TOKYO ELECTRON

SUSTAINABILITY REPORT 2020

Cover photo: Rose (England, U.K.)

The cover photo shows flowers of the countries and regions in which we do business.

TOKYO ELECTRON LIMITED

Akasaka Biz Tower, 3-1 Akasaka 5-chome,
Minato-ku, Tokyo 107-6325, Japan
Tel: +81-3-5561-7402
www.tel.com

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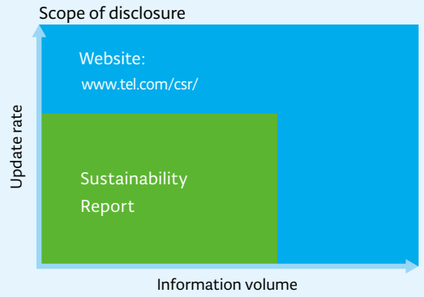
Editorial policy

The purpose of this report is to communicate to all stakeholders the responsibilities and roles that Tokyo Electron (TEL) has in society, and the various activities it implements toward value creation. The report clarifies priority themes, short- and medium-term goals, and SDG initiatives for each of five material issues. It describes global initiatives aimed at developing and resolving issues for industry and society. Data sets are included at the end of the report, with an accompanying third-party assurance report attached for those items that are considered to be of particularly high importance.

TEL remains committed to understanding the demands of all of its stakeholders and to disclosing information in a timely and transparent manner. For more detailed information, please consult our official website.

URL www.tel.com/csr/



Scope
This report covers the entire Tokyo Electron group (34 consolidated companies), with some exceptions (indicated in the content).

Reference guidelines
Global Reporting Initiative (GRI): Sustainability Reporting Standards
Environmental Reporting Guideline 2018, Ministry of the Environment, Government of Japan

Published date
July 2020 (Next report: August 2021)

Period covered
Fiscal year 2020 (April 1, 2019 to March 31, 2020), some content also covers fiscal year 2021

Contact
Akasaka Biz Tower 3-1 Akasaka 5-chome, Minato-ku, Tokyo 107-6325, Japan
CSR Operations
Tokyo Electron Limited
Tel: +81-3-5561-7402

