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Turkish Machinery Sector Report On Sustainability Action Plan

[SUMMARY]



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01 - CHAIRMAN'S WORD

Representing the unity and continuity of the cosmos and life, the Mundus+ brand symbolizes the integrity of our programs and strategies that we, as the Machinery Exporters' Association (MAİB), will be cementing through numerous sustainability projects. Our Association has reached global integration and upgraded its information generation capacity to universal standards in the 20 years since its establishment. This brand is our Association's gift to industrialists.

Mundus+ focuses on a green and smart industrial society and pursues a set of ecological and social goals in parallel with the UN Sustainable Development Goals (SDGs). Our responsiveness to global paradigm shifts in competitive strategies among the world's leading countries in global machinery manufacture has led us to collect our Association's best efforts under the Mundus+ brand.

One of our greatest sources in this field is the European Green Deal. This document is a tremendously important action plan that aims to comprehensively address and resolve issues triggered by delayed digitalization in Europe, environmental degradation, and climate change, as well as the biggest hurdles on the path to sustainability. Similar programs are currently active in the US and in China, though they are based on different dynamics.

This radical industrial transformation, to be financed through the carbon border tax and/or market consumption tax, both introduced by the Green Deal, will bring new responsibilities for both our industry and our country. Therefore, it calls for clear plans and programs concerning how to overcome these challenges. This transformation also requires significant industrial investment, thus giving the machinery manufacturers a vital role in the industry.

We believe carrying out studies that will diversify societal thought in this area is an inherent responsibility of a machinist. Our initiative to expand strategic thinking tools at all levels is among our greatest contributions in an comprehensive transformation effort that requires governments, companies, and individuals to share a common culture.

We will be contributing to the development of our country and our industry through our best efforts under the Mundus+ brand. We will strengthen our brand as a brainstorming platform open for innovation and cooperation, welcoming contributions from all stakeholders.

Kutlu KARAVELİOĞLU
Chairman

02 - MAİB / TURKISH MACHINERY AND MUNDUS+

MAİB / TURKISH MACHINERY

Machinery Exporters' Association was established in 2002 to expand and boost Turkish machinery exports and enhance the share of high-value-added products within total exports. With more than 20,000 members and 23 different product groups, we track all industry-related matters very thoroughly. Our primary goal is to encourage sustainable exports, and we highly value diversifying products, markets, and relations. Considering modern manufacturing architecture, we continuously maintain our focus at all capacities and matters that directly or indirectly impact exports, including innovative and high-quality human capital, competitive and cutting-edge manufacturing infrastructure, digitalization, and industrial cooperation.

Our members have traveled to all corners of the world and developed commercial relations with all nations and geographies. As the umbrella organization of the industry, we consider it our duty of national value to process and spread all data we can collect and have all our members participate in our technical and commercial relations.

It is vital for us to reconsider our operations, particularly those in relation with manufacture goods, in our ever-changing world and ever-growing industry. This reconsideration will allow us to render all stages and spheres of life and the economic chain more habitable, comfortable, and equitable.

MUNDUS+

“Mundus” refers to the cosmos, the world, humans, and humanity. And “Mundus+” is an umbrella brand based on the desire to achieve a more habitable and sustainable world — a new world that consumes less and creates more. We, as the Machinery Exporters' Association, pledge to the world to successfully accomplish this noble mission using our Mundus+ cooperation. Mundus+ attempts to determine what the industry's strategy and action plan should be and how to execute it.

Our knowledge and experience will extend with your contributions, and we will create a better, more habitable world together.

03 - TURKISH MACHINERY SECTOR

According to 2021 data, the machinery sector in Türkiye provides direct employment for 442 thousand people. This figure reaches higher levels with the contribution of employment in supplier subsectors.

Turkish machinery sector, with a volume exceeding 357 billion TL and an export volume (including free zones) exceeding 23 billion USD, has an important place in our national economy. It includes 23 sub-branches, mostly involving small and medium sized enterprises, that produces a wide range of products that distinguishes the sector positively compared to many of its EU counterparts.

The sector is strategically important as it supports national self-sufficiency and independence from foreign markets during periods of global turmoil like the COVID-19 pandemic. The export performance of the sector's enterprises, their quality registered in international markets, and their flexible and competitive structure are in the focus of international customers.

Most of the sector's exports (60%) are made for high-competition markets such as the EU and the US. Today, more than 200 countries utilise goods produced by the Turkish Machinery sector in one way or the other.

Turkish Machinery sector works diligently with its many domestic and international stakeholders to expand its value through sustainable means, such as developing solutions and strategies to adapt to digitalization and sustainable green transformation.

Its consumer/producer structure and its presence in a circular economy system with other manufacturing industries, increase responsibilities of the sector in environmental, social, managerial and economic dimensions in the national, regional and global arena. Machinery manufacturers in Türkiye will continue to be exemplary and pioneering in this process by increasing resource and energy efficiency in the sustainability and producing environmentally friendly machinery and technologies perspective.

In terms of reducing the carbon footprint of the Turkish machinery sector in the transformation process, energy efficiency, energy saving and energy resource diversity are important. In 2022, approximately 35% of electricity generation in Türkiye was from coal, 22% from natural gas, 21% from hydraulic energy, 11% from wind, 5% from solar, 3.5% from geothermal and 4% from other sources¹. The share of industry is approximately 47% in electricity consumption and 32% in natural gas consumption. More than 70% of the electricity used in industry comes from electric motors. Increasing the efficiency of electric motors, is one of the intermediate targets in the sector.

Turkish machinery sector has a high development/growth potential with its product diversity, resistance to crises, flexible structure and qualified personnel. In the change and transformation process, efforts for green and digital transformation are being carried out effectively with all domestic and international stakeholders.

1 <https://enerji.gov.tr/bilgi-merkezi-enerji-elektrik>

04. UNITED NATIONS (UN) SUSTAINABLE DEVELOPMENT GOALS

Sustainability has been the most discussed cross-sectoral topic in the last 50 years. The issue of sustainability, initially approached by countries and sectors for different purposes, has now become the global cause. Though topics such as waste reduction, circularity and green industry are important, the scale of the problems in this field necessitates a holistic approach to sustainability.

As the machinery manufacturers of Türkiye, the pole star and compass for us in this field is the UN Sustainable Development Goals (SDGs).

Sustainability is defined in the UN's "Report of the World Commission on Environment and Development: Our Common Future" as "meeting the needs of the present without compromising the ability of future generations to meet their own needs"². Sustainability means maintaining environmental, social, governance and economic viability while ensuring the continuity of production, diversity and consumption. In economic terms, sustainability is defined as "producing products/services through economically sound processes that minimize negative environmental impacts while conserving energy and natural resources". The SDGs set by the UN consist of 17 goals, 169 sub-headings and 241 indicators³.



Figure 1- Sustainable Development Goals of UN⁴

² Report of the World Commission on Environment and Development: Our Common Future, <http://www.un-documents.net/our-common-future.pdf>

³ <https://sustainabledevelopment.un.org/>

⁴ <https://www.tr.undp.org/content/turkey/tr/home/sustainable-development-goals.html>

05. SUSTAINABILITY PERSPECTIVES FOR TURKISH MACHINERY SECTOR

When the sustainability perspective for the Turkish machinery sector is evaluated from the ESG (Environmental, Social and Governance) dimensions and economic framework⁵:

- Greenhouse gas emissions,
- Efficiency in energy usage,
- Health and safety,
- Fossil fuel savings and emission reductions during machine operation,
- Material procurement, supply risks,
- Diversity in the use of raw materials and others,
- Reuse design and services, issues come to the fore.

Machinery sector in Türkiye has evaluated these topics with a new approach and developed a sustainability strategy by taking the ESG dimensions and economic framework into account. In addition, due to the need for reports that measure the different stages of sustainability, the sectoral sustainability strategy, action plan and reporting are considered as frameworks that should be compatible and complement each other.

Sustainability in the machinery sector is evaluated in terms of the ESG dimensions, responsibilities and international norms and standards in this field. Businesses operating in machinery sector in Türkiye bear responsibilities both on an individual- organizational basis and as part of the global network of businesses.

Today, in order to guarantee their *raison d'être*, purpose and future, businesses have to internalize the sustainability perspective, take green transformation steps that support zero-emission, resource-efficient and competitive economy; and develop these steps. Machinery manufacturers in Türkiye act with this awareness.

