

SUSTAINABILITY REPORT

2022



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Sustainability & corporate social responsibility at Tessenderlo Group

Sustainability and a long-term focus have been a recurring theme in our story for more than 100 years. Whether it is in the products and solutions we supply or the way in which we produce them, the care we show towards our planet and its resources is at the very heart of all of our businesses. We are aiming at developing successful businesses in attractive global markets, with growth potential and where we can help in developing solutions to mega-challenges. This is because we believe that Every Molecule Counts.

It is our ambition to continue our efforts in the future towards remaining a responsible and sustainable company that further strengthens our relationship with our stakeholders. Our key stakeholders are our employees, customers, shareholders, neighboring communities, governments and regulators, trade unions, and suppliers. With the publication of this sustainability report we want to make our sustainability efforts for 2022 more transparent for our stakeholders.

We are therefore building our group with a clear focus on agriculture, food, water management, the upcycling of by-products, and a carefully selected choice of specialty industrial applications where our expertise enables us to make an improved use of resources. We are optimistic about our value creation options in this new era for food, energy, and recycling.

Sustainability and corporate social responsibility (CSR) are inextricably part of the strategy and daily activities of Tessenderlo Group. This includes continuously deciding, acting, and investing with the future in mind. We are convinced that sustainability efforts help us to establish strong relationships with our stakeholders. These efforts enable us to attract and retain new talent, while at the same time also providing a strong impetus for innovation. Within Tessenderlo Group, we want to act according to the expectations of our current and future stakeholders and create value for our company in the long term. In this respect, the strategy will be built around the following different result areas: energy and water, resources, people skills, and digitalization.

Tessenderlo Group resolutely chooses a sustainable production process that shows maximum respect for people, the planet, and the community. This is why Tessenderlo Group is focusing on the following three important pillars in this report:

Our employees

At Tessenderlo Group we continuously invest in our employees.

Our planet

Tessenderlo Group makes every effort to limit the impact of our activities on our planet by thinking, deciding, acting and contributing in a sustainable way.

Our community

From Tessenderlo Group, we work actively together with the environment in which we live and strive to meet the expectations of our stakeholders in the communities and environments where we work and live.

Reporting method and period

In this sustainability report, we are providing an overview of the most relevant objectives, efforts, and results in terms of sustainability for 2022.

This sustainability report is based on the GRI (Global Reporting Initiative) Standards: “Core option”. This report was not subject to an external audit. The GRI indicators used in this report are indicated for each theme. Tessengerlo Group will continue to publish an annual update of this report.

This sustainability report constitutes the declaration of non-financial information of the group and meets the requirements of art. 3:6 § 4 and 3:32 § 2 of the Belgian Code of Companies and Associations.

For any questions, please do not hesitate to contact us by writing to sustainability@tessengerlo.com.

Granularity

Reporting granularity is subdivided according to the social category and the environmental category. This is because these two categories will be addressed in different ways, e.g. concerning the application of boundaries. To this end, each category will be reported as follows:

1. *The social topics*

These are reported on a Tessengerlo Group level unless mentioned otherwise.

2. *The environmental topics*

These are reported separately for each of the following operating segments: Bio-valorization, Agro, and Industrial Solutions. Please note that all Tessengerlo Kerley, Inc. (TKI)-produced products are reported under the Agro segment (the energy and water consumption of TKI is fully included in the Agro segment), together with a new BU, Violleau, which has been split from the Bio-valorization segment, as the market for Violleau’s products aligns more with our fertilizer division. Tessengerlo Kerley, Inc. comprises the Crop Vitality, NovaSource, and moleko business units of Tessengerlo Group.

Furthermore, with regard to T-Power, we have chosen to consider this segment separately due to the nature of the energy production aspect of the T-Power operating segment and the fact that we operate under a tolling agreement. If we added this figure to our total, it would potentially create a misleading picture.

The reference year for social and environmental topics is 2022 unless otherwise stated.

Reporting boundaries

Guided by the GHG Protocol, for the company boundary, we take the equity approach. This means, among other things, that we take our joint venture Jupiter Sulphur (part of TKI) into account for 50%. The metrics reported relate to our own operations, inside of the company boundaries.

Since 2021, we have also included the vehicles either in our own possession or on a long-term lease (as well as company cars - Scope 1). This results in higher energy and energy intensity overall. This is certainly material for the Bio-valorization segment and also Industrial Solutions. The tables at the end of the CSR report show energy figures with and without these aforementioned vehicles, so the comparison with the previous year (2021) can be made on the same basis.

For the water calculations, we calculate according to each source of water: groundwater, surface water, and third-party water. The “produced water” in line with the GRI definition 303-3 a iv is not taken into account.

For the volume calculations, since 2021, we have changed the scope for Akiolis, which is part of Bio-valorization, over all the years from upstream to downstream volumes according to the definition: "product to be sold" for intensity calculations. This also increases the intensity calculations for this segment.

For the waste and emissions metrics, we take the local (region or country) official definitions as reflected in the regulations of the country regarding waste and emissions. We use the official reporting threshold as the CSR reporting threshold.

For the total employees at our company and the split per age category, we consider the total internal full-time equivalents. No temporary employees are included. For Health and Safety metrics, we also count interims, not subcontractors. For all other tables under the "Our Employees" section.

Almost all disclosures are based on measured parameters or calculations (the calculations of one liter or kilogram of fuel into MWh are based on local conversion factors according to GRI 302-1); only in exceptional cases are these based on well-defined estimations.

The energy calculations are made according to GRI 302-1, where we deduct the electricity sold.

Newly acquired facilities during 2022:

- DYKA Réseaux SAS: this has been incorporated into the figures of Industrial Solutions since October 22, 2022
- Some smaller subsidiaries where production has yet to commence

Furthermore, we did not take into account outside storage locations, offices that are not linked to production, ICT servers, outside labs, the new DYKA branch in Poland, and also smaller energy consumers. Therefore, the following businesses and/or locations will not be included in our reporting:

- DYKA s.r.o. (Czech Republic)
- Maramba S.R.L. (Paraguay)
- Kuhlmann Switzerland AG (Switzerland)
- Tessengerlo Kerley Turkey Tarim Ve Kimya Sanayi Ve. Tic. Ltd. STI (Turkey)
- Tessengerlo Kerley Mexico SA de CV (Mexico)
- Tessengerlo Innovation Center (Belgium)
- DYKA Kalisz branch (Poland)
- Outside storage locations
- Offices not linked to production
- ICT servers
- Outside labs

Taxonomy

Since 2021, we have also provided further disclosure on the Taxonomy regulation (EU) 2020/852 that has applied with effect from January 1, 2022, in relation to the climate objectives. This is because we are in the scope of the Non-Financial Reporting Directive and we are preparing in the near future for the Corporate Sustainability Reporting Directive (CSRD).

The Taxonomy Regulation creates a framework that determines to what extent economic activities can be regarded as sustainable, within those criteria, definitions, and approaches. As the EU Taxonomy has a phased introduction, not all Tessengerlo Group activities are categorized under the NACE codes of the current version. In relation to the EU Taxonomy, additional reporting requirements for certain listed companies are established in order to provide information on the proportion of their revenue, capital expenditures (CapEx), and operating expenditure (OpEx) related to sustainable economic activities. The fact that a company does not have activities aligned with taxonomy does not lead to definitive conclusions with regard to the environmental performance of these companies. Not all activities that can make a substantial contribution to the environmental objectives are listed in the Climate Delegated Regulation at this stage.

The below table shows the % turnover, CapEx, OpEx (non-)eligible and (non)-aligned with the current Taxonomy. As some definitions of economic activities in the related Taxonomy are subject to interpretation, specifically regarding the production of chlorine, we reserve the right to review our reporting on this topic. The Taxonomy-related classification of gas and nuclear activities as “transitional” and “green”, if in accordance with the technical screening criteria, was only decided in the course of 2022, and, therefore, did not show in the reporting over 2021. In this context, we have aligned our reporting accordingly.

	Total 2022 (in million EUR)	Share of economic activities eligible for EU Taxonomy (%)	Share of economic activities not eligible for EU Taxonomy (%)
Group Turnover	2,587.5	3.11%	0.00%
Group CapEx	131.1*	0.00%	0.00%
Group OpEx	134.9**	2.96%	0.00%

* Intangible & PPE CapEx and incl. IFRS16 Leasing CapEx

** Maintenance & R&D OpEx (OpEx as defined under the Taxonomy regulation)

Materiality analysis

Materiality assessments

Materiality assessments were implemented to define which material topics are most important and impactful to Tessengerlo Group. Furthermore, these assessments enabled us to consider how we would prioritize the material topics. Materiality assessments are the backbone of any sustainability reporting. Regarding GRI (Global Reporting Initiative) reporting by Tessengerlo Group, the material topics not only reflect the environmental, economic, social, and governance impact we make but they also highlight how the decision-making and assessments of our stakeholders might be influenced.

Our methodology

The methodology behind the materiality assessment involved inviting all colleagues at leadership levels within Tessengerlo Group as well as the CSR Execution Teams. Following this, we carried out a benchmarking process of the industry sectors that are relevant to each of our business units in relation to various material topics. Finally, we put together an online questionnaire that enabled us to select and plot the order of importance for each of the topics. This is done from the position of Tessengerlo Group and also from the perspective of our stakeholders.

Our results

We received a 100% response rate from our stakeholder representatives regarding the questionnaire. Furthermore, this initiative had the full backing of our ExCom and the Board of Directors. This is absolutely crucial because materiality is not only a very useful tool in terms of reporting, but it also enables us to create focus and align our strategy. After analyzing the completed questionnaires, we produced the below CSR Materiality Matrix. The selected topics have been plotted on the X-axis of the matrix to reflect the order of importance for Tessengerlo Group, and on the Y-axis to reflect the order of importance for the stakeholder representatives.

During the scoring process, the possibility was given to the participants of scoring between 0 and 6 on the X-axis and on the Y-axis, with 0 being “not important at all” and 6 being “very important.” The result shows all topics were ranked above 4 (between “important” and “very important”), meaning that they are all considered impactful and important, but some more than others. The size of the circles has no importance. The warm orange colors refer to the topics selected under “social topics.” The colors of the “environmental topics”: water and air are indicated in blue; energy in red; waste in purple; sustainable products, responsible sourcing, and biodiversity in green. We started the process by placing the most important topics situated at the top right, with other topics to follow.

In 2022, we added the latest important topics (see matrix) to our metrics in terms of water emissions and air emissions, waste and renewable energy, as part of the sustainable product dot.



Moving forward

We then linked the materiality topics that we had identified as being most important to the GRI reporting standards. Once this was done, we were able to start measuring the materiality topics regarding the selected GRI standards for each topic. In this connection, we refer to the tables at the end of the report which link each topic to the GRI standards and link the social and environmental topics to the Sustainable Development Goals (SDGs) that we selected as being most important to Tessengerlo Group.

In 2022, we further built on social topics (health and safety, labor and human rights, motivating employees, ethics and compliance, and communities), responsible sourcing-related topics, as well as environmental topics regarding energy and water.

From the materiality matrix, for each topic, a selection of KPIs and targets has been made in order to execute the CSR strategy. All Tessengerlo Group employees have their role to play. Dynamic materiality is applied: at certain intervals, the materiality matrix will be updated to reflect the evolution of CSR in general and it will be related to the development of CSR at Tessengerlo Group specifically. We plan to align our materiality update to the new CSRD (Corporate Sustainability Reporting Directive) in 2023. This will then reflect the “outside in” view (the impact of climate change on the company) and “inside out” view (the impact of the company on climate change).

Governance of CSR

The Tessengerlo Group CSR governance structure allows us to implement, drive and steer the CSR strategy and policies and integrate and coordinate between group functions and the different business units (BUs) for social as well as environmental topics. CSR is promoted, supported, and validated at the highest level of the company: the ExCom and the Board.

Separate monthly CSR and ESG meetings are set between the Group CSR Director and the ExCom, as well as the Execution Team Environment. These are supplemented with many one-on-one meetings. Regular separate meetings are set with the Group CSR Director and the Execution Team Social, the Compliance Team, and the various Group (S)VVP functions (HR, Communication, Finance, Legal, etc.), as well as the Data Team.

Tessengerlo Group also plans to steer and monitor the KPI results, compared to targets. In order to drive CSR, the targets are linked to the LTIs (Long Term Incentives) for the SVPs and the BU Management Teams, and also STIs (Short Term Incentives) for our E-level and L-level population. Our data mining for the KPIs is done at BU level with the Execution Teams of Environment and Social in cooperation with the Data Team. Our environmental data are integrated and secured on the HFM system, which is our global financial reporting platform. Our data are increasingly being populated and integrated into our global reporting platforms.

Reporting of the key environmental CSR KPIs and targets is performed on a quarterly basis and communicated via regular calls by the ExCom. Yearly results of the KPIs are also to be found in the CSR and annual report.

Both internal and external communication is key in CSR in order to send the right message regarding what we do and what we aim to do and to get all our employees on board on our CSR-ESG journey. Regular meetings are taking place between the Group CSR Director and the Communication Team to plan and execute CSR communication via the website, InSider (our intranet), e-zines, presentations, and CSR reports.

To achieve the goals set out in this policy, several tools and actions are either current, in development, or planned.

The CSR progression is also scored yearly by an external assessor, EcoVadis, which is one of the world's most trusted business sustainability rating companies. EcoVadis scores more than 85,000 companies in over 200 different industries. EcoVadis scores us on Environment, Labor & Human Rights, Ethics, and Procurement. Detailed feedback allows us to better monitor and manage our progression and to focus on and improve our path going forward. We obtained a Silver Medal rating, which means we now belong to the top 25% of companies.

Besides the assurance of EcoVadis, we will also be statutory audited according to the requirements of the new CSRD (Corporate Sustainability Reporting Directive). Internal assurance will also be provided via CSR assessments to the BUs, on the level of the BU SVPs, and by the Internal Audit department during their meetings and visits. This will be aligned with the United Nations Global Compact (UNGC) approach, in which we also participate.

Our governance with regard to ESG and CSR is also outlined in our Corporate Social Responsibility Policy, which is published on our website.

Sustainable Development Goals of the United Nations

Sustainable Development Goals

The United Nations General Assembly created the Sustainable Development Goals (SDGs) in 2015. These goals define the world that the United Nations wants to create. They are intended to apply throughout the world and the intention is to ensure that no country is left behind. The 17 SDGs represent the 2030 Agenda and specifically the more positive map of the world that the United Nations seeks. From the 17 global goals, a total of 169 targets were defined by the United Nations.

Adoption of SDGs

The SDGs have received considerable backing from the international business community. With regard to sustainability reporting, 95% of reporting reviewed by the World Business Council for Sustainable Development (WBCSD) in 2019 acknowledged SDGs while 86% of reporting gave priority to specific SDGs. This is a clear recognition of the intent of businesses across the globe to realizing the SDGs.

We chose to publish the SDGs that we are focusing on in our CSR report and on our website; they act as a compass for our strategy, our employees, and also for our stakeholders.

Our approach

We started by identifying what we aspire to achieve and following this, we worked on completing and finalizing our materiality on Environmental, Social, and Governance (ESG) or CSR (Corporate Social Responsibility) topics. This involved identifying and assessing the various potential topics that are most important from the perspective of our business and our stakeholders.

Our aim here is to create a clear and effective tool to indicate the directions we must take in terms of the deployment of our CSR strategy. We want to make our contribution to the bigger goals authentic through our materiality assessment.

We focused on adopting the SDGs of the United Nations that are easily recognizable and to which all of our employees and relevant stakeholders can relate.

