

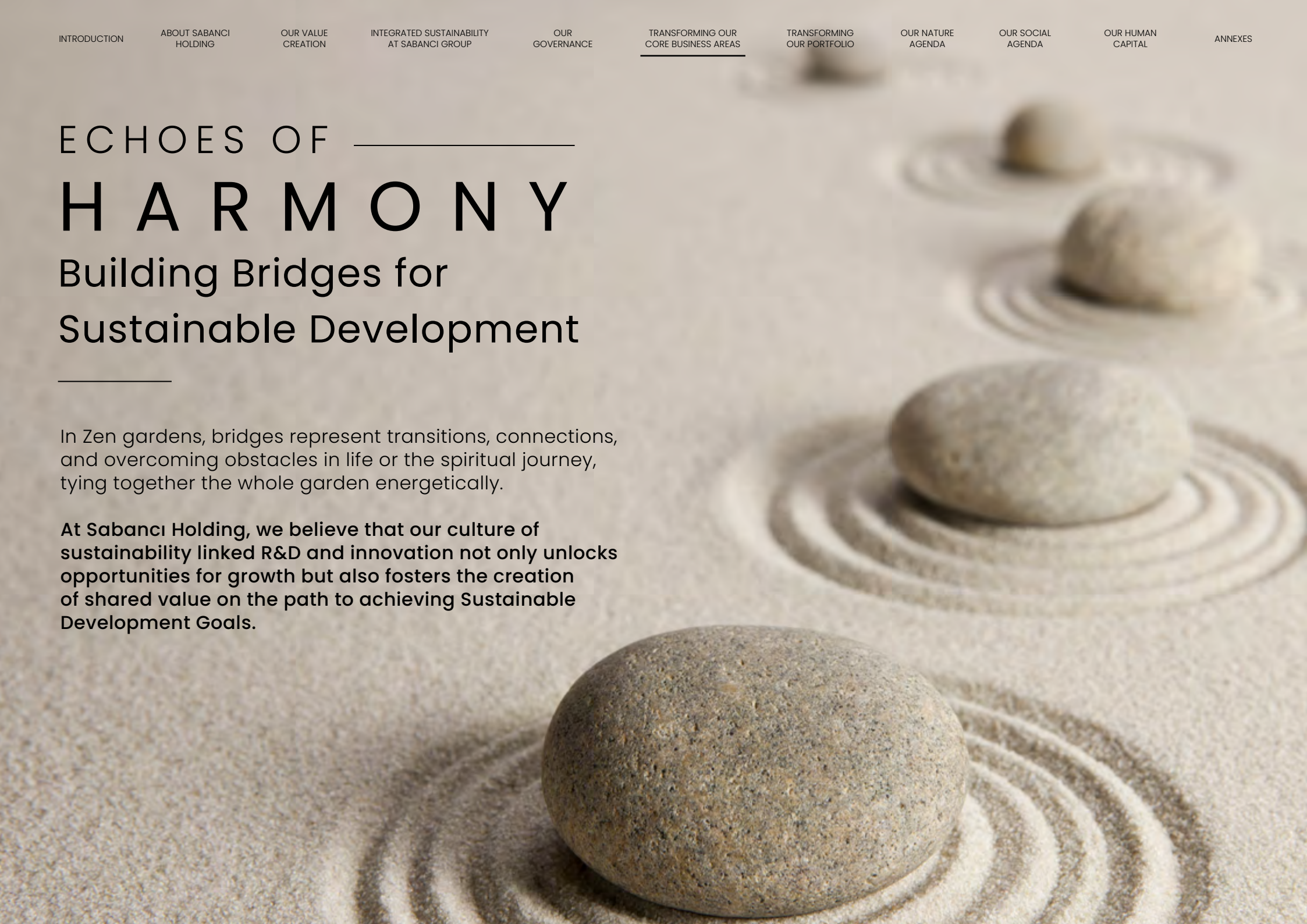
# ECHOES OF \_\_\_\_\_ HARMONY

## Building Bridges for Sustainable Development

---

In Zen gardens, bridges represent transitions, connections, and overcoming obstacles in life or the spiritual journey, tying together the whole garden energetically.

**At Sabancı Holding, we believe that our culture of sustainability linked R&D and innovation not only unlocks opportunities for growth but also fosters the creation of shared value on the path to achieving Sustainable Development Goals.**



# Transforming Our Core Business Areas

We build ecosystems that create synergies among each other, enabling us to enhance our intellectual capital in the new economy.

We believe that growth in sustainable business models is deeply intertwined with business development and innovation. For this reason, Sabancı Holding forms business development and innovation teams with diversified backgrounds to transform those new economy themes into fresh business opportunities on the various growth platforms.

We build ecosystems that create synergies among each other, enabling us to enhance our intellectual capital in the new economy. For example, when an idea is put forward through X-Teams, which is a cross sectoral agile business

development platform aiming to identify potential business areas aligned with the Group’s strategies, it can be converted into products and services at Group companies’ R&D and innovation centers. Alternatively, the idea may be evaluated within the Sabancı ARF program that supports open innovation and provides mentoring, structural support, and pre-seed investment to help entrepreneurs take off.

Additionally, during M&A decision-making processes, the question of how the potential M&A decision can support the strategic directions and capital allocation criteria of the Holding, including sustainability, is considered.

While making decisions on innovation and business development, Group companies also act within this framework to ensure sustainable development. They create various in-house entrepreneurship and business development programs

such as Enerjisa NAR, Enerjisa İVME, Brisa Raket, SabancıDX Corporate Entrepreneurship Program, Akbank+, Akbank Lab, and Aksigorta PURA to capture opportunities and trace future technologies and innovations in the realm of sustainability. In such programs, we engage and partner with external ecosystem players where relevant, in order to formulate scalable business opportunities that serve to a sustainable economy.

## Improving the Resilience of Our Businesses to Future Trends

Sabancı Holding recognizes the significance of strong governance of global trends and risks as a cornerstone of its approach to strengthening business resilience in a complex global environment. In line with this outlook, Holding systematically analyzes potential global trends and risks, considering the perspectives of its stakeholders and

assessing the financial impacts of those risks and trends through both inside-out and outside-in methodologies. These analyses are integral to Sabancı Holding’s Enterprise Risk Management (ERM) strategy, ensuring that all trends and risks are effectively managed. Sabancı Group companies are also deploying their key sources to further improve their performance against any emerging risks. Through the expansion of sustainable products and services, strengthened with ongoing R&D and digitalization efforts, both Holding and Group companies are enhancing their resilience against current and most expected future sustainability-related trends.

For further details on the trends and risks identified through last year’s global analysis and Sabancı Group’s response, please refer to [Page 33 of this report](#).

# R&D and Innovation

In 2023, Sabancı Holding continued its strategic emphasis on research and development (R&D) and innovation, aligning efforts with our commitment to driving sustainable growth and embracing emerging technologies.

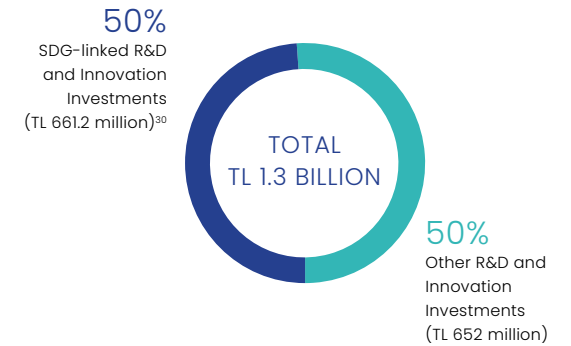
Recognizing the role of digital technologies in shaping the future economy, we intensified our efforts to move digitalization initiatives forward. Through strategic partnerships and targeted investments, we aimed to enhance digital capabilities and foster innovation in the rapidly evolving digital landscape.

Moreover, sustainability remained a cornerstone of our innovation agenda. We deepened our commitment to SDG-linked R&D and innovation activities, to address pressing environmental challenges while unlocking new opportunities for growth. By investing in sustainable growth platforms, we sought to create shared value for stakeholders and contribute to the achievement of

the UN Sustainable Development Goals (SDGs).

In parallel, we continued to make strategic investments in emerging technologies, recognizing their disruptive potential in reshaping industries and driving sustainable growth. Through partnerships with innovative startups and ventures, we aimed to leverage the ecosystem's growth potential and foster collaboration between startups and established enterprises. From digital factory platforms to industrial wearables and AI-powered virtual assistants, our investments spanned diverse sectors, positioning us at the forefront of technological innovation.

## R&D AND INNOVATION INVESTMENTS ✓



We aim that 70% of our R&D and innovation investments serve UN SDGs by 2025.<sup>30</sup>

<sup>30</sup> Includes Aksigorta, Agesa, Akçansa, Brisa, Carrefoursa, Çimsa, Kordsa, Teknosa, Temsa, Enerjisa Enerji, Enerjisa Üretim, SabancıDx

# R&D and Innovation

Furthermore, we spread a culture of innovation across our organization and portfolio companies, fostering creativity, experimentation, and cross-functional collaboration. Through initiatives such as hackathons, innovation challenges, and talent development programs, we empowered our teams to think boldly and drive meaningful change in the rapidly evolving business landscape.

At Sabancı Holding, the innovation and transformation process is seen as a funnel that includes **Discovery, Ideation, Incubation & Commercialization, and Scale-Up**, respectively. These elements are positioned to foster growth and innovation across the Group companies. **The innovation and transformation funnel is based on four key stages: X-Lab, X-Teams, the accelerator program Sabancı ARF, and Sabancı Ventures.**

**X-Lab** focuses on establishing an innovative perspective by using design thinking, lean start-up and other innovation-based methods within Sabancı Group companies.

**X-Teams** verifies the problem area, evaluates scalability, searches and analyzes suitable solution areas/new technologies in order to assess Sabancı Group's competencies within this framework and to develop a roadmap forward.

**Sabancı ARF (Almost Ready to Fly)** is the Group's early-stage acceleration program. This 20-week program includes seed funding at the outset and a potential follow-on investment on demo day, mentorship, networking and collaboration opportunities with Group companies. Sabancı ARF is designed for selected start-ups (open to both Group companies and external start-ups by application) to help them scale up quickly.