URL Inquiry point URL: www.tel.com/contactus/

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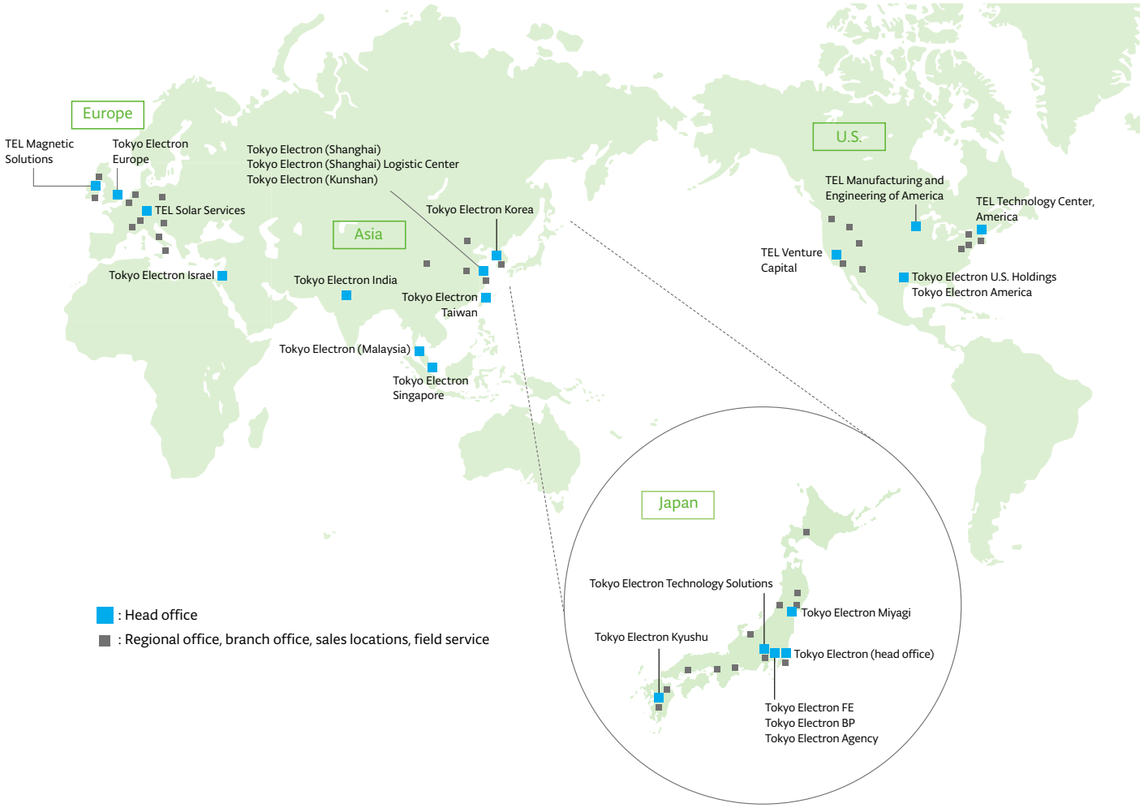
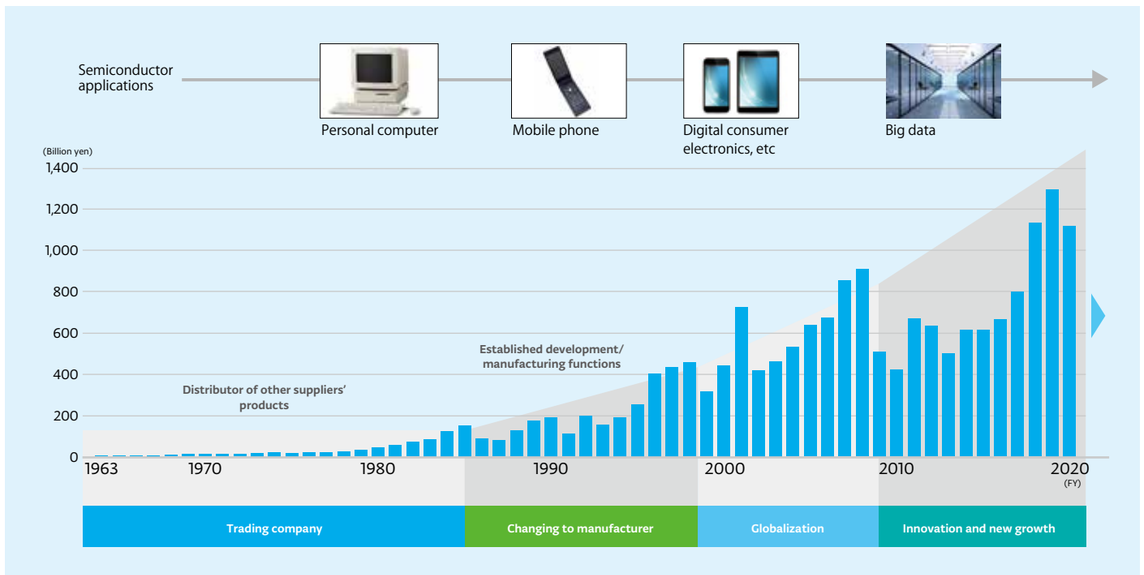
Tokyo Electron's business

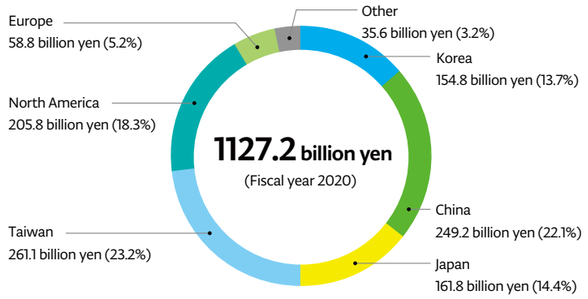
Tokyo Electron (TEL) operates worldwide as a leading company in semiconductor and flat panel display (FPD) production equipment. TEL contributes to developing a sustainable society through its business.