⁵ Judith Herzog-Kuballa- Karsten Zimmermann, *Gelebte Nachhaltigkeit im Unternehmen*, 2020, Frankfurt am Main

06. SUSTAINABILITY AND DIGITALIZATION IN THE TURKISH MACHINERY SECTOR

Preparing for sustainability goals is an important step for Turkish machinery manufacturers which export a significant portion of its exports to the EU. While preparing the sustainability strategy and action plan, the value chain of the sector was considered as a new methodology. It is aimed to achieve measurable improvements in the sector in terms of social, environmental, governance dimensions and economic framework. Seven action areas of the sector's value chain were analyzed and a model sustainability strategy and action plans were prepared with a strategic approach.

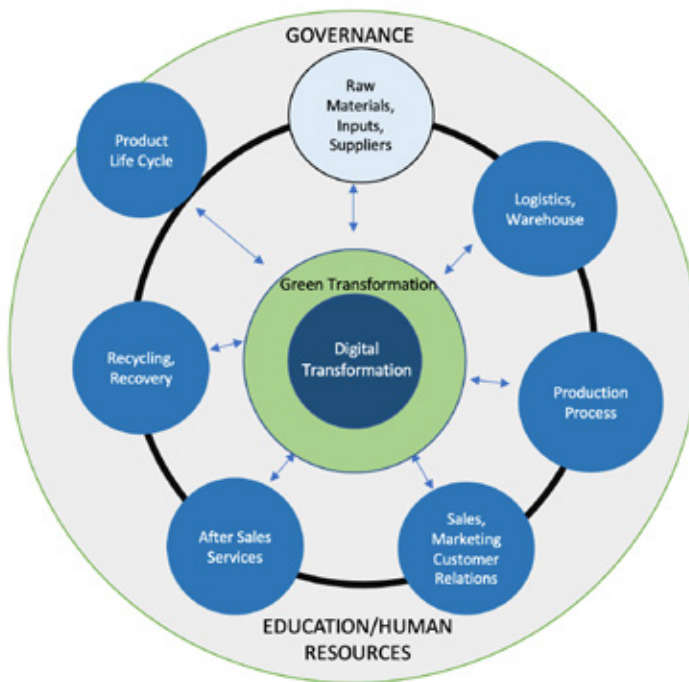


Figure 2: Machinery Industry Value Chain

Seven (7) action areas of the sector's value chain:

- Action Area 1: Raw Materials, Inputs and Suppliers
- Action Area 2: Logistics and Warehousing
- Action Area 3: Production Process
- Action Area 4: Sales, Marketing and Customer Relations
- Action Area 5: After Sales Services
- Action Area 6: Recycling, Recovery
- Action Area 7: Product Life Cycle.

“Management, Governance, Leadership” and “Education and Human Resources” were considered as sub-headings related to all of these action areas, while the concepts of “Digital and Green Transformation” were considered as high-level fundamental dynamics shaping the strategy.

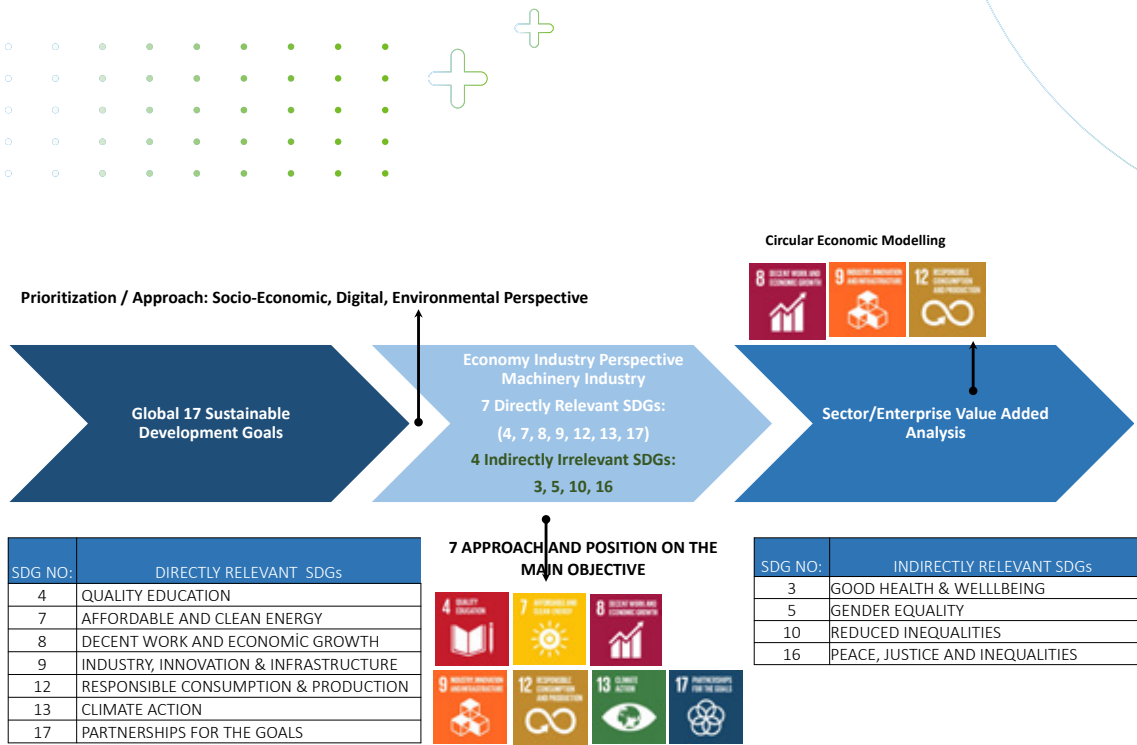


Figure 3: Sustainable Development Goals (SDGs), Directly or Indirectly Relevant to the Turkish Machinery Sector

SDGs which were prioritized and considered directly relevant to the machinery sector:

- SDG 4: Quality Education
- SDG 7: Affordable and Clean Energy
- SDG 8: Decent Work and Economic Growth
- SDG 9: Industry, Innovation and Infrastructure
- SDG 12: Responsible Production and Consumption
- SDG 13: Climate Action
- SDG 17: Partnerships for the Goals

SDGs considered indirectly relevant to the sector:

- SDG 3: Healthy and Quality Life
- SDG 5: Gender Equality
- SDG 10: Reducing Inequalities
- SDG 16: Peace, Justice and Strong Institutions

Digitalization and technological developments require rapid change in goods and services sectors, value and supply chains. Industries fulfill the requirements of digital transformation while finding solutions to global problems and adapting to sustainability processes. Machinery manufacturers in Türkiye make effective use of many applications while integrating technique with technology. Due to this feature, the sector has a high level of engagement with technology and digitalization.

In the machinery sector, customers, investors, etc. expect the production of machines that have adopted a sustainable business model and are based on sustainability. In addition, national and international regulations force machinery manufacturers to produce machines that are user and environmentally friendly, functional, long-lasting and support circularity. Briefly, businesses in the sector are working effectively to achieve a well-designed “twin transformation” process.

07. SUSTAINABILITY STRATEGY AND ACTION PLAN FOR MACHINERY SECTOR

Machinery Sector Sustainability Compliance Map (Table 1) indicates basic framework on which the Action Plan is based. The Compliance Map presents a sector-specific and strategic sustainability model in terms of the information contained. The map shows the sustainability dimensions ESG and their scope, international standards related to each dimension, seven (7) action areas, and SDGs directly and indirectly related.

In the Sustainability Compliance Map, “Digital and Green Transformation” are considered as horizontal dynamics that concern all steps of the value chain. Due to the natural relationship between production and product life cycle, “circularity” is positioned just at the centre of the system.

The Sustainability Compliance Map reflects a dynamic framework. In each action area, the elements covered in the relevant dimensions, namely; standards, directly and indirectly related SDGs, priorities, objectives, actions and key performance indicators are provided.

In the Report for Sustainability Strategy and Action Plan for Machinery Sector, definitions about Vision, Mission and Values are also presented.

Vision

In order to increase the global competitiveness of the Turkish machinery sector, the MAİB (Turkish Machinery) acts with the vision of being an Association that determines the sustainable development goals (SDGs), sustainability strategies and systems to be implemented in the sector, on the basis of environmental, social and governance dynamics and economic perspective.

