, use and disposal.
TP designs and produces products considering the whole product life cycle in an integrated perspective, having obtained the Assurance and Compliance Statement of the Eco Design process according to ISO 14006:2020. Representatives from advanced development, design, production, marketing, purchasing and project management work together following the eco-design concepts to predict the effects of changes of the product and their environmental impact.

Environmental aspects which ought to be analyzed for every stage of the life cycle are:

- Consumption of resources (energy, materials, water or land area).
- Emissions into the air, water, and ground as being relevant for the environment.
- Miscellaneous (e.g. noise and vibration).
- Waste (hazardous waste and other waste defined in environmental legislation).

By the same token, all consumables, materials and parts used in the life cycle phases are accounted for and all indirect environmental aspects linked to their production. Having made up a list on which phase of the life cycle has which particular environmental aspect, these aspects are evaluated according to their environmental impact on the basis of a number of parameters such as extent of environmental impact potential for improvement or potential for change.
According to this ranking the recommended changes are carried out and are reviewed after a certain time.

Sustainable design for final product

Thanks to the Eco Design processes according to ISO 14006:2020, we identify, during the design stage, how each of the life cycle phases of a product or service will impact on the environment in order to reduce it to a minimum without compromising the quality and application of our products and services.
In short, our designers, each time they develop a product, evaluate materials, energy and toxicity in consideration of the product life cycle phases, following this matrix:

	MATERIALS (M)	ENERGY (E)	TOXICITY (T)
Raw materials	Use of materials having the highest percentage of recycled waste materials in order to reduce primary energy and minimise environmental impact. Use of materials with highest percentage of biomaterials (renewables). Use of lightest possible materials so as to reduce emissions due to transport. Use of materials requiring lowest possible energy consumption during manufacture.		
Production	Methods that cut components. Methods that cut material variety. Methods that cut both mass and volume of components. Methods that facilitate recycling of raw materials (without dis-assembly).		
Distribution	Use of recycled packaging and re-usable for finished goods. Cutting right back packaging for transport of finished goods. Lengthening product life-cycle.		
Life cycle of the Product	We use cutting-edge technology to ensure modular product set-up. Energy consumption and other resources are cut to a minimum during product use. The least possible environmental impact during product use, and greater product longevity.		
Product at end of Life-cycle	Ease of dis-assembly to facilitate component dis-assembly so as to recoup raw materials. Identification of material-type to facilitate materials recognition at end of life-cycle and optimise separation of components without diminishing the quality of materials.		

TP efforts include designing new products following sustainable design, rules, using green infrastructures, managing materials rather that creating waste, labelling green products. We can take as an example our cages.

When we design our products, thanks to the precise selection of:

- Materials
- Shapes
- Eco design
- Components
- Selection of electric motors (es. ECM)
- Recycling project/programmes
- Product life cycle commitment

We can reach important competitive advantages and offer the following, easily recognisable benefits to users:

- Less costly to operate and maintain
- Easier to use
- Reduces amount of waste
- Better conservation of natural resources
- Market leadership in terms of CO_2 footprint

For examples, back to our cages, it means:

- Less washing
- Less water
- Less detergents
- Less chemicals
- Less autoclave cycles
- Less bedding

All the above point are touched upon by LEED Rating System.

Components selection

TP promotes the use of cleaner components and seeks to reduce material waste, pioneering new technologies and applications.

For example, we have been among the first to choose ECM motors. Electronically Commutated Motors (EC Motors) also known as Brushless DC Motors (BLDC) which are synchronous electric motors powered by direct-current (DC) electricity and having electronic commutation systems, rather than mechanical commutators and brushes.

"Where we use ECMs?"

- On Air Handling Units.
- On Changing Stations and all laminar flow equipment.

"What are the advantages of ECM motors?"

ECM motors are very high efficiency (65% to 80%) electric motors and maintain a high efficiency level at part speed. This means that in most cases they use from less than one third to one half of the electricity used by traditional induction motors, which in turn translates into lower operating costs and short payback periods. ECM motors' high efficiency also means that the motors run "cool", and dramatically reduce the amount of waste heat produced. In terms of speed control, the motor's operation is controlled by software. ECM motors are also quieter than traditional inefficient motors, have longer design life and require less maintenance.

ECM motor

A Sustainable Changing Station

A Sustainable Changing Station must have EC motor-blowers in order to reduce energy consumption.

- Lower Energy Costs
- Reduced Heat Load emitted
- Reduced Noise & Vibration
- Longer Filter Life
- Reduce CO_2 Footprint

TP has a complete awareness of Product LCA analysis, having a broad vision of what sustainability means, avoiding any narrow outlook on limited variables which offset the reality.
We summarize with the following points:

- ISO 14001 certification
- LCA analysis
- Product features analysis (e.g. shape, materials, etc)
- Product components (e.g. EC motors)
- Eco-design concepts
- Recycling project at the end of the product life

Tecniplast knows that a sustainable choice is a sustainable competitive advantage for our customers' facilities and for our customers' communities.

Tecniplast ARIA CS60

Tecniplast ARIA CS48 HP

Tecniplast ARIA CS36

Tecniplast ARIA CS48

5.2 - ASSESSING TECNIPLAST ENVIRONMENTAL ASPECTS AND IMPACTS

Identification of the environmental aspects and assessment of the environmental impacts are the pillars of the EMS, as they represent the starting point from which to define, step by step, the environmental policy, the structure and framework for implementing, maintaining and improving the EMS

The identification of environmental aspects, as required by the ISO 14001 standard, was carried out taking into account the normal, abnormal and emergency operating conditions and past, present and near-future site operations. In addition, identifying environmental aspects covers both direct environmental aspects, over which Tecniplast has control, and indirect environmental aspects, over which Tecniplast has no control but could exercise an influence.
The above identification approach was applied to the Bugguggiate site in accordance with Procedure PGA 4.3.1 *"Environmental Aspects Management"*.

Within Tecniplast Buguggiate site the following activities are performed:

- Design of plastic moulded products
- Design of the moulds for moulding the plastic products
- Moulding of the plastic items and products
- Finishing, assembling and packaging of finished plastic products
- Production, assembly, testing and packaging of machines and equipment for biomedical research

A minor part of production, mainly machining metal rack components, is subcontracted to qualified firms but also other activities are outsourced, such as:

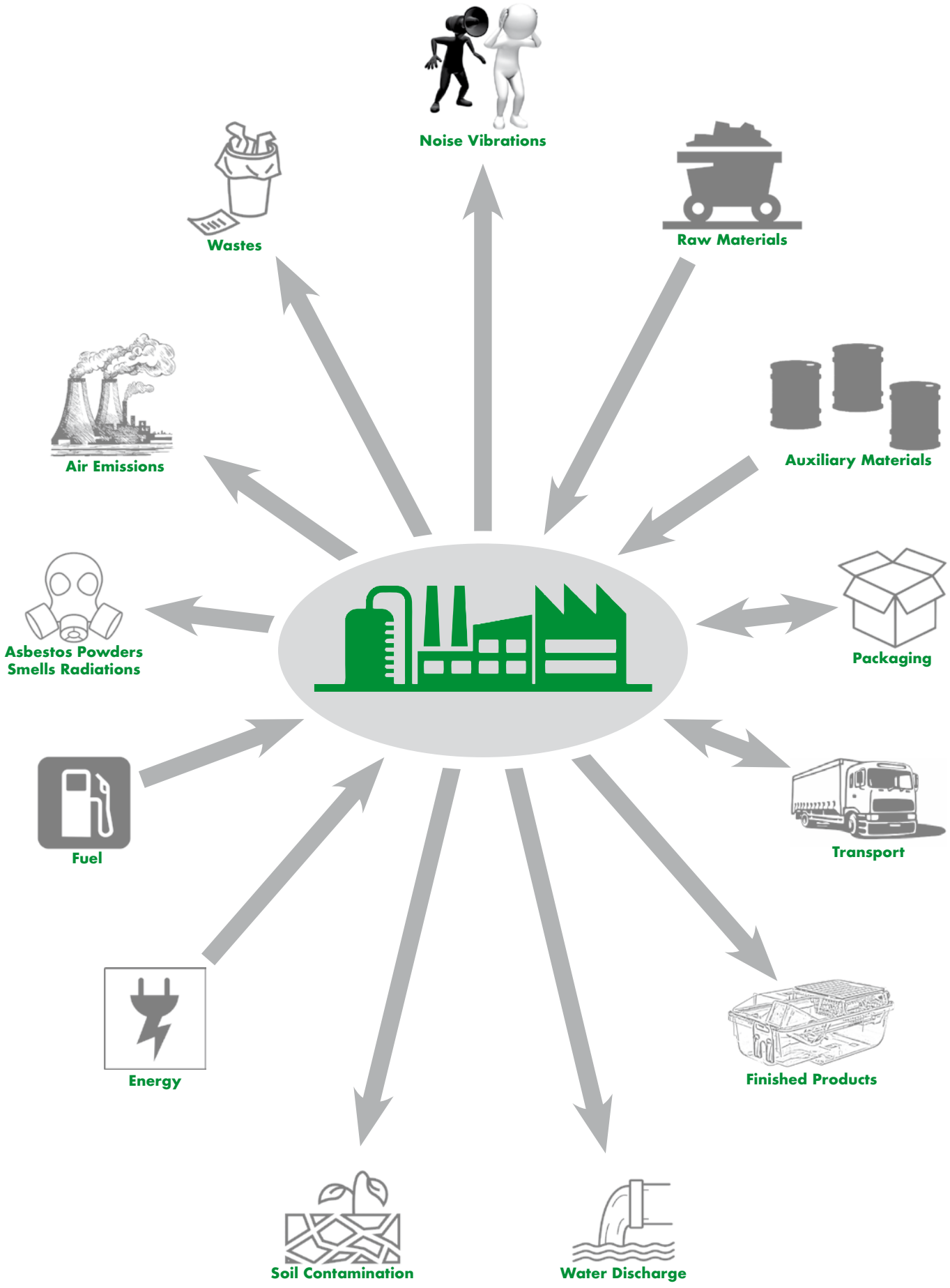
- Surface treatment (painting, coating, glass bead blasting)
- Galvanic surface treatment (chromium-plating, gold-plating, electro-polishing)
- Machining of metal rack components

To identify all the Environmental Aspects, the following evaluation method was applied:

- The HQ site was conceptually divided into areas corresponding to technical and production departments, facilities, buildings, or external areas
- Using an input/output approach for each area, the environmental aspects in terms of natural or transformed resources, of energy consumption and all the items produced but also the emissions, were identified
- Each environmental aspect was assessed in terms of impact using a quantitative system expressed as a combined index based on amount/probability and magnitude of environmental impact
- For each significant environmental aspect (all the aspects with assessment index > than the defined significance threshold of 15), an improvement objective was defined and implemented

The environmental aspects are regularly updated taking into consideration changes in Tecniplast, the results of improvement objectives and the evolution of the applicable environmental legislation.

Environmental Aspects Identification



CONVERTING WASTE BEDDING INTO A RENEWABLE RESOURCE

By Cristian Clerici - Area Manager Washing & Automation Solutions

INTRODUCTION

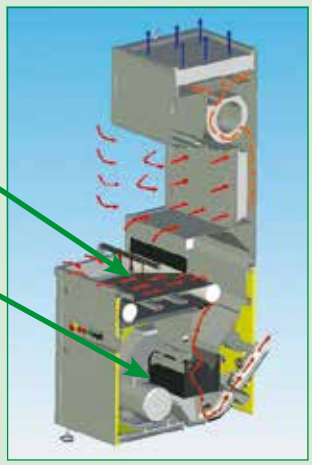
A 10.000 cage animal facility changing cages every 7 days can produce over 1300 kg of waste each week which typically goes to landfill or incineration, that is 67.600 kg per year! The cost of sending this material to landfill can vary between US$ 60 and EU$ 100 per metric ton contributing up to US$ 10.000 per year to this facility's operating cost.
In many regions, waste bedding is considered a biohazard and must be sent to an incinerator for processing driving the costs even higher.
Reducing this waste and finding ways to recycle it are ongoing issues for animal facilities.
Cellulose based materials, like bedding, contain carbon that can be burned to produce energy. In the forest industry waste and byproducts are commonly formed into logs, briquettes, and stove pellets and then used to heat their production facilities. In many countries agricultural waste is collected from fields and converted to briquettes for use as a cooking fuel.
A common use of this type of fuel, or feedstock, is the use of pellet stoves for home heating and hot water production.
The use of biomass as a fuel source is a concept that is growing steadily at a rate of 8,7% annually.
So if the process is so simple and widely used then why not use waste bedding as a raw material to produce similar types of briquettes?
As a company that is committed to the protection of the environment, Tecniplast became interested in finding the answer to this question and began research investigations into the matter.

The primary component required for turning feedstock into briquettes is the briquette making machine itself.
It is a very simple device utilizing basic technology that has been in existing for many years.
The raw material is loaded into a hopper and a mixer meters the material into a press where the briquettes, or logs, are produced through a type of extrusion process.
The second phase is then burning, or gasification, of the briquettes to produce heat energy.
In this pilot study, the focus was on producing and analyzing the briquettes to determine if they were suitable as a feedstock or biofuel.

Rodent bedding is similar to other biomass

No need to remove enrichment - all waste goes into dump station

Shredder homogenizes material and heat generated starts drying process

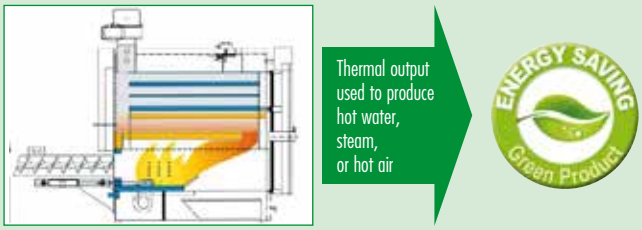


Dump Station

1. Vacuum transport to separator enhances drying and removes dust
2. Instead of going to waste in dumpster, processed material enters hopper by gravity or auger

Briquette Machine

Briquettes moved manually or via auger



Biomass Combustion

METHODS AND MATERIALS

At Ulm University in Germany, a briquetting machine was installed for the purposes of conducting test runs. Four different types of bedding were tested after being used in IVC cages for 7 days (alpha dry, corn cob, and 2 types of wood chip). Briquettes produced were then analyzed in an independent laboratory for moisture and for heat potential using a calorimeter. Initial tests utilized waste bedding that came directly from dirty cages without any additional processing or handling. The result was a briquette that crumbled and was unsuitable for burning.

Subsequent tests were then performed utilizing bedding that had been processed through a bedding handling system and collected prior to being deposited into their dumpster.

The bedding handling system consisted of a dump station with integral shredder and a pneumatic vacuum system with a bedding to air ratio of 1:5.

The resulting briquettes were found to be much denser and of a consistency that made them suitable for burning. Samples of the briquettes were then sent to an independent laboratory for analysis.tudy, the focus was on producing and analyzing the briquettes to determine if they were suitable as a feedstock or biofuel.

RESULTS

Using waste bedding that has passed through the bedding handling system produced similar results for each of the four types of bedding. Moisture content varied from 9,7% to 12,3%, well under the recommended limit of 15%.

The available energy ranged from 13,9 MJ/kg to 15,2 MJ/kg. The briquettes were of a density that made them suitable for burning in a biomass furnace.

Type 1:
REHOFIX mk 3500

Moisture: 10,3%
Energy: 14,7 MJ/kg

Type 2:
LIGNOCEL s 8-15

Moisture: 12,3%
Energy: 14,5 MJ/kg

Type 3:
LIGNOCEL select

Moisture: 11,7%
Energy: 15,2 MJ/kg

Type 4:
ALPHA-DRI

Moisture: 9,7%
Energy: 13,9 MJ/kg

DISCUSSION

Pre-Treatment

The results demonstrate that some pre-processing of waste bedding is required in order to produce briquettes with the proper consistency. A bedding handling system, commonly used in many animal facilities, was found to be a suitable means of pre-treating the waste bedding. In reviewing the functioning of the bedding handling system three features of the system can be identified as contributing to the this effect. The first feature is the use of a shredder to homogenize the waste bedding, enrichment devices, feed and other material. In this case the shredder contained a sieve which that ensured all material entering the vacuum system was of a uniform and small enough size to produce briquettes with sufficient density. The second feature is the ratio of air to material within the vacuum system. The ratio of 1 part material to 5 parts air removes moisture from the waste bedding assisting in producing the desired humidity level. The size and uniformity of the material combined with the high ratio of air to material also ensures the vacuum system remains clog free. The third feature is the cyclonic separator which removes dust and small particles contributing to the uniformity of the final product.