Our methodology

We selected the goals in line with the materiality study that we carried out in 2020. From there, we focused on linking the material topics with the Global Reporting Initiative (GRI). Following this, we work at both the measurement and monitoring of targets by using Key Performance Indicators (KPIs). This shows us areas where there is potential room to make a difference. The KPIs and targets are also linked to the policies and management approaches as shown in the tables at the end of this CSR report.

Our SDGs (Sustainable Development Goals of the United Nations)

Ultimately, Tessengerlo Group selected the following ten [SDGs](#) out of the 17 Goals:

2. **ZERO HUNGER** – Achieve food security and improved nutrition and promote sustainable agriculture. This is realized via our activities in Agro, Bio-valorization, and Industrial Solutions, with a focus on water. Our contribution to target 2.1 is to reduce hunger and increase access to safe, nutritious, and sufficient food all year round.
3. **GOOD HEALTH AND WELL-BEING** – Ensure healthy lives and promote well-being for all at all ages. Tessengerlo Group takes health and safety very seriously and this is rated with the highest score in our materiality matrix. We want to make sure that our people leave our factories and offices in the same health condition as when they arrived. We have already tracked and monitored relevant data related to this topic for a long time. We also steer on health and safety through our KPIs linked to remuneration. Our Safety and Health policy clearly expresses the importance we as a group place on this subject.
4. **QUALITY EDUCATION** – Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. In order to boost employee motivation, this is also referenced in our materiality matrix and training sessions are very important. We are now building in our learning management system several programs that are also related to training sessions and are linked with curricula according to each function, as well as being aligned with our Learning & Development policy.
6. **CLEAN WATER AND SANITATION** – Ensure availability and sustainable management of water and sanitation for all. Through our DYKA Group activities, which are linked to water management systems and the products of Kuhlmann Europe, we are active in water treatment, and this can be linked to targets 6.1 and 6.2: achieving universal and equitable access to safe and affordable drinking water and increase water-use efficiency and ensure sustainable withdrawals and the supply of freshwater to address water scarcity.
8. **DECENT WORK AND ECONOMIC GROWTH** – Promote sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all. Tessengerlo Group is focusing on the following targets, which are also expressed via the policies we have in this context: Labor & Human rights, Diversity & Inclusion, our Code of Conduct, and the Supplier Code of Conduct.
9. **INDUSTRY, INNOVATION AND INFRASTRUCTURE** – Build resilient infrastructure, promote inclusive and sustainable industrialization. DYKA Group’s activities in piping for buildings and infrastructure, and also irrigation and sustainable water management, which are driven by innovation, support target 9.1. This is realized by developing quality, reliable, sustainable, and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access. They also support 9.4 by upgrading infrastructure and retrofit industries to make them more sustainable, with increased resource-use efficiency and the greater adoption of clean and environmentally sound technologies and industrial processes.
10. **REDUCED INEQUALITIES** – Reduced inequality within and among countries. Tessengerlo Group contributes by empowering and promoting the social, economic, and political inclusion of all, irrespective of age, gender, disability, race, ethnicity, origin, religion or economic or other status (10.2). Our approach is also supported by our Code of Conduct and our Diversity & Inclusion policy and this is also expressed by our KPIs: measuring employees per age category, per region of the world, per mother tongue, per gender in the different management categories, gender salary gaps, etc.

11. **SUSTAINABLE CITIES AND COMMUNITIES** – Make cities and human settlements inclusive, safe, resilient, and sustainable. In particular, at Kuhlmann Europe, with its wastewater treatment products, and DYKA Group with its water management systems, contributions can be made to reduce the adverse per capita environmental impact of cities, which also includes paying special attention to air quality and municipal and other waste management (11.6).
12. **RESPONSIBLE CONSUMPTION AND PRODUCTION** – Ensure sustainable consumption and production patterns. Our Bio-valorization segment, which includes Akiolis as well as PB Leiner, contributes to target 12.3 by reducing food waste at the retail and consumer levels and reducing food losses along production and supply chains by valorizing by-products of the meat industry and upcycling residues of restaurants into highly valuable products. In line with the “Every Molecule Counts” philosophy, Tessenderlo Group focuses on target 12.3 by substantially reducing “waste” generation through prevention, reduction, recycling, and reuse. We prefer to focus on upcycling as we turn these side streams into valuable products. Our contribution to target 12.6 is translated in our sustainability reporting and in our Supplier Code of Conduct: “Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle.”
13. **CLIMATE ACTION** – Target urgent action to combat climate change and its impacts. Strengthening the resilience and adaptive capacity to climate-related hazards and natural disasters as mentioned in target 13.1 is incorporated in our risk prevention systems in general, specifically our own ERM (Enterprise Risk Management) system and the AXA Climate Risk assessment.



United Nations (UN) Global Compact

An important step we took in 2022 was our official commitment to the United Nations Global Compact and the commitment regarding the reporting of the progress we make. A lot of companies recognize its importance in terms of sustainability and CSR or ESG and are already participating, and this number is growing on a continuous basis.

Corporate sustainability starts with a company's value system and a principles-based approach to doing business. This means operating in ways that, at a minimum, meet fundamental responsibilities in the areas of human rights, labor, environment, and anti-corruption. Responsible businesses enact the same values and principles wherever they have a presence and are aware that good practices in one area do not offset harm in another. By incorporating the Ten Principles of the UN Global Compact into strategies, policies and procedures, and establishing a culture of integrity, companies are not only upholding their basic responsibilities to people and the planet, but also setting the stage for long-term success.

The UN embraces these 10 principles (see below). In this regard, we already have policies in place and upcoming policies related to these aspects:

- Tessengerlo Group Code of Conduct
- Labor & Human Rights policy
- Diversity & Inclusion policy
- Health, Safety and Environment policy
- Learning & Development policy
- Anti-Bribery and Anti-Corruption policy
- Competition Compliance policies
- Insider Trading – Dealing Code
- Trade Compliance policies
- CSR Policy
- Procurement Sustainability policy
- Supplier Code of Conduct

The Ten Principles of the UN Global Compact

Human Rights

Principle 1: businesses should support and respect the protection of internationally proclaimed human rights

Principle 2: make sure that they are not complicit in human rights abuses

Labor

Principle 3: businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining

Principle 4: the elimination of all forms of forced and compulsory labor

Principle 5: the effective abolition of child labor

Principle 6: the elimination of discrimination in respect of employment and occupation

Environment

Principle 7: businesses should support a precautionary approach to environmental challenges

Principle 8: undertake initiatives to promote greater environmental responsibility

Principle 9: encourage the development and diffusion of environmentally friendly technologies

Anti-Corruption

Principle 10: businesses should work against corruption in all its forms, including extortion and bribery

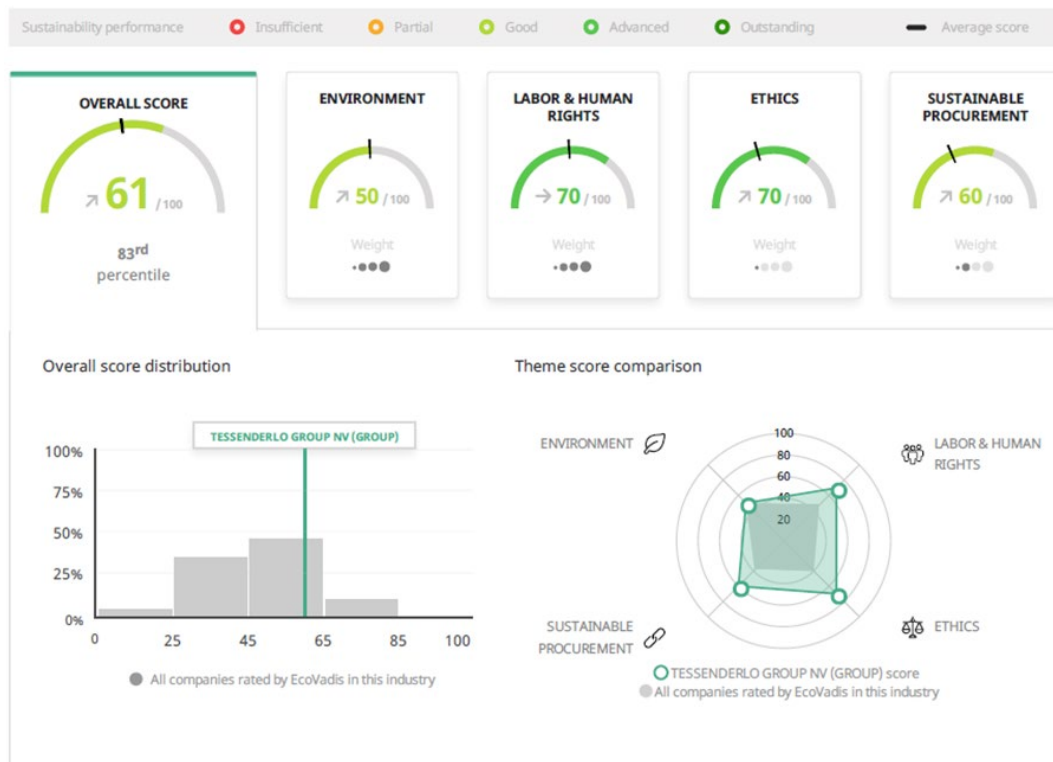
EcoVadis

Tessengerlo Group awarded a silver medal by EcoVadis

In 2022, Tessengerlo Group was awarded a silver medal by EcoVadis. Our CSR progression is scored yearly by the external assessor, EcoVadis, which is one of the world's most trusted business sustainability rating companies. EcoVadis scores more than 85,000 companies in over 200 different industries. EcoVadis evaluates Tessengerlo Group based on Environment, Labor & Human Rights, Ethics, and Procurement. The detailed feedback given by EcoVadis enables us to better monitor and manage our CSR progression and to focus on and improve our CSR path going forward.

We are now among the top 25% of global companies assessed by EcoVadis. This achievement will help drive sustainability within our company and is a clear endorsement of the CSR progress we are making for the benefit of all our stakeholders, particularly our customers.

More details on our rating can be found in the scorecard below.



Our employees

Tessengerlo Group was founded more than 100 years ago. Our founders demonstrated a vision and leadership that is still tangible in our DNA. Our success today relies on the continuation of their legacy: daring to start small and never quitting, not allowing any of our resources to go to waste, and persistently adding value to everything we do through imaginative process thinking and rethinking, and research and development. Our founders also taught us to do business with integrity, and this is a commitment that we unwaveringly maintain as we continue to expand into new business areas and regions.

Over the years, Tessenderlo Group has grown into a diversified industrial group with operations and a commercial presence in more than 100 locations across 26 countries around the globe. Each company in the group serves different markets (inter)nationally with products and services that enjoy an excellent reputation. Our various business units and companies represent the beating heart of the group, each with its own identity and culture, the sum of which is more than the parts.

The attitudes we share, as a group

The various different business units and companies of Tessenderlo Group are not all involved in the same activities. Nevertheless, we speak one language and are united by the attitudes we share. These attitudes have been key in creating a strong company culture that focuses on excellence and sustainable growth:

1. **BE POSITIVE** - We believe in the potential within and around us: we seize our opportunities with optimism.
2. **BE CURIOUS** - We are open-minded and eager to learn: we want to get better at everything we do and discover even more about the world we live in.
3. **BE CONNECTED** - We are connected internally and externally: we work closely together to share our knowledge and best practices.
4. **BE COURAGEOUS** - We don't shy away from obstacles. And we believe that having the courage to challenge each other is a good thing.
5. **BE DECISIVE** - We take and execute decisions and we make sure things happen quickly.
6. **BE FOCUSED** - We set priorities and we pursue results together.

Our 6 attitudes indicate what we consider to be most important as a group. However, whilst these attitudes act as a source of inspiration, they only really exist to the extent that we practice them. This is why we are committed to actively applying our attitudes in our everyday work. Because it reflects positively on our colleagues, customers, and other stakeholders. As a result, they clearly see our entrepreneurial spirit and job satisfaction, and our value-driven, "can-do" mentality.

The guiding principles we share, as a group

Tessengerlo Group has a positive and pragmatic outlook regarding how we can keep growing our business in a sustainable way: we believe that Every Molecule Counts. Creative, well-considered usage of our resources and a long-term focus are a common thread in our story. It is our ambition to strengthen our leading market position in each business unit and company of our group and to ensure enduring profitability. From a strongly anchored family shareholder base, Tessenderlo Group is further committed to creating shareholder value through the execution of a sustainable long-term industrial strategy.

The following principles guide our relationships with our employees, customers, shareholders, and local communities:

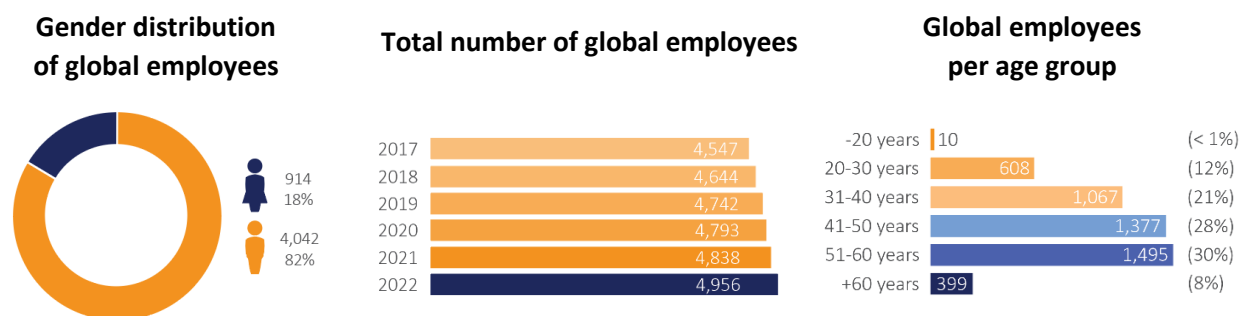
Our guiding principles

1. We believe that Every Molecule Counts: we continually strive to valorize our products and processes to the maximum and to add value to everything we do.
2. Our main focus is our business, and we do everything we can to get better at what we do.
3. The safety and health of everyone in our business comes first. This is non-negotiable.
4. Our people are the beating heart of Tessenderlo Group. We respect, enthuse, challenge, develop, and recognize the achievements of our colleagues.
5. The customer is our priority, and this means operational excellence is essential.
6. We continuously improve our competitiveness. That is why we optimize our spending and keep overheads to a minimum.
7. We are driven by our entrepreneurial spirit: challenge and execution are key. We fight and win the battle in the market by assuming our responsibilities and taking the right actions at all levels.
8. We ensure the sum is more than the parts. We leverage our very diverse skills and share best practices within our group through centers of excellence and services.
9. We continuously practice our 6 attitudes, and we are fully committed to performing our jobs with integrity.

Total number of employees

As at December 31, 2022, the total number of employees (FTE) working for the group amounted to 4,956. Out of this total, 880 employees were active in the Agro segment, 2,073 employees were active in the Bio-valorization business, 1,966 employees were active in the Industrial Solutions segment and 38 employees were active in T-Power.

Meanwhile, 3,833 of the group's total personnel are employed in Europe, 915 are employed in the Americas and 208 are employed in Asia, Africa, and Australia.



Gender diversity

Since 2020, Tessenderlo Group has relied on its policy regarding Diversity & Inclusion, aimed at further improving diversity and inclusion in our workplace. As shown in the figure above and the KPIs in the tables, we measure and monitor a number of different gender-related metrics in the different levels (general, expert level (E), leadership level (L), Board of Directors, and other governance bodies (see table on the next page)). Also, the salary levels between genders are measured in the different groups. The diversity of our employees can also be seen in the geographical spread.