Mission

Under the Sustainability Strategy and Action Plan, MAİB (Turkish Machinery) undertakes following missions,

- To increase global competitiveness of all its members and have a sustainable value chain in the sector,
- To develop a dynamic, permanent, and value-creating infrastructure,
- To identify strategic priorities, focus areas and value chain structure in sustainability,
- To adopt a measurable, reportable, and traceable methodologic approach,
- To undertake the mission of presenting developments and specialized knowledge in this field for the benefit of its members.

Values

The values to be taken into consideration under the Sustainability Strategy and Action Plan have been determined as, transparency, fairness, accountability, responsibility, reliability, and compliance.

Within this strategic framework, the MAİB makes available to the sector necessary information, tools and resources for interpretation, harmonization, measurement, evaluation and reporting to support the sector’s global competitiveness.

Sustainability Action Plan Report- ESG Dimensions:

Regarding the Sustainability Strategy and Action Plan, MAİB is aware of its shared responsibilities. The Association has assumed an active role in creating an infrastructure that will put the UN's SDGs into practice for all the enterprises represented by the Association, not only with all the duties imposed by legal obligations, but also with a new production and export understanding that will shape the future.

Machinery sector in Türkiye does not consider sustainability only as the processes related to emission reduction, carbon regulation or alternative energy. The sector considers sustainability as a framework that includes these, but goes beyond them and will shape the future of the sector. For all enterprises represented by the Association, within the framework of directly related 7 SDGs and indirectly related 4 SDGs, the actions to be taken with a systemic approach centred on ESG dimensions of sustainability have been identified.

A four-dimensional approach is required for the sustainability principle. Each dimension and each area has its own objectives and must be evaluated and analyzed holistically.

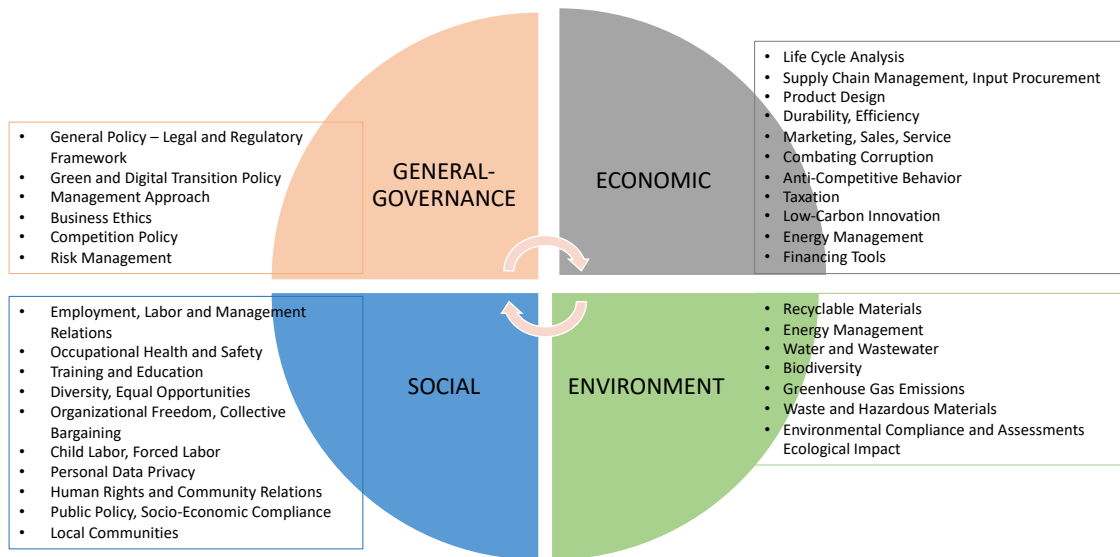


Figure 4: Strategic Approach for the Machinery Sector Sustainability Action Plan - Sustainability Dimensions and Scopes

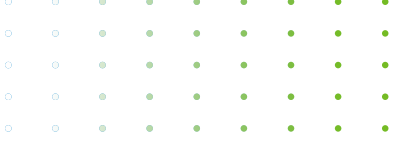
Table 1: Machinery Sector, Sustainability Compliance Map

SUSTAINABILITY DIMENSIONS	SCOPE	STANDARDS	RAW MATERIALS, INPUTS, SUPPLIERS	LOGISTICS, WAREHOUSING	PRODUCTION PROCESS	SALES MARKETING CUSTOMER RELATIONS	AFTER-SALES SERVICES	RECOVERY	PRODUCT LIFE CYCLE
GENERAL-GOVERNANCE	Universal Standards (GRI101: Foundation, GRI 102: General Disclosures, GRI 103: Management Approach), Business Ethics, Competitive Behavior, Legal and Regulatory Framework Management, Risk Management, Digitalization	GRI 100s, ISO 31000 Enterprise Risk Management, OECD General Principles for Multinational Enterprises, Environmental, Social and Corporate Governance-ESG, EU Corporate Sustainability Reporting Directive-CSRD etc.	Raw materials, inputs, energy, efficiency, technology, recycled materials, rules, standards, waste, toxic-hazardous materials, suppliers, supply chain, stakeholders	Transportation, warehouse, standards, rules, efficiency, technology, stakeholders	Manufacturing, assembly, energy, employment-HR, efficiency, technology, rules, standards, stakeholders	Domestic market / export sales, branding, financing, e-commerce, customers, stakeholders, packaging, labeling	Rules, standards, spare parts, maintenance, repair, digitalization, technology, partnerships with stakeholders	Solid wastes, waste recycling, recycling, functionality with new module parts, interoperability with other machines, packaging, rules, standards, stakeholders	Life cycle analysis, rules, digitalization, green transformation, sharing platforms
			4, 8, 9, 12, 13, 17 5, 10	4, 8, 9, 12, 13, 17 10	4, 8, 9, 17 3	4, 7, 8, 9, 13, 17 5, 10	4, 9, 12, 13, 17	4, 9, 12, 13, 17	4, 9, 12, 13, 17
ECONOMIC	Economic Performance, Market Presence, Indirect Economic Impacts, Sales Marketing, Anti-Corruption, Anti-Competitive Behavior, Product Design, Life Cycle Analysis, Supply Chain Management, Durability, Input Supply, Efficiency, Taxation, Low Carbon Innovation Energy Sector Modernization Investments and Financing Tools	GRI 200s, International Integrated Reporting Council - IIRC, Sustainability Accounting Standards Board - SASB, Supplier Code of Conduct - SoCo, International Financial Reporting Standards - IFRS, International Finance Corporation - IFC, Borsa Istanbul Sustainability Index - BIST, Climate-related Financial Disclosure Standards - TCFD, CMB Sustainability Principles Harmonization Framework, EU Green Deal, Border Carbon Regulatory Mechanism - CBAM/SKDM and EU Emissions Trading System, etc.	4, 7, 8, 9, 12, 13, 17 10	4, 8, 9, 12, 17	8, 9, 12, 13 3	4, 7, 8, 9, 13, 17 5, 10	4, 8, 9, 12, 13, 17 3	4, 8, 9, 12, 13, 17 3	9, 12, 13
ENVIRONMENTAL	Recycled Materials, Energy Management, Water and Wastewater, Biodiversity, Greenhouse Gas Emissions, Waste and Hazardous Substances, Environmental Compliance, Environmental Assessments, Ecological Impacts	GRI 300s, Carbon Disclosure Project-CDP, Climate Disclosure Standards Board-CDSB, UN Global Compact-Environmental principles, ISO 14000 Environmental Management, EU Environmental Management and Audit Scheme-EMAS, etc.	4, 8, 9, 12, 13, 17	4, 8, 12, 17	7, 8, 9, 12, 13, 17	7, 9, 13, 17	4, 9, 12, 13, 17 3	7, 9, 12, 13, 17 13	13
SOCIAL	Employment, Labor and Management Relations, Occupational Health and Safety, Education and Training, Diversity, Equal Opportunity, Freedom of Association, Collective Bargaining, Child Labor, Forced Labor, Health and Safety, Data Security, Human Rights and Community Relations, Public Policy, Marketing, Labeling, Privacy, Socio Economic Cohesion, Local Communities	GRI 400s, ISO 26000:2010 Social Responsibility, UNESCO Global Education Coalition, Women's Empowerment Principles-WEPs, UN Global Compact-UNGCC, Human Rights-Corruption, ILO Labor Discrimination, Child and Slave Labor, etc.	4, 8, 9, 12, 13, 17 3, 10	4, 9, 13, 17 5	4, 8	4, 12, 13, 17 3	4, 8, 12, 13, 17 3	4, 8, 9, 12, 13, 17 3, 5	4, 13, 17
DIGITAL TRANSFORMATION									
GREEN TRANSFORMATION									