Environmental Impact

The environmental impact of using waste bedding as a feed stock for energy production can be assessed by comparing it to traditional fuels like heating oil. Based on an average energy potential of 14,58 MJ/kg per briquette the total energy available per year is 1.048,54 GJ. Using the energy per kg of heating oil, the volume of heating oil required to produce the same amount of energy can be calculated.

Translating this value into CO_2 emissions we find the use of waste bedding in a 10.000 cage facility can offset 83,3 tons of CO_2 produced by burning heating oil.

Briquette Available Energy (MJ/kg)	Weekly Bedding Production (Kg)	Annual Recoverable Energy via Gassification (GJ/year)	Alternate Fuel Source	Fuel Available Energy (MJ/Kg)	Alternate Fuel Saved (Kg/year)	CO_2 Emissions reduction (Kg/year)
14,58	1.383	1.048,54	Heating Oil	42,62	26,525	83,288

Cost Benefit Analysis

According to the Investor Responsibility Research Center the price of carbon related to greenhouse gas emissions was 28,24 $ per ton. Estimating the cost for the capital investment along with heating fuel and bedding disposal costs, a simple return on investment calculation shows that the investment in these systems can have a payback in just over 3 years.

Investment (Briquetting & Furnace)	135.000 $
CO_2 Production	83.288 Kg/year
CO_2	28 $/ton
Heating Oil per year	26.525 Kg
Heating Oil	1,35 $/Kg
Waste Bedding	71.916 Kg/year
Bedding Disposal	60 $/ton
CO_2 Offset	2.352 $
Heating Oil	35.809 $
Disposing	4.315 $
Total Annual Savings	**42.476 $**
Payback Period	**3,18 years**

Further Analysis

This pilot study demonstrated how waste bedding can be used to form briquettes suitable for burning, it is now necessary to create conditions in which briquettes are actually burned and energy produced. Determining if facilities are candidates for this solution will need to be done on a case by case basis. This could be accomplished by utilizing an existing biomass furnace or by modifying an existing furnace to accept briquettes. It may also be possible that production of briquettes and burning of briquettes takes place in different locations.

CONCLUSION

In order for waste bedding to be suitable for production of briquettes it is important the bedding be treated to produce a homogeneous and low humidity raw material.

The simplest way to accomplish this is to incorporate a pneumatic bedding handling system that incorporates a shredder into the dump station into the facility (IWT Bedding Handling System). Preliminary testing demonstrates the briquettes formed have a consistency suitable for gasification to produce energy resulting in lower CO_2 emissions, reductions in landfill use, and energy savings. Cost benefit analysis indicates using waste bedding to produce energy can be reduce environmental impacts and be economically viable.

5.3 - MANAGEMENT OF ENVIRONMENTAL ASPECTS

All the Environmental Aspects associated with on-site operations affecting the environment are regularly managed and controlled according to applicable external (or internal) requirements reported inside the Environmental Management System (EMS) procedures

Other environmental indicators or operational parameters are also monitored according to a schedule for maintaining high-level plant efficiency. Legal compliance for the applicable environmental aspects is assured also by EMS internal audits conducted by qualified internal or external auditors. The Environmental aspects are regularly updated taking into consideration changes in Tecniplast, the results of improvement objectives and the evolution of the applicable environmental legislation. The audit results are effective for communicating the situation to top management and, where necessary, adopting improvement actions or objectives.

5.4 - METHOD OF DATA ANALYSIS

The figures contained in this document are regularly collected from the normal tool of industrial accounting

They are organized to present Tecniplast Headquarters factory environmental performance, in the simplest and most economical way possible. The environmental indicators given were selected in line with the EMAS III (2009/1221/CE) regulation and a European Commission Recommendation no. 2003/532/EC suggesting that environmental reports should be analyzed together with statements originating possibly from other companies based in the same industry sector.

In addition, the environmental performance indicators were chosen so that an assessment could be made over time that would provide a comparison with the applicable legal limits and where applicable, with industrial reference values provided by BREF if available - a technical document containing data referring to the best available techniques.

Each table comes with explanatory notes for a full understanding of the values (where their absence might lead to misunderstanding in interpreting the data). The specific values are all calculated with reference to the amount of plastic worked and similar considerations are applicable for rack production.

5.5 - DIRECT ENVIRONMENTAL ASPECTS

To produce all the finished products mentioned previously Tecniplast uses raw materials, natural resources, energy, semi-finished products

Each process, phase or machine pollutes the environment in some way, with air emissions, noise, generating scrap and waste.
This was Tecniplast's greatest concern as regards the environment and sustainability.
This chapter will consider each environmental aspect, giving actual data and trends highlighting underlining the evolution and the evidence that Tecniplast Environmental Policy is not merely words but actual facts.

Consumption of raw materials and additives

The main raw materials used in Tecniplast are technical plastic granules and some pigments to give color to silicone or plastic items.
Other additives are used, in minimum quantities, to detach the moulded plastic components from the moulds.
Tecniplast uses also stainless steel tubes, bars and sheets that are, mainly, laser cut and welded with some phases carried out at the Castronno site or by suppliers and subcontractors.

During 2009 Tecniplast experienced in some way the influence of the international business recession but despite that there was a growing market for Polysulfone and an additional interest in Polyphenilsulfone (PPSU).

Polycarbonate and Polysulfone are the most important raw materials in Tecniplast production. Polysulfone is used for its high quality: tough, rigid, high-strength, maintaining its properties over a range of temperatures (from -10°C to +150°C), it is also resistant to oxidation and hydrolysis and withstands prolonged exposure to high temperatures and repeated sterilization.
As Italy is not a major producer of Polysulfone, Tecniplast purchases PSU from one of the most important world producers of polysulphone as a compromise between the Environmental Management System (EMS) procedure for selecting and qualifying the suppliers and the very limited number of PSU producers in the World.
PSU is a product derived from crude oil, and as such it may be readily recycled as shown by the LCA study, and great attention is placed on means of transport and packaging so as to reduce the impact of logistics. Starting from the LCA study, a similar approach was applied to other suppliers even if located at a shorter distance from Tecniplast HQ .
Where possible Tecniplast purchases from suppliers having the EMS already certified or under the ISO 14001 certification process or seeking to obtain certification to give greater credibility to its efforts and commitment to the environment and sustainability as is evident from the LCA study, and great attention is paid to means of transport and packaging so as to reduce the impact of logistics.

Rack production and assembly started in Buguggiate in 2008.
The racks are made of stainless steel piping and stainless steel sheets purchased from European producers, depending on the availability from Italian or German producers.
The pipe and sheets are worked directly by Tecniplast, in the site of Castronno, or by suppliers having the same laser beam cutting technologies as Tecniplast ; when necessary, additional machining operations are realized by CNC machines according to programmable work programmes. Finally, the machined and holed pipes are assembled and TIG welded with an anthropomorphic robot. All the production scraps are collected and sent to a waste collector for recycling purposes.

Tecniplast has set year by year and also for 2020 a range of objectives to provide further improvements in environmental performance in line with the Continuous Improvement of ISO 14001 standard Requirements and Tecniplast President Sustainability Commitment.

Raw Materials and additives

RAW MATERIALS (Ton)	CONSUMPTION 2017	CONSUMPTION 2018	CONSUMPTION 2019	CONSUMPTION 2020
Polysulfone (PSU)	519,8	420,1	417,9	439,2
Polycarbonate (PC)	455,5	353,1	358	488,4
Polyphenilsulfone (PPSU)	51,3	46,8	51,3	59,9
Polypropilene (PP)	390,8	431,5	387,3	472,4
AcrylicButadieneStyrene (ABS)	52,5	51	69	71,6
Noryl (PPO)	32,5	17,3	21,9	2,7
Nylon (NY)	91,9	44,9	47	32,4
Ultem (PI)	1,1	0,9	0,5	0,7
Polymethymethacrylate (PMMA)	98	88,3	56,4	116,2
PC+ABS	74,4	87,3	88	73,6
Other plastic Materials	99,8	63,6	39,2	109,8
SEBS+Gomme	96,4	43,2	9	15,4
Master	16,6	13,8	12,4	14,4
Polystyrene (PS)	0,17	0,19	0,544	1,765
Internal grounded plastics	114,2	83,2	109,4	151,1

RAW MATERIALS FROM CASTRONNO SITE	CONSUMPTION 2017	CONSUMPTION 2018	CONSUMPTION 2019	CONSUMPTION 2020
Stainless Steel Pipes	567,8	331,5	114,5	87
Stainless Steel Sheets	204,9	164,7	135,2	135,7
Stainless Steel Wire	30,2	30,6	25,3	19,7

New trend in raw material usage

The attention and pressures to reduce the natural and fossil resources as the minerals is forcing a growing number of organizations in attempts to use significant fraction of recycled material for their products.

The effort to use significant amount of recycled raw material is in line with the new paradigm of Circular Economy for promoting the usage of recycled material any time is possible. In addition (or in parallel) to the new trend additional service are required for giving evidence to the market of the reached level of recycled content in the raw materials.

Tecniplast, once more, accepted the challenge that is also a new opportunity in the field of sustainability and uses recycled Polycarbonate obtained from biomass wastes (tail oil) for producing items for some clients.

The new requirements agreed with those clients was verified and certified by Third Part auditors of DNV according to the ISCC Plus scheme (see pag.145) and, for reaching such certification, all the supply chain is certified ISCC for keeping the chain of custody and material traceability.

The use of biomass waste for producing bioplastics is another interesting results for Tecniplastic using among the first organization renewable bioplastic.

Auxiliary Raw Materials and Dangerous Substances

Auxiliary raw materials, often having some hazardous characteristics, are used both by maintenance and the production department. Hazardous liquid substances are stocked in an area with a containment pit and used as required by the production or maintenance program. The hazardous fluids are transferred into small containers with their danger warnings and pictograms to draw attention to the risks associated when using the product. The full list of MSDS are collected and updated and instructions for use are available for operators using such substances. The maintenance department is composed of internal resources with the support of external experts and specialists for specific activities. In addition, in line with the Lean Production approach, some simple maintenance activities have been shifted to manufacturing operators, with a more cost-effective management of manufacturing activities. Among the main materials consumed for maintenance is oil (lubricant and emulsion oils); the consumption is shown in the table below:

RAW MATERIALS	CONSUMPTION 2017	CONSUMPTION 2018	CONSUMPTION 2019	CONSUMPTION 2020
Lubricant and emulsion oils (l)	4.930	2.057	1.060	4.502
Thermal oil (l)	416	932	416	832
Spark erosion fluid (l)	416	624	815	624
TOTAL (l)	5.762	3.613	2291	5.958

Tecniplast Moulds Department

What is the ISCC PLUS Certification?

The International Sustainability & Carbon Certification (ISCC) is an international certification program for the circular economy concerning the verification of the traceability of recycled materials (e.g. mixed plastic waste) based on the principles of mass balance accounting.

The ISCC PLUS system is an independent evaluation performed by third parties, of the traceability of the mass balance to the source of waste ("Point of origin"), according to the accounting principles of mass balance developed by the Ellen MacArthur Foundation.
The ISCC PLUS certification applies to any type of material, from bio-based materials derived from agricultural or forestry materials, mixed plastic waste subject to a chemical recycling process to convert materials that previously could not be recycled through traditional mechanical processes.

DNV

ISCC PLUS Certificate

Certificate Number: ISCC-PLUS-Cert- SE205-00000292

DNV Business Assurance Sweden AB,
Box 6046, Solna, Sweden
certifies that
Tecniplast S.p.A.
Via I Maggio, 6 - 21020 Buguggiate (VA) - Italy
complies with the requirements of the certification system
ISCC PLUS
(International Sustainability and Carbon Certification)

This certificate is valid from 02.09.2021 to 01.09.2022

The site of the system user is certified as:

Plastic Moulding

The scope of the certificate includes the following chain of custody options:

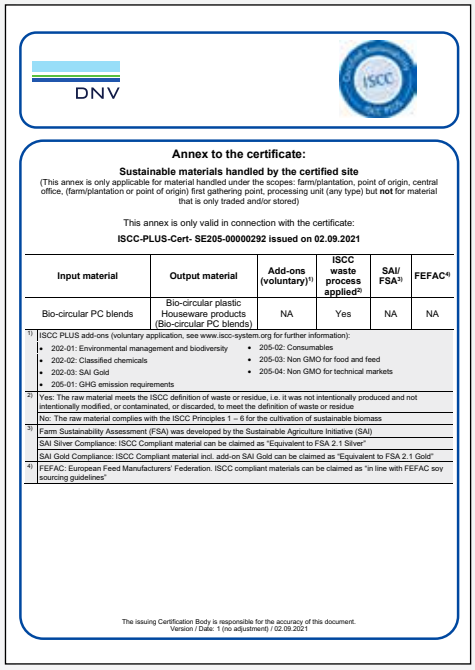
Mass Balance

Stockholm 02.09.2021
Place and date of issue

DNV

Stamp, Signature of issuing party

The issuing Certification Body is responsible for the accuracy of this document.
Version / Date: 1 (no adjustment) / 02.09.2021



DNV

Annex to the certificate:

Sustainable materials handled by the certified site

(This annex is only applicable for material handled under the scopes: farm/plantation, point of origin, central office, (farm/plantation or point of origin) first gathering point, processing unit (any type) but **not** for material that is only traded and/or stored)

This annex is only valid in connection with the certificate:

ISCC-PLUS-Cert- SE205-00000292 issued on 02.09.2021

Input material	Output material	Add-ons (voluntary)[1]	ISCC waste process applied[2]	SAI/ FSA[3]	FEFAC[4]
Bio-circular PC blends	Bio-circular plastic Houseware products (Bio-circular PC blends)	NA	Yes	NA	NA

[1] ISCC PLUS add-ons (voluntary application, see www.iscc-system.org for further information):
- 202-01: Environmental management and biodiversity
- 202-02: Classified chemicals
- 202-03: SAI Gold
- 205-01: GHG emission requirements
- 205-02: Consumables
- 205-03: Non GMO for food and feed
- 205-04: Non GMO for technical markets

[2] Yes: The raw material meets the ISCC definition of waste or residue, i.e. it was not intentionally produced and not intentionally modified, or contaminated, or discarded, to meet the definition of waste or residue
No: The raw material complies with the ISCC Principles 1 – 6 for the cultivation of sustainable biomass

[3] Farm Sustainability Assessment (FSA) was developed by the Sustainable Agriculture Initiative (SAI)
SAI Silver Compliance: ISCC Compliant material can be claimed as "Equivalent to FSA 2.1 Silver"
SAI Gold Compliance: ISCC Compliant material incl. add-on SAI Gold can be claimed as "Equivalent to FSA 2.1 Gold"

[4] FEFAC: European Feed Manufacturers' Federation. ISCC compliant materials can be claimed as "in line with FEFAC soy sourcing guidelines"

The issuing Certification Body is responsible for the accuracy of this document.
Version / Date: 1 (no adjustment) / 02.09.2021

Consumption of Packaging Materials

Packaging material has a limited environmental impact but nonetheless it is taken into full consideration.
Packaging material has a double flow:

- The incoming packaging with raw materials which, if possible, is reused before sending it to an ecological operator for recycling
- The outgoing packaging for the finished product

Where the distance is reasonable and there is a regular supplier of product components, reusable plastic boxes are used, but choosing reusable items for packaging /transport (pallets made of recycled plastic) is under consideration.
A specific indicator was provided for the packaging consumption in relation to production with an interesting improvement (reduction in packaging consumption per "worked ton of raw materials").
Considering the most important packaging materials, it is evident that there is a growing trend that is correlated to a higher degree of protection of finished products like air-handling units.

For this reason, new packaging solutions and materials are under examination, such as assembling the cages directly on the racks or using pallets made of recycled plastic.

Tecniplast considers packaging an important variable in its Green Initiative, showing a great ability to look ahead. Our commitment for a better world tomorrow, is to reduce packaging material with optimization of packaging without jeopardizing the quality of the product , creating value through sustainable business practices and services, focusing on environmental and social responsibility.