TEL's changing business

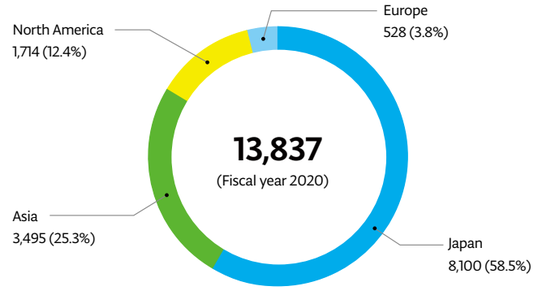


Sales by region (consolidated)

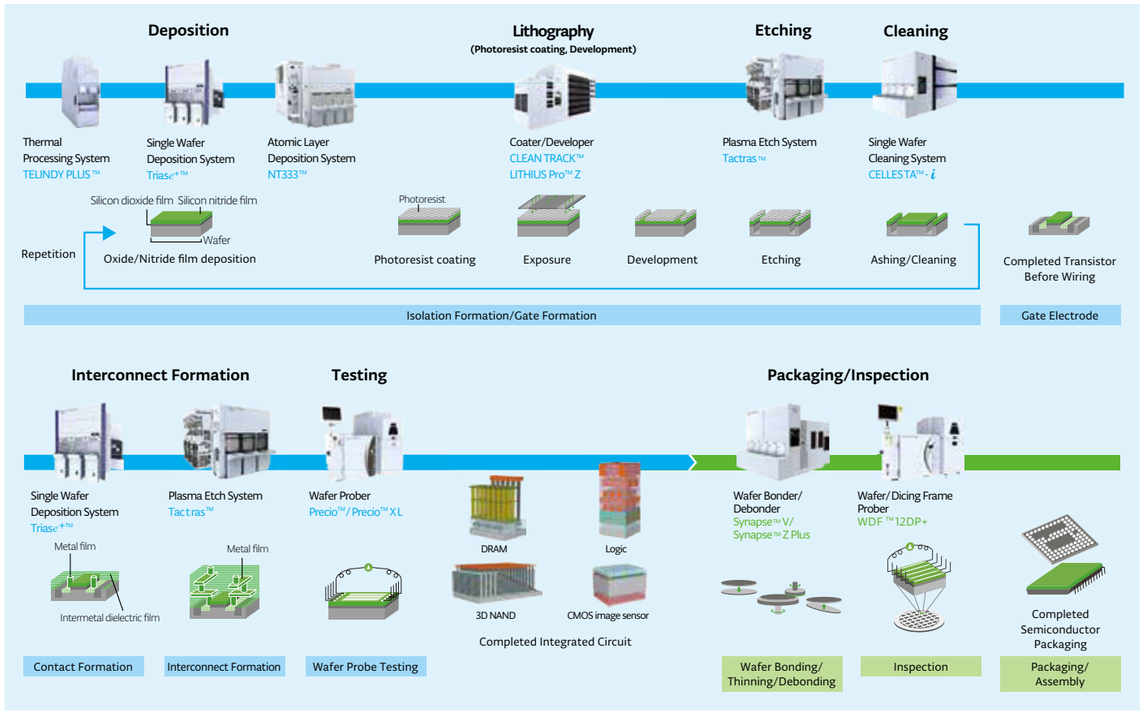


* Fractions smaller than 100 million yen omitted. (Percentages are round off to one decimal place.)

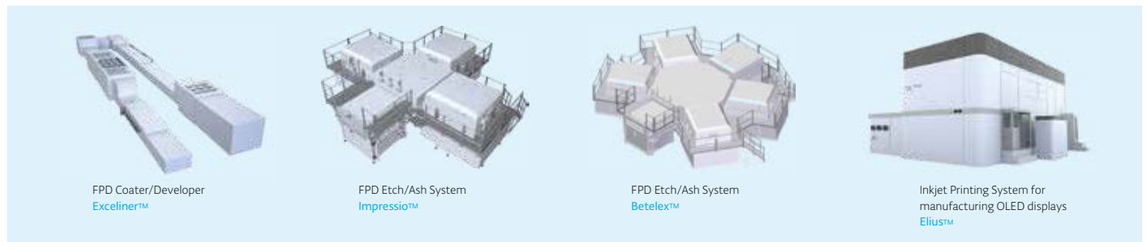
Number of employees by region (consolidated)



Semiconductor manufacturing process and TEL main products



FPD production equipment



CEO's message

Dear stakeholders,

On behalf of Tokyo Electron (TEL), I would first like to express my sincere gratitude for your continued support and patronage.

I would also like to express our heartfelt sympathy to everyone who has been affected by the spread of COVID-19.