**Sabancı Ventures** is the corporate venture capital arm of the Group. As a corporate VC fund, Sabancı Ventures invests in commercialized post-revenue scale-ups and seeks out solid synergies and value creation opportunities for both its investment targets and Sabancı Group companies.



<sup>31</sup> European Institute of Innovation & Technology (EIT) ClimAccelerator Climate KIC is a global programme for start-ups to innovate, catalyse and scale the potential of their climate solutions.

# R&D and Innovation

## Sabancı Global Technology Center GmbH (SGTC)

In 2023, Sabancı Holding, has invested EUR 2.2 million to Sabancı Global Technology Center (SGTC) located at the Technical University of Munich (TUM).

SGTC sets an example of robust university-industry collaboration in Europe and underscores Sabancı Group's commitment to foster sustainable development.

The state-of-the-art facility will serve as a hub for innovation and research for Sabancı Group companies Çimsa and Kordsa.

SGTC is equipped with **eight specialized cutting-edge laboratories** fostering advanced research in fields such as

material technologies, and construction reinforcement. Products developed in Çimsa and Kordsa factories in Türkiye will be reintroduced to the European market at SGTC.

SGTC's model, serving Sabancı Group's purpose to 'unite Türkiye and the World' will also be one of the driving forces behind Türkiye's value-added export mobilization.

With a diverse team comprising **professionals from six different nations**, SGTC embodies international collaboration and expertise. Moreover, the **Çimsa and Kordsa teams are led by two women executives, surpassing the UNESCO Institute of Statistics' level of 30% women employed in R&D activities worldwide.**

Committed to sustainability driven innovation, **Sabancı Group increased the total number of R&D and technology centers to eight, six in Türkiye and two abroad with SGTC in Germany and Kordsa's Asia Pacific Technical Center in Indonesia both opened in 2023.**

Moreover, Sabancı Holding explores variety of models for university-industry collaborations such as MIT Energy Initiative Future Energy Systems Center in the USA, of which Enerjisa companies are members and Composite Technologies Excellence Center, established through the Sabancı University-Kordsa collaboration.

In summary, our R&D and innovation efforts in 2023 were characterized by a strategic focus on digital transformation, sustainability, and collaboration with the broader ecosystem. By remaining agile, adaptive, and forward-thinking, we

are confident in our ability to navigate the challenges ahead and unlock new opportunities for growth, differentiation, and value creation.

## [Highlights From Sabancı Group Companies](#)

### ÇİMSA

Çimsa continues to take significant steps towards shaping the future with its research and development (R&D) and innovation-focused strategy in the sustainable building materials field. In line with short and long-term sustainability goals, R&D efforts include developing new applications to minimize the use of clinker to consume fewer natural resources and reduce environmental impact, increasing the use of alternative fuels and raw materials, exploring hydrogen utilization, carbon capture and utilization, enhancing energy efficiency,

# R&D and Innovation

advancing digitalization, and utilizing artificial intelligence. Sustainability serves as the main lever for R&D activities, with all projects being produced within this framework.

In addition to SGTC in Munich, the Sabancı Technology Center, in synergy with Çimsa's R&D Center, Formülhane, in Mersin, serves as a crucial key for Çimsa to become a pioneer in sustainable and value-added products internationally, establishing a strong bond with its customers and designing innovative products tailored to customer needs.

Çimsa organized the Innovation & Inspiration Day event at the Sabancı Technology Center with nearly 100 business partners. Alongside Çimsa's top management, speakers from the Technical University of Munich (TUM), Friedrich-Alexander University (FAU),

Middle East Technical University (METU), and the Global Cement and Concrete Association (GCCA) participated in the event. Customers from various countries gathered to exchange views on developments in the cement and concrete sector, providing stakeholder insights and sharing information to identify sustainable and value-added product needs.

## AKÇANSA

Akçansa aims to reduce its environmental impact by integrating advanced technologies into its production systems through R&D and innovation activities, contributes to the industry with a 'grow together' approach and continues to be a key solution partner for mega projects in the country. Supporting the transition to a low-carbon economy in line with the principle

of 'working responsibly for the future', Akçansa established the CO<sub>2</sub> Roadmap in line with its 2030 Sustainability Targets and the Low Carbon / Low Clinker New Product Development Plan and manages all its R&D and innovation investments with a focus on sustainability.

Akçansa conducted a total of 2,461 experiments, including 1,612 concrete experiments, at the Betonsa Technology Centre laboratory, focusing on issues such as new product development, product optimization studies, and evaluation of customer and stakeholder requirements. Projects include, but are not limited to, research on the use of microalgae as alternative fuel and CO<sub>2</sub> capture in the cement production process, utilization of demolition wastes in concrete production and construction, development of cement and concrete products with high consistency and

performance, and superior durability and waterproof concrete products. Akçansa conducts research on the applications of carbon capture, utilization, and storage (CCUS) technologies in the field of building materials under the Sabancı X-Teams Project.

Akçansa aims to improve its innovation capability, increase its level of innovation management maturity, and embed innovation in its culture and business processes through activities to raise awareness of innovation, intrapreneurship, design thinking, and lean initiative concepts. The 'Inovasyol' (Road to Innovation) Intrapreneurship Programme serves this purpose by collecting, prioritizing, and implementing new ideas.

# R&D and Innovation

## KORDSA

Science and innovation are at the core of Kordsa's business model. Kordsa places R&D, innovation, technology, and digitalization as facilitators of its sustainability targets, and continuously invests and renders projects in these fields.

Kordsa facilitates decreased fuel consumption by reducing rolling resistance of tires, helps production of lighter vehicles through its composite technologies and contributes to its stakeholders' sustainability goals by using recycled materials in tire reinforcement technology and bio-based materials in composite technology. Kordsa provides construction reinforcement technologies for sustainable building projects, which stand out with their low carbon emission and durability features.

## RFID Tag

Kordsa and SES RFID Solutions GmbH cooperate to provide unique Radio Frequency Identification (RFID) tags for vehicle tire identification and tracking. The collaboration combines the patented SES technology with Kordsa's material expertise to develop a small, flexible RFID tag to embed in vehicle tires before vulcanization. Once embedded in tires, the RFID tag allows global traceability from production to end of life with data benefits for the tire manufacturers, automotive OEMs, distributors, and fleet management companies. Joint patent for newly developed RFID technology solution applications have been made.

## Cord Fabric Solutions for Electric Vehicle Tires

While the automotive industry is rapidly shifting towards electric vehicles (EV), this change necessitates new generation tires. This transformation in the industry

requires the design of tires with increased features such as higher durability, lower rolling resistance, less weight, better strength, high wear resistance, low noise and better sustainability. Kordsa develops cord fabric solutions to meet the increasing demand of electric vehicles. These solutions are aimed to meet the tire specifications required by electric vehicles.

## Development of Bio-Based Resins

Petroleum-based phenolic resins have been used in the thermosetting polymers industry for many years for their advanced mechanical properties, flame retardant characteristics, flexibility and high thermal stability properties. Kordsa has developed flame retardant bio-based resin systems alternative to phenolic resins that comply with both the requirements of the aviation industry (FAR 25.853) and railway (EN 45545) standards.

## Kratos Structural Reinforcement

Kordsa offered the Kratos Structural Reinforcement product line to the construction industry to provide a convenient and high-performance solution to structural reinforcement. Kordsa's dedicated efforts are centered around the development of an innovative retrofitting system that serves a dual purpose: augmenting the service life of existing structures and facilitating the design and construction of exceptionally resilient new buildings.

## Airbag Yarn

With its knowledge and experience in yarn production technologies, Kordsa has started and progressed its efforts to operate in the airbag sector. The technological studies required to fulfill production requirements are handled with an innovative approach by the R&D department.

# R&D and Innovation

## BRISA

Brisa focuses on innovative production techniques and raw materials that enable it to emerge as a stronger actor in the international arena of R&D.

Brisa, the mobility leader of the Turkish tire industry, has been investing in R&D since 1985. Located in the Izmit Plant, which was certified in 2017, Brisa is accelerating value-added product development activities at its R&D Centre.

In addition to innovative process and development technologies in the field of R&D, the Company also puts new products into market in a shorter time as required by the market and leverage many benefits such as cost advantages as a result of raw material sources being approved within a shorter time.

Furthermore, Brisa carries out R&D and technology development operations aimed at electric vehicles, which will shape the future of the automotive industry. Accordingly, manufacturing technologies are being renewed primarily to meet the expectations of vehicle manufacturers from electric vehicle tires. Studies are conducted to enhance performance, diminish noise levels, minimize energy losses associated with tires, decrease tire weight, and prolong tire lifespan.

With all investments and studies, Brisa developed 122 new products by spending TL 272.2 million in 2023 (2022: TL 231 million) and was recognized as the company with the highest amount of R&D investments in its sector in the Türkiye R&D 250 Survey.

## TEMSEA

With its sustainability-oriented mobility strategy, Temsa conducts R&D studies highlighting its innovative approach to tackling sustainability and climate-related problems. Temsa focuses on projects to expand its vision not only in the field of buses and transportation, but also in alternative routes. This comprehensive approach will be an important turning point for both the company and the environment.

Diversifying its revenue in the Mobility Solutions and Equipment for Climate Technology sector by adding battery packs and battery management systems to its portfolio, alongside producing electric buses, Temsa explores new market opportunities. Developed internally by the R&D center, these products have a wide range of usage

areas, from storage to marine, farming to refrigeration. The E-quad last-mile micro mobility vehicle has also commenced mass production, reflecting the Group's commitment to sustainable mobility.

### Temsa Battery Pack

It is an air-cooled battery pack that can operate between -20°C and -60°C, has a capacity of 35, 38, 70, 102 kWh, NMC cell type and works with CANBus 2.0b 29Bit communication protocol. New products using LFP, LFMP, Na-Ion cells are also being studied for the second-generation battery. The battery management system software and cards used in these batteries are R&D and produced by Temsa Tech. Thanks to the software, all diagnostic information about the batteries is received, this information is evaluated on big data servers and the necessary parameters for next generation battery development are



# R&D and Innovation

collected. Battery packs are also offered for sale to other OEMs (Original Equipment Manufacturers).