On December 31, 2022, two out of six members of the Board of Directors were female. The Board of Directors was therefore in full compliance with the Law of July 28, 2011, requiring that as of January 1, 2017, one-third of the members of the Board of Directors should be of a different gender than the other members of the Board. In its selection procedure for the appointment of new directors, the Board of Directors has integrated criteria with regard to diversity of competencies, age and gender diversity. Furthermore, we also comply with the new upcoming directive on diversity at the board level: 40% of non-executive director posts should go to the underrepresented sex (by 2026).

Employees and employment – Labor and Human Rights

Tessenderlo Group ensures respect for all basic human rights throughout the world. We do not tolerate any discrimination or harassment on the grounds of race, color, gender, religion, origin, civil status, family circumstances, feelings or sexual orientation, disability or age. Tessenderlo Group expressly does not permit the use of child labor through the company and its suppliers.

We consider all qualified applicants for employment regardless of race, color, gender, religion, age, national origin, sexual orientation, disability status or protected veteran status. To implement this policy, we rely on our Human and Labor Rights policy within Tessenderlo Group.

The purpose of the policy is to clarify Tessenderlo Group's view that respect for human rights and the observance of labor rights are integral to our business practices. At the same time, we also comply with the UN Global Compact principles.

Any concern our employees might have regarding human rights and labor rights at Tessengerlo Group can be raised either directly with their line managers or with their local senior leaders. This, together with training sessions that are being implemented on this subject, is how we aim to cover our internal risk related to labor and human rights. In case employees have the impression that their concerns have not received sufficient attention, or that the response provided was inadequate, then the matter can be confidentially brought to the attention of the Compliance Officer: codeofconduct@tessengerlo.com. Our external risk is also referred to in our Supplier Code of Conduct and Sustainable Procurement policy.

Tessengerlo Group did not receive any formal complaints regarding labor & human rights or diversity & inclusion in 2022.

To further develop and strengthen our Diversity & Inclusion Politics and Human & Labor rights philosophy, we will make our diversity data available for our HR and leadership community on a monthly basis via a KPI dashboard in 2023. This is a further step in our process of monitoring our KPIs. In addition, we will perform a self-assessment on Human & Labor rights allowing us to verify with the broad network of Tessengerlo employees if there are any opportunities for improvement. We will start defining targets relating to these policies by the end of 2023.

Labor and Human Rights			
ASSOCIATED MATERIAL ASPECT (GRI)	Score 2020	Score 2021	Score 2022
Diversity of gender in governance bodies (Remco, Board, Audit Committee and ExCom*)	New in 2021	18% female 82% male	29% female 71% male
Diversity of governance bodies (gender % of L level, E level and board)	11% female at L level** 24% at E level** 33% at Board level	12% female at L level** 24% at E level** 33% at Board level	15% female at L level** 25% at E level** 33% at Board level
Diversity of gender (all permanent employees)	New in 2021	16.6% female 83.4% male	17% female 83% male
Diversity of employees (per region, per gender, and per age category expressed in total numbers)	See Sustainability report 2020	See Sustainability report 2021	See page 17
% of employees compliant in training Labor and Human Rights	-	-	81.3%
Equal opportunity-ratio of basic salary and remuneration of females to males at L level	Female 6% higher than male	Female 5% higher than male	Male 2.9% higher than female
Equal opportunity-ratio of basic salary and remuneration of males to females at E level	Male 3% higher than female	Male 2% higher than female	Male 4.3% higher than female
Operations in which the right to freedom of association and collective bargaining may be at risk	0	0	0
Total new hires and leavers	New in 2021	673 new hires	641 new hires 384 leavers
Employee turnover	6.5%	12.9%	7.3%

* Diversity of gender in governance bodies: definition changed from 2021 to 2022 for accounting reasons.

2021: BU Leadership Teams, Group Leadership Team, and the Board of Directors.

2022: Remco, Board, Audit Committee, and ExCom.

** E level = Expert level of Managers at the company; L level = Leadership level of Managers at the company.

Developing Human Resources for sustainable growth

Tessengerlo Group relies on a team of experienced professionals and this contributes towards our realization of the business and strategic objectives across all areas.

With our tagline “Every Molecule Counts” we strongly believe that our people are the most important drivers behind our success of creating sustainable growth. As we are making important strategic shifts across our business units, HR has a crucial role to play in driving people and culture development, business growth, and company agility.

We are convinced that our employees are the most important factor in our success. In a global business where knowledge and expertise are essential, we build on our experienced and motivated employees, who have an in-depth knowledge and understanding of both the group and our products. Our HR managers, who make up part of each of the different management teams in the group, are focused on rolling out the updated business strategies, shaping the organization, defining clear roles and responsibilities, as well as attracting, retaining, and developing the right people, and building motivated teams that will realize the objectives of the group. They also guide each company through the cultural changes that are necessary for the successful implementation of the strategic plans. Professional tools and processes for Talent and Reward, sharing best practices, and automation of transactional work are supporting these common goals.

Within our annual performance cycle, clear objectives that are in line with our strategy execution are defined internally in each of the different business units. Each business unit has a communication plan to cascade these objectives of management down to the shop floor and to communicate them into the minds, hearts, and hands of our team members.

Talent management is a key process within our organization. As our business is constantly growing, we offer challenging yet rewarding jobs for enthusiastic people with backgrounds in Engineering, Sales, and Business Development, as well as Operations Management and General Management. We offer many great opportunities in terms of personal development and we strive to have in place a personal development plan for each individual employee. On-the-job training and a permanent feedback culture are essential, but we also organize learning and training programs for all levels of employees. We build on the strengths of one another, and we deploy our people in a complementary manner.

Within our Talent Review Process, we prepare career paths and carefully develop our talent for the future. In addition, we have invested in platforms to facilitate these processes. HR is also responsible for solid remuneration systems and benchmarked and competitive salary packages. The goal behind our remuneration strategy is payment according to performance, in which we strive to stimulate the entrepreneurial spirit of our employees.

We must ensure that our employees, as individuals, are fully prepared at all times in order to respond to both the short-term and long-term challenges we face, as well as to work productively in result-driven teams.

It is for this reason that we have defined the following seven HR pillars for sustainable growth:

FIRST PILLAR

Shaping the right and lean organizations that will be able to provide the most effective support to the different business models.

SECOND PILLAR

Attracting the right employees for the right jobs.

THIRD PILLAR

Engaging our people as regards the ways in which they can make even better contributions to the execution of our strategy. This can be realized by developing annual performance cycles, continuous feedback, the development of recognition plans, and clear communication.

FOURTH PILLAR

Seeking to further empower our employees and create motivated teams through a smart combination of dedicated coaching and teambuilding. This will ensure that we have flexible and agile employees.

FIFTH PILLAR

Training and developing all of the talent in our group. The concept of talent management is considered to be a key process within our organization, and it is therefore the responsibility of every leader and manager in the organization to commit to this objective. In this respect, on-the-job training and a permanent feedback culture are fundamental elements.

SIXTH PILLAR

Offering a solid reward system with benchmarked and competitive salary packages and benefits. Benchmarking is undertaken via professional salary surveys and we also provide medical insurance for our employees and pension schemes in every country in which we operate.

SEVENTH PILLAR

Following the Group Code of Conduct and compliance policies at all times.

Tessengerlo Group's strategy could be undermined by the company's inability to attract or retain employees in key positions, or by the unexpected loss of experienced employees. Tessengerlo Group will continue its efforts to recruit, retain, and develop a competent workforce and manage key talent throughout its global organization.

Training and Talent Management

We cherish talent and actively help our employees to grow and flourish. Through dedicated training programs and coaching, we seek to empower our employees, ensuring that they are flexible and agile, while simultaneously encouraging them to consider how they want to contribute to Tessengerlo Group - both today and tomorrow.

We train and develop our employees because they are critical to our success and our ability to execute our business strategy better than our competitors. Our culture includes having high expectations for the personal growth of our employees, and we encourage continuous learning via job-specific, in-person, and online training. Within HR, we are putting a strong focus on further digitalizing all transactional HR activities. We are also establishing Shared Service Centers in a number of countries to free up HR staff so they can be present on the shop floor and better support business growth.

All employees receive on-the-job training, a permanent feedback culture, and training programs. We build on the strengths of one another, and our Talent Review Process aims at preparing career paths and developing our talent for the future.

In 2022, Tessengerlo Group capitalized on the Learning Management System (LMS) implemented in 2021 by offering e-learning training to all employees on Microsoft Office skills (Excel) or essential personal skills (e.g. Time Management). In terms of training sessions, we have supported them with key initiatives. These include the further roll-out of our program for our factory workers, TOPS, which is a self-learning approach that puts the learner in the driving seat of their career progression, the reinforcement of our Sales Academy with targeted training to strengthen our consultative selling approach, and the launch of leadership programs (Authentic and Transformational Leadership) to equip our managers with the tools to manage the reality of today and tomorrow.

Motivating employees			
ASSOCIATED MATERIAL ASPECT (GRI)	Score 2020	Score 2021	Score 2022
Average number of hours of training per employee per year, excluding training on the job/machine	16	14.8	15.4
Employees receiving regular signed performance and career development reviews expressed in % of E and L grades	95%	96%	96%
Average years of seniority/company service	11.1	13.2*	13.1
% of L and E grade employees in performance-related incentive plans	New in 2021	100%	100%
% of all employees in performance-related incentive plans	New in 2021	66%	66%
% of L and E grade employees with a Personal Development Plan	-	New in 2022	52%
E grade employees in formal coaching or mentoring programs	New in 2021	3.24%	8%
% of employees active in LMS	New in 2021	39%	44%
Hiring by source - internal/external	New in 2021	12% internal 88% external	11.5% internal 88.5% external

* Given that we progressively induce more systemization for the gathering of data, some data from 2020 could be slightly less accurate, and consequently, compared to 2021, might not show the complete accurate evolution.

Safety and health

Tessengerlo Group is committed to protecting and improving the safety, health and general well-being of its employees, customers, suppliers, and neighbors by preventing or limiting its activities and products from affecting people and the environment.

It is our responsibility to ensure that our employees can work in a safe work environment and we are responsible for clearly communicating expectations regarding how to work safely via awareness programs, audits and improvement measures. Tessenderlo Group works to achieve a “zero fatality rate” globally.

Tessengerlo Group’s Safety and Health Policy is integrated into company processes, operations, and systems. The protection of employees, customers, suppliers, visitors, and neighbors against unacceptable risks overrides economic considerations and must not be compromised. In the event of any doubts, the overriding principle of precaution must apply.

Safety and health policy of Tessenderlo Group

Tessengerlo Group and all of its subsidiaries embrace and comply with its legal, ethical, and moral responsibilities, in terms of protecting the safety and health of employees, contractors, customers, and the communities in which we operate. We will always conduct our business to the highest practicable standards.

Tessengerlo Group’s leadership, management, and all employees will act at all times to safeguard the safety and health of all. No business goal, target, or job is more important than ensuring the safety and health of everyone.

To fulfill those responsibilities, Tessenderlo Group ensures that the appropriate level of resources is made available, together with the commitment to continuously improve safety and health performance. It is the role of Senior Leadership to determine, deploy, and manage the required resources to meet Tessenderlo Group’s responsibilities.

All employees and others engaged by Tessenderlo Group are expected at all times to fully comply with applicable regulations and local processes that are determined necessary to protect safety and health. Every incident and life-threatening accident is thoroughly investigated to determine and implement the improvement actions required to prevent any repeat event. All employees are expected to report all such events to local management so that the appropriate procedures can be followed.

Safety and health will always be a fundamental value of Tessenderlo Group.

Our continuous focus on improving safety and health performance remains the top priority for Tessengerlo Group. The year 2022 was again impacted by the global coronavirus pandemic and consequently employee safety and health risks and performance were heightened. Our measures were broadly successful and have remained in place to meet national and local statutory obligations. However, our foremost objective remains to ensure that our employees remain safe and healthy and understand, behave, and participate with our commitment to the well-being of everyone. We strive to preserve, conserve, and protect the resources we use to conduct our business.

Group health and safety performance

During 2022, we continued to focus on sustained improvements from safety and health performance within each business unit. Management has made this the number one priority and utilizes skilled and qualified internal and external resources. Regular management and employee auditing and workplace inspections are conducted, and thorough investigation and follow-up is conducted on injuries and events that have or could have resulted in accidents and harm. Safety and health performance is reviewed each month with the ExCom and the Senior Management of each business unit and, consequently, revised targets are set each year in terms of realizing a continued reduction in accidents and incidents.

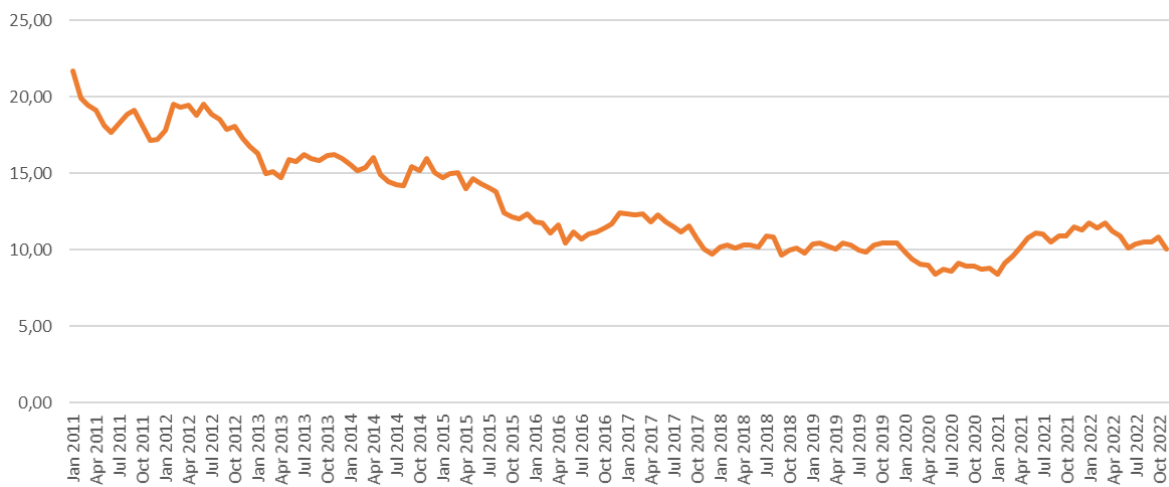
In 2022, we also made further progress in the implementation of a group-wide learning management system, which will enhance our ability to deliver and record systemic safety and health training for all employees and contractors. This major multi-year project will underpin our continuing commitment to training as the key factor in terms of setting standards and expectations for safe behavior in all the locations where we conduct business.

Several business units continue to achieve progress and realized SHE performance improvements, while some other business units reported lower accident levels. Compared with 2021, Tessengerlo Group achieved an improved Lost Time Incident Frequency Rate. However, despite a significantly better second half of the year, the severity rate of the recordable incidents ended up at a higher level in 2022. To further reinforce our Guiding Principle that “The Safety and Health of everyone in our business is more important than any other subject,” we are committed to placing more emphasis on leading safety indicators that have been initiated going into 2023.