Priorities/Objectives in the Machinery Sector Value Chain Action Areas

ACTION AREA 1-RAW MATERIALS, INPUTS, SUPPLIERS	ACTION AREA 2- LOGISTICS, WAREHOUSING	ACTION AREA 3- PRODUCTION PROCESS	ACTION AREA 4- SALES MARKETING CUSTOMER RELATIONS	ACTION AREA 5- AFTER-SALES SERVICES	ACTION AREA 6- RECOVERY	ACTION AREA 7- PRODUCT LIFE CYCLE
<ol style="list-style-type: none"> Ensuring continuity and localization in energy, raw materials, inputs and suppliers; develop sustainable relationships. Securing energy and raw material management and supply. Taking measures on SDGs and their economic, social, environmental and governance dimensions. Making improvements in digitalization and green transformation. Utilizing clean, smart and new technology solutions. Following international developments, standards and rules concerning procurement processes; to reflect these to business processes. 	<ol style="list-style-type: none"> Adapting to climate change and reducing carbon emissions. Utilizing clean energy, smart and new technology solutions, increasing efficiency. Regarding SDGs and their ESG dimensions, taking relevant measures Making improvements in digitalization and green transformation. Following the international developments, standards and rules, to reflect these to business processes. 	<ol style="list-style-type: none"> Taking necessary measures in the areas of SDGs and their ESG criteria. Making improvements in processes for digital and green transformation. Ensuring continuity and localization. Adopting to climate change measures and emission reduction processes. Utilizing clean energy, smart and new technology solutions, increasing energy efficiency. Extending machine life span, providing versatile functionality to the machine, and ensuring the participation of customer and supplier stakeholders in production and design processes. Improving resource and risk management, implementing talent management programs. Complying with climate change regulations and reducing carbon emissions. Following international developments, standards and rules concerning procurement processes; to reflect these to business processes. 	<ol style="list-style-type: none"> Having a management system/infrastructure in line with sustainability objectives. Becoming a sector that bears producer responsibility, adopts a circularity approach, follows and adapts to international developments in the fields of environmental product, design and label application and becoming a sector to be recognized in export markets with this feature. Adapting digital and green transformation concepts to this field and having a good resource, risk, customer and talent management system. Adapting climate change regulations and utilizing clean energy and smart and new technology solutions to reduce carbon emissions. Following international developments, standards and rules regarding value chains and supply processes to reflect them to business processes. Taking relevant measures in the SDGs and their economic, social, environmental and governance dimensions and developing sustainability focused collaborations. 	<ol style="list-style-type: none"> Ensuring continuous customer satisfaction, providing uninterrupted service to customers under all conditions, minimizing maintenance, repair and breakdown delays and reducing delays caused by breakdowns. Maintaining responsible/sustainable value chain management with a digital approach and developing sustainable relationships with business partners in the value chain. Becoming a sector that adopts digitalization and circularity approaches, following international developments in the fields of environmental products, designs, labels and reflecting them to business processes. Improving service quality and having a good risk management and emergency plan system. Taking relevant measures in the SDGs and their social, environmental, governance and economic dimensions and developing sustainability-focused, innovative collaborations. Supporting localization. 	<ol style="list-style-type: none"> Increasing efficiency with digitalization solutions, reducing wastes, residuals and emissions and reusing of waste, residuals and emissions as resources. Planning trainings for error-free operation, waste reduction, increasing recycling and reducing environmental impacts, increasing cooperation with stakeholders. Establishing a structure that supports sustainable circularity and functionality at every stage of the value chain with the help of digitalization. Establishing rules, regulations and systems that bring innovations in recycling. 	<ol style="list-style-type: none"> Following and adapting to technological developments that extend lifespan and reduce environmental footprints. Facilitating disassembly through modular designs. Extending the lifespan through the use of recycled raw materials, replacing or repairing components that have not deteriorated their overall structure. Involving relevant stakeholders in the process, providing trainings. Compliance with work ethics, occupational health and safety and labor standards.

Table 2: Priorities/Objectives in the Machinery Sector Value Chain Action Areas



Action Area 1 : Raw Materials, Inputs and Suppliers

Scope:

Raw materials, inputs, energy, technology, circularity, climate change, legislation-standards and compliance, chemicals, waste management, product life cycle, supply chain, stakeholders, labeling, branding, risk assessment, emergency management, working life, social rights, occupational health and safety, trainings, transparency-traceability, reporting

PRIORITIES/OBJECTIVES

- 1.Ensuring continuity and localization in energy, raw materials, inputs and suppliers; developing sustainable relationships.
- 2.Securing energy and raw material management and supply.
- 3.Taking measures on SDGs and their economic, social, environmental and governance dimensions.
- 4.Making improvements in digitalization and green transformation.
- 5.Utilizing solutions brought by clean, smart and new technologies.
- 6.Following international developments, standards and rules concerning procurement processes; to reflect these to business processes.

ACTIONS

1. Localizing supply networks.
2. Increasing use of sustainable raw materials and inputs.
3. Identifying energy, and environment-related problems that cause carbon footprints in recovery and supply processes and developing innovative solutions.
4. Increasing use of renewable energy in supply processes.
5. Reducing use of water, harmful substances and chemicals on a resource basis.
6. Identifying and preventing factors that cause air, water and environmental pollution.
7. Increasing use of raw materials and inputs that undergo life cycle analysis.
8. Identifying necessary financing model, need, type, government solutions, products and processes to be commissioned.
9. Being transparent, reliable and fast in data sharing. Reporting regularly, in accordance with rules and standards.
- 10.Taking measurable, evaluable and reportable measures.
- 11.Preparing an emergency assessment and response plan for supply processes.
- 12.Developing trainings on sustainability , R&D-oriented communication and cooperation with manufacturers and suppliers.
- 13.Making improvements in the areas of SDGs and ESG Criteria
- 14.Following developments in the global trading system, to adapt to international rules.

KEY PERFORMANCE INDICATORS (KPI).

(Indicator Units: Quantity/type/value/rate/periodic development/ benchmarking/index/etc.)

1. Localization rate, localized elements, amount/value/ratio
2. Number of activities and trainings supporting localization; number/proportion of local suppliers benefiting
3. Amount/value of raw materials and inputs sourced from abroad/dependency ratio.
4. Sustainable raw material and input procurement and utilization rate/ number of suppliers.
5. Type/amount/portion/ratio of energy used in procurement processes; amount/ratio of renewable energy consumption.
6. Scope 1, 2 and 3 emissions; total amount/value/ratio of total emissions; amount of emissions created based on production, turnover, total employees and production area.
7. Water by source, type of water used (spring water, salt water, treated or reclaimed water, etc.), amount of land used and pollution created.
8. Value/amount/proportion of products, waste or packaging materials produced, returned; amount/value/proportion of their recovery.
9. Number of disruptions, problems experienced; value/proportion of economic, environmental damages caused by them.
- 10.Rate of chemical use at source. Type/amount/ratio of chemicals used. Labeling policy, implementation.
- 11.Scope/number/value/amount of initiatives, collaborations, trainings, investments made to achieve the goal.
- 12.Company's and stakeholders' code of business ethics, policies and procedures against corruption, measures taken against such cases, number of such cases.
- 13.Amount/value/proportion of waste and recycling by intermediate goods and raw material producers.
- 14.Amount/value/portion of non-recyclable raw materials, inputs.
- 15.Number of arrangements and improvements made in working conditions such as health, safety, etc. at the source.
- 16.Number/proportion of digitalized processes/services.

DIRECTLY RELEVANT SDGs:



INDIRECTLY RELEVANT SDGs:



Action Area 2 : Logistics and Warehousing.

Scope:

Transport, warehousing, standards, regulatory compliance, digitalization, technological developments, stakeholders, quality, circularity, waste management, product safety, traceability in value chains, transparency, occupational health and safety, talent management, product life cycle, climate change, renewable energy, energy efficiency, environmental investments, biodiversity.