## Refrigerated Trailer Electrification (Refrigerated Truck)

Temsa paves the way for sustainable logistics transportation with its Refrigerated Trailer Electrification Project. In order to electrify the trailers used to transport cold chain products, Temsa launched this project in 2022 and produced the first electric refrigerated truck chassis in Türkiye. The project uses Temsa batteries to enable the electrification of trailers carrying cold chain products. Trailers cooled using diesel fuel are now cooled in a more efficient and environmentally friendly way by controlling and operating the compressor thanks to the Temsa battery pack, hybrid inverter and solar panels. The primary goal of the project is to

achieve a 100% reduction in the amount of fossil fuels used in cooling energy. By achieving this, Temsa emphasizes the goal of saving fuel and reducing carbon emissions. With the Refrigerated Trailer Electrification project, Temsa is not only transforming the logistics industry, but also contributing to an environmentally friendly future.

## My Energy is Sun

The objective of the project, that Temsa has implemented in cooperation with Enerjisa Enerji, is to create a new market and alternative use for used bus batteries without disposing of them as waste. For the purpose of the My Energy is the Sun Project, Temsa developed a DC electric vehicle charging station, which will be integrated with solar energy systems and function off the grid via battery support. This project, which was completed in 2022, stands out with the use of solar

energy as a renewable energy source and provides charging services for up to 4 vehicles with net zero emissions. Presenting this project to both local and global markets, Temsa expands its innovative product portfolio with its energy-providing vehicle charging unit. The project represents a concrete example of Sabancı Holding's future vision.

## Agricultural Battery

With the Agricultural Battery project, Temsa aims to be part of a transformation that will shape the agricultural technologies of the future. The liquid cooled LFP battery pack with a capacity of 74 kWh, which lays the foundation of this project, offers an energy solution in the agricultural sector. Designed to meet the power needs and vibration values of tractors, this special battery pack contributes to the

sustainability of agriculture by reducing diesel fuel consumption. The prototype agricultural battery prevents the use of 22 tons of diesel fuel over its lifetime, offering both an economic advantage to farmers and a positive impact on the environment. The conversion of diesel tractors to electric tractors saves 2,000 liters of diesel fuel per vehicle on an annual basis, while significantly reducing carbon emissions. This is an important step in terms of the environment and climate change.

## E-QUAD

E-quad, a 100% electric cargo vehicle designed to reduce carbon emissions and traffic congestion in cities, and which can also be driven by pedals; with a cargo capacity of 200 kilograms and 2000 liters, the LFP serves as an environmentally friendly vehicle with its replaceable battery.

# R&D and Innovation

## ENERJİSA ÜRETİM

With the steps taken in 2021 and 2022, Enerjisa Üretim turned all its wind and thermal power plants into hybrid power plants by adding solar power plants. It commissioned a 41 MW solar power plant at the end of 2022 and completed the 35 MW power plant investment in 2023.

Aligned with its goal of becoming Net Zero by 2045 by using its renewable energy resources, Enerjisa Üretim completed the infrastructure installations of charging stations with 22 kVA AC power in all its hydroelectric power plants.

Driven by its vision for maintenance, which includes integrating innovative technologies, adopting cost-saving strategies, implementing innovative approaches, and prioritizing innovation, Enerjisa Üretim conducted an inspection

of the emergency valve at Sarıgözü HEPP using an underwater robot. This initiative enhanced the reliability, effectiveness, and sustainability of Sarıgözü HEPP's operation.

Furthermore, converting Hacınoğlu HEPP into a Dark Plant, enabled Enerjisa Üretim centralized monitoring using radar and high-level camera systems, thereby bolstering the plant's security.

**The Dark Plant initiative** implemented in its hydroelectric power plants reflects Enerjisa Üretim's vision shaped by foresight and innovation and its commitment to sustainability delivering energy efficiency gains and ensuring business continuity.

Enerjisa Üretim's Bandırma Energy Base generates electricity with 5 different innovative energy generation methods, including groundbreaking technologies

such as battery storage and hydrogen generation. The base positions itself as an innovation and R&D center by closely following the latest technological developments in the sector and hosting various innovative projects.

### Türkiye's first Hydrogen Valley

A pioneering project that Enerjisa Üretim started in 2023, in partnership with the South Marmara Development Agency, Sabancı University and 16 local and foreign stakeholders, both local and international, with a budget of EUR 36.8 million and supported by an EU grant of EUR 8 million, continues with feasibility studies. The EUR 8 million grant from the European Union's Horizon Europe program is the largest grant issued for such a project in Türkiye to date. As part of 'South Marmara Hydrogen Coast' Valley initiative, Enerjisa Üretim pioneers the establishment of Türkiye's first green

hydrogen facility at its Bandırma Energy Base, with the goal of generating at least 500 tons of green hydrogen per year. In 2023, Enerjisa Üretim met 42% of the hydrogen consumption used for the cooling of Bandırma 2 generator, thanks to our hydrogen generation electrolyser.

## ENERJİSA ENERJİ

### Local Collaborations

In 2023, collaborations were established with Keiretsu Forum Türkiye and the Corporate Ventures Platform. The collaboration with Keiretsu Forum Türkiye entails the introduction and review of selected startups for investment opportunities on a monthly basis. Corporate Ventures Platform, on the other hand, aims to listen to successful corporate entrepreneurship projects from their founders, share best practices and development suggestions by bringing

# R&D and Innovation

together innovation managers and member institutions with companies that have been organizing corporate entrepreneurship for many years while also looking for ways to create a subcommunity within the platform for entrepreneurs in the incubation period.

## University Collaborations

Since 2017, Enerjisa Enerji has been collaborating with ITU Arı Teknokent's incubation centre, ITU Çekirdek, as a key stakeholder. To date, the startups supported by Enerjisa Enerji have received approximately USD 40M from local and global investors, and their total valuation is estimated to be over USD 250M. The company has conducted pilot studies with Kozalak and Delifer Energy and continues to monitor the development of startups like Eyes of Solar and Energyment. During the Big Bang event on December 14, 2023,

TL 300 thousand in grants were provided to selected startups. Buradayım, one of Enerjisa Enerji Corporate Entrepreneurship and Innovation initiatives, was also among the Big Bang finalists.

Enerjisa Enerji evaluates venture capital fund investments to have an impact as an investor in the entrepreneurial ecosystem: access knowledge in new technologies, new business models, products and venture investment processes. An investment has been made in Revo Capital Fund II. Having reached the size of EUR 90 million, the fund's investors include the International Finance Corporation, the European Bank for Reconstruction and Development, the European Investment Fund and the German Development Finance Institution. Through this investment, the Company aims to offer business development opportunities to ventures, thereby

strengthening the technology startup ecosystem in Türkiye. The fund's first exit transaction was completed in 2023 with a partial exit from Builder AI.

## SABANCIDX

SabancıDx runs various software development and innovation projects out of its R&D Center in Istanbul, Türkiye which is certified by the Ministry of Industry & Technology. Through next generation technology and software developed at its R&D Center, SabancıDx offers innovative solutions to carry the companies to the future with strong steps, end-to-end to the changing and digitalizing world.

## Hybrid Cloud Solution with Azure Stack HCI Investment

By signing a strategic, innovative partnership agreement with Microsoft to contribute to Türkiye's strength in cloud technologies, companies in Türkiye can now access hybrid cloud solutions tailored to both local and global needs. Through this collaboration, Turkish companies can experience the advantages provided by Microsoft's Azure cloud solutions via the infrastructure provided by SabancıDx, as a 'Hybrid Cloud.'

While investing in Türkiye's cloud technology infrastructure, SabancıDx Digital Campus will support its customers' digital transformation processes in Türkiye with artificial intelligence and cloud experts through the Artificial Intelligence Supported Hybrid Cloud Solution Center to be opened.

# R&D and Innovation

## Cloud-Native Environments with Container Technologies

Container technologies and cloud-native environments have become innovative fundamental to modern software development and deployment. These technologies enable rapid development, deployment, and scaling of applications while simplifying infrastructure management.

When combined with the Net Zero emission goal, these technologies become key to creating sustainable and environmentally friendly innovative IT solutions. Container technologies package and isolate applications and dependencies independently of runtime environments, ensuring consistent operation across different environments and eliminating the 'it works on my machine' problem between development and operations teams. The cloud-native

approach refers to the development and deployment of applications designed to run in cloud environments. This approach is based on principles such as microservices, continuous integration and delivery (CI/CD), DevOps, and immutable infrastructure. Combining these technologies with Net Zero aims to optimize energy efficiency and resource usage, reducing carbon footprint. Container-based applications reduce energy consumption by preventing unnecessary resource usage and allocating resources only when necessary. In particular, the use of renewable energy sources by cloud providers and infrastructure design focused on energy efficiency are critical to achieving Net Zero goals.

## AKBANK

### Akbank Innovation Centre

Akbank Innovation Centre (Akbank LAB) was launched to develop innovative projects for the needs of the Bank's business units and to achieve the goal of perfecting customer experience with financial solutions that will carry Akbank into the future.

While preparing the Bank for the technology of the future by evaluating collaboration options with players in the entrepreneurship ecosystem, Akbank embraces innovation as a part of its culture and takes steps to support the innovation ecosystem in Türkiye.

Akbank keeps employees informed of new developments by sharing bank-wide 'Innovation Bulletins' consisting of global developments, and shares evaluations

on developments in the field of financial technology and innovation, as well as Akbank LAB's current activities on Akbank LAB Medium account.

With nexTalk events, which Akbank holds live on Youtube, the Bank talks to experts in the sector about its focus areas.

With Akbank LAB, the Bank designs ideas developed in line with focus areas and goals into implementation of value-added financial services. After the evaluations, the Bank tests the feasibility of the successful ideas by passing them through the 'PoC' (proof of concept) stage and assesses the gains for the Bank and its customers.

In this context, 16 of the 40 projects have been disseminated and implemented in many areas such as machine learning, blockchain, artificial intelligence, big

# R&D and Innovation

data, facial recognition, and customer experience.