Health and Safety			
ASSOCIATED MATERIAL ASPECT (GRI)	Score 2020	Score 2021	Score 2022
Lost Time Incident (LTI) frequency ratio ¹ (all employees and contractors)	8.34	11.12	10.63
Near misses frequency ratio ² (all employees and contractors, expressed as number of hours worked)	New in 2021	829.76	893
Workers representation in formal joint management/employee H&S committee	95%	96%	96%
Accident severity rate ³ (all employees)	New in 2021	0.56	0.63
Total safety performance ⁴ (all employees and contractors)	New in 2021	10.84	10.63
Group insurance percentage coverage/ Life Assurance coverage	97%	98%	98%

1. LTI (Lost Time Incident) frequency rate is a rolling annual calculation based on the formula "LTIs x 1 million/total hours worked"
2. Near misses frequency ratio (all near miss reports x 1 million/ total hours worked)
3. Accident severity rate (severity of lost time injuries to employees defined as total days absent/1,000 hours worked)
4. Total safety performance (all LTIs + medical treatments x severity rate/total hours worked)

Tessengerlo Group lost time incident frequency rate
(number of lost time incidents per million hours worked)



Safety and health achievements

Agro segment

Tessengerlo Kerley, Inc. has a total of 9 facilities that have achieved more than 5 years without a lost time incident. In addition, five of those locations have gone more than 20 years without a lost time incident! To support the employee engagement and workplace culture that leads to this type of performance, Tessenderlo Kerley, Inc. maintains a robust behavioral-based safety award program at all its operational facilities. The program is designed to recognize employee activities that help ensure everyone goes home unharmed every day. The focus areas of the program include safety meetings participation, completion of safety inspections, hazard identification, and involvement in the task observation process. During the past year, more than 98% of employees at our process plants actively participated in the Safety Award Program. In addition, a multi-year initiative focused on ensuring SHE management system controls needed to prevent severe injuries and fatalities are fully effective was implemented.

Tessengerlo Kerley International continued its focus on Health & Safety. However, last year did not lead to a reduction of accidents. Unfortunately, an increase in accidents took place. It was predominantly the site in Ham (Belgium) that experienced an increase in accidents compared to the previous year. At the site in Rouen (France), an accident took place after many years of the site being accident-free. To further improve the situation (in order to turn the tide), a review of the 5-year Health & Safety plan took place for the Ham site. An analysis of all incidents and accidents over the last 10 years was used as extra input in order to set the right focus. Meanwhile, the other international sites within Tessenderlo Kerley International continued to operate with an accident-free record.

Bio-valorization segment

PB Leiner continued to make long-term improvements at its sites, maintaining a downward 5-year trend in accident rates. A particular focus was placed on further facilitating safety processes and standardization, among other things, with the global implementation of a safety app. This user-friendly mobile application makes it considerably easier to report incidents, initiate actions, follow up, and give feedback on incidents. Enhancing contractor safety was another focal point in 2022 with several actions being put in place to increase awareness and prevention. The implemented measures are already bearing fruit: the construction of the new wastewater facility in our Argentinian plant, which amounted to a total of 160,000 working hours and involved almost 200 project workers, was achieved without any accident or even any incident. In 2023, we will be taking the next steps in our maturity model by installing safety cross audits, where we will learn from each other and go to the next safety level.

At Akiolis, health and safety at work has remained a key area for management. Akiolis' employees face many challenging work environments and the possibility of lost time incidents. In 2022, Akiolis continued to dedicate additional resources to making improvements and engaging all staff members. The behavioral safety training program to help them highlight areas where employees can make personal improvements to their own safety and that of their colleagues was continued in 2022. In total, 175 managers were trained and they conducted nearly 1,300 safety dialogues. Consequently, the number of work-related incidents resulting in lost time has fallen by more than 10%, particularly in the Transportation department. In addition, 2022 saw 8 sites exceed 1,000 days without a lost-time incident and 17 sites exceeded one year without such an incident.

Industrial Solutions segment

Within DYKA Group, we experienced a significant improvement in the lost time incident frequency rate. The introduction of the safety pyramid within DYKA Group placed a focus on the main safety issues. The safety pyramid included 20 “building blocks” representing all the relevant safety areas. The focus on behavioral, technical, and organizational aspects of health and safety are still at the heart of the program. Among the DYKA Group sites, BT Nyloplast in Hungary extended its accident-free performance record to 2,780 days. DYKA Group is transferring its best practices and management standards of the safety pyramid to the sites where further improvements are still required and this “levelling up” process should realize success in 2023. In 2022, Tessengerlo Group and its DYKA Group business unit officially finalized the acquisition of the Pipelife France plant in Gaillon (FR). The plant has been incorporated into the operations of DYKA France. SHEQ policies and procedures are aligned with DYKA Group and Tessengerlo Group.

Kuhlmann Europe achieved an excellent safety performance in 2022 with a single LTI and an event to celebrate 419 days without an LTI. In addition, safety days were organized at the Loos plant to focus on Seveso emergency safety rules and training on chemical hazards. The sites in France and Belgium maintained their ISO 9001 and 14001 registrations (Loos only) without any deviations having been notified. The French site also started its wastewater monitoring system to obtain approval from the water supply agency in 2023. In December 2022, we also initiated a “Wellbeing at Work” week for our employees that is planned to be repeated in 2023.

T-Power segment

T-Power reported no lost time incidents in its operations during 2022.

Social activities

Tessengerlo Group firmly believes in the importance of the recognition of teams based on positive reinforcement. This can be linked not only to achieving certain results to help growth but also to life events. Our employees spend a lot of their time at work and often “go the extra mile” for the group. We believe these efforts should be celebrated and rewarded. Therefore, we take advantage of various occasions, such as company anniversaries, to organize get-togethers for our teams as well as family and friends. Our aim is to ensure our employees can also share the pride they have in their work and what we do as a company with those from their personal lives. Social activities are important in terms of contributing to the wellbeing of each of our employees and building a positive company environment and culture.

Our planet

The challenges that the world faces - from climate change and population growth to food shortages and economic crises - are the basis for our search for products and processes that create value for all of our stakeholders.

There is no need to debate the fact that our planet is warming up. Overwhelming scientific consensus argues that humans are causing this warming through the emission of greenhouse gasses, mostly from the burning of fossil fuels. A warmer planet creates the effect of changing weather patterns. These changes have an impact on freshwater availability. Climate change also affects our ability to produce sufficient food in a reliable manner. It influences our ecosystems and biodiversity, as well as the spread of diseases. Overall, severely changing weather patterns are increasingly having a profound effect on our lives, our economies and our societies. Climate change is the single most important factor that will define our future market environment.

Growing population

We live on an increasingly crowded planet. “The Day of Eight Billion,” which took place on November 15, 2022, was designated by the United Nations as the approximate day that the world population reached eight billion people. The world population is expected to reach 9.7 billion people by 2050. With approximately 83 million people being added to the world’s population every year, the upward trend in population size is expected to continue. Such an increase will inevitably have an impact on climate change and our natural resources, ecosystems, raw materials and land availability.

Improving standards of living

The global population is not only growing in terms of numbers. Global affluence is also increasing on average. Whilst not every region or country of the world is benefiting from this development, China, Brazil, and India are making big strides forward. Notwithstanding the fact that wider affluence has many positive aspects, it will create a market environment with more people consuming more goods. And this means it will be more difficult for supply to keep up with demand. Improved standards of living are also linked to increasing urbanization; more people are now living in cities than ever before.

Every Molecule Counts

Every human being has the right to food, and we believe that it is our responsibility to help make this possible through more efficient and sustainable agriculture. As demand outstrips nature’s capacity to provide fresh water, and due to a lack of infrastructure, one billion people in the world lack access to sufficient clean water. We offer solutions that promise a reduction of water use in agriculture and improve water management and quality - these represent important steps towards conservation and wider access. The earth’s natural resources are being squandered by some who think that supplies are endless. Indeed, many such resources are either burned or dumped as waste after use. The reality is that these resources can never be replenished. Therefore, in order to avoid depleting resources that should be available to future generations as well as our own, we provide solutions to further reuse and recycle materials, hence adding value to them.

Our challenge is to contribute to making a significant improvement in the efficient use of raw materials, especially residuals or by-products from natural origin. This will mean we are making the most of the resources. For this reason, we are 100% committed to finding new and more sustainable ways in order to successfully address the following mega-challenges:

- Maximizing food production
- Optimizing the use of water
- Using our resources more responsibly
- Making better use of bio-residuals
- Reducing our energy footprint

Environment

Tessengerlo Group is aware of the impact our production operations have on the planet. We want to take our share of responsibility and minimize the impact of our operations. We will continue to explore ways of reducing our environmental footprint in every aspect of our activities.

“Every Molecule Counts” is at the heart of our strategy and this is expressed by the numerous business activities and projects we deploy in terms of circularity. At the same time, our activities are subject to environmental regulations that could create substantial costs and lead to disputes regarding environmental matters. National and local authorities might even impose “no-fault liability,” leading to a negative impact on our activities. Meanwhile, the environmental regulations in the markets where we operate are becoming stricter, with a growing emphasis on compliance.

We offer various products and environmentally friendly solutions, in which we typically reclaim and transform by-products from our own or other industries.

Based on the outcome of the materiality analyses and taking the assessments of our employees and stakeholder representatives into account, we decided to focus on the topics of water and energy, which have been enriched with data on renewable energy, water and air emissions, and waste.

Water and energy topics represent areas of major importance with regard to helping preserve the natural resources of our planet, and are at the same time material to our business. As production volumes are subject to change, we have also calculated the intensity ratios of water and energy, which represent a more tangible steering metric.

There are two approaches regarding environmental sustainability:

1. Reduce the impact of our own operations on the environment, related to climate change mitigation
2. Reduce the impact of the environment on our operations, related to climate change adaptation

1. Reduce the impact of our own operations on the environment

Going back to the subject of materiality we see that there is a whole cluster relating to sustainable products: energy, water, air, and by-products. “By-products” is our preferred terminology instead of “waste” because we see by-products as being value products that fit into our “Every Molecule Counts” philosophy. Energy and water are tackled as the first topics at group level to report on in our step-by-step approach. Energy and CO₂ relate to climate change mitigation and both energy and water are seen as very important environmental topics, where our company also has an impact. We work continuously on energy efficiency. Of course, next to these material topics, other parameters will follow such as monitoring of the upcycling of by-products and the use of recyclates (non-virgin raw materials) in our strategy towards the circular economy.

At present we have two main approaches for environmental topics:

- Circularity (Every Molecule Counts), see narratives of each BU
- Optimization (energy and water), see tables with metrics and evolution

The tables on pages 34, 35 and 36 show how renewable energy, air and water emissions, waste, energy and water are monitored by our KPIs. In order to reach our targets, many projects are planned or at the execution stage across the different BUs. These projects can be product-related or process-related. Operational Excellence programs also help in this context. Apart from the Tessenderlo Group CSR policy, several BU environmental policies are currently being implemented, such as energy and energy efficiency policies, e.g. at some of our Belgian plants we have Energie Beleidsovereenkomsten (energy policy agreements); some other BUs have their own environmental policies and might be monitoring some additional CSR related KPIs and targets, but they are always integrated into the Tessenderlo Group CSR approach.

2. Reduce the impact of the environment on our operations

Climate change adaptation, which is seen as the process to adjust to the effects of climate change, is now also monitored by us with the support of our AXA Climate project, which gives us a clear view of our actual and future exposure related to climate change. We screen all our own sites, rented terminals, consignment stocks, tolling sites, and our key business supply chains for natural hazards and the possible exposure to climate change. Extreme weather events and droughts pose additional risks through damage to assets and/or adverse consequences on operations, supply chains, and insurance costs. In the broader picture, we also refer to our Enterprise Risk Management Policy where CSR risk is taken up in the screening and the planning.

Climate change adaptation

Our exposure to climate change and our own impact on climate change are two sides of the same coin. We cannot dissociate them, and our understanding of how to reduce the impact of the climate on our own operations and to reduce the impact of our own operations on the climate, is critical for the future of our activities in alignment with global sustainability goals.

Our exposure to climate change

To understand our exposure to climate change and set up the ideal adaptation strategy, in late 2021, Tessengerlo Group launched an initiative to assess its exposure to natural hazards and climate change. Unfortunately, the past is no longer a reliable indicator and our resilience will depend on a clear vision of what we can expect in the future in terms of climate change.

Climate change creates challenges with rising input costs (energy, water, raw materials, insurance costs, market shifts, agricultural transition...). Extreme weather events, cold/heat waves and droughts pose additional risks through damage to assets and/or adverse consequences on operations. And they also impact people on the work floor, our supply chains and the community at large. Risks associated with climate change have been increasing in terms of both frequency and severity in the past few years.

Despite the random installation of some physical protective measures and the use of better-adapted insurance solutions, we are facing a growing need for a more comprehensive approach to resilience, relevant to the changing environments in which we operate, and which assures our stakeholders that our future growth is sustainable. To meet this growing challenge, we realized that we needed to develop more sophisticated resilience measures to reduce the impact of the climate on our operations. A climate change resilience plan can help cover both the physical and transition risks that can protect our business future.

Our primary purpose is to assess the risks, not just the hazards, and to develop a climate resilience strategy through

- Physical protection measures
- Organizational measures
- A sustainable supply chain

Another purpose is to align our business strategies on climate change, especially in terms of agricultural transition.

The “Climate change” project

Selected service provider and methodology: AXA Climate SAS

1st step

We asked the service provider to execute a thorough assessment according to IPCC scenario's (Intergovernmental Panel on Climate Change/United Nations). To assess our exposure, two scenarios (Representative Concentration Pathways RCP 4.5 and RCP 8.5) were selected, and also two horizons (2030 and 2050) vs baseline 2022.

Next steps

A periodic update of the risk modelling on the actual scope is considered (every 2 or 3 years) and the ad hoc individual assessment of potential new sites.

Base-case : RCP* 4.5 Mid-century warming of +1.6 to 2.5°C. The end-of-the-century warming of this scenario is projected to reach +2.1 to 3.5°C versus the pre-industrial era. NB Current climate policies and 2030 determined contributions targets are leading to an end-of-the-century warming of +1.9 to +3.0°C, in line with the base case.

Pessimistic case: RCP* 8.5. Mid-century warming of +1.9 to 3.0°C, which is approximately 0.4°C warmer than the RCP 4.5. The end of the century warming of this scenario is projected to reach +3.3 to 5.7°C versus the pre-industrial era.

The IPCC Working Group I Sixth Assessment Report shows that the world will probably reach or exceed 1.5°C (2.7° F) of warming within just the next two decades. Whether we limit warming to this level and prevent the most severe climate impacts depends on the actions we take in this decade. Only with ambitious emission cuts the world can keep the global temperature rise to 1.5°C, which is the limit that scientists say is necessary for preventing the worst climate impacts. Under a high-emissions scenario, the IPCC has confirmed the world may warm by 4.4°C by the year 2100 — with catastrophic results.

We applied this base case scenario and a pessimistic case scenario, which we can use for adaptation purposes and develop a risk management response e.g. assess the exposure, adapt our operations, avoid disruptions, etc. Beside adaptation and, of course, decarbonizing, engaging, innovating, etc., mitigating our own impact is part of our strategy. Two sides of the same coin!

Scope of the AXA Climate analysis

579 sites in 38 countries

1. Our own sites, e.g. our manufacturing plants, our own warehouses and terminals, our branches, administrative buildings, innovation centers, ICT server locations - 193 locations.
2. Our rented terminals and warehouses as well as our consignment stocks with customers; 212 locations in total.
3. Some key suppliers and customers, which are critical to our supply chain. For this, we scrutinized 174 sites.

Therefore, for each individual site, we know precisely the value at stake: Assets (buildings, machinery, etc.), Inventory, Sales, and Spend, and Gross profit margin, which allow us to quantify and qualify precisely what is at risk. The physical parameters taken into account are: flood, heat index, drought, rain, wind, energy, heat, cold, wildfire and geophysical parameters.

Parameters which can directly impact the assets and the people : flood, geophysical parameters, wildfire and wind. The parameters rather having an impact on the consumption of energy (cooling, warming) will also impact people working on the site and the community at large : cold, heat.

The other parameters which rather have an impact on the consumption of water will also impact the community : drought, rain.