PRIORITIES OBJECTIVES

In logistics and warehousing;
1.Adapting to climate change and reducing carbon emissions.
2.Utilizing clean energy, smart and new technology solutions, increasing efficiency
3.Regarding SDGs and their ESG dimensions, taking relevant measures
4.Making improvements in digitalization and green transformation.
5.Following the international standards and rules, to reflect these to business processes.

ACTIONS

1. Adopting green transportation and green storage approaches.
2. Utilizing technological advances and data analytics to optimize freight and transport and improve vehicle efficiency in transportation.
3. Implementing pilot projects focusing on new fuels and other emission-reducing technologies that will increase efficiency in related processes; optimizing routes.
4. Focusing on the concept of environmental logistics and developing collaborations with stakeholders.
5. Sharing information and data in a fast, transparent and reliable manner on issues with environmental impacts such as the amount of greenhouse gases generated in related processes, packaging materials, etc.
6. Ensuring that employees working in relevant processes have a healthy, safe and decent working environment.
7. Increasing energy efficiency efforts; increasing the number of environmentally friendly vehicles and the use of renewable energy in vehicles and storage processes.
8. Developing a smart storage and shipment environment with the assistance of digitalization; eliminating delays caused by malfunctions through predictive maintenance.
9. Designing trainings for modernization and efficiency improvement.
10. In addition to trainings; periodically conduct weak point search studies with stakeholders.
11. To continue regulatory harmonization efforts.
12. Ensuring that the measures to be put in place are measurable, evaluable and reportable.
13. Preparing an emergency assessment and response plan for logistics and storage processes.

KEY PERFORMANCE INDICATORS (KPI).

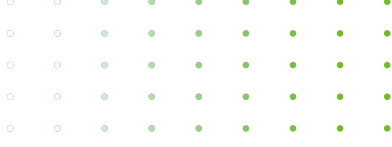
(Indicator Units: Quantity/type/value/rate/periodic development/ benchmarking/index/etc.)

1. Adopting green transportation and green storage approaches.
2. Use technological advances and data analytics to optimize freight and transport and improve vehicle efficiency in transportation.
3. Implement pilot projects focusing on new fuels and other emission-reducing technologies that will increase efficiency in related processes; optimize routes.
4. Focus on the concept of environmental logistics; develop collaborations with stakeholders.
5. The amount of greenhouse gases emitted in related processes, packaging materials, etc., are fast on issues with environmental impacts, such as the number of regions and settlements where the produced machines will be shipped; the amount of cargo.
6. Shipment times, type, amount and share of fuel used; the CO2 load generated and the number of shipments with minimum CO2 emissions; the number of emergency shipments, the amount of additional time and fuel for this.
7. Number of shipments with zero defects and full vehicles; number/amount/proportion of non-full shipments.
8. Customer satisfaction with environmental shipments; minimum number of delays, wrong shipments, complaints received
9. Number of vehicles used in shipment, number of breakdowns and troubleshooting times.
10. Working conditions of personnel; health, safety, etc. Number of arrangements and improvements made in working conditions.
11. Product waiting time in warehouses, warehouse occupancy rates, minimum storage times, number of continuous full shipments, number of foreseeable shipments.
12. Amount of products entering/exiting the warehouses; amount and cost of energy required for lighting and heating of the warehouses.
13. Type, amount, share of energy used in the storage process; renewable energy consumption, ratio.
14. Type of emissions generated in the storage process (Scope 1,2,3); total amount and value of emissions.
15. The amount of carbon emissions created in logistics and warehousing processes based on product quantity, turnover, total number of employees, storage area.
16. Number of disruptions and problems experienced; magnitude of the damage caused by these.
17. Scope/number/- amount/duration of collaborations, trainings and investments initiated for the purpose.
18. Number of analyzes, reports and notifications made for transparency and traceability
19. Number of sustainability-oriented meetings with stakeholders.

DIRECTLY RELEVANT SDGs:



INDIRECTLY RELEVANT SDGs:



Action Area 3: Production Process

Action Area 3: Production Process

Scope:

Manufacturing, assembly, employment, productivity, technology, digitalization, legislation, standards, labeling, certification, branding, stakeholders, occupational health and safety, human rights, working conditions, equal opportunities, raw material and supply management, water and waste management, climate change, product life cycle, risk and emergency management, talent management, R&D and innovation, circularity

PRIORITIES / OBJECTIVES

- In the production process area;
1. Taking necessary measures in the areas of SDGs and their ESG criteria.
 2. Making improvements in processes for digital and green transformation.
 3. Ensuring continuity and localization.
 4. Adopting to climate change measures and emission reduction processes.
 5. Utilizing clean energy, smart, and new technology solutions, increasing energy efficiency.
 6. Extending machine life span, providing versatile functionality to the machine, and ensuring the participation of customer and supplier stakeholders in production and design processes.
 7. Improving resource and risk management, implementing talent management programs,
 8. Complying with climate change regulations and reducing carbon emissions.
 9. Following international developments, standards and rules concerning procurement processes; to reflect these to business processes.

ACTIONS

1. Localization of production factors and development of local and sectoral collaborations.
2. Reducing the use of water, harmful substances and chemicals in the relevant process.
3. Identifying and preventing factors that cause air, water and environmental pollution.
4. Considering life cycle analysis; establishing systems to reduce waste, residual and waste material output and emissions; integrating the digitalized circularity approach into all relevant processes.
5. Develop strategies and design processes to reduce emissions, toxic and harmful substances.
6. Structuring R&D, innovation, production, management systems and processes to support sustainability performance.
7. Involving customers and suppliers in the process; providing multifunctionality to machines; planning trainings and collaborations for error-free operation.
8. Reviewing the production process to support digital transformation and green transformation; reducing delays due to breakdowns with predictive maintenance and repair; producing smart, long-lasting machines with innovative production designs and zero waste targets.
9. Establishing an internal unit in manufacturing companies that works with a visionary approach, develops suggestions and provides feedback on the system and strategies to be followed in economic, social, environmental and managerial areas at all stages of the value chain.
10. Having a transparent, reliable and fast information system for sharing data on production processes.
11. Monitoring developments; reporting in accordance with national and international standards; sharing performance improvement results with all stakeholders; developing a stakeholder dialog mechanism.
12. Preparation of an emergency, risk assessment and response plan.

KEY PERFORMANCE INDICATORS (KPI)

(Indicator Units: Quantity/type/value/rate/periodic development/ benchmarking/index/etc.)

1. Localization rate; quantity and value of localized elements; number of activities and trainings supporting localization and number of beneficiaries.
2. Sustainable raw material and input procurement and utilization rate, number of suppliers.
3. Type and amount of energy used, share of renewable energy, energy efficiency, energy consumption indicators; amount of savings achieved through energy efficiency; type and amount of chemicals used.
4. Investments made for the working area, lighting, heating, energy needs of the enterprise; process improvements; number of assembly, disassembly activities that comply with the standards.
5. Source-based water, type of water used (spring water, salt water, treated or reclaimed water, etc.), amount, and pollution created; amount of wastewater, amount of wastewater treatment. Amount of soil and air pollution (ecological footprint, CO2 footprint).
6. Amount of waste generated; amount and rate of recovery; amount of garbage.
7. Amount and value of emissions (Scope.1,2,3) generated in the process; amount of emissions generated on the basis of production, turnover, total employees and production area.
8. Product lifetime, number of breakdowns, maintenance and repairs for the machines produced and the machines used in machine production.
9. Number of products undergoing life cycle analysis.
10. Number of products with sustainable labeling.
11. Working conditions; employee satisfaction; number of female/male employees, number of in-service training programs organized; number of arrangements and improvements made in working conditions such as health, safety, etc.
12. Improvement in responsible producer approach; level of customer satisfaction; number of risks, problems, their impacts and solutions. Number of stakeholder notifications.
13. Number of initiatives taken to achieve the identified objectives; number of collaborations initiated with stakeholders in the field of sustainability innovation; amount and value of value created; scope, number and amount of trainings provided and investments made.
14. Number of innovation and green transformation collaborations supporting sustainability.