In this context, the Akbank LAB Innovation Centre People and Culture team, Waste Log, which digitalizes waste processes in the first period of the Akbank+ Program, and Voltla, which improves the experience of electric vehicle owners, received an investment of USD 500 thousand from Akbank. Following the successful completion of the first term, the second term of the program continued with the development of the business ideas of 15 in-house entrepreneurs of Akbank. In 2023, 5 business ideas from different focus areas were included in the program. With the interim presentation to be held in the coming days, 3 business ideas will continue to the next phase of the program, the Entrepreneur Journey Phase.

## **AKBANK+**

With Akbank+, the Bank enables in-house entrepreneurs to work on their ideas on a full-time basis. While the personal rights of the participants as Akbank employees continue, all participants can also pursue their activities as full-time entrepreneurs.

Within the scope of the program, 6 ideas worked on by Akbank employees are studied for the 'empathy', 'identification' and 'idea generation' steps of the design-thinking methodology during a 10-week incubation phase, and then 3 ideas determined by the presentations to be made to Akbank's Investment Committee move on to the second phase of the program in 14 weeks and turn into MVPs (Minimum Viable Products) in line with the 'prototype' and 'test' steps.

Akbank implements the program together with GOOINN, which provides consultancy services in the field of innovation and entrepreneurship. In addition, once the business models of the participants are clarified, the Bank creates an advisory board that will provide mentorship to ideas in the process of MVP development and their investment journey.

## **Akbank Hackathon – Disastertech**

This year's Akbank LAB Hackathon focused on developing solutions to protect and save lives before, during, and after natural disasters.

Akbank Hackathon: DisasterTech event, organized in collaboration with Akbank LAB and imece with 176 different teams to which nearly 500 people applied in total, kicked-off online on October 14, 2023.

Within the scope of the event, 33 teams that were selected worked on various projects.

In the Akbank Hackathon: DisasterTech event; developers, software developers, designers and students interested in this field aimed to develop innovative solutions for disaster management. The teams focused on developing safer and more resilient disaster management systems by using the technology. As a result of the evaluations made by the jury members, the first team of finalists won TL 100 thousand TL, the second team TL 60 thousand TL, and the third team won TL 40 thousand.

# Digitalization for Sustainable Business Models

The digital strategy of Sabancı Group aims to accelerate the digital transformation of its companies and Türkiye, while also enabling scalable business models and international expansion.

To support this vision, Sabancı Holding established the Digital Strategic Business Unit (SBU), which is dedicated to fostering existing digital capabilities and accelerating new investments in key areas.

In 2023, under the leadership of Mr. Max Roger Speur, the Digital SBU focused on enhancing cloud business infrastructure and services through SabancıDx and supporting digital marketing and

cybersecurity growth through its companies Opportune and Radiflow.

Looking forward, Sabancı Group's digital and tech retail business unit plans to intensify its sustainability initiatives, expand product offerings, and implement a blended digital and physical strategy.

The vision is to create an integrated digital value proposition for connected enterprises, leveraging cloud, big data, and transformation capabilities.

The Group's extensive know-how, strategic partnerships, and global resource access are significant in driving growth across the digital value chain.

Future initiatives will prioritize investments in emerging markets and next-generation technologies, ensuring a sustainable and innovative digital future for Sabancı Group.

Sabancı Holding is committed to integrating digitalization into its sustainability strategy, recognizing it as an important driver for achieving Group's future-focused sustainability targets.

By leveraging technology, Holding aims to embracing significant trends and opportunities that enhance our business models and sustainability practices.

To ensure accountability and progress, digitalization-related annual KPIs are integrated into the performance assessment of our related Executive Committee members. These top decision-makers, who also serve on the boards of various Sabancı Group

companies, play a leading role in accelerating Sabancı Holding's digital transformation efforts.

Sabancı Holding leverages the capabilities of its enabler companies, SabancıDx and Teknosa, for digital transformation strategies while also digitize data management systems ensuring the transparency and accuracy of sustainability related data in its internal processes.

Accordingly, in 2023, Sabancı Holding invested in Pulsora's, which is a digital platform for ESG data management, USD 20M Series A funding round through Sabancı Climate Ventures. This investment is an indicator of a commitment to leveraging advanced technology to improve data quality and accuracy. With Pulsora's expertise, Sabancı Holding aims to enhance the data collected by Group companies,

# Digitalization for Sustainable Business Models

covering environmental, social, occupational health and safety (OHS), economic, and governance metrics.

## Growing Ambition in AI Technologies

SabancıDx has solidified its position as a leading provider of multi and hybrid cloud solutions, aligning with the Digital SBU's strategic objectives in the digital market.

A strategic partnership with Microsoft has enhanced Sabancı's cloud value proposition, incorporating Azure capabilities within Türkiye. This cooperation focuses on offering hybrid cloud solutions to meet both local and global customer needs. Additionally, the collaboration with Microsoft extends to the Cloud Solution Center, which bolsters hybrid cloud and artificial intelligence competencies within Türkiye's digital ecosystem. This agreement also presents

significant expansion opportunities for SabancıDx in Southeast Europe, Central and Eastern Europe, and the Middle East and Africa, facilitating market access and generating foreign currency revenue. Beyond the Microsoft partnership, SabancıDx has initiated cloud infrastructure partnerships with major brands, utilizing the expertise of digital native talent to implement and manage cloud solutions effectively, thereby better serving its expanding customer base.

Sabancı Ventures also acts as a 'sensor' for Group companies to identify new growth areas, actively evaluating investment opportunities with innovative business models and/or cutting-edge technologies. SV focuses on digital-related areas such as Internet of Things (IoT), artificial intelligence (AI) and big data, climate tech, insurtech, health tech, fintech, mobility, material technologies and cloud tech.

## Highlights from Sabancı Group Companies

### ENERJİSA ÜRETİM

Enerjisa Üretim leverages its digital capabilities to predict the future and build tomorrow today. Renewable energy is made feasible through decentralized energy generation, digital transformation, and efficient data management by fast, competent, and talented teams. The knowledge and experience gained during this digital structuring and transformation are marketed to external stakeholders through Senkron Energy Digital Services.

Enerjisa Üretim launched OnePact AI, an advanced analytical tool powered by Microsoft's Azure OpenAI Service, designed to optimize operational efficiency by combining data from 40,000 IoT points with operational information. This AI application improves

demand-supply balance, digital power management, and maintenance, while supporting ESG objectives by providing data-driven strategies to reduce emissions and promote sustainable energy practices.

Through the Enerjisa Production Center Operation Control, Monitoring, and Development Operation SENKRON, the company organizes remote operation, performance, and status monitoring processes for power plants in Türkiye and abroad.

The SENKRON Performance Monitoring and Development team offers internal and external performance and

# Digitalization for Sustainable Business Models

24/7 status monitoring services for approximately 4 GW capacity across five different technologies. These services include real-time monitoring, alarm situation investigation, and monthly evaluation reports.

**In 2023, Enerjisa Üretim fully integrated Dikili, Çeşme, and Akköy wind power plants into the SENKRON infrastructure, initiating remote operation and performance monitoring activities, and extending these efforts to 55 MW capacity hybrid solar power plants.**

To simplify the increasing number of power plants and processes, Enerjisa Üretim started the joint SCADA project,

aiming to operate power plants according to instantaneous target load demands without requiring operator intervention, with completion expected in 2024.

Enerjisa Üretim also developed digital twins using 126 machine learning models across 409 features for instant and status monitoring alarms and early fault detection. These models make predictions at 10-minute intervals and perform monthly analyses by comparing them with real values.

## SABANCIDX

As the leading technology company in Türkiye, SabancıDx provides customers with innovative solutions needed in a competitive environment. SabancıDx comprehensively meets all companies' needs in cloud technologies, preparing customers for the technology needs of

the future with managed technology services and products developed in the digital transformation field. While providing services from a single point in cloud solutions and managed services, SabancıDx empowers businesses with innovative technology solutions that encourage productivity and success.

**With the Artificial Intelligence Supported Hybrid Cloud Solution Center, SabancıDx brings together global competencies and local needs, offering flexible and reliable solutions for customers in Türkiye and worldwide.**

An example for SabancıDx's cloud transformation solutions is a **Hybrid**

**Cloud Infrastructure Migration Project** provided for a leading insurance/finance company that involves transitioning the company's existing technological infrastructure to a cloud-based infrastructure and architecture. This transition aims to create a faster, more secure, and flexible working environment. The project utilizes the high standards of an internationally certified data center, providing significant advantages in environmental sustainability, energy efficiency, internet access, and data security, while also working towards NetZero certification.

Key improvements include infrastructure renewal, transitioning virtualized systems to a modern private cloud environment, and reinstalling the OpenShift container platform in the new architecture. Additionally, the establishment of a new Emergency Response Center is a significant part of the project.



# Digitalization for Sustainable Business Models

Another example for SabancıDx's **Cloud Infrastructure System Solutions** is a cloud infrastructure system preparations project provided for a new insurance/finance company. Client's insurance application, which entirely relies on new cloud technologies, has been designed and implemented with a carbon advantage from scratch.

**Through Türkiye's largest 'Cloud Born' infrastructure platform project, all future needs of the client can be addressed flexibly and rapidly in a carbon-advantageous cloud environment, using only the necessary resources.**

SabancıDx also offers a range of digital products that enhance efficiency and support sustainability.

**Edoksis** facilitates electronic document management for over 4,000 corporate customers, significantly reducing paper waste through millions of electronic transactions.

**Pratis** digitizes procurement processes for over 150 companies, saving costs and reducing environmental impact by eliminating the need for physical documents and meetings.

**HrWe**, along with its applications **Hrweb**, **Perfx**, **Thanxie**, and **Boospace**, supports digital HR transformations, enabling efficient, paperless management of payroll, performance, recognition, and office reservations, thereby enhancing employee experience and operational efficiency.

## ÇİMSA

Çimsa identifies and implements digitalization projects focused on areas of development with the aim of embracing the evolving requirements of a digitized world, where the transition to productive (GEN AI) models of artificial intelligence (AI) systems is accelerating.