RCP : Representative Concentration Pathway: the value of 4.5 or 8.5 refers to the concentration of carbon that delivers global warming at an average of 4.5 or 8.5 watts per square meter respectively across the planet.*

Results of the analysis

1. Data were delivered by AXA Climate SAS at the end of Q1 2022
2. A priority scale was defined as follows:

Low	There is a very limited risk and vulnerability that does not require a specific intervention beyond business as usual to react to climate change consequences
Moderate	There is a limited risk and vulnerability that does not require a specific intervention beyond business as usual to react to climate change consequences
High	Existing risk that can aggravate with climate change, that may have impact on business continuity or short-term damages. It requires further investigation to be either disqualified as a risk or considered as a higher priority for Tessengerlo Group. It should currently represent a medium level of priority for Tessengerlo Group.
Extreme	Existing risk strongly aggravating with climate change, with significant impacts on business or damages. It requires further investigations to determine impacts on business and CAPEX, and adaptation strategy. It should currently represent a top priority for Tessengerlo Group

Main findings and our focus at this stage

Our focus here is on our own sites in Europe, the Americas, and our only own site in Asia, as we can obviously not move our manufacturing sites.

Our rented sites could possibly move and, as an example, with the ongoing migration of agriculture business activities in the US from the West to the East where water is more readily available, we are aware that to continue to serve our customers we might use different terminal locations than we did historically.

The sites of our suppliers and customers that are at risk might generate some disruptions but the risk is very limited. Sourcing alternatives can possibly be considered. Climate impacts will be discussed with our trading partners.

General conclusions

Our climate change adaptation is a work in progress. Based on global climate action (cf. COP 27), the results of our current analysis could change and we might have to adapt ourselves to new scenarios.

The adaptation requirements can be considered from different perspectives and will have different purposes for our different stakeholders.

- Adaptation with regards to the impact on people (health and safety protection) and the community at large.
- Adaptation with regard to the impact on the physical assets (asset protection and business continuity).

The analysis shows that Tessengerlo Group is less exposed at this point in time.

As we extend our presence and our footprint, we will continue to integrate climate action in the future, as well as product adaptation.

Tessenderlo Group is fully aware of the significance of climate change, highly concerned about the various impacts on people, assets, food production, supply chain disruption risks, and the agricultural transition, and has been adapting its product range for quite a while. Below are just a few examples related to the migration of agriculture business activities for climate reasons, and, mainly significant droughts.

- 4R Nutrient Stewardship: Crop Vitality provides crop nutrition tools that allow growers to be sustainable stewards in their fields. Delivering nutrients to plants at the right rate, time and place, and from the right source, is vital to crop yield and crop quality.
- Reduced water consumption.
- Precision fertilization.
- Circular and sustainable bio-fertilizers based on food and feed products.
- Our crop protection line includes organic and naturally sourced products that combat fungus and mildew and provide protection from sun damage.
- The potential relocation of terminals to serve our customers.

As outlined on the next pages featuring tables on energy and water, we realized reductions in 2022 compared to 2020 for energy (without vehicles in order to compare like-for-like), and for water (total) and an increase for water intensity. The latter can be explained by the reduced volumes produced in the Agro sector related to supply chain changes induced by geopolitical conditions such as the conflict in Eastern Europe and the need to cool many storage tanks due to high ambient temperatures.

For energy as well as water, we look to the entire group excluding T-Power (where we are operating under a tolling agreement):

- Total energy: reduction of 5.9%
- Energy intensity: reduction of 1.3%
- Total water: reduction of 0.4%
- Water intensity: increase of 4.1%

In light of our materiality concerning the topics on sustainable products, air and water, we added new metrics on renewable energy, waste and air, and water emissions. The tables for these metrics can be found on the next page.

For the waste category, we have split this into hazardous and non-hazardous waste following the national legislation definitions and also the reporting thresholds. The non-hazardous waste section for the Bio-valorization segment is substantial due to the fact that sludge is officially calculated as waste and also the fact that it can contain quite a lot of water. Tessenderlo Group is always looking at how to better valorize side streams and also the officially called "waste" streams in the context of the "Every Molecule Counts" philosophy that aims at stimulating the circular economy.

The renewable energy source is self-generated renewable hydrogen as well as purchased electricity from renewable sources.

We also refer you to the financial part of the annual report, which elaborates on CSR risks; ethics and compliance, safety, industrial safety, transport accidents, climate risks, cybersecurity risks, usage of Tessenderlo Group products, and market and strategic risks.

Renewable energy

Renewable energy (MWh)	
2022	
Agro	0
Bio-valorization	2,836.0
Industrial Solutions	49,883.0
T-Power	0

Waste

Waste (ton/year)		
	Hazardous waste	Non-hazardous waste
2022		
Agro	362.6	5,966.2
Bio-valorization	249.7	194,727.8
Industrial Solutions	2,603.8	2,560.9
T-Power	2.3	30.0

The non-hazardous waste of the Bio-valorization segment is mainly sludge, which is, according to local legislation, considered as "waste."

Water and air emissions

	Water emissions			Air emissions					
	Nitrate (kg NO ₃ - N/y)	Phosphate (kg PO ₄ - P/y)	Pesticides (kg/y)	Sulfur dioxide (kg SO ₂ /y)	Nitrogen oxides (kg NO _x /y)	Non- methane volatile organic compounds (NMVOC) (kg/y)	Fine particulate matter (PM 2.5) (kg/y)	Ammonia (kg NH ₃ /y)	Heavy metals (kg/y)
2022									
Agro	2,908.0	N/A	N/A	551,690.0	180,487.0	N/A	32,696.0	83,000.0	181.0
Bio-valorization	20,603.0	14,300.0	N/A	78,270.0	215,005.0	2,203.0	2,287.0	677.0	0.11
Industrial Solutions	95,309.0	2,252.0	N/A	67.0	3,683.0	N/A	1,843.0	N/A	39.0
T-Power	97.0	N/A	N/A	N/A	238,600.0	N/A	N/A	N/A	N/A

Energy

	Energy					
	Energy (MWh/y)*			Energy intensity (MWh/y)**		
	2020	2021	2022	2020	2021	2022
Group (minus T-Power)	2,062,867	2,122,737	2,029,000	0.78	0.78	0.81
Agro	366,740	348,942	287,657	0.22	0.20	0.19
Bio-valorization	1,480,030	1,534,323	1,514,872	3.05	3.30	3.31
Industrial Solutions	216,098	239,472	226,472	0.43	0.46	0.42
T-Power	2,350,652	1,531,225	1,729,863	N/A	N/A	N/A
	Energy (without vehicles)					
	Energy (MWh/y)			Energy intensity (MWh/y)		
	2020	2021	2022	2020	2021	2022
Group (minus T-Power)	2,062,431	2,027,035	1,938,760	0.78	0.75	0.77
Agro	366,304	339,242	277,876	0.22	0.20	0.18
Bio-valorization	1,480,030	1,457,025	1,443,723	3.05	3.13	3.16
Industrial Solutions	216,098	230,767	217,161	0.43	0.44	0.40
T-Power	2,350,652	1,531,225	1,729,863	N/A	N/A	N/A

* Total energy consumption within the organization, in MWh, and per operating segment

**Total energy intensity ratio for the organization, and per operating segment

1. Organization specific metric (the denominator) to calculate the intensity ratio: The denominator is in metric tons of year product produced to be sold; by-products included
2. Types of energy included in the intensity ratio: Hydrogen, electricity, liquid light fuel, liquid heavy fuel, natural gas, coal, wood, steam
3. The intensity ratio is based on energy consumed within the organization

Water

	Water					
	Water withdrawal (m ³ /y)*			Water intensity (m ³ /t)**		
	2020	2021	2022	2020	2021	2022
Group (minus T-Power)	17,369,996	17,255,481	17,298,000	6.60	6.35	6.87
Agro	3,532,440	3,441,548	3,373,750	2.14	1.99	2.22
Bio-valorization	10,747,657	10,583,725	10,831,327	22.18	22.76	23.69
Industrial Solutions	3,089,898	3,230,207	3,092,924	6.21	6.22	5.70
T-Power	2,224,721	1,362,781	1,703,973	N/A	N/A	N/A

	Water								
	Water withdrawal by source (m ³ /y)								
	Surface water			Ground water			Third-party water including city water		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
Group (minus T-Power)	10,404,045	10,304,877	10,030,286	4,518,921	4,059,382	4,274,279	2,447,031	2,891,221	2,993,436
Agro	2,204,027	2,162,367	2,028,718	671,357	523,821	571,348	657,056	755,360	773,684
Bio-valorization	6,445,389	6,227,104	6,181,422	2,555,499	2,311,726	2,486,722	1,746,770	2,044,895	2,163,183
Industrial Solutions	1,754,629	1,915,406	1,820,146	1,292,065	1,223,835	1,216,209	43,205	90,965	56,569
T-Power	2,168,545	1,306,227	1,654,883	0	0	0	56,177	56,555	49,090

* Information necessary to understand how the data have been compiled: see separate information on granularity & boundaries

** Organization specific metric (the denominator) to calculate the intensity ratio: The denominator is in metric tons of year product produced to be sold; by-products included

Innovation

Investments in innovation and R&D activities remain a key element of the Tessenderlo Group strategy, and this investment continues to underpin our core philosophy that “Every Molecule Counts.” Our innovation activities are prioritized in alignment with our business strategies. In R&D and new business development, Tessenderlo Group continued to improve and develop product, process, and application technologies through a customer-centric approach, launching new products, exploring new applications for existing products and more efficient ways of producing them, thus enhancing their utility, sustainability, and environmental protection profile. We also further developed our collaborations with academia, customers, suppliers, and other relevant stakeholders.

Our Agro segment

In 2022, we continued our efforts to enhance the sustainability of our fertilizers and their production processes. Through dedicated lab, pot, and field trials, we are tailoring our products and their usage to help improve crop growth, yield, crop health, and soil health. We not only conducted scientific pot and field trials at our Dinuba farm but also collaborated with several leading agronomic institutes. This approach means we will continue to contribute to sustainable agriculture practices, translating the insights gained from these scientific trials into fertilizer use recommendations and new fertilizer developments. We strive to continuously improve our production processes through incremental and more disruptive process innovations, with the ambition of ensuring the economic and environmental sustainability of our operations.

Our Bio-valorization segment

We are passionate about improving the lives and well-being of humans and animals and - in that context - our product innovations focus on the valorizing and upcycling of by-products from other industries or making the most out of our precious natural resources.

In this regard, we continued to improve our portfolio of healthy collagen ingredients for humans, including making an investment in a research program to partner with internationally recognized experts in the field from the University of Maastricht. Furthermore, we are continuing to explore the effects of our collagen peptides in the area of sports nutrition via our scientific collaboration with Florida State University. We made good progress with our research program into collagen peptides with the aim of enabling us to expand our market for collagen and gelatin. PB Leiner’s gelwoRx™ Dsolve pharmaceutical gelatin portfolio has been extended with three new products: Dsolve B, Dsolve P, and Dsolve xTRA. The new variants have been specially designed to provide advanced solutions for reduced crosslinking and fast dissolution of soft capsules. In addition, PB Leiner has entered into a joint venture with Hainan Xiangtai Group in China to produce and commercialize premium fish collagen peptides.

In a collaboration with Utrecht University, focusing on biofabrication in regenerative medicine, different promising cell viability results with our Claro™ bioinks have been obtained. We continue to market our IP-protected IDX and VDX technologies, yielding highly digestible blood meals and feather meals, and are starting to license the technologies to those customers that want to significantly upgrade their feather or blood meals, making sure that “Every Molecule Counts.”

Our Industrial Solutions segment

Together with various academic partners, we continued our research to develop sustainable solutions for the recovery of critical minerals, such as copper, which is essential for electromobility, as well as gold for electronics. At Kuhlmann Europe, several research initiatives are ongoing to optimize the production process of FeCl_3 in different plants. Meanwhile, DYKA Group continues to develop innovative solutions in response to megatrends such as urbanization, climate change, water scarcity, and the energy transition. Improving in the area of sustainability is an integral element of the DYKA Group innovation strategy, which is realized by, among other things, increasing the recycled content in products and improving the energy efficiency of the processes used.

For product and technology platforms that are applied across several business units, we rely on our Innovation & Learning Center in Dinuba (California, USA), the Phoenix Innovation Center (USA), and the Tessenderlo Innovation Center (Belgium). We also rely on our R&D expertise across a broad area of organic and inorganic chemistries at lab and pilot scale, which support several innovation projects in Agro, Bio-valorization, and Industrial Solutions. Furthermore, our R&D teams partner with our operations groups to constantly improve and optimize our products and processes with the aim of ensuring operational excellence.

We continue to invest in innovation at our R&D sites, including commissioning state-of-the-art pilot equipment, which facilitates the development of new sustainability concepts for next-generation products, and improves the “from concept to commercialization” timeframe. Innovation teams at Tessenderlo Group collaborate directly with our customers to support the adoption and use of our products at their sites and in their processes.

Crop Vitality and Tessengerlo Kerley International

Precision agriculture

In agriculture, our crop nutrition and crop protection companies support growers in meeting the global demand for food production.

Producing sufficient food for a growing population is the driving force behind the progress of agricultural production and sustainability initiatives. A potential global population of nearly 10 billion by 2050 means advances in food production technologies will be needed.

Our agricultural activities support our vision of building a safe, smart, and sustainable world. By upcycling by-products from refineries into safe, non-hazardous fertilizers that become a valuable resource for growers, we contribute to creating sustainable agriculture. We help growers around the world meet the challenges of global food production. This is achieved with our high-efficiency fertilizers that are used in conjunction with precision agricultural practices, which reduce the amount of nutrients lost to air or runoff to waterways. Precision agricultural practices can lower water use with drip irrigation and placing fertilizer in the exact location where the plant requires it as opposed to simple broadcast methods. By providing growers with training based on our research, we give them the tools and resources to improve their soil and crop health.

For developing economies, population growth and land availability are some of the main problems agriculture is facing today. Proper use of crop nutrition and crop protection products make the available farmland more effective and limits the need to clear more land for additional crop production.

Every time a crop is grown and harvested, nutrients are taken from the soil and these nutrients must be replaced in order to continue producing food, feed, fuel, and fiber crops. Sulfur, nitrogen, potassium, calcium, and magnesium fertilizers make a vital contribution to healthy, productive soils by providing the nutrients that plants need for their growth.

NovaSource

Crop protection

As long as agriculture has existed, pests, weeds, and diseases have diminished the yield of crops. The responsible use of our NovaSource crop protection products, which include insecticides, herbicides, and fungicides, enables growers to overcome these challenges and continue to provide the world with nutritious, abundant, and affordable food. Our crop protection line includes organic and naturally sourced products that combat fungus and mildews, and provide protection from sun damage.

Violleau

We offer organic fertilization and biocontrol solutions to our customers, as well as personalized advice according to the soil, climate, and crop situation.

Taking the environment into account is a big part of everything we do. Our activity is part of the circular economy logic as we valorize animal and plant by-products from agricultural and agri-food activities into organic fertilizers. We believe in valorizing every stream and offering local solutions to the organic agriculture market.

From an upstream perspective, we offer recovery solutions to our farming partners for some of their effluents, to local food industries for their co-products, or to surrounding towns for the green waste they collect.

We also provide biocontrol solutions to give farmers the necessary tools to control pests in a sustainable and reasonable manner.

PB Leiner

We valorize animal by-products better, creating mutual value, close to our stakeholders.

We produce gelatin and collagen peptides that are used for valuable applications in the food, pharmaceutical, and health & nutrition sectors. The raw material we use, which are the remains of animals slaughtered for the meat and fish industry, might otherwise simply have been discarded: pig skins, beef hide and bones, and fish skin are products that, in most countries, are only used for human consumption in limited quantities, or even not at all. By upcycling these materials, we make the most of our planet's resources.