People across the world are now facing an unprecedented battle against infectious diseases. And amid this battle, the shift toward a data-driven society is picking up speed, including the growing use of remote work arrangements, distance learning, video streaming, and remote medicine. The world is further applying technologies such as IoT, AI, and 5G toward building a society that is strong and resilient under all situations. As such, we expect to see the aggressive implementation of new information and communication technologies which are supported by semiconductor technology. Furthermore, together with semiconductors, displays—which translate data into visual form—are becoming even more important.

As an industry leader for production equipment of semiconductors and flat panel displays, Tokyo Electron's Corporate Philosophy is "We strive to contribute to the development of a dream-inspiring society through our leading-edge technologies and reliable service and support." We will maintain our Corporate Philosophy by continually pursuing and expanding world-class profits in the medium- to long-term through utilizing all management resources to create technologies with the high added value found nowhere else in the world.

In addition to the three pillars established in our medium-term management plan—product competitiveness, responsiveness to customers, and higher productivity—we have identified two material issues: people and workplaces, which is a source of corporate growth, and management foundation, which relates to corporate governance and compliance. In fiscal year 2020, we are reviewing our annual and medium-term goals for each material issue and conducting various activities toward achieving these goals. In addition to accelerating the reduction of our CO_2 emissions activities in relation to our products and factories and offices, we carried out human rights due diligence within the group and our suppliers, and we began working in earnest to identify and remediate any human rights issues.

In fiscal year 2014, to promote sustainability management in accordance with international frameworks, we became a signatory to the United Nations Global Compact and began implementing Sustainable Development Goals (SDGs) initiatives. Then in fiscal year 2016, we became a member of the Responsible Business Alliance (RBA) and focused on expanding CSR activities in our supply chains.

Moving forward, to properly fulfill our mission and responsibilities, we will continue to aim to remain a company that is loved and trusted by all stakeholders by promoting sustainability-focused management and contributing toward addressing issues of industry and society as well as their development.

Your continued support and patronage are very much appreciated by all of us at TEL.

Toshiki Kawai
Representative Director, President & CEO
Tokyo Electron Limited

CSR-oriented operations

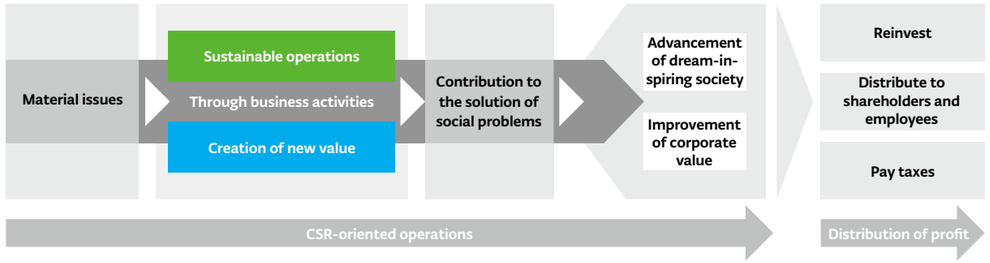
Tokyo Electron's Corporate Philosophy

We strive to contribute to the development of a dream-inspiring society through our leading-edge technologies and reliable service and support.

People. Technology. Commitment.

CSR policy

The CSR operations of Tokyo Electron (TEL) are initiatives that realize TEL's Corporate Philosophy. We pursue sustainable operations from the viewpoints of corporate governance, legal and regulatory compliance, and business ethics while creating new value through our products and services. Based on these efforts, TEL implements CSR activities to help address social issues. We will continue to pursue CSR activities to build stakeholder trust, improve corporate value and, by doing so, promote the growth of a sustainable and dream-inspiring society.



CSR promotion framework

TEL implements sustainability management, which is integrated into the business strategy from a medium- to long-term perspective of corporate value enhancement. Three groups have been established to promote CSR activities. The CSR Management Council, the highest decision-making body regarding CSR, conducts discussions regarding the policy for the entire group, and important projects. Based on this, the CSR Global Committee discusses, that progress management regarding activities for achieving CSR targets along with the promotion of global projects, and shares best practices. At the CSR Monthly Meeting, information on activities is shared with representatives from each division, and collaborative systems are built to tackle cross-division themes.

We are also working to strengthen our CSR structure by appointing officers in each division across the company to be in charge of understanding the CSR policy and goals and promoting CSR.