We know that packaging can serve many purposes for organizations; however, those purposes should serve not only the organization and its end users but the environment as well. It is almost impossible to think of packaging without thinking of its effects on the environment. Our products, like all finished products, require packaging prior to delivery; the packaging materials are mainly Polyethylene film or bags, paperboard and wooden pallets used for packaging chairs, cages, racks and air-handling units.

We have Implemented a complete environmental packaging policy under the guidance of the technical department developing Tecniplast (internal) standard oriented to Eco Design concept to:

- Reduce and minimise the amount of packaging material per finished product
- Increase the recycling rate of packaging materials
- Eliminate all hazardous substances in the packaging

According to the Life Cycle Thinking, when Tecniplast designs a product and its packaging, we know that it is important to ensure that there is minimum waste of materials (if possible, no waste at all).
Packaging materials consumption in Tecniplast could become a waste for the customer. For this reason, improvement objectives have been implemented such as delivering the rack with all the cages installed, thus reducing packaging materials and transported volume.

The final goal is a double benefit: preserve the environment and reduce the packaging costs for the organizations.
Our Designers and Engineers always refer to Ecodesign concepts for packaging:

- Material Content (selection of material, recycled or recyclable material, reduction in quantity, no hazardous materials, CFC and CHC free materials)
- Waste Management (the largest possible quantity of waste can be recycled)
- Transportation (dimension, regional suppliers)
- Performance (resistance, no environmentally damaging effects, care and service instructions)
- Cradle to Cradle (Recyclability)

PACKAGING MATERIALS	CONSUMPTION 2017	CONSUMPTION 2018	CONSUMPTION 2019	CONSUMPTION 2020
Wood and pallets (Ton)	161,1	179,4	163	343
Paperboard (Ton)	344,3	308,9	297,6	380,6
PET film (Ton)	5	3,6	5,7	4,2
TOTAL (Ton)	445,5	427,1	466,4	727,8

The increase in number of pallets handled is due to specific requests of some new customers who have chosen TP for its attention to corporate sustainability.

Tecniplast has adopted internal recyclable transportation plastic crates for transportation of raw material and components (from and to Manufacturing sites), substituting cardboard boxes, with a consistent saving of cardboard consumption.

All finished products require packaging prior to delivery; the packaging materials are mainly Polyethylene film or bags, paperboard and wooden pallets used for packaging chairs, cages, racks and air handling units.

Packaging materials consumption in Tecniplast could become a waste for the customer; for this reason, improvement objectives have been implemented such as delivering the rack with all the cages installed, thus reducing packaging materials and global transport volume.

Even a durable plastic mouse cage has a limited life and at the end that would usually mean consignment to a land fill site or incineration. However,

TP has designed and offered a new initiative to recycle both plastic and steel components of mouse cages and water bottles since 2008. Tecniplast gives a second life to old plastic cages, recycling them into automotive parts, furniture, household appliances, office & urban equipment.

The project is very simple and effective: Tecniplast organization , through local recyclers, collects autoclaved old plastic cages, offering an incentive discount on purchase of new ones.

Since 2008, Tecniplast has collected more than 120 tons of plastics avoiding more than 2.400 tons of CO_2 footprint in the atmosphere. Our planet cannot support a throwaway lifestyle any longer and social responsibility finally becomes also an economic benefit for laboratories.

Packaging resistance test

Tecniplast has adopted a new test on packaging resistance with the objective of defining an optimal packaging in terms of resistance and protection of the products with the smallest amount of material. This procedure is a general simulation test for unitized loads, made up of either single or multiple products or packages of the same products, designed to evaluate the protective performance of packaged-products related to vibrations, shocks and other stresses normally encountered during handling and transportation, to evaluate load stability. Choice criteria are the mass and the destination of the package.

The following three classes of packages exist, depending on the mass of the package:

- Gross mass ≤ 30 kg
- Gross mass > 30 kg and 100 kg
- Gross mass > 100 kg

The following three classes of severities exist, depending on the destination of the package.

- Level 1: very long range transportation (> 2500 km), or expected poor conditions of transport infrastructure
- Level 2: long range national transportation or international transportation, with adequate roads and railways, in a temperate climate
- Level 3: short range national transportation (< 200 km), without particular hazards

REFERENCE STANDARD (IF APPLICABLE)
ISTA 3E
EN ISO 4180
EN ISO 2248
EN ISO 2234
EN ISO 2244
EN 28768

The above tests consider the following sequence and test type:

BASIC SEQUENCE	TEST TYPE
Conditioning	Atmospheric
-	Horizontal impact test
Shock	-
Compression	Static load
Transport vibration	Vibration
Transport vibration	Repetitive shock
Compression	Static load
Shock	For package ≤ 70kg
Shock	Drop tests for package > 70Kg

Methods of quantifying damage to a package and/or its contents.

The extent of damage may be quantified as follows: loss of content by number, volume or mass.

NOTE: Loss by leakage is also related to time.

Transport and Logistics

All the packaged finished products are transported by road using trucks provided by a regular supplier. In addition, depending on the final destination, transport might continue by road (in Europe) or by ship for North and South America and the Far East; only occasionally is the transport performed by airfreight for urgent requests. Tecniplast headquarters are very close to the Buguggiate exit of the Milan-Varese highway and there is a very limited local impact due to transport of raw materials and components. The average number of trucks arriving at and leaving Tecniplast headquarters is 10 per day (average estimation by statistical sampling).

The fully Automated Warehouse was able to result in:

- Reduction of operating costs
- Increased delivery speed
- Reduction in shipping mistakes
- Enhanced safety
- Reduction in stock availability
- Reduction inf time to deliver orders from batches

The Manufacturing Plant, an operative structure active in USA since November 2010 for production of racks and changing stations with 5.295 m^2/57.000 sqf for production (Welding, Glassblasting, Peening, Assembly) and warehouse (Shipping and Receiving) and 1.858 m^2/20.000 sqf for Offices and for Tecniplast Activity Center (TAC) was able to:

- Reduce number of Containers shipped to USA from EUROPE (about 1/3 per year)
- Reduce the lead time to the customer
- Reduce the CO_2 Footprint of the products
- Reduce the consumption of our transportation system
- Reduce the delivery speed

The Centralized Automated Warehouse has reduced the consumption by 10% of oil for trucks transporting raw materials, part and products from the old 3 satellite warehouses. To Fulfill the EMS requirements, yearly Tecniplast Top Management define improvement objectives aiming to reduce the ranking of some Significant environmental Aspects and to improve the global environmental profile of the site and products.

Tecniplast USA Warehouse

Water consumption

The site uses, for hygienic and industrial needs, only drinkable water supplied by the local utility ASPEN.
Tecniplast manufacturing processes do not require water or steam consumption, but the water, mixed with monoethylenic glycol, is needed to cool the moulds of the moulding machines removing heat during the plastic processing; other uses of water are inside the piping of the boilers for heating purposes, for hygienic purposes and for watering the lawns and gardens.
A separate water supply line is dedicated to fire prevention and the related water consumption, under normal conditions, is only due to mandatory tests on the connected fire hoses. After the construction of the new warehouse a mandatory water deposit of 1.000 m^3 must be maintained for fire prevention needs. The water used in the cooling circuits and the boiler piping flows in closed loops reducing the consumption only to purges.

Water consumption is shown in this table:

WATER CONSUMPTION	2017	2018	2019	2020
TOTAL (m^3)	7.083	8.636	7.153	8.349

Data are referred to Buguggiate Site

The water consumption has some variability elements like number of employees and visitors, or the natural raining water column but despite such variability is quite regular.

To improve the monitoring of the water consumption it is under evaluation the installation of metering devices by the maintenance department. With sensitivity on the monitoring of data, TP started avoiding water leaks.

Discharged Waste Water

Waste Water is discharged into the internal sewage network, connected to the public sewage system. Given the water use, according to the applicable legislation, the waste water is classified as *"domestic"* water discharge and the waste water does not need to be treated at a specific

Waste Water Treatment Plant on site but is collected into the public sewer to be processed in a Biological Waste Water Treatment plant, on a local scale, reducing the pollutant to a level adequate for discharge into Lake Varese.

The amount of waste water is considered as a fixed rate (80%) of the consumed water, and due to the specific use of water there is no monitoring prescription but only a request for pollutant analysis (once every 2 years using an accredited laboratory) to check that the pollutant emissions are lower than the pollutant emission limits for a domestic sewer.
The recorded analysis of wastewater discharge confirms full respect of the water emission limits (records are available at the QEHS department). Rainwater is collected in an underground well located under B building and in case of heavy rain the overflow flows into the municipal sewer; an additional well, equipped with a degreasing system, is located close to the waste collection area to reduce the risk of water contamination from lubricants or spent oils handled and stocked in those limited areas. The environmental analysis performed by a chemical accredited laboratory confirms the respect of legal limits for all the significant parameters of domestic waste water discharge; the waste water analysis is mainly concerned with Carbon Oxygen Demand (COD), hydrocarbons, total Chromium, as is evident in the next table the emission values are very low compared with the legislation limits and Tecniplast after a trend analysis of the pollutant decided to exclude the yearly monitoring according to the authorization prescriptions.

Improvement goals: 10% reduction in water consumption by installing rainwater collection tanks and/or using water for irrigation according to the ground humidity rate by means of sensors.

Waste Production

All activities generate waste and due to the significance of environmental aspects each type of waste generated is managed with care according to the applicable EMS procedure and mandatory European and Italian waste legislation requirements.

This means using appropriate containers, well labelled for identification, implementing waste separation at source to facilitate the path of all the recyclable waste or the final disposal. All waste generated is collected in a specific area designed to receive all kinds of waste material. The waste from the temporary stock area is loaded onto authorized trucks for disposal operations.
The authorized waste carriers transport the waste to other authorized external waste operators both for recycling or final disposal in authorized landfills or feeding waste incinerators.

Most of the waste is generated by plastic manufacturing (start-up and shutdown, respectively), and as far as possible it is ground directly on site and partially re-moulded with fresh PSU or PC plastic granules. The waste material is collected in separate containers and transferred to two external restricted areas for purposes of temporary stocking before disposal.

Tecniplast logistics department manages about twenty kinds of waste per year, grouped and presented as Hazardous and Non-hazardous wastes.
It is evident that to reach such figures of recycled waste Tecniplast is using the right approach and the packaging waste is regularly separated and sent to recycling operators.
Tecniplast subscribes to CONAI (national consortium for packaging recycling) and POLIECO (national consortium for recycling polyethylene goods).

The waste production for the reference period are reported in the following tables:

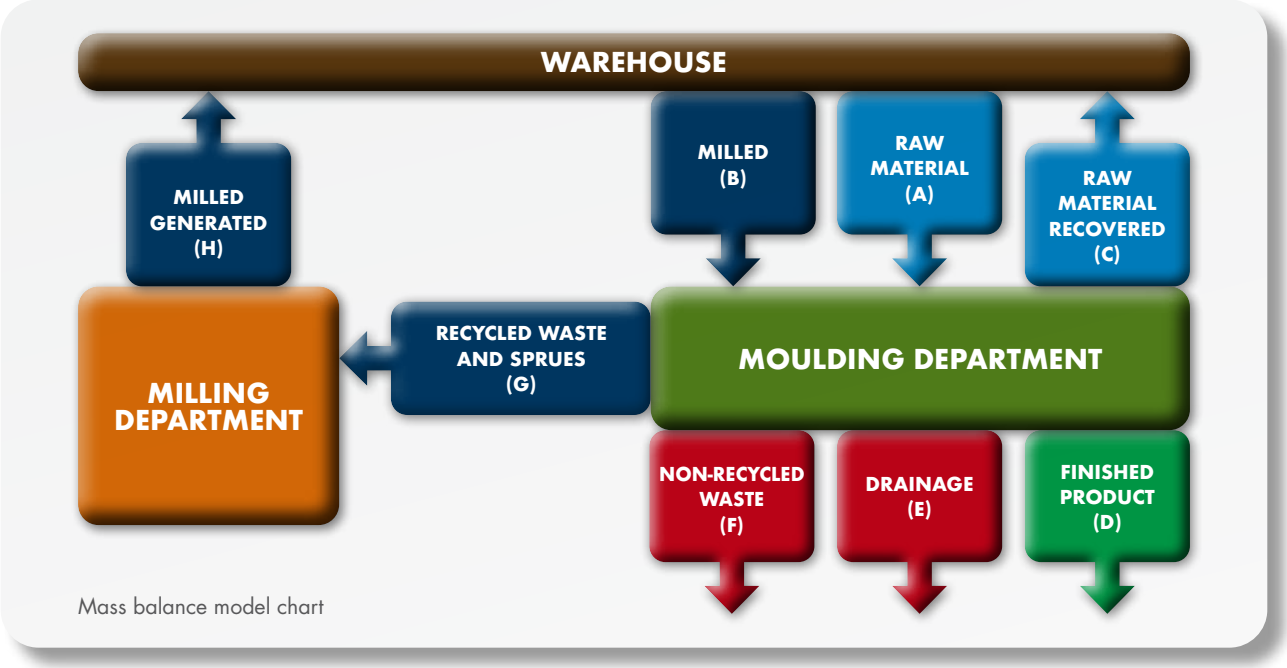
END OF WASTE SCENARIO	2017	2018	2019	2020
Recycled (t)	288,1	238,8	259,6	351,9
Landfilled (t)	5,5	2,1	4,7	1,5
Total (t)	293,5	240,9	264,3	353,4
Waste Circularity Index (%)	98,14	99,13	98,22	99,59

WASTE PRODUCTION	2017	2018	2019	2020
Non-hazardous Waste (t)	281,2	234,8	257,5	346,3
Hazardous Waste (t)	12,3	6,1	6,8	7,1
Total (t)	293,5	240,9	264,3	353,36

The waste production reduced quite regularly from 2017 in the following years and also with reference to the previous Environmental report, in addition, due to a very strict management of wastes a very significant amount of wastes are sent to external waste operators for the recycling activities.
For measuring the amount of recycled waste an additional environmental indicator was introduced: the Waste circularity index measuring the rate of recycled waste compared to the total waste production; using such indicator a value of 98% or more was reached as evidence of the good management of wastes.

To fulfill the EMS requirements yearly Top Management defines Improvement Objectives aiming to reduce the ranking of some significant Environmental Aspects and to improve the global environmental profile of the site and products.
With reference to the Environmental Aspects Assessment, regularly updated, the following improvement objectives have been successfully implemented and reached.

In absolute terms, the quantity of waste produced over the year has increased. As a percentage such waste amounts to +20%-+30%.
Data regarding plastic waste have been analysed: the indicator (waste produced/raw materials used) shows that it is substantially in line with the historical data, which means that the total increase is strictly connected to the production increase that has taken place.
It is considered that what is shown above is also valid for the other principal waste produced and hence that the increase is linked to the increase in materials (e.g. raw materials, packaging, pallets shifted) needed to guarantee production levels.



Mass balance model chart

Energy Consumption

For the manufacturing process and all the auxiliary services Tecniplast needs electricity, purchased by the main energy suppliers. For heating the facility TP uses natural gas as fuel burned inside four condensation boilers.
The four heat generators, for an overall heating power of 2.2 MW, are regularly maintained and monitored for combustion emissions and thermal efficiency. Diesel oil is only used to supply the emergency generators, generally in stand-by mode and periodically tested under the fire prevention programme. Energy consumption is regularly monitored.
Tecniplast has installed a photovoltaic field panel for 2,8 kW of electric energy and 25 m^2 of thermal solar panel.
The expected benefits are about 2,700 kWh/year of electricity and 12 MWh thermal energy and 7,200 kg of avoided CO_2.

The commitment to reducing energy consumption is performed in many directions:

- Avoiding any waste of energy,
- Using updated technology for motors, pumps (inverter technology)
- Using updated technology for lighting (led, dimerized lumps)
- Using updated technology for heating (condensed boilers)

Thermal energy is expressed in kWh and referred to square meter of the heated surface; the thermal energy is derived from the direct consumptions of natural gas and diesel oil respectively multiplied by the Lower Heating Value of such fuels derived from the UNFCCC data. Under Tecniplast's commitment to the environment and sustainability other actions are in progress for energy consumption reduction:

- Market research to buy, at least in part, renewable energy
- A regular introduction of an inverter electric motor and other devices (lighting systems) in advance of EuP directive

The energy consumption and production (with self-consumption) for the reference period are reported in the following tables.