### Çimsa's Digital Roadmap

In support of digital transformation in 2023, Çimsa has undertaken projects such as strengthening technical infrastructure for establishing cybersecurity and digitizing data management, creating shipment planning infrastructure to enhance customer satisfaction, implementing Enterprise Resource Planning (ERP) infrastructure for overseas subsidiaries, digitally transmitting order forms via production automation system,

establishing Digital Archive on the production automation system for ready-mix concrete plants and aggregate quarries, and installing autonomous control systems on equipment within factories.

### Digital Twin Project: CemClone

With the CemClone project, Çimsa aims to create digital twins in cement industry facilities to enhance processes, performance, and efficiency. The project continuously collects data through sensors strategically placed within the facility, creating a detailed digital model that reflects the physical reality of the facility, allowing for precise simulation. This enables facilities to analyze potential impacts on predetermined scenarios, facilitating process optimization and assisting in efficiency-focused emission reduction within the decarbonization roadmap.

# Digitalization for Sustainable Business Models

## Artificial Intelligence Applications

In this context, in 2023, Çimsa implemented projects in cement factories aimed at establishing an artificial intelligence-supported real-time predictive maintenance system on critical equipment, ensuring:

- Enhanced equipment performance and extended usage life,
- Optimization of water consumption through algorithms for more effective utilization of water resources,
- Integration of artificial intelligence image processing systems into cameras in facilities, and
- Procurement of drones capable of capturing footage in outdoor and indoor areas where operational and maintenance planning processes pose risks, thus supporting occupational health and safety

Furthermore, in 2023, Çimsa accelerated the adaptation of current technology processes and aimed to enhance operational efficiency using artificial intelligence. To achieve this goal, Çimsa joined the supporters of the Türkiye Artificial Intelligence Initiative, contributing to the development of the artificial intelligence ecosystem in Türkiye.

## BRISA

Brisa is also taking strong steps in the field of digitalization. Within this framework, software have been developed that automate technical design processes with artificial intelligence. Thus, development processes have been perfected and accelerated. Besides developing innovative services for its customers to meet future mobility needs, the Company also develops image processing and end-to-end data analysis systems to

ensure the highest performance in production processes.

As part of the digitalization process that provides efficiency and an effective management approach, Brisa offers trainings to its business partners on digitalization and changing customer expectations within the scope of the 'My Business Partner is Digitalizing' project. With this project, the presence of business partners on digital platforms is strengthened, and it is aimed to create customer traffic to the stores of business partners by using digital marketing tools.

## Smart Digital Applications in Brisa Facilities

Brisa connects employees in the İzmit and Aksaray facilities through augmented virtual reality applications, enabling instant communication and remote support using smart glasses. In the Aksaray facility, the tire

production process is digitized with robotic applications and data analytics, enhancing product quality and process efficiency. Smart machines and tools generate 800 million data flows daily, allowing for the analysis of ideal conditions and production angles for tires.

The fully automatic tire transfer system ensures zero-defect production without the tires touching the ground, resulting in a 30% energy savings. Additionally, a digital twin of the facility enables remote monitoring and intervention within a maximum of two minutes to address any issues.

## KORDSA

Kordsa strengthens its efforts on sustainability with its digitalization strategy. Continuous improvements are achieved by meticulously monitoring emissions in the field and analyzing

# Digitalization for Sustainable Business Models

the data. Thanks to IoT sensors and automation technologies, energy efficiency in offices is maximized.

In its advanced data analytics studies integrated into the digitalization strategy, Kordsa aims to achieve results that enhance energy and resource efficiency through data-oriented solutions. **In 2023, SabancıDx and IndoKordsa launched the 'Indonesia Twisting Energy Optimization Partnership' to reduce electricity consumption in the twisting process using AI.** This project successfully reduced electricity consumption by 208 kWh per production ton.

As part of Kordsa's 'Digitally Integrated Kordsa' strategy, which the company calls Kordsa 5.0, the company has **completed the 'Project Janus,' its enterprise resource planning (ERP) system, across 4 countries on 3 continents.** Project Janus

will enable Kordsa to build a data-driven business culture within the company. This will allow new products to be transferred to production lines much faster, and the relevant facilities will be able to switch to production with digital infrastructure.

Kordsa is implementing this project simultaneously in its facilities in Türkiye, Indonesia, Thailand, and Brazil, aiming to create a data-driven business culture.

*Project Janus has been honored with the prestigious SAP Transformation Award. Project Janus won the 'SAP Digital Transformation Award of the Year in the Chemical Industry' at the 'SAP Transformation Awards' of the year, which is given to the most innovative and successful technology transformation projects in its field.*

## ENERJISA ENERJİ

While supplying energy to its customers, Enerjisa Enerji adds value to the world, humanity and its own operations by using the power of technology. Enerjisa Enerji applied its sustainability framework to its digital transformation model and tracked how its projects impact society, environment and business.

### IoT Project

Enerjisa Enerji's IoT project aims to enhance various teams, including network operations, investment, and energy management, by collecting data effectively. System integration projects have resulted in significant time savings and operational efficiency.

Key initiatives include:

- **Supply Continuity:** Improvements in the Outage Management System ensure

supply continuity and minimize power outages in the field.

- **Maintenance:** Digitalization projects focus on making maintenance and repair operations more efficient, minimizing occupational health and safety risks, and monitoring and reporting field operations to ensure network supply continuity.

- **Safety First:** Occupational health and safety (OHS) is a top priority. Digitalization projects aimed at OHS minimize risks that could cause work accidents and implement digital technologies to ensure the highest safety measures during field operations.

- **Customized Solutions:** Timely data processing, monitoring, and integration into decision support processes are crucial. The 'E-Central' project, part of Enerjisa's 'Energy of My Business' model, aims at real-time monitoring and reporting of assets and operations. E-Central facilitates the management

# Digitalization for Sustainable Business Models

of energy efficiency systems through a centralized monitoring application, offering operations, maintenance, and asset management on a single platform with modern mobility and AI-supported algorithms.

## TEKNOSA

Teknosa aims to be alongside its customers in all their needs with a unique customer experience and digitalization in its strategic roadmap. It enhances customer satisfaction through seamless experiences offered across multiple channels, fast and high-quality services, customer service programs, and service-oriented training provided to employees. The Company continuously improves its operations with a strategy that also focuses on sustainability to create differentiation with the experience and values it offers across all channels. In this

context, both online and store designs have been renewed.

## Next Generation Digital Applications

Artificial intelligence and digitalization have become crucial, especially in retail with dynamic and intense data structures. Teknosa continues to actively work on high-priority digital projects to maintain its competitive advantage and leadership in the field:

- An AI-Based Data-Driven Negotiation digital tool, particularly enhancing purchasing capabilities, will be launched in 2024.
- Pilot applications for the Digital-Assisted Sales Force tool, which will elevate the field team to global best practices, are planned to be implemented in 2024.

## CARREFOURSA

Carrefoursa began its e-commerce operations in 2005 and has significantly expanded since 2018. Currently, it operates with 141 vehicles from 58 stores across 18 provinces in Türkiye. Several digitalization projects are underway to enhance customer experience and streamline processes, including route optimization, aisle-based picking, integration of various payment systems, and user-friendly interface designs. The C-Mobil application, available to all employees, aids in identifying and segmenting customers through CRM and retail digital applications. Additionally, robotic process automation is utilized to boost operational efficiency and reduce errors.

- **Route Optimization:** Delivery addresses are automatically sorted for drivers,

ensuring faster deliveries and reducing carbon emissions.

- **In-Store Routing:** This project enables pickers to collect customer orders according to the store map and product layout, speeding up the order-picking process.
- **Aisle-Based Picking:** Orders are sorted into aisles for simultaneous picking, improving efficiency and accelerating the picking process.

## AKBANK

With a strong digital technology infrastructure and strategic collaborations in innovation, Akbank aims to create added value and a positive impact on stakeholders. By accurately analyzing changing trends and customer expectations, the bank strives to offer an easy, simple, and practical banking experience with personalized

# Digitalization for Sustainable Business Models

solutions. Achieving an 85% digital penetration rate and implementing a cultural transformation program that supports digital transformation, Akbank has successfully continued to provide uninterrupted quality services to its customers throughout the year.

## ReFi Türkiye Program and Efforts in Regenerative Finance

The 2<sup>nd</sup> edition of the ReFi Türkiye program, focusing on Regenerative Finance, was successfully completed through the Social Innovation Platform, imece. Utilizing Web3 technologies, the program seeks finance-based solutions to global issues such as climate change, environmental pollution, and carbon emissions. This year, efforts continued to increase literacy in Regenerative Finance by providing various content to the ReFi Türkiye program.

Key initiatives included the publication of the ReFi Türkiye video series, the ReFi Türkiye Report, and an ecosystem map. The 'ReFi Türkiye Interview Series' on Akbank's YouTube channel covered three main topics: social and environmental meta-crises and the age of regeneration, the history and uses of blockchain technology, and the foundational questions of 'What is ReFi?', 'Why ReFi?', and 'Why Türkiye?'. The ReFi Ecosystem Maps, created on the Graphcommons platform, visually brought together institutions, projects, and individuals within the ReFi environment both in Türkiye and abroad.

Additionally, in collaboration with Sabancı University's Centre of Excellence in Finance, the 'Web3 Economy Training' introduced the Web3 economy to 50 young professionals from various sectors, ranging from law to digital fashion. For

more details on the program and its outputs, visit [refiturkiye.com](http://refiturkiye.com) and [rapor.refiturkiye.com](http://rapor.refiturkiye.com), and access the video series on Akbank's YouTube channel.

## AKSIGORTA

With the increase in vulnerable populations and the rise in extreme weather events, the importance of innovative collaborations in the insurance industry and transparent, swift claims processes that do not disadvantage the customer has grown significantly.