CSR Global Committee

Conference name	Participants	Function	Meeting frequency
CSR Management Council	• Chairman of the Board • President & CEO • Directors and Managers	• Decide company-wide CSR policy • Discuss important matters	Twice annually
CSR Global Committee	• Chief CSR Promotion Director • Heads of related departments • CSR officers of affiliates and overseas companies	• Manage progress of activities for achieving CSR goals • Implement global projects • Share best practices	Twice annually
CSR Monthly Meeting	• Person in charge of CSR at each division	• Share information on CSR activities • Discuss cross-division CSR initiatives	Monthly

In addition, once a year, we invite employees from around the world to submit examples of CSR in the workplace, with outstanding initiatives being awarded the CSR Promotion Award by the Representative Director, President & CEO. Throughout the group, we are promoting CSR activities through our daily business activities in order to aid in the development and to resolve issues in industry and society, and to contribute to the achievement of SDGs.

CSR Promotion Award Ceremony

Participation in global initiatives

TEL is a corporate member of the United Nations Global Compact and the Responsible Business Alliance (RBA[1]), both global CSR initiatives, whereby the company strives to build a sustainable management foundation from a global perspective.

The United Nations Global Compact

- An international initiative for sound globalization and sustainable societies
- TEL signed in 2013

WE SUPPORT UN GLOBAL COMPACT

RBA

- A CSR promotion group focused on the electronics industry
- TEL signed in 2015

Responsible Business Alliance Affiliate Member

The Ten Principles

Human Rights
Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
Principle 2: make sure that they are not complicit in human rights abuses.

Labour
Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
Principle 4: the elimination of all forms of forced and compulsory labour;
Principle 5: the effective abolition of child labour; and
Principle 6: the elimination of discrimination in respect of employment and occupation

Environment
Principle 7: Businesses should support a precautionary approach to environmental challenges;
Principle 8: undertake initiatives to promote greater environmental responsibility; and

Anti-Corruption
Principle 9: encourage the development and diffusion of environmentally friendly technologies.
Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

Framework (five sections)

In addition, TEL has expressed its approval of the recommendations offered by the Task Force on Climate-related Financial Disclosures (TCFD[2]) and is pursuing initiatives based on the framework of governance, strategy, risk management, indicators and targets relating to the impact and opportunity that climate change presents to its business.

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

Evaluation from third-party institutions

TEL's CSR activities have received high appraisal from evaluation organizations in various countries, and we have been selected as a constituent stock under leading global ESG investment indices, including DJSI[3] Asia Pacific 2019, FTSE4 Good Index[4], FTSE Blossom Japan Index[5], MSCI World ESG Leaders Index[6], MSCI Japan ESG Select Leaders Index[7], and MSCI Japan Empowering Women Index (WIN[8]).

MEMBER OF Dow Jones Sustainability Indices In collaboration with SAM

FTSE4Good

2020 MSCI ESG Leaders Indexes Constituent [9]

2020 CONSTITUENT MSCI JAPAN EMPOWERING WOMEN INDEX (WIN) [9]

Initiatives for Sustainable Development Goals (SDGs)

The SDGs are a universal set of goals to achieve by 2030, which were unanimously adopted by the United Nations Sustainable Development Summit in 2015. TEL conducts activities on a group-wide level, and for each CSR fiscal year and medium-term goal, and material issue, it has clarified the SDGs it is working toward through business.

Tokyo Electron supports the SDGs

1 RBA: Rebranded from the Electronic Industry Citizenship Coalition (EICC®) in October 2017

2 TCFD: Task Force on Climate-related Financial Disclosures

3 DJSI (Dow Jones Sustainability Index): An ESG (environmental, social and governance) investment index by S&P Dow Jones Indices LLC. The Asia Pacific covers companies in that region.

4 FTSE4Good Index: An index related to environmental performance and corporate social responsibility developed by FTSE Russell.

5 FTSE Blossom Japan Index: An index that reflects the performance of Japanese companies that have demonstrated strong ESG practices.

6 MSCI World ESG Leaders Index: Companies that have high ESG performance are selected from the MSCI Global Sustainability Index, an ESG investment index developed by Morgan Stanly Capital International (MSCI).