ENERGY CONSUMPTION	2017	2018	2019	2020
Electric Energy (MWh)	6.412	6.010	6.069	6.297
Natural gas (1000 stm³)	261,7	274,3	236,1	234,4

Data are referred to Buguggiate Site

To fulfil the EMS requirements yearly Top Management defines Improvement Objectives aiming to reduce the ranking of some significant Environmental Aspects and to improve the global environmental profile of the site and products. With reference to the Environmental Aspects Assessment, regularly updated, the following improvement objectives have been successfully implemented and reached.

Air Emissions

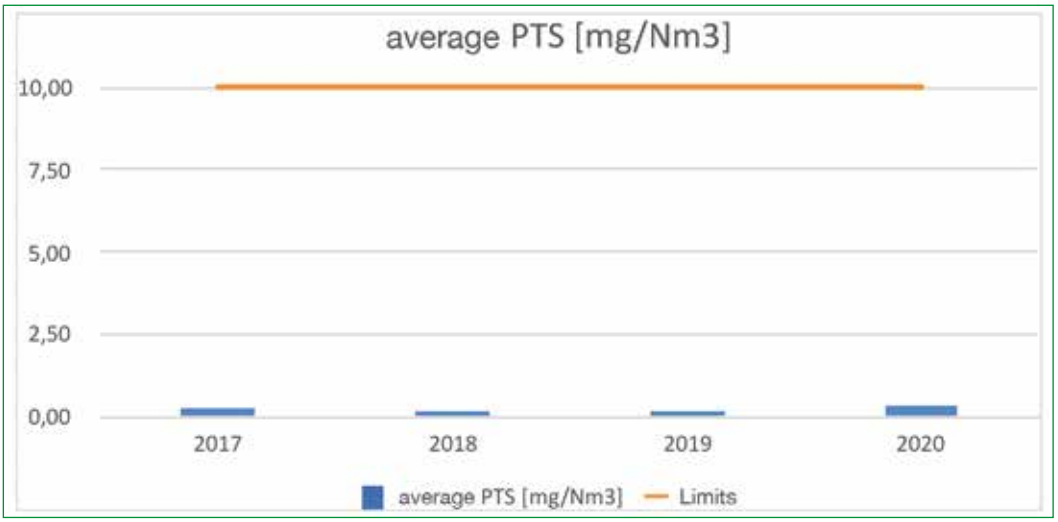
Emissions into the atmosphere are a significant environmental aspect associated with Tecniplast processes and manufacturing operations. The factory has nine emission points, authorized by the Lombardy Region in accordance with applicable legislation. Legislation compliance is provided by means of scheduled preventive maintenance and air emission control performed yearly by an external Accredited Analysis Laboratory. Each authorized emission point emits specific pollutants that may be grouped into the following four categories of gaseous emissions:

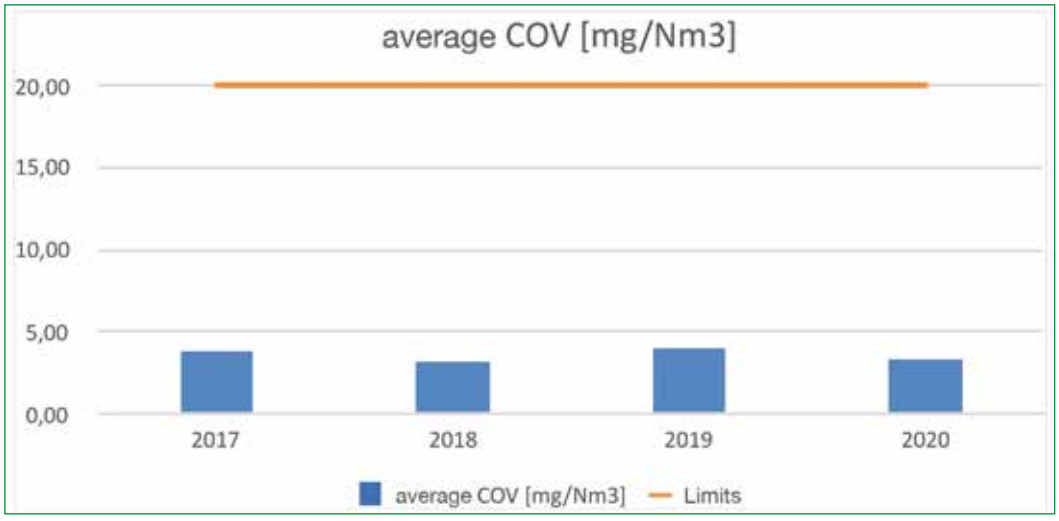
- Emission from Injection moulding No. 9 emissions - (pollutants: Dust, VOC)
- Emission from other activities No. 5 emissions - (pollutants dust, VOC, oil mist)

To avoid a full list of data, a weighted average of the emissions for the most important pollutants is shown in this table.

EMISSION/YEAR	2017	2018	2019	2020
Dust (mg/Nm³)	0,22	0,14	0,17	0,30
Legal Limits	10	10	10	10
VOC (mg/Nm³)	3,90	3,18	3,97	3,32
Legal Limits	20	20	20	20

Among the most important emissions are VOC and dust.
The following table shows such emissions. The emission's values are lower than the legal limit.





Certificate of fire prevention (CFP)

Tecniplast obtained the Certificate of Fire Prevention for all the activities where some fire risk could exist; the certificate obtained will be renewed in October 2021.

In accordance with the applicable fire prevention requirements, all the fire prevention devices are checked twice a year by an external specialized company and records of such activities are available.

The items checked are:

- Hand-held fire extinguishers
- Smoke and flame sensors
- Natural gas leakage sensors
- Water firefighting hoses

Another important principle of firefighting fully accomplished by Tecnipalst is the training of workers and employees so that for each department and for each shift an adequate number of trained people are able to react in case of fire.

Soil and subsoil

The site is about 300m above sea level and the soil is permeable.
Soil and subsoil might thus be affected by possible losses of chemicals and oils.
With the application of prevention principle, such a potential risk is managed by rendering impermeable every surface of the manufacturing plant, where losses, spillages and leakages are it is significant and where possible containment basins are used especially where there is storage/handling of chemicals, oil, liquid waste, potential pollutants for soil and subsoil.
All the underground tanks have been decommissioned, in accordance with applicable environmental legislation.
Soil samples were analyzed by a specialized laboratory and no findings exceeded the limits established by applicable legislation for soil contamination.

Asbestos and Elements Containing Asbestos

Tecniplast, like almost all production sites, had some roofing covered by eternit sheets containing asbestos fibers.
Around the year 2000 most of the covering was removed and replaced. The material containing asbestos was disposed of as hazardous waste and, in line with applicable legislation, was sent to authorized landfill.
The roof of the rack assembly department (eternit sheds) was removed during February and March 2016.

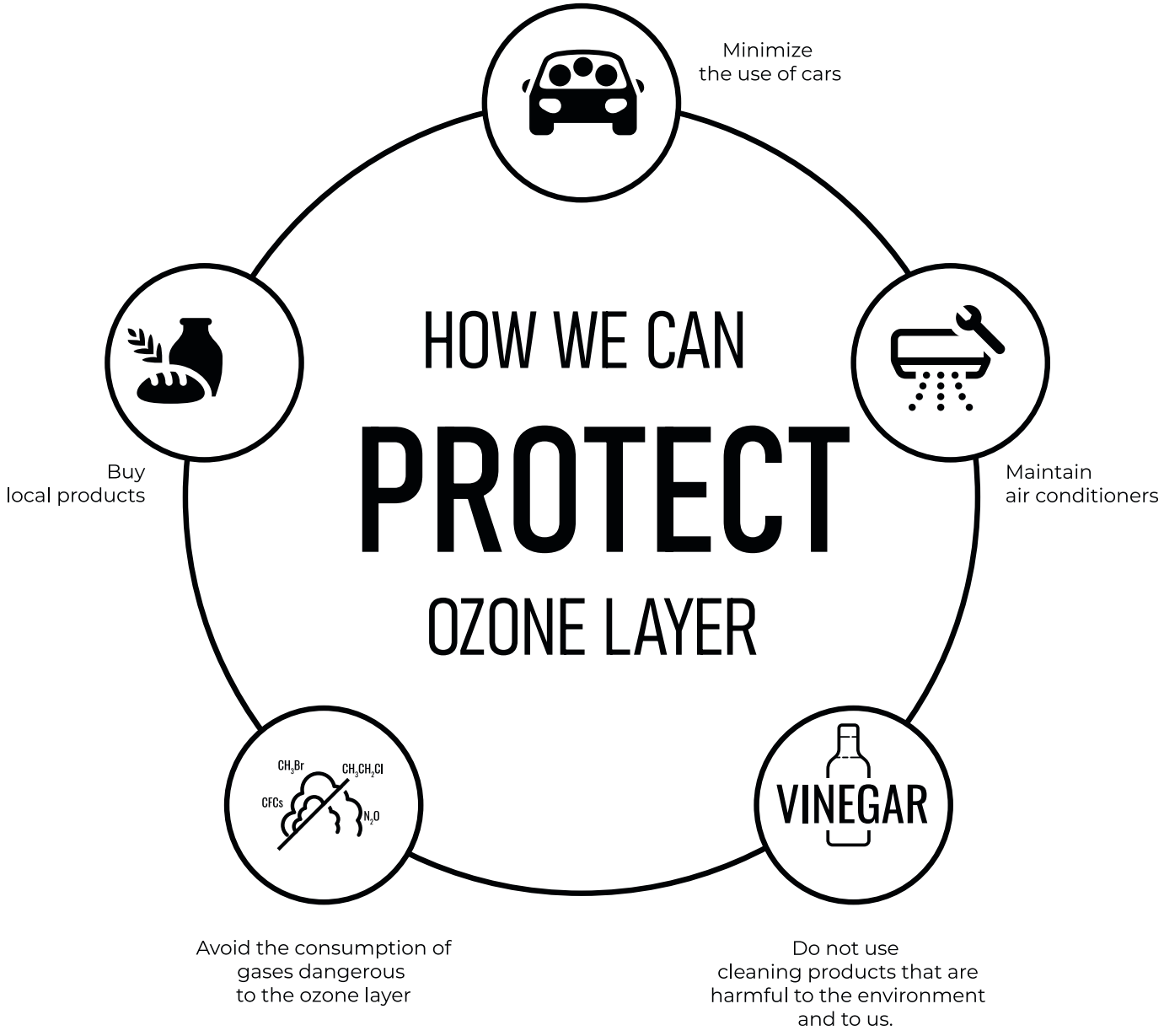
During initial works prior to building new offices and warehouse, in the surrounding ground purchased for that purpose by Tecniplast, some asbestos sheets were found within the subsoil.
Tecniplast managed the situation with awareness and responsibility by:

- Informing the local public authority of the situation
- Searching for specialized asbestos removal companies
- Defining an asbestos removal action plan
- Subjecting the plan to the public authorities
- Removing and disposing of the material containing asbestos to an authorized landfill

Tecniplast is Asbestos free since 2016.

Ozone depletion layer

For the air conditioning Tecniplast uses n° 32 plants (refrigerant and heat pumps) containing R407 and R410 refrigerating fluid.
In line with European and national legislation the air conditioning devices are regularly monitored to check for any fluid leakages and are annually declared to ISPRA, the national official register. The regular maintenance of the air conditioning devices and the leakage test control performed by a qualified subcontractor confirm the absence or a limited leakage of refrigerant fluid avoiding and limiting the contribution to the depletion of the ozone layer and global warming effects.



External noise

Tecniplast plant is mainly within the commune of Buguggiate and it is classified by the Noise Zoning Limits set by the municipality (commune) of Buguggiate (VA).
The zoning was defined during 2007 and Tecniplast is in the following situation with the surrounding zones:
For class III zone towards Gazzada (VA) commune and class IV zone for Buguggiate (VA) commune, noise monitoring campaigns are regularly implemented by qualified acoustic technicians at the site surroundings during the night and day time confirming the full respect of the noise limits.

The table below shows the results of the monitoring campaign, supported by the map showing the monitored points.
The shift with the previous reference points is due to minimal internal expansion or variations for which the external noise was repeated.

DAILY		
MONITORED POINT	EQUIVALENT LEVEL [DB(A)]	LIMITS [DB(A)]
A	53,0	55
B	57,0	65
C	49,0	60

NIGHTLY		
MONITORED POINT	EQUIVALENT LEVEL [DB(A)]	LIMITS [DB(A)]
A	43,5	45
B	54,9	55
C	46,5	50

All the value fully respect the limits and the nightly value close to the limit could be strongly affected from the motorway noise. We plan to repeat the external noise monitoring campaign and update the actual noise level at any significant plant modification.

Electromagnetic fields

All equipment, machinery and tools used in Tecniplast are labelled EC for safety purposes to reduce the e.m. risk; in September 2012 the levels of electromagnetic fields were measured to assess e.m.f. risks according to the appropriate legislation for e.m.f. worker exposure.
All the measured values are far below limits.

Land use

Among the new Environmental Aspects under consideration is the Land use, the meaning associated to land use is just a ratio between two surfaces A and B where:

A is the area of the site left to green

B is the area of the site with a non reversible change of destination, (generally industrial or civilian building and infrastructure).

After TP expansion in late years the overall surface of Tecniplast is as follow:

- Built area 12.024 m^2 (source: Report of Consonni Building Contractor Company)
- Green area 8.378 m^2

It is evident that the ratio is 41% with a significant part of the site left to green. TP will identify new objectives to increase the green area or adopt compensation offset criteria for the carbon dioxide emissions. In any case TP surface is a very small area compared to the 50 hectares/week of soil transformed from green to grey in Lombardy (National soil consumption report 2009).

5.6 - INDIRECT ENVIRONMENTAL ASPECTS

Indirect environmental aspects deal with aspects not occurring at Tecniplast site but externally, for example for the production of energy, or during the use phase of cages, or for the production and transport of raw materials. All these environmental aspects are not under the EMS as they do not occur at Tecniplast site but nonetheless Tecniplast could and would influence them in order to reduce, where possible, also such environmental aspects and impacts.

Energy

Tecniplast is aware that among the environmental indirect impacts are the air emissions from the thermal power plants producing electricity, power plants releasing into the atmosphere large amounts of carbon dioxide and other pollutants. The appropriate indicator for electricity production is the Emission Factor. The emission factor could vary according to the Country electricity producing mix or for a single power plant. (the emission factor is a figure of the amount of CO_2 emitted per kWh).

For such reasons Tecniplast Purchasing Department is looking for renewable energy suppliers to buy, in the coming years, part of renewable energy but, nonetheless, energy saving improving objectives are in progress. In the future all these matters will be assessed using the Carbon Dependency Indicator (CDI).

CO_2 Emissions

An additional indicator taken into account is the CO_2 emissions due mainly to electricity consumption and direct fuel combustion for heating the facility and offices. The energy and fuel consumption data are discussed in the related paragraph, the same data are used here for assessing the CO_2 emissions, which are calculated by multiplying the fuel or electricity consumption by the correspondent Emission Factor derived from the UNFCC or considering the Italian mix for electricity production. The direct CO_2 emissions, at the site, is a limited amount of the total CO_2 emissions.