## ClaimsChat

The ClaimsChat application developed by Aksigorta facilitates prompt customer response in the event of damage. This application leverages artificial intelligence to create a WhatsApp group comprising an expert, file manager, service representative, and customer

representative. A transparent and fast communication environment is facilitated through the creation of a WhatsApp group immediately upon receiving the customer's damage notification. Upon completion of the process, artificial intelligence conducts an emotional analysis of the entire conversation, after which the relevant information is transferred to the CRM. In addition, Aksigorta, which has digitalized the offer stage through its chatbot application, ensures the provision of all operational services in a timely and reliable manner. Aksigorta remains in touch with its customers throughout the claims process, ensuring that all necessary documents are collected, and their demands are met through ongoing correspondence.

## Aksigorta Digital Assistant ADA

ADA is a digital assistant developed by

# Digitalization for Sustainable Business Models

Aksigorta. It provides users access to a comprehensive range of information related to insurance products, policy transactions, claims processes, and customer services. ADA is the first artificial intelligence application within our country's insurance industry. The Center provides individuals with the opportunity to address a wide range of matters, including inquiries pertaining to claims files and notifications concerning depreciation notices. Furthermore, individuals have the option to seek assistance from the ADA for support in addressing these matters.

The contents of the ADA Chatbot are:

- Creation of a Supervisor Chatbot tailored for the call center.
- Introduction of a feature to include the status of files undergoing claims investigation in WhatsApp Push notifications.
- Deployment of CRM integrations aimed

at promoting customer adoption of the Aksigorta Mobile application.

- Implementation of enhancements to the menu of the Voice Response Systems for the ECS project.
- Utilization of the CRM Dashboard to digitally display customers' journeys in the live and self-service channels,
- Deployment of necessary integrations and displaying them on the website to facilitate the receipt of depreciation notices by ADA.

The ADA, which began delivering voice support in the call center in 2022, provides customers with information regarding claims files and their current status. With the inauguration of the voice support service, Aksigorta customers can contact ADA's call center 24 hours a day, seven days a week at 444 27 27 to learn the latest status of their claims files, including file status changes, payment dates, and payment amounts.

## Detection of damage through AI-driven image

AI-driven image recognition technology operates on the damage photos sent when the claims report is filed, identifies the affected vehicle, determines the specific areas where damage has occurred, and assesses the type and extent of the damage. Based on the findings, a determination has been made regarding the repair or replacement of the part. The system utilizes various variables, including labor and parts catalog prices, to determine the potential compensation amount. Additionally, it determines the need to assign an expert to handle the case. The system effectively decreases file completion time and offers financial benefits by minimizing the need for unnecessary expert appointments.

## AGESA

Within the framework of its support for technology-based business ideas in the insurance sector, Agesa took its place in the Big Bang Challenge, where the best of the initiatives supported by İTÜ ARI Teknokent's Incubation Center İTÜ Çekirdek every year are determined. The contribution of initiatives to sustainability is among the company's priority parameters in its selection process for grant support. This year, Agesa provided TL 150 thousand support within the scope of grant support, mentorship and collaborations in the field of sustainability. Agesa employees who participate in İTÜ Çekirdek's mentoring program continue to provide start-up mentoring within the framework of the program.

# Environmental Investments and Expenditures

As Sabancı Group, we classify environmental expenditures into two categories: those required for regulatory compliance purposes (mandated by law) and those not mandated by law. In 2023, the environmental expenditures of Group companies exceeded TL 354 million. Of these environmental expenditures, 67% consists of those not mandated by law (i.e., those that extend beyond regulatory compliance).

Environmental investments in our growth areas approached TL 8.9 billion in 2023 alone. We follow these investments across three categories regarding their contribution to sustainable development.

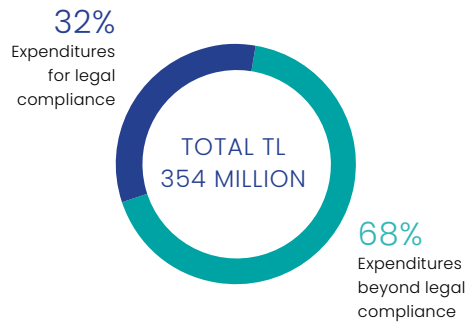
Accordingly, the largest environmental investment in 2023 was realized in the mitigation investments category with 64%.

**1.Mitigation Investments:** Mitigation investments include activities that greatly mitigate resource use or GHG emissions and directly contribute to sustainable development.

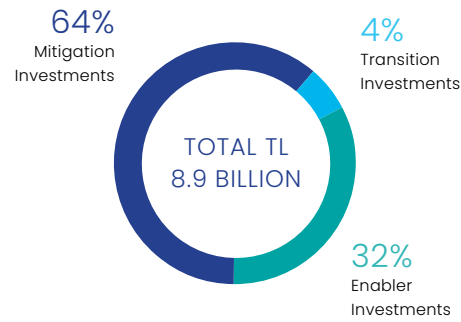
**2.Transition Investments:** This refers to investments in products and services that are resource-intensive and/or carbon-intensive in nature but can be considered a transition to more sustainable technologies, such as cement products produced using alternative raw materials and/or fuels.

**3.Enabler Investments:** Environmental investments made for enabling purposes refer to investments in products that are not considered direct resource use or carbon emission reduction activities but provide inputs to related industries or enable deployment.

## BREAKDOWN OF ENVIRONMENTAL EXPENDITURES<sup>32</sup> (2023) ✓



## ENVIRONMENTAL INVESTMENTS IN OUR GROWTH AREAS<sup>33</sup> (2023) ✓



<sup>32</sup> Usually refers to operational expenses (OpEx) or capital expenditures (CapEx), such as the purchase of energy efficiency equipment or modernization. It is aimed at making existing activities more sustainable. Routine maintenance-repair, environmental measurement, etc. expenses are not included. It expresses expenditures that results reduction in raw materials, waste or GHG emissions.

<sup>33</sup> Usually refers to capital expenditures (CapEx). Growth investments in the company's core business areas are included in this category. This includes the relevant M&A activities.

# SDG-Linked Products and Services

Sabancı Holding's commitment to transform its portfolio towards sustainable business models is deeply rooted in its strategic framework emphasizing the need for decarbonization across various industries.

This commitment includes investments in SDG-linked products and services which are significant steps upon accelerating the transformation towards decarbonized businesses in a diversified portfolio, aligned with our focus on responsible investment and sustainable business models.

We monitor products and services that reduce resource usage and GHG emissions, facilitate the transition to more sustainable technologies, support the deployment of these technologies, and create a positive social impact.

We initiate a mindset shift across all Sabancı Group companies while also regulating and monitoring SDG-linked products and services according to our internal classification system based on global standards and best practices to guide our investment decisions on SDG-linked economic activities. We continuously improve and foster our transformation towards a sustainable portfolio, as a driver of positive change.

We intend to echo this mindset of investing for a better and sustainable future across all Sabancı Group companies. We monitor SDG-linked products and services under four categories: mitigation, transition, enabler and creating a positive social impact.

## SDG-LINKED PRODUCTS AND SERVICES

**1. Mitigation:** Covers products and services that provide benefits for the direct mitigation of environmental resource use and GHG emissions.

**2. Transition:** Refers to products and services that are resource-intensive and/or carbon-intensive in nature but are related to the transition to more sustainable technologies.

**3. Enabler:** Covers products and services that create a positive environmental impact on customer operations or serve as inputs for sustainable industries.

**4. Creating a positive social impact**

## SELECTED EXAMPLES FROM INDUSTRIES

**Energy:** Green tariffs, renewable energy sales  
**Financial services and banking:** Sustainable funds investing in environmentally friendly industries  
**Mobility solutions:** Electric vehicles

**Material technologies:** Cement products with increased service life

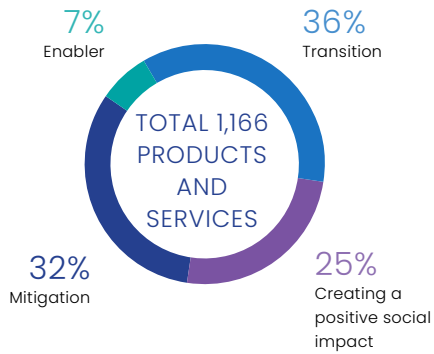
**Energy:** E-mobility charging stations  
**Other:** E-mobility charging stations in a parking lot, in-store repair for electronics in cases where it is difficult to access maintenance and repair services  
**Material technologies and mobility solutions:** Batteries, light materials that reduce the carbon footprint for the end user

**Energy:** Customer solutions that provide energy security in businesses such as hospitals or in regions lacking access to energy and experiencing frequent interruptions



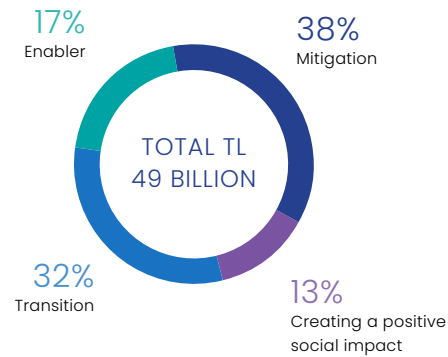
# SDG-Linked Products and Services

## NUMBER OF SDG-LINKED PRODUCTS AND SERVICES ✓



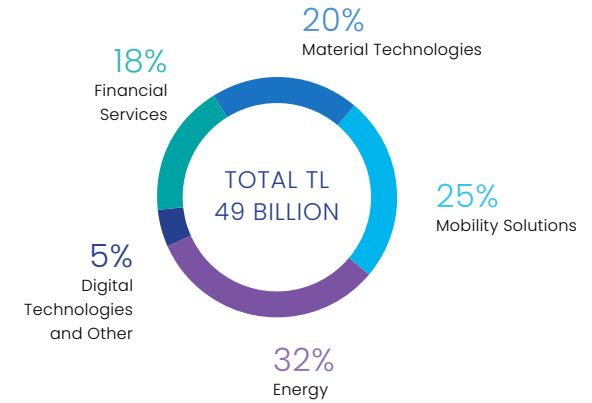
The total number of SDG-linked products and services in our Group reached 1,166 in 2023.

## DISTRIBUTION OF REVENUES ✓



The revenues from SDG-linked products and services amounted to TL 49 billion.

## SDG-LINKED PRODUCT AND SERVICE REVENUES SECTORAL DISTRIBUTION<sup>34</sup> ✓



The largest revenue stream in total was generated through the mitigation category. In terms of sectoral distribution, our energy companies have the highest share of SDG-linked product and service revenues.