7 MSCI Japan ESG Select Leaders Index: An index featuring companies with high ESG performance selected from its parent index (MSCI Japan IMI Top 700 Index: Top 700 securities based on free float-adjusted market capitalization). The Index targets 50% of the free float-adjusted market capitalization within each GICS sector of the parent index.

8 MSCI Japan Empowering Women Index (WIN): An index developed by MSCI featuring companies with excellent gender diversity selected from its parent index (MSCI Japan IMI Top 700 Index).

9 Please check the link for the logo's disclaimer. https://www.tel.com/csr/review/

Identifying material issues

Viewing social trends from a global perspective, Tokyo Electron (TEL) uses the following process to identify important and priority material issues (key issues) to be addressed for the medium- to long-term enhancement of corporate value.

Issues awareness

Social environment

While uncertainty in the global economy is increasing, humans are also faced with various social issues, including abnormal climate conditions and natural disasters, human rights issues and conflicts between states, cyber-terrorism, and the spread of infectious diseases. Climate change and inequality in human rights, in particular, are pressing issues for the global community, and there are strong calls for further action, not just by international, organizations, and national governments, but also by the private sector. While keeping an eye on trends in the United Nations Global Compact and RBA, and taking recommendations from third-party organizations into consideration, TEL recognizes social issues that may affect business along the value chain, and is striving to eliminate risks in its business activities and to create new value.

Business issues

With the spread of IoT, AI, the 5G next generation communication standard, and data science*, everything is becoming networked, and we are transitioning to an era of big data at an accelerated pace. Applications are expanding for semiconductors and flat panel displays that support social infrastructure, and the need for technological innovation is also growing as demand increases. Amid such circumstances, given that our business is semiconductor and FPD production equipment, we must, while maintaining an accurate grasp on technological trends and customer needs, promote cutting-edge research and development, and turn this into products for the market. It is also becoming increasingly important for us to provide high-value-added services that help improve the productivity of delivered equipment, such as remote maintenance and predictive maintenance.

* Data science: The approach of using data to extract new scientific and socially beneficial knowledge

Risks and opportunities

TEL examined the risks and opportunities closely related to sustainable business development in consideration of social issues and social/business environments such as SDGs.

Social trends	Risks for TEL	Opportunities
Environment	• Failure to comply with laws and regulations or industry codes of conduct • Increases in business costs	• Promotion of environmental management • Improvement of product environmental performance and creation of business opportunities
Human rights	• Difficulties in recruiting and loss of talent • Damage to corporate image	• Improvement of employee engagement • Creation of new values through respect for human rights
Governance and compliance	• Lack of oversight and supervisory functions for management • Ethics and compliance violations	• Development of highly effective governance system • Implementation of sincere and fair business practices
Evolution of technology	• Delays in development of cutting-edge technology • Lost business opportunities	• Generating innovative products and services • Maintaining competitive advantage
Supply chain management	• Weakening of supply system • Loss of business continuity	• Establishment of a sustainable production system • Strengthening collaboration by building relationships of trust
Information security	• Loss of core information • Suspension of business operations	• Establishment of a robust information infrastructure • Improvement of information literacy

Stakeholder engagement

TEL learned about stakeholder opinions and requests through ongoing dialog, before sorting through them and reviewing the important themes to be addressed.

Stakeholders	Communication opportunities	Key opinions and requests	Relevant material issues
Shareholders/ investors	• Earnings announcements, medium-term management plan briefings • IR conferences, IR roadshows[1] • Interviews	• Medium- and long-term growth scenario and associated measures • Sharing of market perspectives and improved accuracy of business forecasts • Further initiatives for corporate governance	• Product competitiveness • Higher productivity • Management foundation
Customers	• Technology conference • Customer satisfaction survey • Individual technology collaboration	• Understanding of diverse application needs • Proposal of high-value-added solutions • Comprehensive and optimal solutions	• Product competitiveness • Responsiveness to customers • Higher productivity
Suppliers	• Production update briefing • Partners day • STQA[2] audit	• Sharing of higher-quality, timely information • Improvement of own processes through compliance with quality standards	• Higher productivity • Management foundation
Employees	• Employee meetings • Global engagement survey • Career interest survey (Japan)	• Sharing of management messages, direct dialog • Support for medium- to long-term career development for employees • Creation of opportunities for promoting and recognizing productivity in the working environment and the spirit of challenge among diverse employees	• People and workplaces • Management foundation
Local communities	• Community contribution activities • Tours of factories and offices • Environmental debriefings	• Contribution to development of the next generation of human resources and to elimination of poverty problems • Coexistence of company with communities • Promotion of environment conservation	• People and workplaces • Management foundation
Governments/ associations	• Industry group activities • Collaboration with various initiatives	• Creation of innovation leading to the resolution of social issues • Initiatives targeted at climate change and respect for human rights • Building of sounder supply chains	• Product competitiveness • People and workplaces • Management foundation