DIRECTLY RELEVANT SDGs:



INDIRECTLY RELEVANT SDGs:



Action Area 4: Sales, Marketing and Customer Relations

Scope:

Domestic and export sales, R&D and innovation, digitalization, financing, e-commerce, circularity, climate change, compliance with standards, labeling, customers, stakeholders, sectoral collaborations, product safety, producer responsibility, business ethics, brand reputation, working conditions, transparency, value chain and traceability, interaction with stakeholder groups, reporting.

PRIORITIES/OBJECTIVES

- In sales, marketing and customer relations;
1. Having a management system/infrastructure in line with sustainability objectives.
 2. Becoming a sector that bears producer responsibility, adopts a circularity approach, follows and adapts to international developments in the fields of environmental product, design and label application and becoming a sector to be recognized in export markets with this feature.
 3. Adapting digital and green transformation concepts to this field and having a good resource, risk, customer and talent management system.
 4. Adapting climate change regulations and utilizing clean energy and smart and new technology solutions to reduce carbon emissions.
 5. Following international developments, standards and rules regarding value chains and supply processes to reflect them to business processes.
 6. Taking relevant measures in the SDGs and their economic, social, environmental and governance dimensions and developing sustainability focused collaborations.

ACTIONS

1. Conducting brand and customer satisfaction research and surveys. Sharing the results transparently...
2. Creating and implementing a good sales, marketing, brand and customer management plan.
3. Reflecting developments in sustainability and circularity, sectoral approaches to customer relations and social media communication strategy.
4. Establishing a system that works in the field of innovation and R&D.
5. To create a collaboration channel that will enable customers to be more involved in production, sales and marketing processes.
6. To create a sustainable packaging strategy and policy.
7. Conducting studies that evaluate the effects of investments made in ESG criteria in sales, marketing and customer relations processes.
8. To include human-machine and machine-machine cooperation infrastructures, customer-machine-producer information platforms in the sales, marketing and customer relations processes of the machines produced.
9. Planning and commissioning trainings for employees, stakeholders and customers.
10. To develop a system that monitors performance related to ESG practices in the process and transparently reports the results.
11. To establish an end-to-end tracking and traceability system.
12. Prepare emergency and response plans for the process.
13. In the process, have work plans to protect biodiversity and prevent practices that cause climate problems.

KEY PERFORMANCE INDICATORS (KPI) (Indicator Units: Quantity/type/value/rate/periodic development/ benchmarking/index/etc.)

1. The status of sustainability indicators in brand and customer satisfaction surveys.
2. Number of products with sustainability labels, data on their sales/exports, feedbacks.
3. Product sales data in compliance with international product safety and quality management systems.
4. Data on product safety surveys, quality and supplier audits for relevant products.
5. Number/share of digitalized processes and services.
6. Number of steps taken, complaints received, actions taken on circularity. Status/number of transparent public disclosure of these.
7. Amount and rate of non-recyclable packaging. Recycling, product life cycle data.
8. Number/value/proportion of returned products, packaging.
9. Number/value of collaborations/investments in digital/green transformation for sustainability.
10. Number and breakdown of measures taken for occupational safety, employee and customer satisfaction; distribution of steps taken and results obtained.
11. Breakdown by employee, age, gender, etc. categories; number of female employees and managers,
12. Number and nature of rewards or penalties received for ESG performance in the process.
13. Number of complaints and suggestions received through relevant channels and actions taken in relation to these.
14. Number of activities related to sustainable branding, packaging and labeling.
15. Data on stakeholder engagement. Adding sustainability indicators to brand research.
16. Number of trainings, reports and surveys provided to employees and managers.
17. Number and results of studies, trainings, case studies on policies and procedures determined to combat corruption.
18. Emergency and response plan practices, risk assessment data.

DIRECTLY RELEVANT SDGs:



INDIRECTLY RELEVANT SDGs:



Action Area 5 : After Sales Services

Scope:

Rules, legislation, standards, spare parts maintenance and repair, digitalization, climate change, circularity, R&D innovation, renewable clean energy, value chain, waste management, talent management, working conditions, social rights, environmental investments, partnerships with stakeholders, sectoral collaborations, brand reputation, product quality and safety

PRIORITIES/OBJECTIVES

In the field of after-sales services;

1. Supporting localization.
2. Ensuring continuous customer satisfaction, providing uninterrupted service to customers under all conditions, minimizing maintenance, repair and breakdown delays and reducing delays caused by breakdowns.
3. Maintaining responsible/ sustainable value chain management with a digital approach and developing sustainable relationships with business partners in the value chain.
4. Becoming a sector that adopts digitalization and circularity approaches, following international developments in the fields of environmental products, designs, labels and reflecting them to business processes.
5. Improving service quality and having a good risk management and emergency plan system.
6. Taking relevant measures in the SDGs and their social, environmental, governance and economic dimensions and developing sustainability-focused, innovative collaborations.

ACTIONS

1. Continuous monitoring of key indicators (dashboards) in digital environment.
2. Creating customer, machine, manufacturer and information sharing platforms.
3. Establishing a good customer tracking (CRM) and resource planning (ERP) system; creating a planned after-sales service process.
4. Reducing emissions with environmental impacts that arise within the framework of after-sales service processes.
5. Involving customers in production, sales, after-sales service and training processes.
6. Providing healthy, safe and balanced working environments for employees; planning trainings for a safe and sustainable work environment.
7. Establishing a good risk management system in all risk areas, including after-sales services; increasing service quality and level of compliance with standards.
8. Establishing a system for monitoring and evaluating rules, practices and developments on sustainability for the effectiveness of decisions to be taken in administrative processes.
9. Designing an after-sales service process to support brand reputation.
10. Determining policies and rules that support the business ethics approach.
11. Continuing collaborations for sustainability innovation in the process

KEY PERFORMANCE INDICATORS (KPI)

(Indicator Units: Quantity/type/value/rate/periodic development/ benchmarking/index/ etc.)

1. Customer satisfaction and the ratio of digitalized services and processes.
2. Maintenance and repair times resulting from new process designs.
3. The number of malfunctions in the products offered for sale, the average time required to resolve them, the number and duration of new problems that arise between malfunctions, the average working time without malfunctions
4. Total equipment efficiency, machine uptime; number of planned and unplanned maintenance.
5. Number of preventive, predictive maintenance, repairs. Future forecasts.
6. Shortening and optimization of maintenance and repair rounds. Number of repairs the first time.
7. Energy requirement, type, renewable energy share, energy efficiency ratio used in products subject to after-sales services.
8. Value and rate of emissions with environmental impacts that occur within the framework of after-sales service processes.
9. Amount of waste reduced, amount of resources recovered, amount of emissions reduced.
10. Working conditions in after-sales service areas, gender distribution of employees and number/duration of trainings provided.
11. Number of health and safety activities subject to improvement in after-sales service areas.
12. Indicators of increased efficiency, profitability, quality and customer satisfaction achieved through digitalized serv.
13. Status of sustainability indicators in brand reputation surveys. Number and rate of products with sustainable labeling; number of sales, maintenance and repair services provided for these products.
14. Practices contrary to business ethics that may occur in the process, cases of corruption and the measures taken against them and the number of actions taken.
15. Number of collaborations for sustainability innovation.
16. Number of practices and initiatives supporting localization in after-sales services.

DIRECTLY RELEVANT SDGs



4 QUALITY EDUCATION



8 DECENT WORK AND ECONOMIC GROWTH



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



13 CLIMATE ACTION



17 PARTNERSHIPS FOR THE GOALS

INDIRECTLY RELEVANT SDGs:



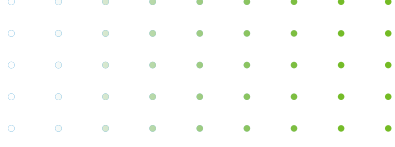
3 GOOD HEALTH AND WELL-BEING

Action Area 6 :Recovery

Scope:

Solid waste, waste management, circularity, recycling, product life cycle, compliance with legislation and rules, R&D and innovation, functionality with new module parts, transparent management approach, business ethics, packaging, standards, stakeholders, emergency management, occupational health and safety, talent management, supporting local producers, brand reputation.

Action Area 6: Recovery



PRIORITIES/OBJECTIVES

In the field of recovery;

1. Increasing efficiency with digitalization solutions, reducing wastes, residuals and emissions and reusing of waste, residuals and emissions as resources.
2. Planning trainings for error-free operation, waste reduction, increasing recycling and reducing environmental impacts, increasing cooperation with stakeholders.
3. Establishing a structure that supports sustainable circularity and functionality at every stage of the value chain with the help of digitalization.
4. Establishing rules, regulations and systems that bring innovations in recycling.