<sup>34</sup> Akbank is not included. Akbank's performance regarding its sustainable business model is monitored under the Sustainable Finance heading.

# SDG-Linked Products and Services

## Highlights from Sabancı Group Companies

### ÇİMSA

#### Izo Power 42.5

One of the renewed sustainable members of Çimsa Super Grey Cement Family, Izo Power 42.5, reduces carbon emissions by 15% compared to classic Portland cement; while Master Power, produced in compliance with the 'significant contribution level' of the European Union Taxonomy, achieves reductions of up to 50%.

#### CEM-II Product Portfolio

Declaring 2023 as the Year of Grey Cement Product Transformation, Çimsa identified blended cement types parallel to the technical specifications required by its customers and introduced to the

market the CEM-II product portfolio with ideal recipes prepared through the R&D center's efforts. Through customer-based planning within the scope of products available in different strength classes of CEM-I Portland cement, 37% of the total gray cement product portfolio was transferred to the CEM-II product group.

#### Iconicrete Ready-Mix Concrete Product Family

Çimsa focuses on the different needs of its customers with its value-added product series that offer innovative solutions in the ready-mixed concrete business line. In this context, in 2023, Çimsa introduced IconiCrete, a premium ready-mixed concrete series developed for a wide range of needs in creating sustainable living spaces in the building materials industry. Shaped by the principles of quality, consistency and

reliability, these products have been developed for a variety of applications, from airport runway concrete to architectural design wonders, and are renewed every day to meet the changing demands of the sector.

#### Çimsa's Ready-To-Fly Concrete: Flycrete

In the event of natural disasters or situations threatening national security, the rapid and effective implementation of renewal and repair processes is a critical factor in quickly restoring living spaces and infrastructure to normalcy. Considering the potential use of calcium aluminate cement in ready-mix concrete and the construction industry, Çimsa goes beyond tradition with FlyCrete, its next-generation product that gains high strength within a few hours, allowing for quick repair and renovation solutions.

With FlyCrete, Çimsa facilitated the renewal of damaged areas exposed to continuous heavy loads at Türkiye's 2<sup>nd</sup> largest airport, without affecting flights, in just 3 hours. Commercialized in 2023 as a first in Türkiye and third globally, FlyCrete simplifies critical processes and creates value in society. The use of FlyCrete in critical infrastructure showcases its potential to maintain and improve essential services and facilities in urgent cases. By facilitating rapid repairs and renovations, FlyCrete helps maintain the functionality and safety of damaged areas in infrastructure, contributing to the goal of making cities safe, resilient, and sustainable.

[Çimsa received patent application approval for FlyCrete, the innovation champion product of the 14<sup>th</sup> Golden Collar Awards, in 2023.](#)

# SDG-Linked Products and Services

## AKÇANSA

By innovative technologies, Akçansa designs environmentally friendly and innovative products with high added value and efficiency.<sup>35</sup>

### Green For Cement

'The Green for Cement' group includes 'Actioncem', with low carbon, 'Solidcem' resistant to environmental impacts and 'Duocem' with high strength and durability as sustainable cement product categories.

### Green For Concrete

'Green For Concrete' group includes the ready-mixed concrete specialty products 'Performix', 'Solidmix', 'Hidromix', 'A+Concrete', '100+Concrete' and 'Yolbeton', which are developed in line with the needs of customers and create added value with their sustainable and long-lasting features.

## Ecocrete

The new generation ready-mixed concrete product 'Ecocrete' targets the lowest possible carbon footprint by using sustainable technologies. In 2023, 16% of Akçansa's ready-mixed concrete products were produced with the Ecocrete brand.

Akçansa initiated a life cycle analysis project for ready-mixed concrete products and prepared the first and only Environmental Product Declarations in the sector in 2020.

[Updating EPD certificate for all its ready-mixed concrete products in 2023 voluntarily, Akçansa provides the environmental impact of the concrete its customers use and facilitates their green building certification processes such as LEED, BREAM, Green Star.](#)

## BRİSA

[Brisa provides the market tires with lower rolling resistance, less emissions and noise, lower weight, energy-saving, long-life tires that use recycled materials.](#)

Brisa has a rich product portfolio consisting of Lassa Ecopia and Greenways series and environmentally friendly tires with Bridgestone Driveguard and RFT (Run Flat Tire) technologies.

Brisa is preparing extensively for the electrification transformation, developing state-of-the-art tires for rapidly expanding electric vehicles and cooperating with global vehicle manufacturers.

Brisa positions itself not only as a tire manufacturer, but also as a mobility company that offers services beyond the tire. To this end, Brisa acquired Arvento Mobil Systems, the leader in vehicle tracking systems, in 2022.

Brisa aims to offer different mobility solutions and products to its sector by combining Arvento data with its service network and tire products.

## KORDSA

Guided by its robust R&D and innovation strategy rooted in collaborative partnerships, Kordsa focuses on sustainable materials and application of circular economy practices.

### Recycled Polyester Raw Materials for Technical Textile Applications

Within this R&D project Kordsa developed tire reinforcement products with 100% recycled polyester raw material content. Kordsa reduces product carbon footprint by manufacturing recycled polyester (rPET) tire cord fabric for sustainable tires. The İzmit Facility of Kordsa was entitled to receive the ISCC (International Sustainability Carbon Certification)

<sup>35</sup> <https://www.akcansa.com.tr/en/sustainable-product-movement-from-akcansa-green-for-cement-and-green-for-concrete/>

# SDG-Linked Products and Services

Plus Certificate, which is among the most reputable and comprehensive certification programs in the field of sustainability, with its production process in the field of circular polyester.

## Recycled Nylon Usage for Technical Textile Applications

Kordsa transforms its production/ technological nylon scraps through recycle machine into recycled raw materials and reuses them in the production as recycled nylon raw material input. Within this R&D project Kordsa succeeded in producing nylon tire reinforcement products with 40% recycled nylon raw material content.

## Bio-based Resin Systems as an Alternative to Phenolic Resins

Kordsa and its subsidiary Axiom Materials in USA, optimized honeycomb applications by using a bio-based green alternative resin that produced from

sugar cane waste instead of petroleum-based resins. This bio-based resin has a 77% lower product carbon footprint.

Kordsa became the first company in the world to develop this solution and Kordsa applied for a patent.

## Sustainable Engineering Plastics Formulations

High value-added recycled polyamide compounds developed within Kordsa were offered directly to the market for the first time in 2023. The polymer used in the products within the scope of the compounding business unit is obtained from mechanically recycled polyamide material.

## TEMSA

TEMSA contributes to 'smart mobility' solutions and 'decarbonization' that will shape the sustainable future of the automotive industry.

**TEMSA is the only manufacturer in Europe that can offer its customers an electric model in every segment.**

LDSB E, TS45E and MD9 ELECTRICITY CLASS II vehicles with 350-400 km range are designed for short intercity distances.

**Avenue EV**, which is offered to customers in a wide geography, especially in the European market, can be fully charged in just 15 minutes and can travel up to approximately 80 km, thanks to its short-term charging feature.

**Avenue Electron** is an urban electric bus with the capacity to increase range thanks to its single-pedal driving system, customizable digital instrument panel, energy-saving air conditioning system and gear selector programs.

## FUELCELL 12M

FuelCell 12m project, that Temsa carried

out in collaboration with Skoda, focused on developing a new 12-meter hydrogen-powered vehicle design. Hydrogen vehicles operate with zero emissions and additionally enjoy the advantages of fast refueling and long range. Refueling takes only 3 to 5 minutes, while a full tank of fuel can cover an average of 500 - 600 kilometers.

## TROLLEYBUS 12M

Trolleybus 12m project, completed in collaboration with Skoda, is an innovative approach in Trolleybus vehicles segment to making urban transportation more environmentally friendly. Thanks to their batteries with a range of up to 50 kilometers, assurance is provided against problems that may occur on the city line.

## HD12 FUEL CELL

HD12 Fuel Cell project started in 2023 and is targeted to be completed in 2026. Temsa is using Toyota's fuel cell

# SDG-Linked Products and Services

technology and batteries to develop long-distance buses with an all-electric powertrain, manufactured according to General Safety Regulation (GSR) rules.

The main goal of the project is to become a pioneer in H2 Coach vehicles in the field of zero emission transportation. The project in cooperation with CaetanoBus brings long-distance advantages and the latest technological contribution to the bus industry paving the way for a green alternative for the buses of the future.

## ENERJİSA ENERJİ

Enerjisa Enerji contributes to the energy ecosystem by offering sustainable products and services through a responsible value chain approach and innovation.

*Enerjisa Enerji offers end-to-end solutions to enhance energy efficiency and reduce the carbon emissions of corporate*

*customers under the roof of 'The Energy of My Business (İşimin Enerjisi)' through 19 sustainable products and services.*

Please refer to [the link](#) to learn more about Enerjisa Enerji's sustainable products and services under the frame of The Energy of My Business.

## ENERJİSA ÜRETİM

*With 8 wind, 2 solar and 12 hydroelectric power plants, 46% of Enerjisa Üretim's installed power consists of renewable power plants. This ratio will increase to 60% when YEKA-2 and capacity increase projects under construction are completed.*

Furthermore, Enerjisa Üretim's Bandırma Energy Base generates electricity with 5 different innovative energy generation methods, including ground-breaking technologies such as battery storage

and green hydrogen generation. Enerjisa Üretim positions the base as a platform that shapes the transformation of the energy sector.

## CARREFOURSA

*Committed to sustainability, CarrefourSA offers 110 products and services designed to generate positive social impact and promote waste prevention and reduction.*

Among the facilitating products is the service of e-charging station points located at 17 locations for electric vehicles.

CarrefourSA also has 61 different products that aim to achieve waste prevention and reduction supported by various projects. Besides, there are 26 products that have been designed by CarrefourSA to ensure positive social impact upon the society.