As part of Tessengerlo Group, we adhere to the group's motto: "Every Molecule Counts." This motto represents the unique attitude we have towards sustainability and innovation. In everything we do, we seek to further valorize the resources at our disposal. This counts just as much for the end products we make, which we constantly optimize, as it does for the by-products from our processes, which we consistently seek to repurpose as best we can.

The application potential of gelatin and collagen is astonishingly broad. In food, for example, gelatin can make your croissants fluffier, your mousses airier, and it gives gummies that nice chewy bite. Moreover, gelatin can extend the shelf life of certain foods, hence limiting food waste. Gelatin is also the most widely used ingredient to make medical capsules, on account of its almost universal body tolerance, combined with the fact that it melts at body temperature and displays useful elasticity and clarity features. Collagen peptides in turn can enhance bone and joint health and are used as part of patients' recovery nutrition.

And that is not all. We also produce dicalcium phosphate (DCP) from animal origin, which is suitable for animal feed. This phosphorus source replaces phosphorus from mining in the feed sector, thus counteracting the depletion of our natural resources. Furthermore, DCP from animal origin is better absorbed by chickens, which leads to less phosphorus pollution of open waters. And the sludge sediment that remains after the treatment of our wastewater contains nutrients like phosphorus and nitrogen that help plants grow. Those nutrients actually come from the plant feed given to the cows and pigs that are our source of raw material. And so today we are working on closing the loop: at several locations across the globe, we are working on ways to transform our sludge into a soil enhancer.

Whilst meat consumption in the Western world is slightly declining, the worldwide consumption of meat is still increasing due to the growth of global GDP. By continuously looking at how we can optimize our processes, we not only increase the yield but are also able to upgrade the characteristics of our finished products. This results in higher value creation of the consumed raw materials.

When it comes to our processes, we also actively apply our "Every Molecule Counts" philosophy. We are continuously working to improve every segment of our organization. For example, while our production process uses large quantities of water, we take great care to minimize our water consumption and to make sure it is properly treated before discharge so it has no negative impact on the receiving water body. When it comes to energy, we continuously strive to optimize and reduce our consumption of electricity and heat.

This being said, continuous improvement will only get us so far. A dedicated workgroup is setting out the beacons and how we will get there, and we are committed to making the necessary investments.

Akiolis

At Akiolis, we help to create a more sustainable world through our operations. This means adding value to animal materials generated in the production of, but not included in, food for human consumption. In doing so, we are a link in an intelligent chain based on the recovery of co-products and by-products. Processed animal protein (PAP) and animal fats generated from these materials allow us to conserve fossil fuels and food sources. As a core element of the circular economy, the recovery of animal materials enables us to directly address the question of sustainable development.

Our business model is naturally aligned with the circular economy. As part of our service, we collect animal co-products and by-products in the meat industry (e.g. slaughterhouses, butchers, and cutting plants) and in distribution (e.g. large retailers). Through appropriate treatment, we are able to harness the nutritional or technological potential of these animal proteins and fats, which we then provide to manufacturers in various sectors that require renewable materials for their own processes.

Some examples:

- Our PAP and animal fats are a substitute for fossil fuels in generating green electricity or steam used in industrial furnaces, or indeed as a building heating source.
- Our proteins can be used to feed farmed fish. They are also a substitute for fishmeal, which helps to protect and conserve maritime wildlife.
- Our animal proteins can also be used to fertilize soil or be applied as a fertilizer to vines, fruit trees, vegetable crops, and green spaces, and they conform to organic agricultural standards.
- Our animal fats are an ingredient in soaps and detergents, as a substitute for palm oil.
- Our fats and proteins are also an ingredient in food for dogs and cats.
- By collecting bones from slaughterhouses, we are also able to extract bone minerals, resulting in ossein, used in gelatin production.
- Sanitary safety.

DYKA Group

Sustainable water & air management, energy transport and building systems

DYKA Group's long-life plastic pipe systems reduce water leakages in drinking water supply and wastewater discharge networks. The electrical cable ducting systems and gas piping systems support the energy transition towards renewable energy sources. Incorporating recycled materials into our piping systems reduces the need for finite resources and landfill.

Catastrophes relating to climate change have increased significantly in recent years and will continue to occur more frequently. Unpredictable levels of rainfall often exceed retention capacities, create flood damage and overrun water treatment facilities. Although we realize that no system is equipped to completely manage all flooding, our solutions for drainage, attenuation, and infiltration, as well as our stormwater management systems, work effectively against the negative impacts of increasingly frequent rainstorms. These solutions reduce flooding and collect, store, and manage sudden rainfall, which prevents it from immediately spilling into rivers and retaining its capacity for reuse.

Throughout the world, too much clean drinking water goes to waste. This is not only the case in the developing world. Poor quality pipework and leakages in distribution infrastructure result in the loss of one-third of all drinking water. Our solution to this major problem is to supply high-performance, long-life plastic pipe systems that will reduce water loss in the pressure supply network. Our objective is to significantly reduce this staggering level of waste.

The trend of urbanization represents a massive challenge regarding water supply and treatment. Key environmental issues, such as sustainable urban drainage, green infrastructure, and the increasing use of brownfield sites are causing the house building market to change. The growing population also means the market for construction materials is experiencing high levels of demand.

The increasing demographic movement of people to cities has led to the increase in wastewater drainage requirements with a wide network of connections. Pipes and fittings are the prerequisites for housing.

We are constantly diversifying our product range to ensure that we can respond to these changes.

Drinking water will become the world's most valuable product over time. We currently face a mega-challenge in providing drinking water to everyone. In the future, we need to become smarter in terms of managing our water supplies. Our plastic pipes will ensure the safe transportation of all different kinds of water; not only drinking water but also rain and wastewater.

Practical innovation also means the creative use of our systems to support other challenges. Just as water pipe systems have clearly contributed to the health and well-being of people for decades, legislation is now focusing on additional building standards with respect to air treatment. Fortunately for the environment and energy consumption, the insulation of our houses has improved dramatically in recent times. However, this brings with it the risk of a decrease in the inflow of oxygen in houses that can, in turn, result in the retention of humidity and poor air quality that endangers the health of the nearby residents. Based on our considerable expertise in water treatment systems we are now converting this knowledge into air ventilation and treatment solutions that will contribute to a healthy climate inside houses.

In the production of the intermediate layer of our PVC pipes, we increasingly incorporate recycled PVC material, giving new value to post-consumer PVC material and reducing demands on finite resources whilst maintaining high-quality levels. Also, the use of recycled PP materials in injection molded products has increased in recent years (e.g. Rainbox infiltration boxes and inspection chamber bases).

Kuhlmann Europe

Water treatment, cleaner water, and much more

We bring solutions to treat and recycle dirty water and to produce drinking water with quick, cost-effective concepts and we develop sustainable processes for resource conservation.

In the water treatment market, we are the number three supplier in Europe of inorganic chemicals that act as coagulants for customers in municipal or industrial waste and drinking water plants. We serve some of the major cities in Europe, including Paris and Brussels. Too frequently, contaminated wastewater from industrial processes is simply thrown away and many decontamination methods employ finite raw materials, which create additional waste and environmental problems. We help our customers take dirty water and deliver clean water through the use of recycled chemicals that coagulate phosphates and other contaminants both quickly and in a cost-effective way.

The Kuhlmann Europe business unit offers alternative reuse opportunities for the by-product HCl from SOP (sulfate of potash) and waste pickle liquor from the steel industry by converting them into coagulants used for the treatment of municipal and industrial wastewater, as well as for the production of drinking water.

The circular business model for water treatment products allows for the use of a by-product from the sulfate of potash fertilizer production present in our group as a raw material for the steel industry. Once used by the latter in their pickling operations, Kuhlmann Europe recuperates the pickling liquor from our customers, which is in turn used to produce coagulants for water treatment. These coagulants then enable phosphorus to be extracted from wastewater and in doing so prevent the eutrophication of surface waters.

moleko

Sustainability in industrial businesses

Through the creation of environmentally aware chemistries for mining and industrial applications, the moleko business unit is creating a safer work environment for customers and plant production processes.

Circularity in the chemical industry demands differentiation, sustainable practices, and the reduction of waste. Moleko plays an essential role in assisting and enhancing the businesses of its customers through its chemistries. This includes the areas of copper production, water purification, remediation of contaminated soils/water, food processing, and energy production. Moleko is committed to finding innovative ways to reduce waste.

Our alternative chemistries such as Thio-Gold[®], which can replace cyanide (CN) lixivants, allow for extended mine life and gold recovery with less environmental impact and a safer working environment.

Our cyanide detoxification chemistry and applications help to eliminate the discharge of noxious chemicals to mine tailings, which protects local communities and wildlife from exposure to this hazard.

Our polysulfide line of products, including Calmet[®] and Cyntral[®], provide a safe and effective method of remediating heavy metals in contaminated soil and groundwater applications, converting corrosive cyanides in refining applications into nonhazardous chemistry, protecting equipment, and reducing potential environmental emissions.

Our Captor[®] product provides safe, nonhazardous dechlorination and deozonation chemistry in municipal water treatment facilities, which replaces the use of more hazardous chemicals.

Moleko can upcycle by-product gases from refineries and convert them into value-added chemistry while ensuring world-class environmental performance. Furthermore, this can be done at the customer's site to optimize logistics and reduce our carbon footprint.

As part of our product stewardship endeavors, we strive to make every molecule count and focus on the safe and effective use of our products while innovating essential chemistries for a sustainable future.

T-Power

Gas power plants in the energy mix of the future

Since June 2011, T-Power has been operating a CCGT plant (Combined Cycle Gas Turbine, steam, and gas power plant) on the Tessenderlo Group sites in the Belgian municipality of Tessenderlo. This gas plant combines a gas turbine with a steam turbine to produce electricity. The natural gas is first burned in the gas turbine, thus driving it, and the combustion gases then enter the recovery boiler, which produces steam. The steam is then fed into the steam turbine. As a result, approximately two-thirds of the combustion heat is recovered. The plant provides 425 megawatts of electricity and it meets the latest environmental standards. T-Power is continuing to investigate the upgrade of the gas turbine that will result in higher efficiency and electrical output.

The gas-fired power plant is very flexible, and this flexibility is becoming increasingly important due to the rising share of fluctuating energy sources in the power grid, such as wind power and solar energy. A gas power plant has lower emissions than lignite and coal-fired power plants and it also has a different risk profile to that of nuclear power stations. This modern power plant enables Tessenderlo Group to respond to developments in the Belgian energy market.

The CSR infographics for each business unit are available on the Tessenderlo Group website (www.tessenderlo.com/en/csr-infographics).

Some initiatives within the group

Tessenderlo Group continually strives to find more sustainable solutions. We aim to minimize our ecological footprint and to maximize the contribution of our products in the transition to a green economy. We offer various products and environmentally friendly solutions, in which we typically reclaim and transform by-products from our own or other industries.

In 2022, we took many initiatives with regard to sustainability on a group and BU level to help to create a world that makes the most of its resources. We aim to fully understand what is happening in the world to determine how we can build the business of tomorrow by successfully addressing those issues.

Tessenderlo Kerley International

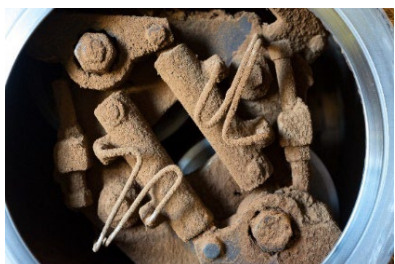


Tessenderlo Kerley International has been working on reducing waste, including the use of virgin plastic. With effect from 2023, we will start using recycled intermediate bulk containers (IBCs) for Thio-Sul[®]. Both the metal frame and the plastic container of the IBC will be recycled. Furthermore, all packaging will be subject to a strict cleaning and quality control process to ensure a products of the highest quality. In 2023, we will investigate using the same approach for other products, and we will also investigate the use of recycled plastic for our SOP bags.

Tessenderlo Kerley International has started the construction of a new Thio-Sul[®] plant in Geleen (the Netherlands). In this context, significant efforts are being put into the sustainable operation of the facility: additional investments have been made to integrate its carbon-free steam production into the Chemelot heat network. Furthermore, improved scrubbing systems will be installed in order to minimize air emissions. Finally, research is ongoing with the aim of eliminating the discharge of water treatment chemicals. All of this makes for a facility with a very low environmental footprint!



Violleau



First of all, we adjusted our production process for organic fertilizer pellets by implementing a bypass in our flow. This allows certain formulations to skip a part of the production process. Creating a more tailor-made and flexible production process has enabled us to further reduce our energy consumption.

Secondly, we worked with some of our raw material suppliers to switch from packaged deliveries to bulk deliveries, which further reduced the waste generated in our plant. This has allowed us to establish a more environmentally friendly, safer, and ultimately more economical setup.



[Tessenderlo Kerley, Inc.](#)

Tessenderlo Kerley, Inc., which operates the Crop Vitality, NovaSource, and moleko business units, focused on water, energy, and upcycling. Here are a few examples of the 2022 initiatives:

Solar farm in Hanford, California

Tessenderlo Kerley’s Hanford facility completed phase 1 of the installation of the 2 MWH solar facility at the end of 2022, with commissioning due in the first quarter of 2023. The solar farm will allow Tessenderlo Kerley to sell excess power to the grid during daylight hours. The project was designed with the future in mind: the possibility of expansion as the facility grows and having battery installations to power the plant at night.



Water management in Dinuba, California

Crop Vitality’s Innovation & Learning Center installed an array of moisture meters to lower our water use at the research farm and demonstrate the viability of low-water intensity agriculture for local growers in the state of California where water management is increasingly becoming a major area of focus for the government and an increasingly costly input for growers.

Upcycling in Billings, Montana

Through our joint venture with Jupiter Sulphur LLC, Tessenderlo Kerley installed a unique system to capture and upcycle byproduct ammonia from the adjacent refinery that would otherwise be incinerated. Over 3,000 tons of ammonia can now be captured and utilized in the production of our Thio-Sul® (ammonium thiosulfate) fertilizer.



Water management in East Dubuque, Iowa



Tessenderlo Kerley’s engineering team devised a new closed-loop cooling system for the ammonium bisulfite unit that reduces the need for cooling water, potentially saving millions of gallons of water that are lost to evaporation every year.

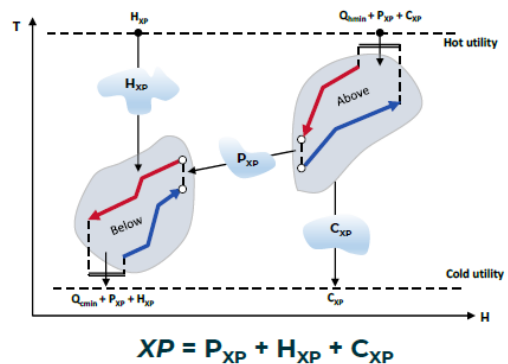
Supporting the municipal water treatment station in Acorizal, Brazil



Our Acorizal team is putting our water treatment expertise to good use for its local community: in 2022, the team assisted with the refurbishment of the municipal water station by sharing process expertise, providing purification ingredients, and training the municipal workers. Continued training and support are on the agenda for 2023 with the objective of maintaining a reliable supply of better-quality water for the residents of Acorizal.

Pinch studies to cleverly prioritize energy efficiency projects

Pinch analysis is a systematic methodology to prioritize energy-saving actions and provide a comprehensive understanding of energy usage across an entire plant. This integrated approach enables us to reduce energy consumption as efficiently as possible at plant level, rather than merely working on stand-alone sub processes and installations. Furthermore, it is a dynamic approach that can be applied to different processes, which means that we can continuously improve our sustainability performance over time.