CO_2 EMISSIONS FOR	2017	2018	2019	2020
Electric Energy (t)	2.729	2.558	2.583	2.680
Natural gas (t)	517	542	466	463
Total (t)	3.246	3.100	3.049	3.143

Data are referred to Buguggiate Site

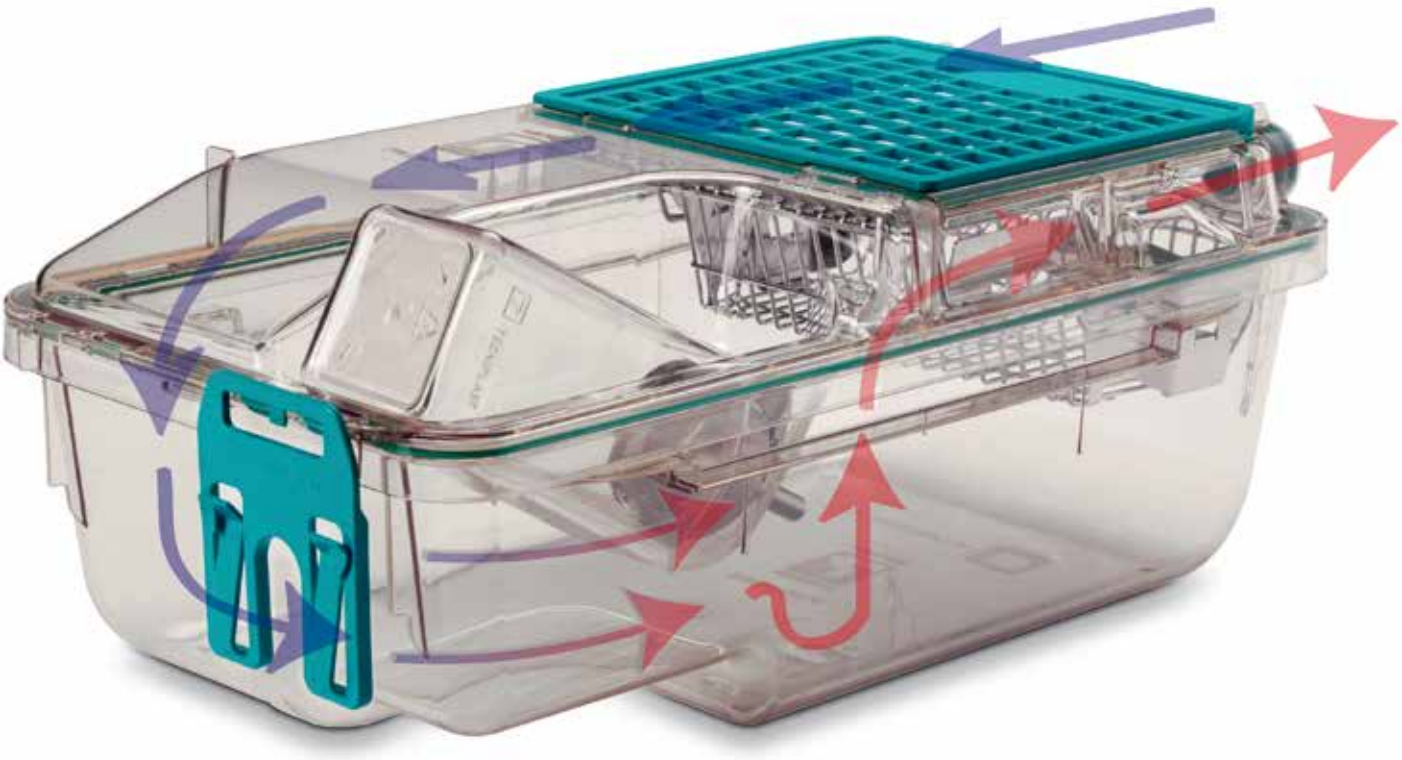
Use of Cages and other Products

Indirect environmental impacts associated with the use phase of Tecniplast products have a wide range of variability. For the PC chairs or other domestic products, the use phase consists of periodical cleaning activity with a very low impact during the use phase. A different situation is faced when dealing with cages used for in vivo for laboratory research. The Euro-guide defines the requirements to be met for housing laboratory animals in comfortable and ergonomic environments throughout their lives, but it does not mention any environmental aspects or material selection rules nor the production technologies to be used for the cage production.

The freedom of choice has directed the producers to two logical construction alternatives for the ventilated cages: the single use or disposable and the reusable ones.

The peculiarity of the disposable ventilated cage is that, when the cage is used in a husbandry laboratory, it is used only one time, for about 7 working days and then it is recycled or disposed of. On the other hand, the reusable ventilated cage can be used several times on condition that it undergo weekly cleaning bedding, washing and sterilization cycles which restore it to an "as good as new" condition even after many years of use.

The cages following a technical choice by Tecniplast, are made of Polysulfone PSU, a very stable and temperature resistant material of the polycarbonate PC family that could be used for many years. Of course, according to hygiene principles and FELASA Euroguide, after use, the cages are washed and sterilized on weekly routine frequency, thus consuming energy and steam. Using the LCA methodology an LCA cage study was performed and peer reviewed giving full evidence that the use phase is the most polluting during the whole cage life cycle, for such reason, product improving objectives were adopted or are in progress (see boxes for LCA results and improving objective).



Emerald Cage: the latest Tecniplast cage launched on the market

Emerald cage vs GM 500 cage

During 2019 a new LCA study was performed on the Emerald Cages and a comparative assessment with the GM500 cage was realized to provide evidence of any environmental impact improvement. Emerald cage was designed by the engineering department with the support of the R&D department and applied the Ecodesign approach reducing the PSU used for the cover and the basin and at the same time creating a step to carry out rodents' physical exercise of ascents and descents, and to improve the health conditions of rodents.

Initially the objective of the LCA study was the comparison of the full life cycle of the IVC GM 500 and the Emerald cages *"from cradle to grave"*. After a quick survey of the operating conditions, involving Italian and foreign husbandry laboratories, TP decided to reduce the scope of the study only to the *"Cradle to gate"* phases instead of a full *"cradle to grave"* LCA.

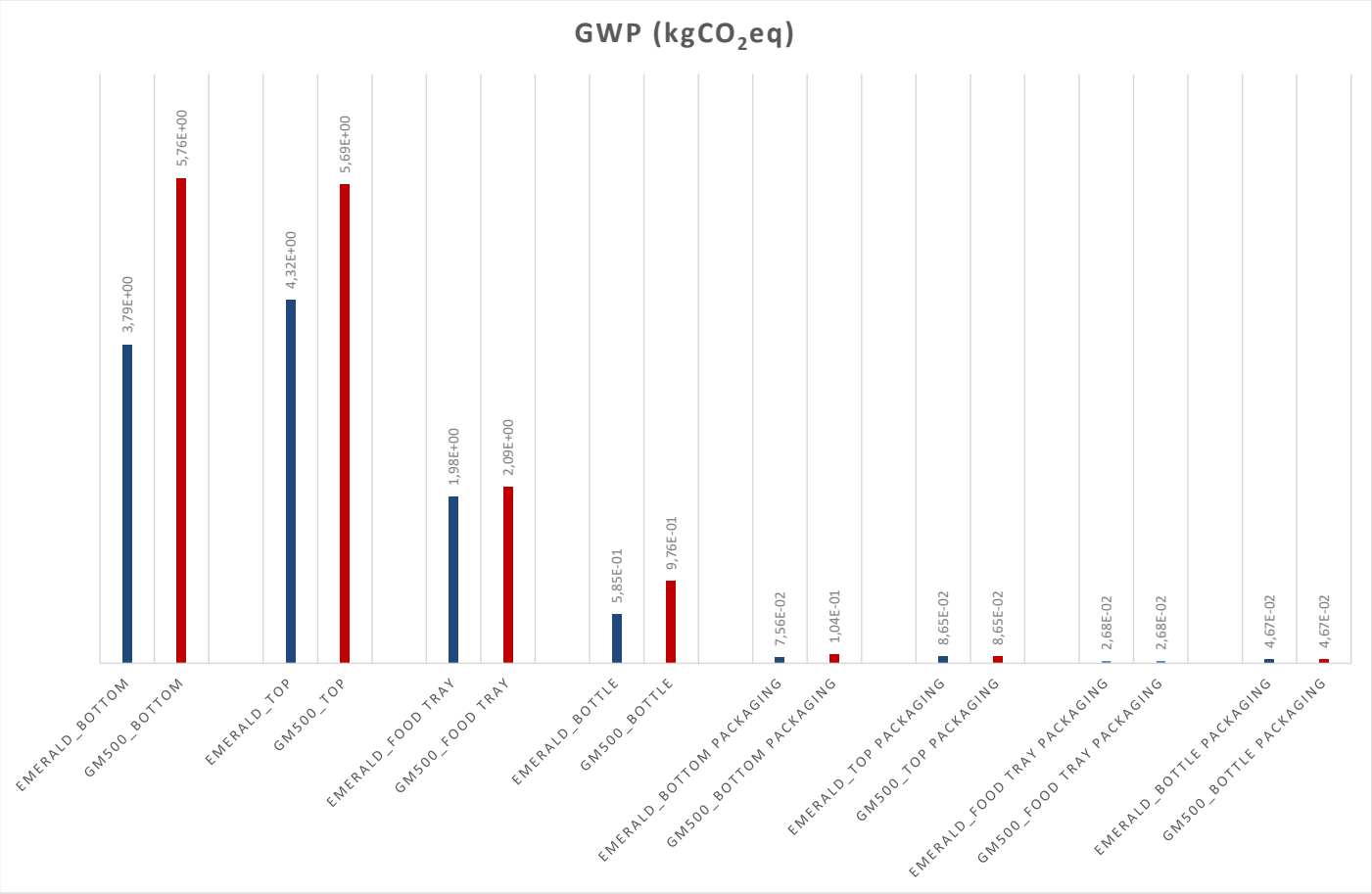
The reason was that the operating conditions within the husbandry are almost the same, without significant changes in resource consumption. Moreover we have to consider that the greatest contribution to impacts are due to the using phase of the IVCs and any improvement introduced with the Ecodesign (or other) approach for the manufacturing phase, could have been partially hidden from the global values.

Accordingly, the scope of the study is to assess the environmental impacts, using the LCA methodology, for the Emerald cage and considering (an internal) benchmark with the IVC GM 500. The environmental impact categories considered were GWP, AP e ADP to gain a wider understanding of the consequences on the Environment.

The choice of the impact categories is correlated to the interest of the market, mainly in the carbon footprint of the product, and the commitment of Tecnipalst in expanding the classes concerning the other environmental categories. On this voluntary basis, TP decided to consider in the LCA also the acidification potential and Abiotic Depletion Potential of resources.

Another important consideration was that many significant changes were produced in the impact methods used in the commercial software, updating the state-of-the-art but also the dataset have been updated and the only possibility to make a benchmark was to create a new model in the SimaPro software and using the same data-set any time it was required for the same raw materials or processes. On the basis of the final decision, all the input and output of elementary flows associated with process units of the product system cage will be organized in upstream and core. Such organization of data will allow the environmental impact to be understood that is associated with the supplier for raw materials, components, auxiliary material and energy supply and all the impacts at the production site.

The information obtained will be used internally for an internal benchmark adequate for monitoring the improvement obtained from the product (Emerald cage) innovation. On the other hand, the same information and data will allow clients to obtain measurable and understandable data to choose the best products, by expanding the purchasing evaluation criteria adding environmental criteria to the economic and quality requirements.



In this study a conservative approach was used because during the usage phase the number of cages to be washed and sterilized in autoclave could be increased, due to the lower volume of the cages and so also the steam necessary for the sterilisation process could be reduced.

Recycle, Reuse

An additional LCA study was implemented for the 2GM 160 rack with additional improvement objectives.

All the products improvement objectives are based on the 4 R approach:

- Reduce raw material consumption,
- Reuse, were possible, components,
- Recycle as much material as possible,
- Repair any time it is possible and convenient

and *"from cradle to new cradle"* Industrial Ecology philosophy.

Tecniplast has implemented for over 10 years a WW recycling PSU programme at the cages end of life.
For over 10 years Tecniplast has understood that no matter what the size of our business, there are steps we can take to reduce our carbon dioxide emissions and help combat climate change.
We know that a large percentage of greenhouse gas emissions are from the "provision of goods,": the extraction of resources, manufacturing process, transportation and disposal of "goods", including consumer products and packaging, building components, and passenger vehicles, but excluding food.

The Tecniplast Group recycling program is a fantastic example of how we can dramatically reduce our carbon emissions.

Our Project is based on the following points:

- By measuring our carbon footprint, we can understand the impact we have on the environment. We have started a process of identifying our products Life Cycle Assessment analysis.
- Promote recycling: by identifying how much pollution our products generate, we can ensure our plastic cage recycling program, will significantly reduce our overall carbon footprint

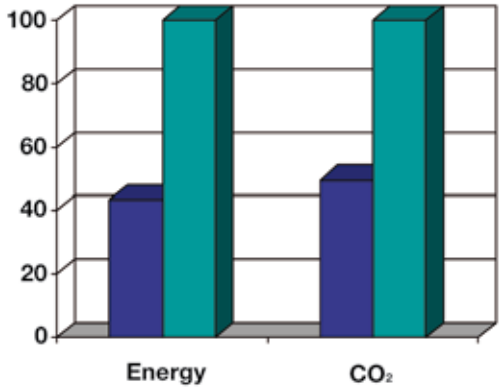
We started our recycling scheme in 2009 to give a second life to old plastic cages, recycling them into automotive parts, furniture, household appliances, office & other products.

"Tecniplast collects autoclaved old plastic cages from its clients and offers an incentive against the purchase of new ones. Different countries run this programme differently i.e. some give the money raised to charity and for example in Italy, we support the framework agreement with the Environmental Ministry of Italy."

The recycled plastic decreases the need to extract "virgin" resources from forests, oil reserves and mines, to make industrial products. Giving our plastic cages the possibility to offer a second life means less energy is consumed to manufacture and transport products. As a result, less carbon dioxide and other greenhouse gas (GHG) emissions are generated.

The bottom line is: with every item you recycle or reuse, you help reduce greenhouse gases and protect the climate.

Other Tecniplast initiatives in this direction are:

- Products (IVC GM 500 CAGE) LCA
- LCA OF TP Products
  What Tecniplast did to go beyond making profits was to make a difference by sharing ethical values
- Tecniplast conducted, first in the Industry, an LCA study through special LCA software (SimaPro of PRè NL). The LCA study was peer reviewed by an independent LCA expert who gave the following judgement: *"The undersigned independent external expert states that the attached LCA study is in compliance with the steering documents identified under the "Review Scope" (Review Scope: the task of the verifier was to review the LCA model, the LCA report and the underlying data, in order to verify full compliance with ISO 14040:2006 and ISO 14044:2006".*
- TP used the Life Cycle Assessment (LCA) to track usage of raw material, assembling and distribution, in order to quantify the impact of TP business activities and work to reduce this impact, with the following initiatives.
- The focus towards a more sustainable society is having a wide influence on industrial production forcing it to identify processes and products with lower environmental loads. With the aim of improving the decision process of the final users, a growing number of organizations implement product Environmental Impact Assessment study using a system perspective that means using Life Cycle Assessment (LCA) methodology. LCA gives a full understanding of all the environmental impact categories such as climate change or resources depletion and, in addition, depending on the analytical modelling of the product, also identifies the environmental hot spots for any phase, material or process involved, so the LCA could be used as a baseline for the correct improvement of the environmental profile of the product starting from the hot spots, with a cost effective approach.
- 

IVC	ENERGY (Mj)	CO_2 eq. (Kg)
Reusable	983	66,4
Disposable	2.245	134

- LCA is also very useful for product benchmarking in case of similar products or products having the same function, as is the case of reusable and disposable products. In line with its environmental commitment, Tecniplast realized an LCA study of the IVC GM 500 cage with the target of measuring the carbon footprint emission during the life cycle of the IVCs in order to respond to additional market requirements.
  Tecniplast realized the LCA study with an additional target, measuring the carbon footprint emission during the Life Cycle of the IVCs, comparing reusable and single use versions as against a disposable PET cage used in animal laboratories. When we consider the life cycle of disposable cages, generally made of PET (polyethylene terephthalate), after a single use we must dispose of them, whilst when we use durable cages, made of PSU (polysulfone), after a use we must wash and sterilize them, as they could be used again and again for at least 6 operating years. When all the comparative data are inputted into a special LCA software (SimaPro of PRé NL) it is immediately evident that the reusable cage has all the environmental impacts category lower than the disposable cage and, for example, comparing the data of energy and CO_2 emitted for the disposable and reusable cages we obtain, respectively a ratio of 43,8% for energy and 49,5% for CO_2 emission.
- The comparative cages LCA study was peer reviewed by an Independent LCA Expert who gave the following judgment: "The undersigned independent external expert states that the attached LCA study is in compliance with the steering documents identified under the "Review scope".
- (Review scope: the task of the verifier was to review the LCA model, the LCA report and the underlying data, in order to verify full compliance with ISO 14040:2006 and ISO 14044:2006).

STUDIO MAURIZIO FIESCHI
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LCA study
-

The Carbon Footprint of the IVC GM 500 Cage (using the LCA methodology)

-

Tecniplast S.p.A.
www.tecniplast.it
(edited by Vito D'Incognito - Take Care International)

Verification of compliance with the requirements established by International Standards ISO 14040:2006 and ISO 14044:2006

Verifier

Maurizio Fieschi, as independent external expert.

Review Scope

The task of the verifier was to review the LCA model, the LCA report and the underlying data, in order to verify full compliance with ISO 14040:2006 and ISO 14044:2006.