ACTIONS

1. Initiating efforts to incorporate waste, residues and production by-products into new product manufacturing.
2. Carrying out R&D and innovation studies that will increase efficiency in the field of recycling, and developing cooperation with local stakeholders
3. Initiate efforts to reduce the need for resource and material intensity during production and use.
4. Taking innovative measures to prevent waste at all stages of the value chain.
5. Collaborating with all relevant stakeholders for solutions that support green transformation in the field of recycling and introducing new and innovative solutions.
6. Establishing an effective risk management system in this area; having emergency response plans.
7. Meeting the health, safety and good working conditions needs of workers in recovery processes.
8. Designing trainings that support circularity and sustainability in recovery and involving all relevant stakeholders in these processes.
9. Within the scope of social responsibility, as responsible producers and/or exporters aiming for circularity and sustainability, initiating cooperation efforts with wider masses .
10. Reporting on policies, procedures and practices with a transparent management and traceability approach.

KEY PERFORMANCE INDICATORS (KPI).

(Indicator Units: Quantity/type/value/rate/periodic development/ benchmarking/Index/etc.)

1. Level of digitalization, productivity increase indicators.
2. Amount/value of residues, wastes and emissions generated at all stages of the value chain, and the amount/value of those recovered.
3. Error-free, uninterrupted operation times. Total equipment efficiency, overall equipment efficiency, total effective equipment performance, machine uptime.
4. User convenience (minimizing the number of human interventions).
5. Number of trainings provided for error-free, uninterrupted operation and waste, residue and emission reduction. Number and distribution of employees receiving these trainings.
6. Proposed rules and regulations on recovery.
7. Number of collaborations to improve recovery and circularity.
8. Number of reports prepared and supporting transparent management approach.
9. Renewable energy consumption; non-renewable energy consumption; energy efficiency; amount of savings achieved in the field of recovery.
10. Proportion/amount of sustainable raw materials and inputs created in the recovery process.
11. Air, water and soil pollution indicators created in the recovery process.
12. Number of projects and initiatives implemented to protect and facilitate biodiversity.

DIRECTLY RELEVANT SDGs:



INDIRECTLY RELEVANT SDGs:



Action Area 7 :Product Life Cycle

Scope:

Life cycle analysis, compliance with legislation and standards, digitalization, green transformation, sharing platforms, energy efficiency, raw material management and procurement, waste management, environmental investments, value and supply chains, social standards, talent management, stakeholder collaborations

PRIORITIES / OBJECTIVES

In the area of product life cycle;

1. Following and adapting to technological developments that extend lifespan and reduce environmental footprints.
2. Facilitating disassembly through modular designs.
3. Extending the lifespan through use of recycled raw materials, replacing or repairing components that have not deteriorated their overall structure.
4. Involving relevant stakeholders in the process, providing trainings.
5. Compliance with work ethics, occupational health and safety and labor standards.

ACTIONS

1. Initiate efforts to ensure that stakeholders partnered for the objectives are included in product design, production, use and recycling processes, and that their contributions and participation are supported.
2. Establishing strategies, rules and norms that will ensure corporate transparency and create a culture, planning stakeholder engagement and creating a framework to ensure that risks are well managed.
3. Use environmentally friendly techniques and technologies, support the use of renewable energy sources, create plans to reduce environmental footprints, reduce harmful and inefficient waste and increase recycling.
4. Utilization of inert materials in landfills.
5. Initiating efforts to ensure resource, energy and cost efficiency in the internal and external supply chain, establishing a risk management system, and preparing work plans that take corporate and social responsibility into account.
6. Conducting product life cycle analyses. Improving performance.
7. Supporting talent development and management processes.

KEY PERFORMANCE INDICATORS (KPI).

(Indicator Units: Quantity/type/Value/Rate/periodic development/ benchmarking/in dex/etc.)

1. Reduced material quantity/value/proportion in the production process
2. Amount/value/proportion of material reused in the production process.
3. Duration of product use.
4. Rate of change in production costs.
5. Number of products for which product lifecycle analysis has been performed.
6. Changes in demand, production, sales, quantity/value/ratio.
7. Maintenance, repair costs and duration relationship.
8. Competitiveness and productivity indicators.
9. Share of energy used in the production process.
10. Environmental investment costs.
11. Amount of savings achieved through energy efficiency.
12. Number of cooperation partners.
13. Rate of automation and technology intensity in production.
14. Amount/value of investment in new technologies.
15. Social values created.
16. Number of employees included in the talent management process.

DIRECTLY RELEVANT SDGs:



08. SUSTAINABILITY AND CIRCULARITY

Circularity is an important feature and a valid approach for all dimensions of sustainability. The classical linear economic system defined as “produce-consume-dispose” is being replaced by a circular system that envisages less and smarter consumption. Because resources are not unlimited, the transition from a linear to a circular system accelerates in the economy.

Circularity is at the centre of the UN Sustainable Development Goals (SDGs). The circular economic system has a special place in sustainability approaches due to the direct relationship between production and product life cycle. Less consumption and more efficient use of each resource, material and energy are the main elements of the system. Briefly, the circular economic system is built on basic objectives such as “reuse, re-evaluate, clean energy, clean environment, decent life, long lasting product and zero waste”. It is possible to achieve sustainability goals, if these objectives are truly met.

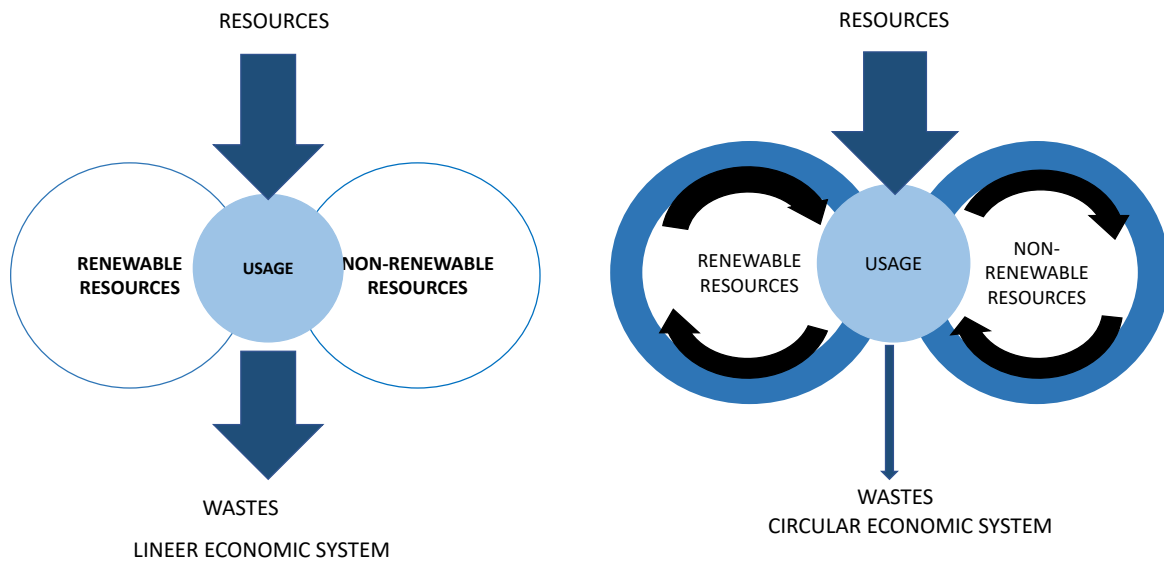


Figure 5: Classical Linear Economic System and Circular Economic System

Within the framework of the SDGs, the responsibility of each enterprise increases due to its production processes. Each manufacturer must monitor every stage in the product’s life cycle, stay informed about developments, use resources effectively and bear responsibility. In this system, product-based life cycle (cradle to cradle) analysis is an important step. The participation of all suppliers and stakeholders in the value chain is essential for a successful circular system. Machinery manufacturers in Türkiye continue their preparations to take the necessary steps for circularity in sustainability dimensions.

09. SUSTAINABILITY IN TÜRKİYE

Türkiye signed Paris Agreement which includes the UN's rules, and regulations on climate change in 2015. The Agreement entered into force for Türkiye in October 2021. Thus, in relation to the scope of the 2030 Agenda and 2050 targets, work has begun to reflect the defined SDGs, targets, and commitments into national regulations.