Most of our plants did a pinch analysis in 2022 or will start one in Q1 2023. We are currently prioritizing heat consumption reduction as this makes up over 80% of our energy consumption, and it is the most complex aspect of our efforts to increase sustainability.

> 10% net heat energy reduction in Nehe (People's Republic of China)

A great telling example of how this integrated pinch approach can yield better net sustainability results can be found in Nehe:



In order to deliver gelatin of the best quality, our processes require a cooling step towards the end of the line. The pinch analysis revealed that, in another part of the plant, the use of cold groundwater reduced the efficiency of an installation that produces the drinking water needed for the Nehe production site. As a result of bypassing that cold groundwater to first act as a coolant in the cooling step, and pass it through the drinking water installation only afterwards when the water has absorbed the heat from the cooling step, the team achieved energy gains on multiple levels, getting one step closer to closing the loop.

Akiolis

Gasification of meat and bone meal



In 2022, we validated a large-scale industrial investment for our Saint-Langis-lès-Mortagne plant in order to limit our carbon footprint by using biomass C1 meat and bone meal. This consists of gasifying the animal meal produced on-site to transform it into synthesis gas and produce energy used to operate the site and, at the same time, produce electricity that is sold back to the grid.

This project is unique in France and it responds to a circular logic of resource-saving in line with France's energy transition program.

Signing of new agreements on quality of life at work and professional equality between men and women

These agreements are important in terms of taking into account the new expectations of our current and future employees. We worked on five themes: attracting a wide range of profiles, developing the professional skills of our employees, reconciling better working conditions with the company's performance, promoting work-life balance, and structuring career development.



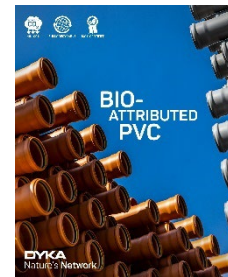
Organization of social events on-site and off-site

In 2022, at each of our sites, we invited our employees to participate in picnics, barbecues, lunches in the countryside, or go-karting. These team get-togethers represented an opportunity to celebrate our successes in a convivial way and strengthen the sense of belonging and pride of our employees.

DYKA Group

Bio-attributed PVC at DYKA Netherlands

In 2022, DYKA Netherlands took a further step in improving the sustainability of its plastic pipe systems. The innovation is focused on one of the most important raw materials in the production of PVC pipe systems - ethylene. Ethylene can now be produced from material of bio-attributed origin, providing a CO₂ reduction of at least 90% compared to current plastic pipe systems. This is a smart innovation, to which our Dutch colleagues are fully committed.



Launch of DYKA Group Sustainability Program

In 2022, DYKA Group launched its Sustainability Program across all its entities. The program consists of three pillars, covering several UN SDGs:



1. **Circularity:** we want to prevent raw materials from becoming waste and we want to minimize our emissions.
2. **People:** focus on people-related subjects, such as safety and diversity.
3. **Continuous Improvement:** focus on innovation and strengthening our sustainability performance.

Several specific and timebound targets were set. We have already taken some great steps in regard to this program by, for instance, creating life cycle assessments (LCAs) for our products and by creating a sustainability checklist for both suppliers and our product development team. We are continuing with our efforts in terms of making our Sustainability Program effective.

Improving awareness and actions on Operation Clean Sweep

With 7 of our 9 plants already taking part in Operation Clean Sweep (OCS) - with the aim of having all plants take part before the end of 2023, several initiatives were launched in 2022. We started communicating with all internal stakeholders via team presentations and by signing our “Employee Pledge to Prevent Resin Pellet, Flake, and Powder Loss.” In addition to that, several warning panels regarding possible losses were placed in relevant locations in the plants. Meanwhile, an inventory of possible technical solutions to prevent any losses has been created and several positive actions were taken. We will continue our OCS efforts in 2023.



Mill Scales



The Mill Scales project consists of restarting a reactor using a raw material that has the same name (this is a co-product from the metallurgical industry) with the objective of producing ferric chloride at a lower cost while diversifying the raw materials.

This reactor was started in 2013 and stopped in 2017. The restart was implemented in several stages in 2022, during which we continued our project to use mill scales as an alternative to oxides. Our goal is to produce ferric chloride with this reactor on a sustainable basis without any shutdowns. In 2023, we will also continue to investigate other sources of iron.

Hydrogen use and energy efficiency

Thanks to our investment in the heat recovery loop that was made in 2021 and the optimization of the use of hydrogen in our steam boiler, we were able to reduce our natural gas consumption by 20% compared to 2020. Indeed, in 2022, we continued to consume more hydrogen in the boiler to reach a record level of 54% in the gas/hydrogen mix.

We are pleased to report that our energy consumption has remained stable compared to 2020 while our total production has increased by 22%! To further improve our energy consumption, we also installed new plant compressors in 2022 that allowed us to reduce it by another 33%.



In 2023, we have plans to replace the KOH flake boiler, which will allow us to use 100% of our co-produced hydrogen and will further improve our energy efficiency.

Chemical Industry Trophy 2022



In November 2022, France Chimie (the professional organization that represents the chemical industry in France) awarded Kuhlmann France the Chemical Industry Trophy 2022, in the CSR category, at the ceremony of Les Trophées de l'Industrie.

Our ability to reinvigorate our company over the years to ensure a positive future and perpetuate our industrial activity throughout the French territory and in Europe, our integration of the circular economy and recycling in our business model, and the flexibility of our processes in terms of electric energy consumption were the three essential reasons for France Chimie awarding this trophy to Kuhlmann France.

Our community

Sustainability and corporate social responsibility also mean that we as a group must be aware of what is going on outside of our company walls. Tessengerlo Group plays an important role in society. We want to make a positive contribution to society and help to create a society that is characterized by more prosperity and a higher level of well-being for all of our stakeholders. In our daily activities and objectives, we continuously consider our stakeholders, who include our employees, customers, suppliers, partners, shareholders, media, and local residents in the areas in which we operate.

We also care about the community around us and we therefore participate and actively promote the participation of our teams in social and charity events. Some of our companies also have active partnerships with learning institutions and are a recognized partner for development purposes. This is an investment in the future of education, as well as in future generations.

We organize and participate in various initiatives. For instance, we organize on-site plant tours, invite guest speakers at courses, and participate in job fairs; this often results in internships, which in turn can lead to fixed employment over time. Failure to successfully manage relationships with local communities could adversely affect the group's reputation. Tessengerlo Group will continue its efforts to make a positive contribution to the local communities it is part of.

Business ethics

All employees and subsidiaries of Tessengerlo Group worldwide aim to comply with the applicable laws and regulations of the countries in which they operate, with the Tessengerlo Group Code of Conduct, and are expected and required to comply with the contents of the Code of Conduct.

Tessengerlo Group requires honesty and integrity from all employees in the application of the Code of Conduct and in all aspects of its business and expects the same of all its partners. Tessengerlo Group complies with generally accepted international standards for business practices, which form the basis for its activities and relations worldwide. For those also in a position of leadership and management at Tessengerlo Group, this means, among other things, that they show "zero tolerance" towards violations of local/international laws and all infringements of The Code of Conduct, other company rules, and regulations. The protection and care of people and the environment represents a significant part of Tessengerlo Group company policy.

Code of Conduct

In 2017, a Code of Conduct was drafted and incorporated into our organizational DNA. Our Code of Conduct builds upon the Guiding Principles of Tessengerlo Group, together with our 6 Attitudes. Fundamentally, the Code of Conduct sets out how we intend to continue to fully comply with the laws and regulations in all regions where our organization is operating.

Due diligence procedures have been built into various business processes to ensure compliance with Tessengerlo Group's Code of Conduct across all of our segments. Verification of the operation of these procedures is included in the audit program of the company's Internal Audit Department. The Code of Conduct describes the procedure to be followed for reporting and investigating violations of the Code.

Procurement & Supplier Code of Conduct

Looking from a social, ethical, or environmental perspective, the area of Procurement is a very important area in terms of sustainability. We look to our own impact for the material topics in Scope 1 and Scope 2, but the impact from the supply chain is as important, or sometimes even more important in terms of emissions or impact on the environment. At Tessengerlo Group, we have had a Group Procurement Sustainability Policy since 2021 that was updated and published on our website in 2022. The purpose of this policy is to solidify sustainability and CSR within Procurement and our suppliers' communities.

In addition to our Group Procurement Sustainability Policy, we also have our Tessengerlo Group Supplier Code of Conduct. This lists for our suppliers our requirements with respect to business ethics, social, safety, health, and environmental performance, which are in line with Tessengerlo Group's guiding principles. We expect all our suppliers, subcontractors, joint venture partners, and agents to comply with these requirements. The Supplier Code of Conduct is part of the business contracting process and it is a prerequisite for business partners to be selected to do business with our group. We are in contact with our supply base to have this document signed. The Code of Conduct, the Supplier Code of Conduct, and the Group Procurement Sustainability Policy are available on the Tessengerlo Group website (www.tessengerlo.com/en/sustainability-development).

On a regular basis, training sessions on sustainability topics are provided to the Procurement Community of the group. Every training session is registered on our LMS and is available for new employees, in the onboarding program. KPIs and targets for Procurement that we monitor are shown in the table below.

Communities			
ASSOCIATED MATERIAL ASPECT (GRI)	Score 2020	Score 2021	Score 2022
Collaborations in which local communities are involved	-	New in 2022	100%
Procurement training in CSR	New in 2021	75%*	100%
% of the spend with Supplier Code of Conduct signature, measured against the spent of the previous year	New in 2021	61.38%**	81%

* Estimation

** Result of calendar year 2021 - as this KPI started in the course of 2021, the score is continuing to increase.

Anti-bribery and anti-corruption

Mitigation of the corruption & bribery risk

1. [Code of Conduct](#)

As stated in our Code of Conduct, Tessengerlo Group complies with the Foreign Corrupt Practices Act, other country-specific and appropriate anti-bribery laws, and with the basic principles of the International Chamber of Commerce (ICC) Rules of Conduct to Combat Extortion and Bribery and the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions of 1997.

All employees of Tessengerlo Group may never offer, provide, or receive any financial or other inducements in order to obtain, retain, or alter business contracts or for the purpose of influencing decisions.

The employee shall not offer, give, solicit, or accept any bribe, whether cash or other inducement, to or from any person or company, wherever they are situated and whether they are a public official or body, supplier, or customer, in order to gain any commercial, contractual, or regulatory advantage for Tessengerlo Group, nor to gain any personal advantage, pecuniary or otherwise, for the employee or anyone connected with themselves.

The prevention, detection, and reporting of bribery is the responsibility of all employees throughout Tessengerlo Group. All employees must report any information that they would have evidence of or suspicion about in this respect.

2. [Mitigation](#)

A learning management system (LMS) is in place and our employees (L levels and people working in Procurement) need to follow the training sessions and to pass a test.

On a yearly basis, we carry out a sales and a spend ledger analysis on a group level per country, using the Corruption Perceptions Index (CPI*) to identify potential risks.

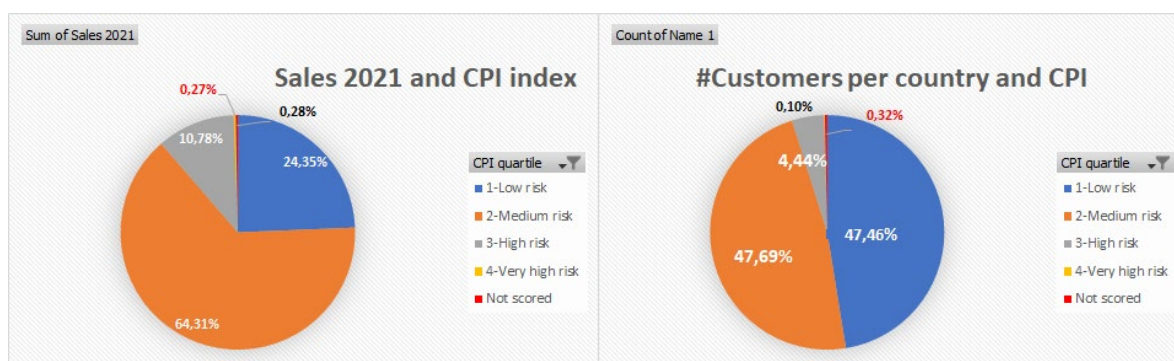
3. [CPI screening](#)

To reinforce the LMS and respect the Code of Conduct, as well as create extra awareness, a CPI screening has been organized. Findings are communicated to the ExCom and possible “matches” can generate further actions via internal audit and control. Our focus here is on countries presenting extreme risks.

(CPI): The Corruption Perceptions Index (CPI) is an index that ranks countries "by their perceived levels of public sector corruption", as determined by expert assessments and opinion surveys. The CPI generally defines corruption as an "abuse of entrusted power for private gain." The index has been published annually by the non-governmental organization Transparency International since 1995.*

4. [Results of the 2022 screening](#)

1. Sales



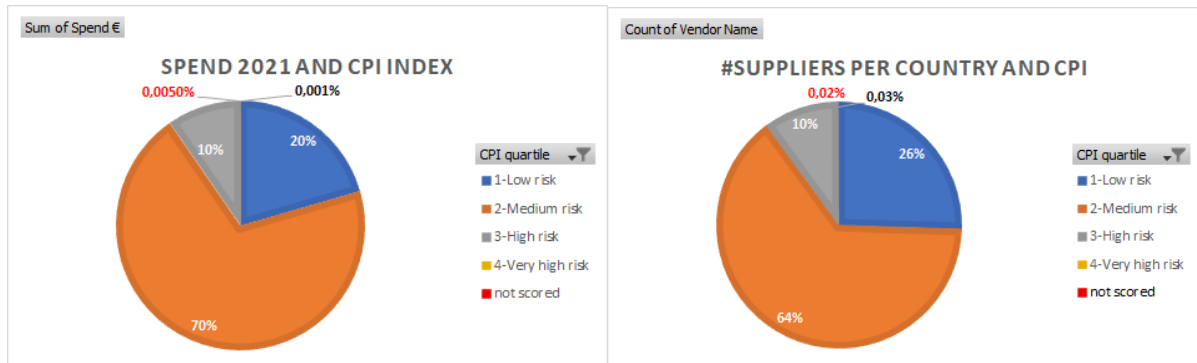
The analysis detected 24 accounts (0.10% of our customers) representing +/- 5 million EUR of sales (0.27% of annual sales) in very high-risk countries.

These 24 accounts have received adverse media screening and we did not find any press releases related to corruption or any kind of risks for any of them.

NB1 The analysis excluded the dispersed suppliers involved in the collection of raw materials in France for the bio-valorization business (thousands of butchers, restaurants, etc.).

NB2 Some countries (21 in total) are not scored by Transparency International because they are autonomous states but still under “protectorate” or similar regimes. If we used the CPI score of the country they are associated with, they would enter into the “Lowest risk” quartile. They also represent +/- 5 million EUR of sales (0.28% of annual sales) and 81 accounts (0.32% of our customers).

2. Spend



The analysis detected 4 accounts (0.03% of our suppliers) representing +/- 17,000 EUR of spend (0.001% of annual spend) in very high-risk countries.

These 4 accounts have received adverse media screening and we did not find any press releases related to corruption or any kind of risks for any of them.

NB2 One country is not scored by Transparency International because it is an autonomous state but remains under “protectorate” or similar regimes. If we used the CPI score of the country it is associated with, it would enter into the “Lowest risk” quartile. This country also only represents +/- 5 million EUR of sales (0.005% of the annual spend) and 3 accounts (0.02% of our suppliers).