The **'Bring Your Own Container'** project, launched to reduce packaging waste and prevent single-use plastic, allows customers to buy only what they need in the meat, fish, bakery, legume, nuts, and delicatessen departments using their own containers. By doing that, the company provides an eco-friendly service enabling customers to further reduce plastics and waste. Initially piloted at CarrefourSA Selamiçeşme gourmet store, this initiative is now available in all fresh food departments across 41 stores, including İstinye Hyper, Fulya Hyper, Metropol Hyper, and 36 gourmet stores. To raise awareness, customers receive a 10% discount on products purchased with their containers.

## TEKNOSA

*In 2023, Teknosa's repair and maintenance services have significantly contributed to product sustainability.*

# SDG-Linked Products and Services

Teknosa successfully improved the performance of over 245 thousand products, with an impressive 93% returned to the same consumer. Through initiatives like the **Buyback** and **Refurbished Phone Service**, Teknosa responsibly managed 58 thousand old phones, refurbishing and reselling a substantial portion online. Teknosa will expand refurbished phone sales to stores in 2024 further amplifying its sustainability efforts and reaffirming its commitment to reducing electronic waste.

Teknosa also offers a range of 148 energy-efficient household appliances and 17 air conditioners across all its sales channels. Customers are educated about the benefits of these products, and the

Company offers discounts of up to 250 TL on A-rated energy-efficient household appliances, along with up to 25% off on Screen Protection and TeknoGaranti Services, contributing to the longevity of products.

## AKSIGORTA

### Citroën Ami (E-Vehicle Insurance)

Working through the regulatory issues by collaborating with Citroën, Aksigorta started providing insurance (damage cover of the other party in case of a collision and Third-Party Financial Liability assurance coverage) to Citroën Ami, facilitating customers to use this e-vehicle.

### E-Kasko (Electric Cars Insurance)

Aksigorta has launched an exclusive insurance for electric vehicles including specific benefits such as incorrect charging, battery coverage or running out of charge. Moreover, Aksigorta donates to the Aegean Forest Foundation for planting saplings for electric vehicle customers.

### Cover For Electric Charging Stations

Electric charging station insurance is mandatory according to the legislation, but obligation was postponed to 2024. As insurance companies hesitated to insure electric charging stations due to high and uncertain risks, Aksigorta has been swift and ready since 2023.

### Complementary Health Insurance Specially For Youth (18-30)

With the 'Complementary Health Insurance Youth Campaign', Aksigorta provided young people between the ages of 18-30 with Supplementary Health Insurance with a discount of up to 20%.



[For the Sabanci Group facilities certified with ISO 9000, please read the ISO Certifications Document available at the Download Center section of the Report's website.](#)

Note: For details on the SDG-linked products of Sabanci Group companies, please refer to their individual corporate websites.

# Sustainable Finance

The transformation of finance is essential to achieving a sustainable future. In sustainable finance, environmental considerations might include climate change mitigation and adaptation and the environment more broadly, for instance, preserving biodiversity, pollution prevention, reducing water consumption and the circular economy. Social considerations could refer to inequality, inclusiveness, labor relations, investment in human capital and communities, and human rights issues.

During the reporting year, our Group companies in the financial services and banking sector have continued efforts to increase their sustainable finance activities. Meanwhile, the rest of the Group enjoyed the **lower finance cost and favorable conditions** in its **new investments through green and sustainable finance solutions**. Finally, we benefited from financial incentives to

enhance our investments in renewable energy technologies through Sabanci Climate Ventures. **In 2023, Sabanci Climate Ventures secured tax equity financing totaling USD 184 million for the Cutlass Solar II Project, a 272 MW solar energy investment in the US.** This project represents a significant step in our commitment to sustainable energy and demonstrates our ability to leverage financial opportunities for impactful initiatives.

## Highlights from Sabanci Group Companies

### AKBANK

In 2023, through updating its Sustainable Finance Framework with a Second Party Opinion, **Akbank expanded its focus to encompass green, blue, and social thematic areas, pioneering initiatives in Türkiye.** This evolution includes financing

for climate adaptation, green hydrogen and hybrid maritime transportation vehicles, and financing investments that support the redevelopment of the earthquake zone. With its updated framework, the Bank uses green and social criteria to categorize the projects to which it provides sustainable financing in accordance with international principles such as the ICMA Green Bond Principles and the LMA Green Credit Principles and IFC's (International Finance Corporation) Blue Finance Guideline.

In its commitment to transparency and measurable impact, Akbank analyzes the environmental and social benefits of the sustainable financing initiatives. For instance, **in 2023 alone, the renewable energy project financing contributed to a reduction of approximately 130 thousand tCO<sub>2</sub>e**, while the social loans supported various stakeholders, including women-owned and young SMEs in earthquake-

affected areas. Moreover, with its commitment to Net-Zero Banking Alliance (NZBA), Akbank sets ambitious targets, aiming to become a Net Zero Bank by 2050. **The Bank exceeded its TL 200 billion Sustainable Financing goal for 2030 by the end of 2023 and raised it to TL 800 billion.**

To foster widespread understanding and adoption of sustainable finance principles, Akbank completed ESG, sustainable finance and climate change trainings for all corporate and commercial branch employees in 2023. Simultaneously, the Bank prioritizes customer learning, guiding them through regulatory requirements and market dynamics, particularly in areas like carbon emissions reporting and green transformation. **Transition to green economy efforts extend beyond financing;** Akbank actively engages with customers in carbon-intensive sectors,

# Sustainable Finance


encouraging and supporting their transition towards green technologies and practices.

## **Akbank sets the share of sustainable funding target as 100% for 2030.**

In 2023, sustainability-linked and gender equality-themed Tier 2 (global first gender-themed Tier 2) transactions totaled USD 300 million. Türkiye's first social-themed syndication loan will provide USD 500 million in support for financing foreign trade transactions affected by the earthquake. Akbank issued 8 social bonds totaling USD 243 million with a maturity of 1 year.

In 2023, the volume of ESG-themed funds reached TL 3.2 billion with 174 thousand investors, representing a 165% increase in the number of investors compared to 2022. As the **first Turkish bank among deposit banks to set long-term targets**

in this regard, Akbank is committed to **increasing the sustainable investment fund balance to TL 15 billion in Assets under Management by 2030.**

In 2023, Akbank increased its sustainable project finance loans 3.6 times compared to 2022. Through innovative products and strategic partnerships, Akbank continued to empower customers on their sustainability journey. Akbank has eighteen Sustainable Finance Products and Services . **Delivering firsts such as Sustainable Deposit accounts, Blue Financing products and comprehensive SME Eco Transformation Package,** Akbank offers tailored solutions across segments, facilitating the transition to a low-carbon future.

[Akbank provided USD 50 million in funding for green projects and women's entrepreneurship.](#)

Recognizing and rewarding green initiatives shows the Bank's commitment to driving impactful change in the finance sector. With the updated criteria and enhanced customer engagement, Akbank fosters a growing ecosystem of companies committed to environmental stewardship and transforming society towards a more sustainable and resilient future.

## **AKSIGORTA**

Aksigorta will announce a target compatible with the Paris Climate Agreement by choosing assets that comply with its understanding of sustainable living, sustainable future and sustainable investment. In terms of its overall investment portfolio strategy, Aksigorta aims to invest in companies that demonstrate sensitivity to ESG issues, thereby ensuring a reasonable return and a sustainable future. In line with

these principles, Aksigorta will invest in the shares of companies with high ESG performance, listed in the 'sustainability' and 'corporate governance' indices of Borsa Istanbul (BIST), as well as in debt instruments issued by these companies, lease certificates, and other capital market instruments. Aksigorta will also invest in index funds, thematic funds, and green bonds that align with these ESG criteria. In 2023, Aksigorta invested approximately TL 600 million in Ak Asset Management's Sustainability Fund.

## **AGESA**

Agesa offers a Sustainability Equity Pension Fund within the scope of its nine pension plans. According to the strategy of the Fund, at least 80% of the fund portfolio is continuously invested in shares of domestic and foreign companies listed on globally recognized sustainability indices, such as the 'BIST



# Sustainable Finance

Sustainability Index,' American depositary receipts, and global depositary receipts, as well as participation shares of exchange-traded funds established to track sustainability indices domestically. The fund aims primarily to invest in companies with high performance in environmental, social, and corporate governance (ESG) aspects within the Sustainability Index, targeting high real return performance for medium to long-term growth. In 2023, through the implementation of revised fund distribution proposals within FonPro, a portion of the stock allocation was specifically allocated to the sustainability fund. This strategic allocation was designed to foster the continual growth and expansion of the fund. Assets under Management (AuM) reached TL 1.2 billion TL.

## ENERJİSA ÜRETİM

In 2023, Enerjisa Üretim financed the company's renewable energy investments and wind power plant purchase by signing a loan agreement of USD 110 million with the European Bank for Reconstruction and Development (EBRD).

Furthermore, Enerjisa Üretim initiated measures to explore financing options for the Renewable Energy Resources Zone YEKA-2 projects.

## BRİSA

In 2023, Brisa performed its first sustainable financing transaction with the EBRD.

The loan agreement in the amount of USD 100 million is to be used to finance a new capital expenditure program for the period 2023-2025. This program includes

capacity expansion through acquisition of new machinery and equipment at Aksaray plant, and modernization and improvement investments to increase the production of fuel-saving and low-carbon emission products at İzmit plant. This investment plan, with substantial sustainability benefits, will support Brisa to achieve its sustainability goals by reducing net greenhouse gas emissions through Scope 3.

## KORDSA

Kordsa and Garanti BBVA International signed a sustainability-related loan agreement in the amount of USD 50 million.

The terms of the loan are based on three key performance indicators: annual reduction in Scope 1 and Scope 2 greenhouse gas emissions, the proportion of suppliers with emission

reduction objectives aligned with the Science Based Targets initiative, and the annual increase in health and safety training. The sustainability performance targets will be audited by independent third-party assurance. The agreement is part of Kordsa's efforts to reduce the environmental and social impact of its activities, while also decreasing emissions throughout its supply chain. It places a particular focus on the raw materials it procures, using the emission reduction objectives of the Science Based Targets initiative. This sustainable financing loan underscores Kordsa's pioneering sustainable practices and supports the transformation of its suppliers as they work to mitigate the environmental impact of their activities.