Review Process

The validation has been focused on ensuring that:

- the methods used to carry out the LCA are consistent with the International Standards ISO 14040:2006 and ISO 14044:2006
- the methods used to carry out the LCA are scientifically and technically valid
- the data used are appropriate and reasonable in relation to the goal of the study
- the interpretations reflect the limitations identified and the goal of the study
- the study report is transparent and consistent

The validation has been conducted by sampling activities. Main unit processes, inputs, outputs and data processing for reporting have been sampled, with specific attention to: system boundaries, allocation rules, material and energy resources, wastes, raw materials, transports, impact categories and characterisation factors.

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On desk and on site review has been conducted.
The main review phases have been conducted with the following timing:

- 2010-01-20÷2010-02-05 on desk verification of LCA
- 2010-03-25 on site verification; visit at site of Buguggiate (VA)
- 2010-03-25 review of refined LCA

Main come out facts were:

- Not all the goal and scope assumptions and limitations were clear.
- The system boundaries needed a review
- The LCA needed the check and updating of some inventory data
- Not all the methodological steps were so comprehensible, so more explanations have to be added

The Company has done any necessary action in order to modify LCA to achieve a full compliance with the International Standards. The use of updated secondary data is recommended for the editing of future study revisions.
A detailed review report is available in the verifier office.

Statement

The undersigned independent external expert states that the attached LCA is in compliance with the steering documents identified under the "Review scope".

Yours sincerely,

Buguggiate, 25th March 2010.

Attached: Reviewed LCA study

- The carbon footprint of the IVC GM 500 CAGE (using the LCA methodology) (Ed. 25-03-10)

IVC	ENERGY (MJ)	GWP (kg CO_2 eq)
Disposable	2.245	134
Reusable	983	66,4
Reusable/Disposable %	43,8	49,5

Following the initiative of the Engineering and R&D department, at the end of 2010's the use of Digital Ventilated Cage (DVC®) was introduced.
The most important results of the DVC® on the site of LCA is that the frequency of the cage substitution doubled from 1 week to 2 weeks, as was confirmed by many research husbandry laboratories.
The new and important condition was adapted in an LCA sensitivity analysis using the previous data and model obtaining the new data.

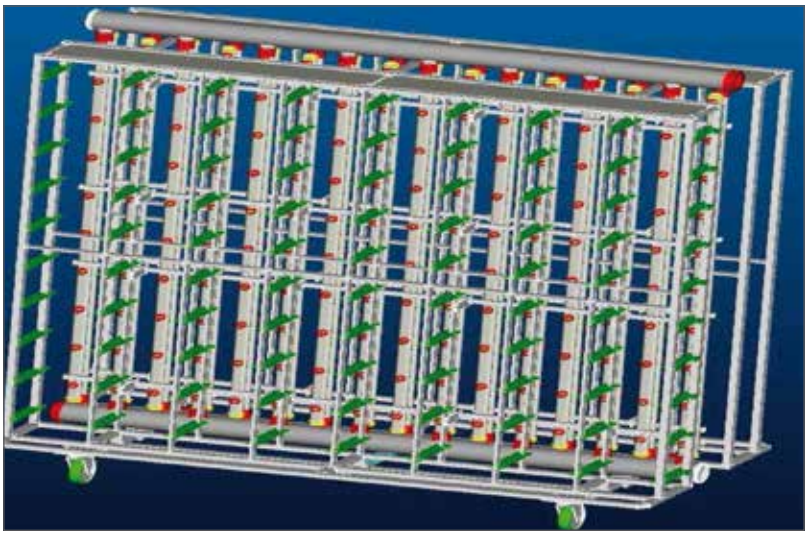
IVC	ENERGY (MJ)	GWP (kg CO_2 eq)
Disposable	2.245	134
Reusable	983	66,4
Reusable (2 weeks)	685	58,1
Reusable (DVC)/Disposable %	30,51	43,35

Tecniplast conducted additional LCA study for the following items

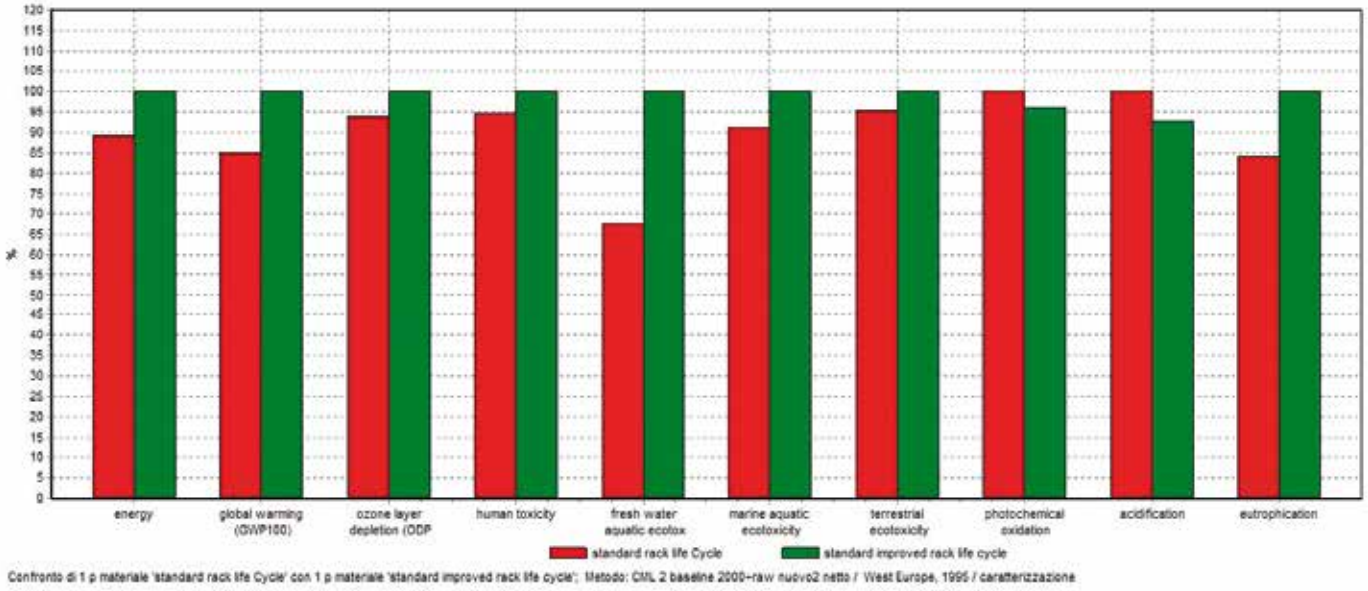
- The cage hanging and ventilation rack (metal version and new version
- Remo Touch (RT) vs Sky Flow (SF) Air Handling Units

All the studies were implemented according to ecodesign principles; reducing the amount of material, using lighter material, choosing productive processes more friendly for the environment. The aim of the LCA study was always to understand and then reduce the environmental impacts in accordance with the life cycle thinking approach.

In order to sustain the cages a reticule of polyamide nylon glass fibers reinforced guides is provided (Rack - stainless steel version and new version with plastic guides for cages). Each guide is inserted into a hole realized on the vertical sustaining piping; the shape of the guide simplifies the operation of extraction and insertion of the IVC cages improving the ergonomics for the operator. The solution is also very important in reducing the manufacturing time by avoiding welding from the distribution pipes and the previous hanging metallic guide. Also, the global weight is reduced.



The global results are shown in the next table, extracted from the SimaPro sw showing the old stainless steel version (in red column) and the new innovated and lighter version (in green column) with all the impact categories.



Confronto di 1 p materiale 'standard rack life Cycle' con 1 p materiale 'standard improved rack life cycle'; Metodo: CML 2 baseline 2000+raw nuovo2 netto / West Europe, 1995 / caratterizzazione

The new version of the Sky Flow was based on a redesign with the following results:

- The Product Weight reduction is 56,4%
- The Packaging Weight reduction is 34,3%
- The Global Weight reduction obtained is 50,9% and weight reduction of 70,7 kg has an important influence in reducing the environmental impact of products being transported.
- The number of materials remains substantially the same: around 10
- The total number of components is reduced by about 25% with additional advantages during the assembly phase at site, as a matter of fact, a reduction of 4,5 hours in working time is obtained with the advantage of reducing the general consumption for lighting and heating/cooling the assembly department and the specific energy consumption for screwing and other assembly operations

Packaging

TP considers packaging an important variable in its Green Initiative, showing a great ability to look ahead. Our commitment for a better world tomorrow, is to reduce packaging material with optimization of packaging without jeopardizing the quality of the product, creating value through sustainable business practices and services, focusing on environmental and social responsibility.

We know that packaging can serve many purposes for organizations; however, those purposes should serve not only the organization and its end users but the environment as well. It is almost impossible to think of packaging without thinking of its effects on the environment. Our products, as all finished products, require packaging prior to delivery; the packaging materials are mainly Polyethylene film or bags, paperboard and wooden pallets used for packaging chairs, cages, racks and air-handling units.

We have implemented a complete environmental packaging policy proven by many international certifications (ISO 14001), in order to sell Environmental Friendly Products, with the lowest amount of packaging material, 100% recyclable, through:

- Eco Design concept for reduced material per product
- Maximization of recycling at the end of life
- Elimination of specific hazardous substances

When we design a product and its packaging, we know that it is important to ensure that there is minimum waste of materials (if possible, no waste at all). Packaging materials consumption in TP could become a waste for the customer; for this reason, improvement objectives have been implemented, such as delivering the rack with all the cages installed, thus reducing packaging materials and transport global volume. When a company manufactures a design, the materials used are often expensive. Any wasted materials mean that the company is also wasting money. In a competitive world waste must be minimized. If there is little waste of material, then less material is needed to manufacture a design.
This helps conserve the environment. Energy (electricity etc...) to drive machinery is needed to manufacture designs. If waste material is produced it means that energy has been wasted cutting, shaping or removing this useless material. Recycle as much waste material as possible and use it again. This saves money and protects the environment.

Our Designers always consider for packaging:

- Material Content (selection of material, recycled or recyclable material, reduction in quantity, no hazardous materials, CFC and CHC free materials)
- Waste Management (the largest possible quantity of waste can be recycled)
- Transportation (dimension, regional suppliers)
- Performance (resistance, no environmentally damaging effects, care and service instructions)
- Cradle to Cradle (Recyclability)
- Specifically, our designers always consider using recycled materials. Why Recycled materials matter:
- Recycling a material such as paper or card means that fewer trees need to be cut down to produce new paper and card
- Manufacturing card and paper directly from trees rather than recycling old card and paper uses more energy (electricity etc...)
- Recycling materials means there is less waste

Transport and Logistics

All the packaged finished products are transported by road using trucks provided by a regular supplier; in addition, depending on the final destination, the transport could continue by road (in Europe) or by ship for North and South America and Far East; only occasionally is the transport by means of aircargo - for urgent requests.

Tecniplast headquarter is very close to the highway Milan-Varese exit Buguggiate and there is a very limited local impact due to transport, for other reasons Tecniplast is expanding the main site and eliminating other production sites in Castronno (a nearby commune) reducing the local impacts due to transport of raw materials and components. Average number of trucks arriving and leaving Tecniplast headquarters range from 70 to 100 per day.

Tecniplast has conducted, first in the Industry, an LCA study through special LCA software (SimaPro of PRè NL). The LCA study was peer reviewed by an independent LCA Expert who gave the following judgement: *"The undersigned independent external expert states that the attached LCA study is in compliance with the steering documents identified under the "Review Scope" (Review Scope: the task of the verifier was to review the LCA model, the LCA report and the underlying data, in order to verify full compliance with ISO 14040:2006 and ISO 14044:2006"*.

- TP used the Life Cycle Assessment (LCA) to track usage of raw material, assembling and distribution, in order to quantify the impact of TP business activities and work to reduce this impact, with the following initiatives.
- The focus towards a more sustainable society is having a wide influence on industrial production forcing it to identify processes and products with lower environmental loads, such as for example transport and logistics. With this objective, with the aim of improving the decision process of the final users a growing number of organizations have implemented product Environmental Impact Assessment study using a system perspective that means using Life Cycle Assessment (LCA) methodology.

LCA gives a full understanding of all the environmental impact categories such as climate change or resources depletion and, in addition, depending on the analytical modelling of the product, also identifies the environmental hot spots for any phase, material, process or transport involved; so the LCA could be used as a baseline for the correct improvement of the environmental profile of the product starting from the hot spots, with a cost effective approach.

Management of Suppliers of goods and services

The selection of suppliers is based on their capacity to fulfil (conformity) the product or service requirements.
The suppliers of raw and auxiliary materials are chosen for the quality of the supplied materials and services, but also for time delivery punctuality, for environmental criteria, such as EMS certifications or subscription to environmental improvement programmes. Among the significant outsourced activities should be considered surface treatment (painting and metallization) and galvanic surface treatment (chromium deposition, electropolishing), such suppliers are strictly monitored and environmental audits are performed inside the EMS audit program. Waste disposal and transport services are provided only by waste operators selected from authorized waste operators giving priority to recycling material facilities as final destination. Laboratories carrying out chemical analyses of environmental parameters are chosen from accredited laboratories (e.g., SINAL). Other monitoring, internal services or maintenance activities are outsourced and assigned only to qualified operators to whom are regularly communicated environmental issues or provided with training sessions to increase their environmental and safety awareness.

Eco design on top of mind

Tecniplast's focus on environmental issues is demonstrated by the activities described in this Environmental Report.
In addition, since achieving ISO 14001 Environmental Certification in 2006 and last renewed in 2018, TP environmental strategy ensures that TP staff objectives coincide with those of the company. We need to bear in mind that Tecniplast has obtained the Assurance and Compliance Statement of the Eco Design Process according to ISO 14006:2020.
Among TP values and ethical code, a place of vital importance is occupied by sustainability. Sustainability is a core company belief which we have invested in throughout the local territory, through concrete actions. TP works with commitment and optimism so that future generations can be proud of the environmental awareness that TP have incorporated into its projects, achieving tangible and demonstrable results. TP strategy of sustainable development also translates into high efficiency in manufacturing end use efficiency and research and development of innovative technologies.

Tecniplast has defined the following Environmental Policy:

- Maintain compliance with environmental legislation and regulation
- Reduce the environmental impact resulting from our activities
- Achieve a reduction in waste production, reducing energy consumption and optimizing the use of natural resources and raw materials
- Consider in advance the environmental impact of new equipment and processes
- Enhance employees' awareness of environmental issues
- Define how to properly use and dispose of the product in order to minimize environmental impact

Tecniplast business principles maintain that *"There is no real progress without Sustainability"*.
In line with the Environmental policy the following objectives have been successfully implemented and achieved:

- Paperless use and maintenance manuals: Transfer from paper to CDs saves 200 Kg paper per year
- Implemented a LCA study of cages and racks, focused on assessing energy consumption and carbon food print
- 100% of plastic scraps from injection moulding is reused in other productive processes
- Green Purchasing Policy initiative to purchase products (raw materials) with lower environmental loads
- Started reuse of some scrap plastic material after feasibility tests (Source: 2009 Environmental Report)
- Substituted paperboard for wood in packaging reducing the packaging weight by 20%
- Started a logistics project to optimize transportation of products, reducing weight, volume, layout and truck paths and number of containers involved
- Adopted a new packaging solution, i.e. assembling the components of the products together instead of shipping them separately (reduction of 20 kg of paperboard and plastic films per rack). Using pallets made of recycled plastic and recyclable
- Initiated contacts with Public Authorities to gain authorization to recycle cages at the end of the life, promoting a second life for plastic through local recyclers
- Initiative to design products with Eco Design Concept:
  - Reduction in quantity of materials used during production.
  - Reduction in energy/water used by product during the life cycle.
  - Maximization of recyclability of the products at the end of the life (100%).
- Our caging systems are energy efficient. TP blowers, with superior air delivery, are an essential tool in *"greening"* animal research facilities. Our ventilation systems and performances extend cage change intervals. Static cages are usually changed twice weekly. TP individually ventilated cages can go up to two weeks between change-outs. Fewer changes mean less washing; less washing means less fresh water is being used; fewer cycles of washes means less detergents with a decrease of up to 75% of chemicals polluting waterways; less use of autoclaves and washers means less energy used; fewer changes means less bedding and reduced waste.

TP ventilation systems offer optimal ventilation distribution with related improvement in Indoor Environmental Air Quality by reducing the room air change rates and downsizing the HVAC equipment with less consumption of energy.