A “National Sustainable Development Coordination Board”⁶ was established under the coordination of the Presidential Strategy and Budget Presidency. The Board was tasked with monitoring and coordinating the implementation of the SDGs at the national level.

In the 11th Development Plan⁷, sustainability became the main concept shaping the Plan. The “Medium Term Program” (MTP)⁸ for the 2023-2025 period included an extensive coverage to sustainability.

In response to the climate change, steps to be taken for transition to a low carbon economy were identified. In the long term, considering the net zero emission target and the multifaceted impacts of climate change, it was announced that steps will continue to be taken for green transformation in all sectors, and areas of economy within the framework of development priorities.

Ministries, Institutions and Organizations Related to Sustainability in Türkiye:

Presidency of Strategy and Budget⁹ : Coordination with the responsible institutions and organizations on SDGs is ensured by the Presidential Strategy and Budget Directorate. The work of the National Sustainable Development Coordination Board is carried out within this Directorate.

Ministry of Environment, Urbanization and Climate Change: “Climate Change Presidency”¹⁰ and “Climate Change and Air Management Coordination Board”¹¹ were established in the Ministry. The Ministry is responsible for the coordination of activities about Greenhouse Gas Emission (GHG) reduction and green development. The Ministry is also responsible for the preparation of Circular Economy Action Plan (CEAP) and the enactment of Climate Law which will be a legal base for the implementation of the Emission Trading System (ETS).

Ministry of Trade¹² : The Ministry is responsible for the “Green Deal Action Plan” within the scope of harmonization with the EU's Green Deal, efforts to protect competitiveness in exports and steps to be taken to deepen the integration under the Türkiye- EU Customs Union.

6 <https://www.mevzuat.gov.tr/MevzuatMetin/CumhurbaskanligiGenelgeleri/20220719-12.pdf>

7 https://www.sbb.gov.tr/wp-content/uploads/2022/07/On_Birinci_Kalkinma_Plani-2019-2023.pdf

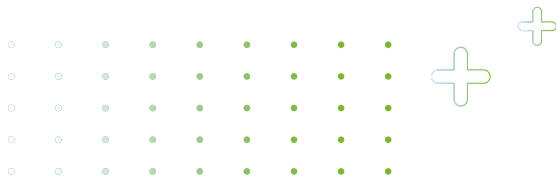
8 <https://www.resmigazete.gov.tr/eskiler/2022/09/20220904M1-1.pdf>

9 https://www.sbb.gov.tr/wp-content/uploads/2020/03/Surdurulebilir-Kalkinma-Amaclari-Degerlendirme-Raporu_13_12_2019-WEB.pdf

10 <https://www.resmigazete.gov.tr/eskiler/2021/10/20211029-35.pdf>

11 <https://www.resmigazete.gov.tr/eskiler/2013/10/20131007.htm>

12 Yeşil Mutabakat Eylem Planı, <https://ticaret.gov.tr/data/60f1200013b876eb28421b23/MUTABAKAT%20YE%C5%9E%C4%B0L.pdf>



Turkish Exporters Assembly (TIM)¹³ : TIM has developed a Sustainability Action Plan to guide exporters to achieve the goals of climate change, sustainability, and the European Green Deal.

Turkish Statistical Institute (TurkStat)¹⁴: TurkStat coordinates activities to meet the sustainability-related data generation, verification and research demands of relevant organizations in Türkiye. The Institution improves inter-agency technical cooperation activities to produce global sustainability indicators. The Institution monitors the level of achievement of 17 SDGs and 169 targets with 131 indicators in Türkiye, and discloses its assessments in its' bulletins.

Borsa Istanbul (BIST) Sustainability Index¹⁵: In 2014, BIST prepared the Sustainability Guide¹⁶ for Companies to raise awareness on environmental, social and governance issues among listed companies. The BIST Sustainability Index is an index of companies traded on Borsa Istanbul with high levels of corporate sustainability performance. BIST has been calculating the Sustainability Engagement Index since 2021. BIST also works with the Capital Markets Board (CMB) on green debt instruments and green lease certificate practices, increasing sustainable debt instrument and lease certificate issuances in the capital market, transparency, and external assessment obligations, reinforcing investor confidence, etc.

Capital Markets Board (CMB)¹⁷: The CMB has prepared the Sustainability Principles Compliance Framework. Although the implementation of these principles is voluntary, it is mandatory to report whether they have been implemented or not on a “comply or disclose” basis. For this purpose, the “Sustainability Report Template” has been prepared by the Board. In addition to this, “Green Debt Instrument, Sustainable Debt Instrument, Green Lease Certificate, Sustainable Lease Certificate Guide”¹⁸ were published.

Turkish Standards Institute (TSE): TSE assists businesses in reporting and verification of EN ISO 14001 “Environmental Management System” on greenhouse gas, green airport, water footprint, product carbon footprint, etc. In addition, TSE ISO 31000 and TSE ISO 45001 standards also support sustainability related activities¹⁹.

Other Institutions and Organizations (NGOs, Initiatives):

Business for Goals²⁰

Business and Sustainability Development Association (BCSD)²¹

13 <https://tim.org.tr/faaliyetlerimiz-tim-ekolojik-ihracat-akademisi-tim-surdurulebilirlik-eylem--1>

14 <https://data.tuik.gov.tr/Bulten/Index?p=Surdurebilir-Kalkinma-Gostergeleri-2010-2019-37194>

15 <https://www.borsaistanbul.com/tr/sayfa/165/bist-surdurulebilirlik-endeksi>,
<https://www.borsaistanbul.com/tr/duyuru/3037/borsa-istanbuldan-sirketler-icin-surdurulebilirlik-rehberi>

16 https://borsaistanbul.com/files/Surdurulebilirlik_Rehberi_2020.pdf

17 <https://www.spk.gov.tr/Sayfa/Dosya/1332>

18 <https://mevzuat.spk.gov.tr>

19 IQ Net SR 10- <https://tse.org.tr/IcerikDetay?ID=2438&ParentID=73>

20 <https://www.business4goals.org/>

21 <http://www.skdturkiye.org/>

10. CONCLUSION

Sustainability is an approach and a system of thinking that should be at the centre of everything. It should be at the centre of all activities of every business.

Since sustainability is a continuous learning and improvement process, it naturally requires a circular approach.

The model proposed in the Machinery Sector Action Plan Report is a “unique model” that is appropriate to the structure of the sector and will support the sector’s value chain and inter-sectoral collaborations. In this model; it is determined with an “approach that transforms from vision to action”. The model has been prepared as a system where measurable, concrete results can be obtained, with up-to-date data, considering the action areas that make up the value chain of the sector.

The report contains the necessary information for self-assessment at the sub-sector or company scale. It will be necessary to schedule the proposed actions and determine the right performance indicators to monitor the realization of the actions.

Association of Machinery Exporters (MAİB) has assumed an active role in creating a strategic infrastructure that will reflect the SDGs into practice and ensure sustainability-oriented transformation for all enterprises represented by the Association, not only with the entirety of the duties set forth by legal obligations, but also with a new production and export understanding that will shape the future.

Under the umbrella brand “Mundus+”, the machinery manufacturers in Türkiye have taken sustainability as a systemic approach that will shape the future of the industry. As the spearhead of change in the sector, Mundus+ develops its knowledge and experience in order to reach a more livable world together.

11. REFERENCES AND ADDITIONAL LITERATURE

Note: Sustainability encompasses many issues across environmental, social, economic and governance dimensions. Therefore, the references used for this report are grouped under these dimensions. Due to the nature of the matter, there may be some overlappings.





Sustainability, by definition, is ensuring the continuity of human life while providing for uninterrupted production and diversity. Taking care of current needs without compromising the needs of the future generations.

Turkish Machinery, active in a techno-domain that contributes to the well-being and comfort of mankind proclaimed themselves responsible for "sustainability" and consequently prepared a plan of action under the umbrella brand of Mundus+

'The Plan' was conceived to conceptualize the vision and turn strategy into actions that will produce concrete, measurable results across the industry.

Turkish Machinery trusts that all its stakeholders will join in the efforts to share the responsibility for a livable, productive world with a plus.

Because the world has our word.

For additional documentation visit:
mundusplus.org.tr

mundus+