Risks could arise from possible non-compliance with Tessengerlo Group’s Code of Conduct and the associated internal procedures, as well as from the amendment or application of laws and regulations in the various jurisdictions in which Tessengerlo Group nv operates. In order to manage the risk, training courses on the application of the Code of Conduct and anti-trust code are organized worldwide, including the possibility of reporting violations of rules to various individuals in the organization, such as the hierarchical superior, the site leader, and HR and, if necessary, the Compliance Officer. There is also a Compliance Committee active within the group that is dedicated to the coordination of the compliance activities within the group, which includes the definition of the various training programs that are organized.

Whistleblowing

There is a Belgian law on whistleblowing that was passed on December 15, 2022. It will be implemented in 2023 in all plants and subsidiaries of Tessengerlo Group in Belgium. There is also a French law on whistleblowing that was published in 2022; it did not have an implementing decree. This decree has recently been published, so it will also be implemented in 2023.

We expect similar laws to be implemented other EU countries in 2023.

In 2020, 2021, and 2022, we had a zero score for the eligible alerts to the Compliance Officer at the whistleblowing level for anti-bribery and anti-corruption.

We also refer you to the financial part of the annual report, pages which elaborates further on CSR risks; ethics and compliance, safety, industrial safety, transport accidents, the usage of Tessengerlo Group products, and market and strategic risks.

Cybersecurity

To protect against potential cyberattacks, Tessengerlo Group has invested heavily in cybersecurity in recent years and will continue to do so in the coming years. Within Tessengerlo Group, a cybersecurity governance team and program has been defined and is executed by a combined team of internal and external cybersecurity experts.

On a weekly basis, a team of cybersecurity experts meets to discuss the status of short-term action items and key cybersecurity incidents. The progress on cybersecurity policies and procedures is also monitored and the long-term strategy is discussed and adjusted if necessary. Tessengerlo Group draws inspiration from best practices of recognized cybersecurity organizations and frameworks such as NIST and ISO.

Every quarter, people from the cybersecurity team, internal audit, and risk management meet to discuss a general status update on cybersecurity projects and any possible major incidents that occurred. During this meeting, changes to cybersecurity policies and procedures are also discussed and approved. At least once a year, the Board of Directors receives an update on the cybersecurity program and any major incidents that occurred.

Through awareness and education, Tessengerlo Group works hard to ensure its employees understand their very important role in the cybersecurity and privacy equation. The employees must attend mandatory cybersecurity awareness training and are subject to a phishing test campaign at least twice a year. Information and updates are regularly shared through the various communication channels within Tessengerlo Group regarding recent cybersecurity topics. Employees are also asked to immediately report all suspicious email messages to the ICT Service Desk via a simple click in their email tool.

Tessengerlo Group also works with external cybersecurity teams to check the public ICT assets for weaknesses as well as to screen potential theft of user credentials.

Data privacy

Privacy and data security are among the primary concerns of Tessengerlo Group. We handle all personal data that customers, suppliers or employees provide with the utmost care. Tessengerlo Group observes a strict duty of confidentiality in the use of personal information and adheres to a set of data privacy principles documented in our Privacy Policy, which is reviewed against changes in our environment and updated when changes occur. We have taken appropriate technical and organizational security measures to ensure the security, integrity and privacy of all personal information collected, and to protect personal data against loss, misuse, and/or destruction. We ensure compliance with the requirements of the General Data Protection Regulation (GDPR).

Tessengerlo Group does not sell personal information to third parties for marketing, advertising, or other commercial purposes.

Ethics and Compliance			
ASSOCIATED MATERIAL ASPECT (GRI)	Score 2020	Score 2021	Score 2022
Anti-trust training – current rate of compliance in line with the defined schedule	86.3%	85.1%	90%
ABC (anti-bribery and anti-corruption) training – current rate of compliance in line with the defined schedule	New in 2021	62.3%	81%
Code of Conduct training – current rate of compliance in line with defined schedule	100%	95.1%	81%
IP and confidential information training – current rate of compliance in line with defined schedule	91%	73.4%	90%
New hires receiving Compliance training in line with the agreed schedule (by job category) within 90 days of being hired	New in 2021	95%	100%
Training on harassment and discrimination in the workplace (TKI)	100%	100%	100%

KPIs

Our CSR strategy is inter-connected at the different levels of our group. The materiality topics (Labor and Human rights, Motivating employees, etc.), with its current metrics (associated material aspect) and KPIs (GRI), are linked to the higher level goals of the United Nations (SDGs) and also to our policies and management approaches at Tessengerlo Group. Below are the CSR metrics, with several new KPIs for 2022, and also the associated targets for social topics.

Social metrics

Labor and Human Rights								
ASSOCIATED MATERIAL ASPECT (GRI)	GRI	SDG	Score 2021	Score 2022	Targets	Group policies		
Diversity of gender in governance bodies (Remco, Board, Audit Committee and ExCom*)	405-1 a	8 10	18% female 82% male	29% female 71% male		Diversity and Inclusion policy		
Diversity of governance bodies (gender % of L level, E level and board)			12% female at L level** 24% at E level** 33% at Board level	15% female at L level** 25% at E level** 33% at Board level				
Diversity of gender (all permanent employees)			16.6% female 83.4% male	17% female 83% male				
Diversity of employees (per region, per gender, and per age category expressed in total numbers)	405-1 b 102-8		See Sustainability report 2021	See page 17				
% of employees compliant in training Labor and Human Rights	412-2 b		New in 2022	81.3%			95%	Labor and Human rights policy
Equal opportunity-ratio of basic salary and remuneration of females to males at L level	405-2		Female 5% higher than male	Male 2.9% higher than female				
Equal opportunity-ratio of basic salary and remuneration of males to females at E level		Male 2% higher than female	Male 4.3% higher than female					
Operations in which the right to freedom of association and collective bargaining may be at risk	407-1	8	0	0	100%			
Total new hires and leavers			673 new hires	641 new hires 384 leavers				
Employee turnover	401-1, b	8 10	12.9%	7.3%				

* Diversity of gender in governance bodies: definition changed from 2021 to 2022 for accounting reasons.

2021: BU Leadership Teams, Group Leadership Team, and the Board of Directors.

2022: Remco, Board, Audit Committee, and ExCom.

** E level = Expert level of Managers at the company; L level = Leadership level of Managers at the company.

Motivating employees						
ASSOCIATED MATERIAL ASPECT (GRI)	GRI	SDG	Score 2021	Score 2022	Targets	Group policies
Average of hours of training per employee per year, excluding training on the job/machine	404-1	8 10	14.8	15.4		Learning & Development policy
Employees receiving regular signed performance and career development reviews expressed in % of E and L grades	404-3		96%	96%	> 90%	Group talent strategy policy
Average years of seniority/company service	(401-1, b)	10	13.2*	13.1		
% of L and E grade employees in performance-related incentive plans			100%	100%	> 75%	
% of all employees in performance-related incentive plans			66%	66%		
% of L and E grade employees with a Personal Development Plan			New in 2022	52%		
E grade employees in formal coaching or mentoring programs	404-2		3.24%	8%	> 5%	
% of employees active in LMS			39%	44%	> 75%	
Hiring by source - internal/external	401-2, v	8 10	12% internal 88% external	11.5% internal 88.5% external	> 20% internal	

* Given that we progressively induce more systemization for data mining, some data from 2020 could be slightly less accurate, and consequently, compared to 2021, might not show the complete accurate evolution.

Health and Safety						
ASSOCIATED MATERIAL ASPECT (GRI)	GRI	SDG	Score 2021	Score 2022	Targets	Group policies
Lost Time Incident (LTI) frequency ratio ¹ (all employees and contractors)	403-2-9-10	3 8	11.12	10.63	By BU and Tessenderlo Group	Health and Safety policy
Near misses frequency ratio ² (all employees and contractors, expressed as number of hours worked)			829.76	893	By BU	
Workers representation in formal joint management/employee H&S committee	403-1 102-41		96%	96%	By BU	
Accident severity rate ³ (all employees)			0.56	0.63	By BU	
Total safety performance ⁴ (all employees and contractors)			10.84	10.63	By BU and Tessenderlo Group	
Group insurance percentage coverage/Life Assurance coverage	401-2, i, iii	3	98%	98%	95%	

1. LTI (Lost Time Incident) frequency rate is a rolling annual calculation based on the formula "LTIs x 1 million/total hours worked"
2. Near misses frequency ratio (all near miss reports x 1 million/ total hours worked)
3. Accident severity rate (severity of lost time injuries to employees defined as total days absent/1,000 hours worked)
4. Total safety performance (all LTIs + medical treatments x severity rate/total hours worked)

Ethics and Compliance						
ASSOCIATED MATERIAL ASPECT (GRI)	GRI	SDG	Score 2021	Score 2022	Targets	Group policies
Anti-trust training – current rate of compliance in line with defined schedule	205-2	4	85.1%	90%	95%	Anti Bribery and - corruption policy & Anti-trust Competition policy
ABC (anti-bribery and anti-corruption) training – current rate of compliance in line with defined schedule			62.3%	81%		
Code of Conduct training – current rate of compliance in line with defined schedule	205-2, 102-16-17, (410-1)		95.1%	81%		Code of Conduct policy
IP and confidential information training – current rate of compliance in line with defined schedule	(418-1)		73.4%	90%		Group IP policy
New hires receiving Compliance training in line with the agreed schedule (by job category) within 90 days of being hired	404-2	95%	100%	Code of Conduct policy		
Harassment and discrimination in the workplace (TKI)	(410-1)	4	100%	100%		Diversity and Inclusion policy

Communities						
ASSOCIATED MATERIAL ASPECT (GRI)	GRI	SDG	Score 2021	Score 2022	Targets	Group policies
Collaborations in which local communities are involved			New in 2022	75%*		
Procurement training in CSR	404-2	4 8 11	75%*	100%	95%	Procurement Sustainability policy
% of the spent with Supplier Code of Conduct signature, measured against the spent of the year before	414-2 a	11	61.38%**	81%	77% ***	

* Estimation

** Result of calendar year 2021 as this KPI started in the course of 2021, the result is further increasing.

*** Moving target: the target is increasing over time

Environmental metrics

Renewable energy

	Renewable energy (MWh)
GRI	302-1 b
SDG	9, 11, 12, 13
Group policies	Corporate Social Responsibility policy
	2022
Agro	0
Bio-valorization	2,836.0
Industrial Solutions	49,883.0
T-Power	0

Waste

	Waste (ton/year)	
	Hazardous waste	Non-hazardous waste
GRI	306-3 a, 306-3 b, 306-5 a, 306 - 5 d, 306-5 e	
SDG	3, 9, 11, 12, 13	
Group policies	Corporate Social Responsibility policy	
	2022	
Agro	362.6	5,966.2
Bio-valorization	249.7	194,727.8
Industrial Solutions	2,603.8	2,560.9
T-Power	2.3	30.0

The non-hazardous waste of the Bio-valorization segment is mainly sludge, which is, according to local legislation, considered as "waste."

Water and air emissions

	Water emissions			Air emissions					
	Nitrate (kg NO ₃ - N/y)	Phosphate (kg PO ₄ - P/y)	Pesticides (kg/y)	Sulfur dioxide (kg SO ₂ /y)	Nitrogen oxides (kg NO _x /y)	Non- methane volatile organic compounds (NMVOC) (kg/y)	Fine particulate matter (PM 2.5) (kg/y)	Ammonia (kg NH ₃ /y)	Heavy metals (kg/y)
GRI				307-7 a ii	307-7 a i	307-7 a iv	307-7 a vi	307-7 a vii	
SDG	3, 6, 9, 11, 13			3, 9, 11, 13					
Group policies	Corporate Social Responsibility policy								
	2022								
Agro	2,908.0	N/A	N/A	551,690.0	180,487.0	N/A	32,696.0	83,000.0	181.0
Bio-valorization	20,603.0	14,300.0	N/A	78,270.0	215,005.0	2,203.0	2,287.0	677.0	0.11
Industrial Solutions	95,309.0	2,252.0	N/A	67.0	3,683.0	N/A	1,843.0	N/A	39.0
T-Power	97.0	N/A	N/A	N/A	238,600.0	N/A	N/A	N/A	N/A

Energy

	Energy					
	Energy (MWh/y)*			Energy intensity (MWh/y)**		
GRI	302-1e			302-3 a		
SDG	12, 13, 15					
Group policies	Corporate Social Responsibility policy					
	2020	2021	2022	2020	2021	2022
Group (minus T-Power)	2,062,867	2,122,737	2,029,000	0.78	0.78	0.81
Agro	366,740	348,942	287,657	0.22	0.20	0.19
Bio-valorization	1,480,030	1,534,323	1,514,872	3.05	3.30	3.31
Industrial Solutions	216,098	239,472	226,472	0.43	0.46	0.42
T-Power	2,350,652	1,531,225	1,729,863	N/A	N/A	N/A
	Energy (without vehicles)					
	Energy (MWh/y)			Energy intensity (MWh/y)		
	2020	2021	2022	2020	2021	2022
Group (minus T-Power)	2,062,431	2,027,035	1,938,760	0.78	0.75	0.77
Agro	366,304	339,242	277,876	0.22	0.20	0.18
Bio-valorization	1,480,030	1,457,025	1,443,723	3.05	3.13	3.16
Industrial Solutions	216,098	230,767	217,161	0.43	0.44	0.40
T-Power	2,350,652	1,531,225	1,729,863	N/A	N/A	N/A

* Total energy consumption within the organization, in MWh, and per operating segment

**Total energy intensity ratio for the organization, and per operating segment

1. Organization specific metric (the denominator) to calculate the intensity ratio: The denominator is in metric tons of year product produced to be sold; by-products included – GRI 302-3 b
2. Types of energy included in the intensity ratio: Hydrogen, electricity, liquid light fuel, liquid heavy fuel, natural gas, coal, wood, steam – GRI 302-3 c
3. The intensity ratio is based on energy consumed within the organization – GRI 302-3 d

Water

		Water					
		Water withdrawal (m ³ /y)			Water intensity (m ³ /t)		
GRI		303-3 a			N/A		
SDG		6, 9, 11, 12, 13, 15					
Group policies		Corporate Social Responsibility policy					
		2020	2021	2022	2020	2021	2022
Group (minus T-Power)		17,369,996	17,255,481	17,298,000	6.60	6.35	6.87
Agro		3,532,440	3,441,548	3,373,750	2.14	1.99	2.22
Bio-valorization		10,747,657	10,583,725	10,831,327	22.18	22.76	23.69
Industrial Solutions		3,089,898	3,230,207	3,092,924	6.21	6.22	5.70
T-Power		2,224,721	1,362,781	1,703,973	N/A	N/A	N/A

		Water								
		Water withdrawal by source (m ³ /y)								
		Surface water			Ground water			Third-party water including city water		
GRI		303-3 a i			303-3 a ii			303-3 a v		
		2020	2021	2022	2020	2021	2022	2020	2021	2022
Group (minus T-Power)		10,404,045	10,304,877	10,030,286	4,518,921	4,059,382	4,274,279	2,447,031	2,891,221	2,993,436
Agro		2,204,027	2,162,367	2,028,718	671,357	523,821	571,348	657,056	755,360	773,684
Bio-valorization		6,445,389	6,227,104	6,181,422	2,555,499	2,311,726	2,486,722	1,746,770	2,044,895	2,163,183
Industrial Solutions		1,754,629	1,915,406	1,820,146	1,292,065	1,223,835	1,216,209	43,205	90,965	56,569
T-Power		2,168,545	1,306,227	1,654,883	0	0	0	56,177	56,555	49,090

* Information necessary to understand how the data have been compiled: see separate information on granularity & boundaries – GRI 303-3 d

** Organization specific metric (the denominator) to calculate the intensity ratio: The denominator is in metric tons of year product produced to be sold; by-products included

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