We have other differentiation factors in terms of sustainability, which can be summarized with the following points:

- Our high temperature cages are made of polysulfone. Polysulfone lasts about twice as long as regular polycarbonate cages, reducing replacements and amount of waste
- The use of TP IVC systems have proven to provide healthier conditions for cage occupants and caretakers alike by maintaining proper IAQ.
- Hepa filters, exclusive gaskets, valves and flaps systems ensure perfect sealing and reduce the level of odours, noxious gases, dust and infectious agents, providing sufficient indoor air of appropriate quality.
- The cage body features a silicone gasket with a silicon lip that fits snugly around the base, ensuring an occlusive seal and an ideal containment when the top is fitted. This means that even when running in positive pressure, laboratory allergens are contained, protecting both staff and researchers. A large square filter (0.2 microns filter pores size) kept in place on the top of the cage by a filter retainer with silicon sealing also ensures the safety of inhabitants in case of power failure without compromising protection.
- Racks are constructed of recyclable stainless steel with 100% recycling of excess production material.
- Cage and Rack washers are designed with energy, water saving and reduced environmental impact in mind, including limited heat loss and noise emission, which is well below 70 dBA. By partially re-circulating wash water in combination with a totally separate rinse circuit, we ensure a remarkable reduction in energy usage, steam peak demand and consumption and, of course, the use of chemicals and waste discharge.
- Furthermore, our highly efficient mechanical wash, makes for very low detergent concentrations, typically 0,15%, offering further financial savings and increased environmental protection. Please consult with our local representative for break-even running cost analysis and return on investment.
- TP atomation solutions offer systems able to manage not only cage bottoms but full cage set-ups (bottoms, tops and wire lids). These systems receive a trolley loaded with dirty assembled cages coming directly from animal rooms, disassemble the cages, dump waste food and waste bedding and finally load all the items on to a dedicated presentation rack, ready to be processed in any rack-washer. The idea of moving trolleys with assembled IVC cages and letting a robot manage them in all the dumping and loading operations, before the washing phase, guarantees top-class allergen protection and reduces practically to zero the level of exposure for the operators, with an optimal safety in the inner environments (rooms).
- TP automation solutions offer systems able to reduce the risk of musculoskeletal disorders.
- There is a strong relation between MSD (Musculoskeletal disorders) and certain work-related physical factors in Lab Animal Facilities.

The 70th Aalas National Meeting was held from October 13th to October 17th, 2019. Scientific sessions included papers and posters and presentations by scientists working in the field of laboratory animal science. This year presentations focused on new developments in technology and equipment as major considerations when planning new facilities. Increasingly, decisions on equipping facilities need to appraise the impact of whole "systems" over their life cycle rather than just the upfront purchase costs or functionality of individual items of equipment. An interesting presentation was presented about Durable cages vs Single Use Cages.
The presentation described the evaluation carried out during the design and planning phases for a multi-species additional research animal facility in Bergamo, Italy. The presenter aimed to evaluate the current rodent IVC caging possibilities the market offered to make the best possible choice for animal welfare, operational efficiency and maximize Return on Investment (ROI). The new multi- species facility would have a capacity of approximately 2000 ventilated mouse cages and about 600 rat cages. The project was still on paper, therefore, all options were available: such as disposable or durable caging systems, used with or without washing facilities, with or without sanitation area and flexible warehouse spaces. The basis of the decision making process was the development and comparison of the following key performance indicators; economic sustainability, operational functionality and efficiency, and environmental impact . Operating costs for each system were developed into cash flow statements and an incremental cash flow comparison developed. A review of the operational impacts related to material handling flows, cage change operations, and biosecurity were conducted. An environmental assessment of each scenario was conducted using a Life Cycle Assessment (LCA) process conforming to ISO14040 and ISO14044.

To fulfill the EMS requirements yearly, Tecniplast top management defines improvement objectives aiming to reduce the ranking of some significant environmental aspects and to improve the global environmental profile of the site and products.

With reference to the Environmental Aspects Assessment, regularly updated, the following improvement objectives have been successfully implemented and reached:

LCA in 2017

Ongoing, the assessment of the environmental impact using LCA in the design phase for each new product.
Implemented for:

- Housing Products
- Laminar Flow Products
- Aquatics Products

LCA in 2018

Ongoing, the assessment of the environmental impact using LCA in the design phase for each new product.
Implemented for:

- Housing Products
- Laminar Flow Products
- Aquatics Products

LCA in 2019

Started the assessment of the environmental impact using the Eco design matrix with the objective of arriving in 2020 at receiving the assurance and compliance statement of the Eco Design Process according to ISO 14006:2020.
Involving all product lines:

- Housing Products
- Laminar Flow Products
- Aquatics Products

LCA in 2020

Obtained the assurance and compliance of the eco design process according to ISO 14006:2020, integrating guidelines to establish, document, implement, maintain and improve continuously our eco design management as part of the environmental management system, involving all product lines:

- Housing Products
- Laminar Flow Products
- Aquatics Products

CHAPTER 6

TECNIPLAST ENVIRONMENTAL INDICATORS

6.1 - ENVIRONMENTAL INDICATORS MONITORED

6.1 - ENVIRONMENTAL INDICATORS MONITORED

This chapter details some of the environmental indicators regularly monitored by the QEHS department and used by Top Management to review the Environmental Management System during the Management Review.
The Management Review is one of the most important requirements of the ISO14001 standard and, accordingly, TECNIPLAST Top management and Representatives take an active part in assessing the state of the EMS and in identifying new improving objectives.
In addition to absolute data as expressed in production and material consumption, relative environmental indicators are used for a better on-going understanding of the results taking into account yearly results in terms of production.
The indicators chosen and used in the Environmental Report refer to the amount of plastic worked or to the hours worked; the second reference tends to better consider the differences of production mix, and other manufacturing variables as well as TECNIPLAST site expansion.
All the data in this chapter are related to the hours worked in Buguggiate Manufacturing Site.

Injection moulding plastic scraps vs Plastic in Finshed Products

The new indicator performs a correlation between the plastic scraps and the plastic in the Finished Products; the unit adopted is the division of 2 weights and is represented as a percentage.

YEAR	2017	2018	2019	2020
Injection moulding plastic scraps (ton)	132,9	84,5	123,8	149,4
Plastic in finished products (ton)	1.524,1	1.362,5	1.352,2	1.566,6
Scraps/Plastic in finished products (%)	8,72	6,20	9,16	9,54

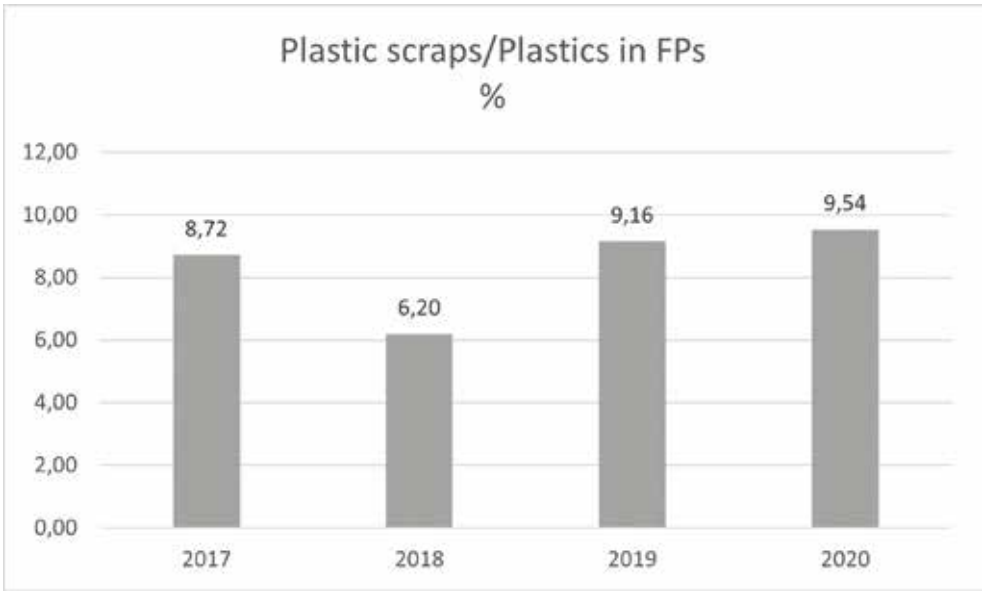


Table 1

The scrap percentage variability is mainly due to the production mix; in addition, during 2020, with reference to 2019, about 20% of new product' codes have been processed, with additional increase in scraps.

Injection moulding plastic scraps vs processed plastic as raw materials

With this indicator the scraps vs the amount of plastic consumed as raw materials is monitored; the complement to 1 could be considered the efficiency of processed plastics.

YEAR	2017	2018	2019	2020
Plastic raw materials (ton)	1.657	1.447	1.476	1.716
Injection moulding plastic scraps (ton)	132,9	84,5	123,8	149,4
Scraps/Processed Plastics (%)	8,02	5,84	8,39	8,71

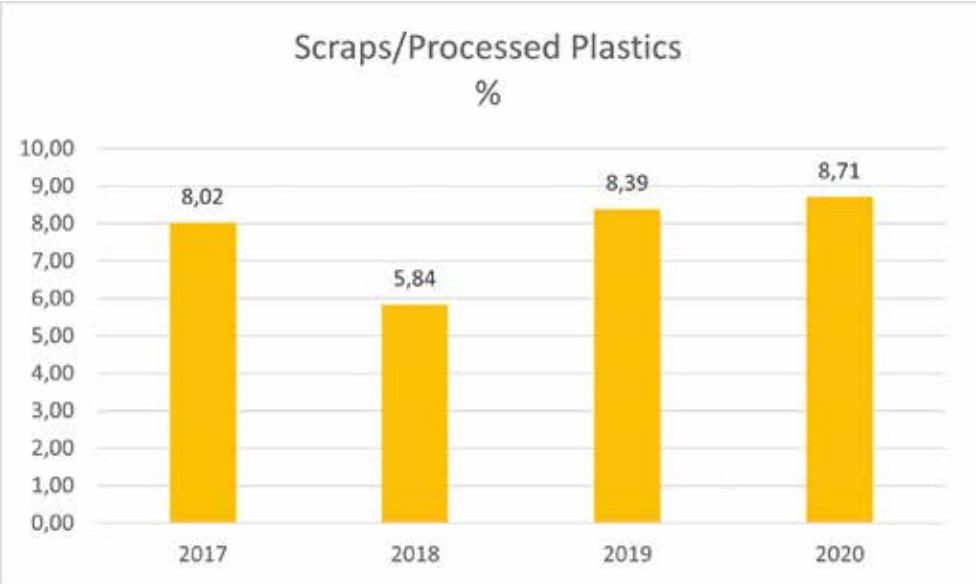


Table 2

The scrap percentage variability, considering the processed plastic, is mainly due to the production mix; in addition, during 2020, with reference to 2019, about 20% of new product' codes were processed, with additional increase in scraps.

Electricity consumption per hour worked

With this indicator the amount of energy consumed for each hour worked is monitored, obtaining the intensity consumption of electricity.

YEAR	2017	2018	2019	2020
Electricity consumption (MWh)	6.412	6.010	6.069	6.297
Hours worked (H*1000)	657	654	630	660
Electricity Consumption Intensity (kWh/h)	9,76	9,19	9,63	9,54

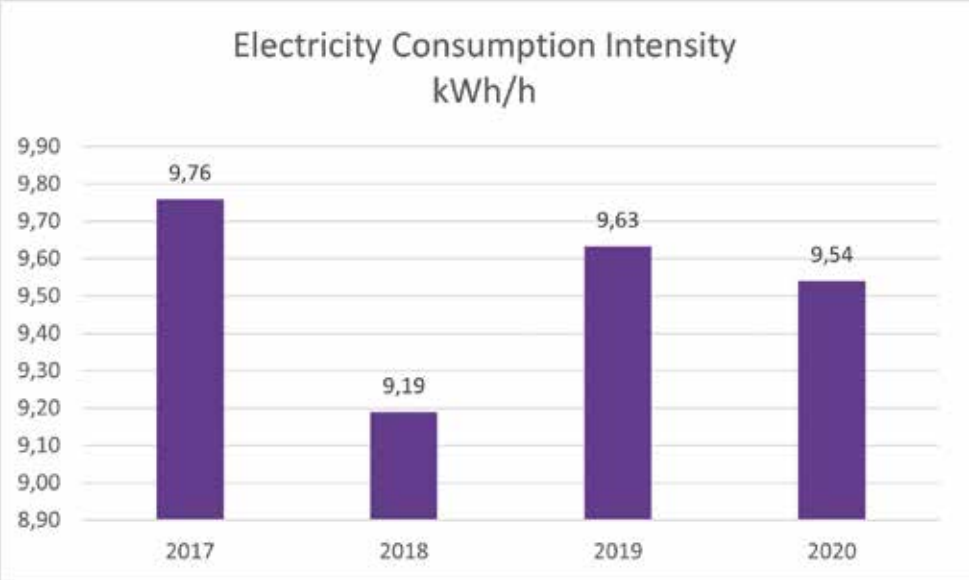


Table 3

As reported in the previous Environmental report due to the improvement objectives implemented at the site the intensity consumption of electricity was reduced by more than 10% from 10,742 kWh/h during 2015 to 9,5 kWh/h during last year.

Energy consumption for unit mass of Finished products

A new indicator was introduced for monitoring the energy consumption referred to the finished products; such indicators are conservative as all the energy consumption is attributed to the injection moulding department; nevertheless the specific energy consumption shows a decreasing value in line with TP effort for reducing the energy consumption and the environmental impacts on site and the product life cycles.

YEAR	2017	2018	2019	2020
Electricity consumption (MWh)	6.412	6.010	6.069	6.297
Plastic in FPs (ton)	1.524,1	1.362,5	1.352,2	1.566,6
Specific energy consumption (kWh/Kg)	4,21	4,41	4,49	4,02

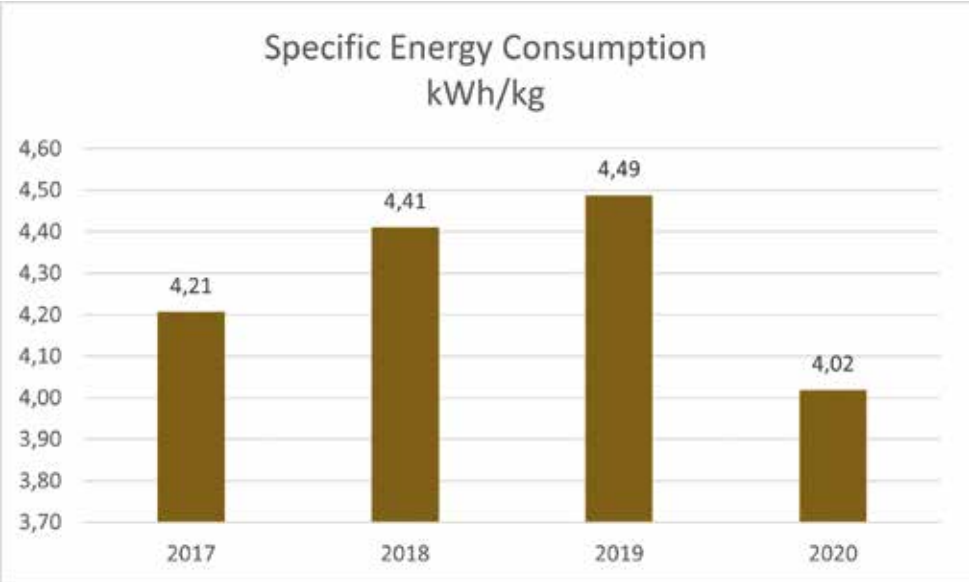


Table 4

The improvement objective of monitoring the energy consumption for each department was subject to delay due to the pandemic situation. During 2021 TP plans to install specific meters for each production department; allowing the actual specific energy consumption to be calculated.

Water consumption for unit mass of Finished products

A new indicator was introduced for monitoring water consumption referred to the finished products; such indicators are conservative as all the water consumption is attributed to the injection moulding department.

YEAR	2017	2018	2019	2020
Water consumption (m^3)	7.083	8.636	7.153	8.349
Plastic in FPs (ton)	1.524,1	1.362,5	1.352,2	1.566,6
Specific water consumption (l/Kg)	4,65	6,34	5,29	5,33

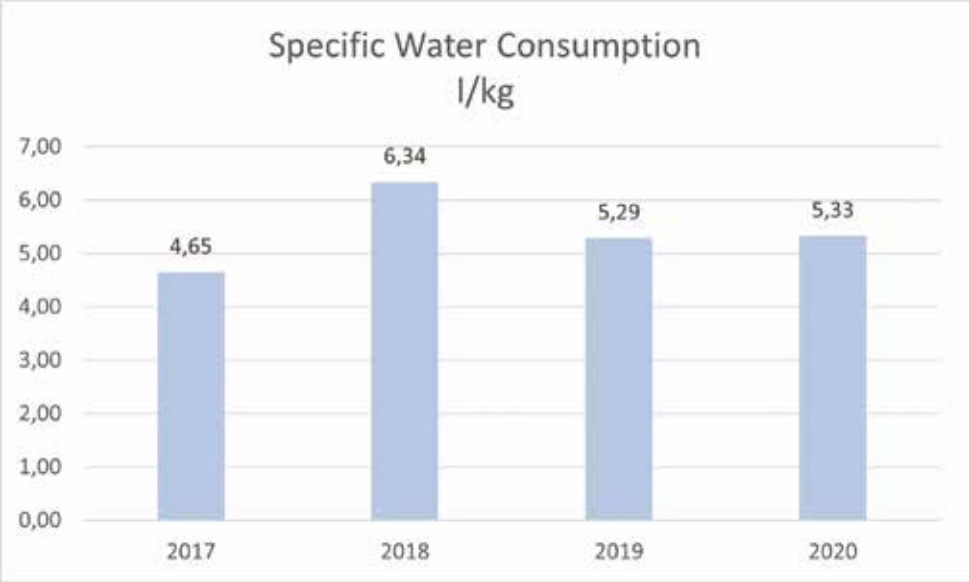


Table 5

The meters installed during 2020 gave us two relevant hits:

- The immediate assessment of any leakage from the piping system.
- Water consumption has a significant variability with an increase from May to November for irrigation purposes.

In addition, the TP Management, on the base of its ethical and environmental awareness, during the last Management Review decided to evaluate the possibility of installing a rain water collector so as to use the collected rain water for irrigation.

Packaging consumption vs Finished Products

A new indicator was introduced for monitoring the packaging consumption referred to the finished products; this indicator is conservative, as packaging includes also other products like racks and so on.

YEAR	2017	2018	2019	2020
Packaging consumption (ton)	445,5	427,1	466,4	727,9
Plastic in FPs (ton)	1.524,1	1.362,5	1.352,2	1.566,6
Specific pack consumption (Kg/Kg)	0,29	0,31	0,34	0,46

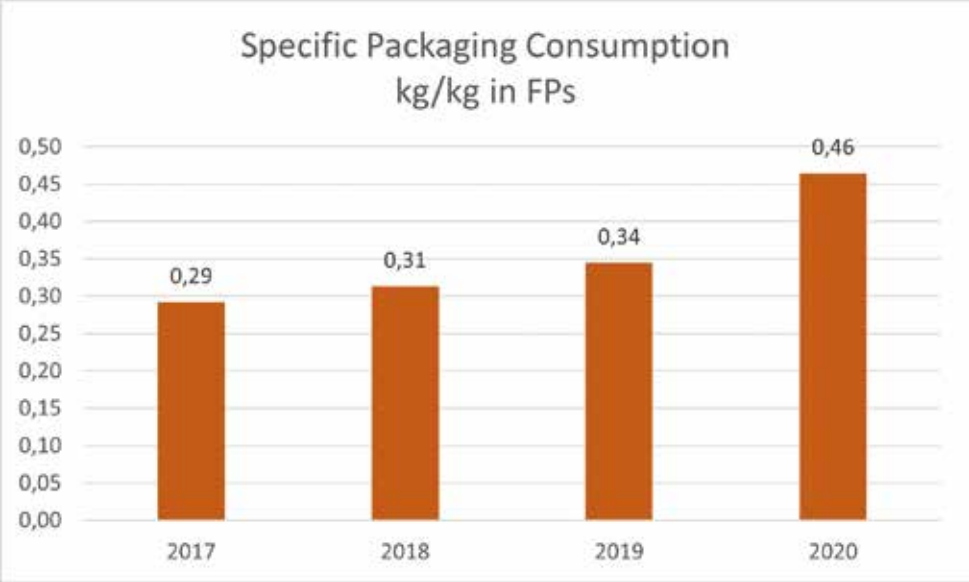


Table 6

Packaging consumption during 2020 increased significantly, as a new customer required a significant amount of packaging.

Plastic processing efficiency

A new indicator was introduced for monitoring the efficiency of the processed amount of plastic as the ratio between the amount of plastic in the finished products and the processed plastic at the injection moulding department.

YEAR	2017	2018	2019	2020
Plastic materials (ton)	1.657	1.447	1.476	1.716
Plastic in FPs (ton)	1.524,1	1.362,5	1.352,2	1.566,6
Efficiency (%)	91,98	94,16	91,61	91,29

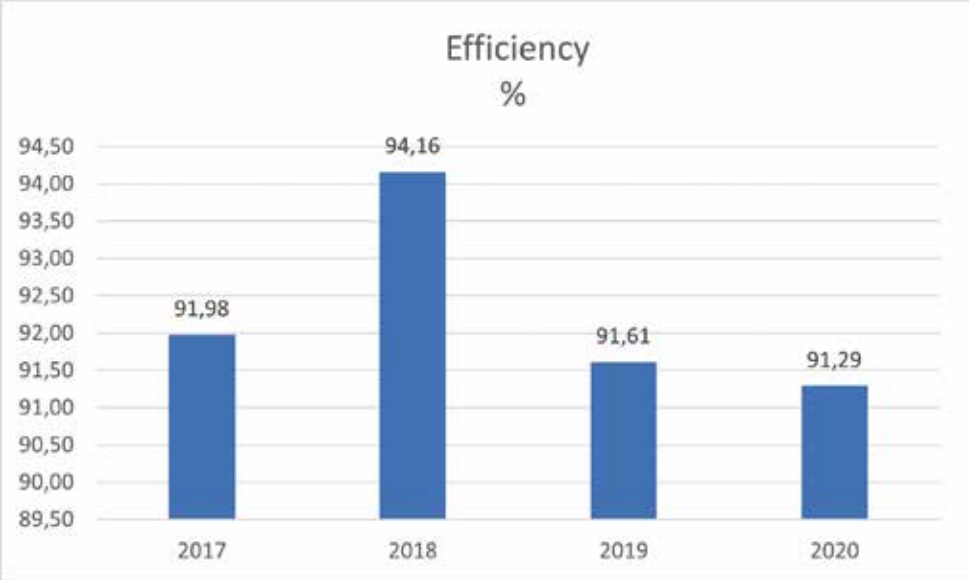


Table 7

The global efficiency rate is always greater than 91%, the variability is due to the product mix and to production interruptions during 2020 for the Covid emergency.

Total drain and granulated plastic

The objective to optimise plastic consumption is a permanent one. This indicator gives the amount of scraps and recycled plastic referred to the plastic consumed.

YEAR	2017	2018	2019	2020
Plastics consumption	1.657	1.447	1.476	1.716
Plastics scraps	132,9	84,5	123,8	149,4
Recycled plastic	66,2	25,4	54,2	81,2
Scraps (%)	12,02	7,59	12,06	13,44

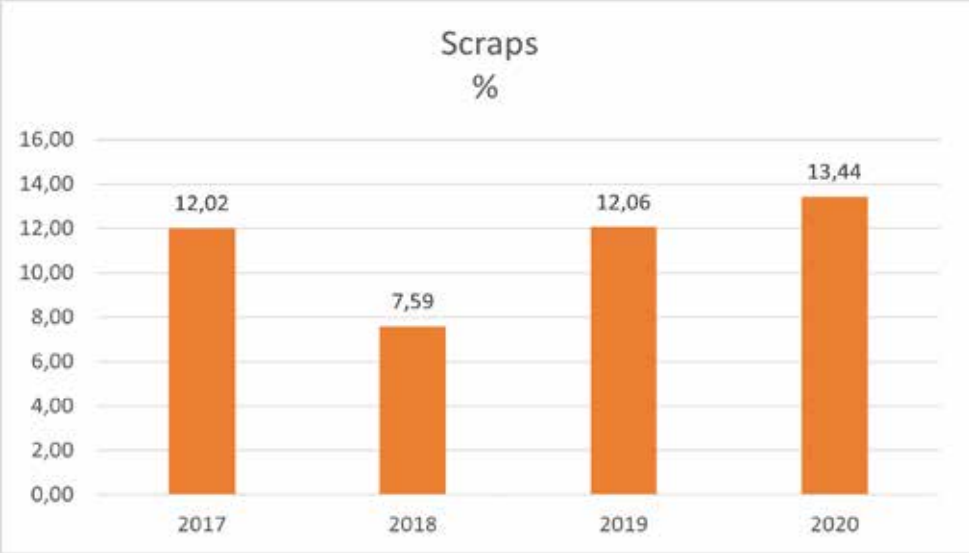


Table 8

The variability obtained is mainly due to mix variability and emergency condition of last year.
The relevant increase in recycled plastic (+50% between 2019 and 2020) is due to the 20% icrease in new product's codes processed.

APPENDIX

2D Two dimentional drawing.

3D Three dimentional drawing.

AALAS American Association for Laboratory Animal Science.

A&E American Architects and Engineers.

ACCREDIA Italian national laboratory accreditation system (ex SINAL).

AKKAB Protocol, recognized by FELASA, describes a clear and repeatable method to test and assess washing, decontamination, rinsing and drying performance needed to ensure flawless operations in a modern animal facility.

ARPA Agenzia Regionale per la Protezione dell'Ambiente-Regional Agency for Environmental Protection.

BAT (BEST AVAILABLE TECHNIQUES) More efficient techniques to obtain a high level of environmental protection. They regard the design, building, maintenance, management and shutdown of the plant, which are developed to allow their implementation under valid and reasonable conditions from the economic and technical point of view.

BREF Document containing information about production processes of the industrial field, associated environmental impacts and on the best available techniques for the prevention or reduction of pollution.

CAM Computer Aided Manufacturing.

CAD Computer Aided Design.

CAD-CAM Specific production machine able to receive input directly from computer CAD and operate consequently without human intervention.

CARBON FOOTPRINT Carbon footprint measure of CO_2 and other Greenhouse gas emissions during the life cycle of product or service. All the greenhouse gases are transformed in CO_2 equivalent.

CBS Carlo Bernardini Steel Company, part of Tecniplast Group of Companies.

CD Compact disk.

CDI Carbon dependency Indicator.

CFC Clorophluorocarbon.

CNC Computer Numerical Control.

CO Carbon monoxide.

CO_2 Carbon dioxide. Carbon dioxide is one of the main causes of the greenhouse effect.

COD Chemical Oxygen Demand - parameter that estimates the quantity of organic substances present in water considering the oxygen consumption.

CSR Corporate Social Responsibility.

DVC® Digital Ventilated Cages.

DVM DACLAM Doctor of veterinary medicine Diplomate of the American College of Laboratory Animal Medicine.

ECM Electronically commuted motors.

ECOLABEL AND ECOAUDIT COMMITTEE The EMAS technical committee, which is in charge of executing the tasks established by EMAS regulations.

EDM Electrical Discharge Machining (spark erosion).

EGNATON (http://www.Egnaton.com) is a no profit organization - The European society for sustainable laboratory technologies pursues the promotion of environmental protection, health protection and sociocultural goals.

EMAS (ECO-MANAGEMENT AND AUDIT SCHEME) ECC Regulation no. 1221/2009, 19th March 2001, regarding the voluntary adhesion of the companies in the industrial field to a common system of eco-management and audit. The regulation is applied to each single production site and indicates the requirements of an environmental management system needed for its registration. The institution responsible for registering the production sites in Italy directly depends on the ISPRA (ex APAT - Agency for environment protection and for technical services), while the verifications of conformity are performed by accredited Third Party Institutes. It differs from the Standard ISO 14001:2004 by stating the obligation to publish an annual document containing information concerning the environmental performance of the site.

EMF ElectroMagnetic Fields.

EMISSION Solid, liquid or gaseous substance released into the environment.

EN European Normalization, refers to standard applicable at European scale.

ENVIRONMENTAL AUDIT Systematic, documented, periodical and objective instrument for managing the performance of the organization, the management system and the processes for protecting the environment, in order to: i) facilitate management control of behaviors that can have an impact on the environment; ii) assess compliance with the environmental policy including the environmental objectives and the targets of the organization.

ENVIRONMENTAL IMPACT "Any modification of the environment which can be adverse or positive, total or partial, consequent to the activities, products or services of an organization" as defined by UNI EN ISO 14001:2004.

ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) Part of the general environmental management system including the organizational structure, the planning activities, the responsibilities, practices, procedures, processes and resources to develop, put into effect, achieve, review and maintain the environmental policy.

ENVIRONMENTAL PERFORMANCE Measurable results of the actions taken by an organization for the management of the environmental impacts linked to its activities.

ENVIRONMENTAL POLICY General criteria and the objectives of an organization regarding the environment, including compliance with all the relevant provisions on the environment and the undertaking to continually improve environment performance; this environmental policy forms the framework for establishing and re-examining the environmental objectives and targets.

(SIGNIFICANT) ENVIRONMENTAL ASPECT Element of an organization's activity, product or service, which can interact with the environment or which can have a significant environmental impact.

EC European community.

ERP Enterprise Resource Planning.

EU European Union.

EuP Energy using Products European directive concerning the criteria for designing products consuming less energy during their global life.

EWC European Waste Code made up of 6 digits and used for identifying the same waste on a European scale.

FELASA Federation of European Laboratory Animal Science Associations.

FOREST STEWARDSHIP COUNCIL (FSC) Non-profit, non-governmental organization, which includes among its members, social and environmental groups, indigenous communities, consumer associations, forest owners, technicians, certification bodies, timber production and marketing companies.

HCFC Hydroclorophluorocarbon.

HFC Hydrophluorocarbon.

HCl Cloridric acid.

HQ Headquarters.

HR Human resources.

IMS Integrated Management System.

INDICATORS Qualitative and quantitative values which link the most considerable effects on the environment to the activities performed by the company.

ISO International Organization for Standardization.

ISO 14001:2015 "Environmental management System - Requirements with guidance for use".

ISO 14006:2020 Environmental management systems - Guidelines for incorporating ecodesign.

ISO TS 14067:2018 Greenhouse gases — Carbon footprint of products — Requirements and guidelines for quantification.

IVC Individually ventilated cage.

IWT International Washing Technology Company, part of Tecniplast Group of Companies.

LAS Lab Animal Science.

LCA Life Cycle Assessment, scientific methodology for assessing the environmental impact of products and services from "cradle to grave".

LEAN MANAGEMENT Is an approach to managing and organizing work that aims to improve a company's performance.

LEED Leadership in Energy and Environmental Design.

MSDS Material Safety data Sheet - technical document defining all the characteristics of hazardous substances.

MW Mega Watt - energy unit.

NGO Non-Governmental Organization.

NOX Nitric oxide.

ODP Ozone Depletion Potential.

OR O Ring.

PC Polycarbonate.

PE Polytene Expanded.

PGA Environment management procedure.

PNV Present Net Value.

PSU Polysulfone.

PV Plant Photovoltaic Plant.

QEHS Quality, Environment, Health and Safety.

R&D Research and development.

ROI Return On Investment.

SCM Supply Chain Management.

SDGs (United Nations) Sustainable Development Goals.

SST Total Solids in Suspension. They show the quantity of solids suspended in water and are linked to water clarity.

SUSTAINABLE DEVELOPMENT Development which produces the maximum benefits for the present generation by maintaining the same standards of living for future generations.

TEP Tons Equivalent of Petroleum Conventional measurement commonly used in energy calculations common to all energy sources, in consideration of their calorific value.

TIG Tungsten inert gas - welding process using tungsten bar for welding under a protected (inert) local atmosphere.

TTC Tecniplast Training Centre.

UNI Ente di normazione Italiana - Italian standardisation organization.

VA Varese.

VOC Volatile Organic Compound.

WCM World Class Manufacturing.

NOTES

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NOTES

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =

COMPANY WITH ENVIRONMENTAL SYSTEM CERTIFIED BY DNV GL = ISO 14001 =

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