1 IR roadshows: A tour of IR activities pitched directly to shareholders and investors

2 STQA: Supplier Total Quality Assessment

Analysis and selection

TEL has ascertained the social and business environment, considered the risks and opportunities, and put in order the opinions and requests of all stakeholders. We have deliberated material issues from the perspectives of their importance to both the building of a sustainable society and importance to the business to lead to increasing TEL's corporate value. As a result, continuing on from last year, we have defined our material issues as people and workplaces, which are important as a resource for creating value, and management foundation, which concerns corporate governance, compliance, the environment, human rights, and other issues, in addition to product competitiveness, responsiveness to customers, and higher productivity, which are items identified for enhancement in the medium-term management plan.

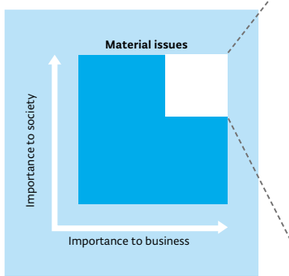
Examination of validity

With regard to the defined material issues, an examination of validity was conducted at the review council, which included external experts.

Key opinions and advice obtained from Review Council

- An outstanding strong point in the management and progress of priority themes and annual goals for material issues is TEL's constant effort to improve effectiveness by conducting annual reviews based on changes in the business environment and feedback from stakeholders
- Developing indicators that show the degree of contribution to achieving medium-term goals and SDGs could be effective for enhancing competitive advantage and corporate value
- Further initiatives are expected for realizing the Corporate Philosophy of "We strive to contribute to the development of a dream-inspiring society through our leading-edge technologies and reliable service and support."

Identified material issues



Material issues	Medium-term goals	Priority themes
Product competitiveness	• Create strong next generation products	• Tackling technological innovation • Environmental contribution of products
Responsiveness to customers	• Become the best and sole strategic partner	• Solutions that create value for customers • Improvement of customer satisfaction
Higher productivity	• Constantly pursue higher management efficiency	• Continuous improvement of business operations • Quality management • Improvement of customer productivity/yield
People and workplaces	• Maximize dreams and drive	• Diversity and inclusion • Career development • Work-life balance • Health and safety
Management foundation	• Build a management foundation for increasing value	• Governance • Risk management • Compliance • Environmental management • Supply chain management

TEL sets fiscal year and medium-term goals taking into consideration its five material issues and associated priority themes.

CSR goals and results

FY2020

Material issues	Priority themes	Annual goals	Results
Product competitiveness	Tackling technological innovation	• Ensure that 20% or more (three-year moving average) of all equipment models are new products for next generation technologies	• Achieved 22.9%
		• Maintain the previous year's global patent application rate	• Maintained the previous year's rate (Achieved 81.2% in fiscal year 2019 and 79.8% in fiscal year 2020)
	Environmental contribution of products	• Reduce per-wafer emissions of CO_2 by 20% by fiscal year 2025 (as compared with fiscal year 2014)	• Reduced by 16% in fiscal year 2020 as compared with fiscal year 2014 (Chose roadmap and equipment models for achieving goals for each core product)
Responsiveness to customers	Solutions that create value for customers	• Increase TEL's value to customers	• With growth of the logic device and foundry businesses, and resumed investment in NAND in the second half of the fiscal year, increased usage of TEL equipment by main customers
		• Increase sales in field solutions business from the fiscal year 2019 level	• Increased by 6.3% from the previous fiscal year
	Improvement of customer satisfaction	• Get 3 points ("Satisfied") or more on 100% of customer satisfaction survey items	• Achieved 93.3% (increased by 8.9% from the previous fiscal year)
Higher productivity	Quality management	• Utilize knowledge and strengths within the group	• Decided company-wide response policy for material non-conformance matters and expanded to relevant divisions (12 of 12 matters completed)
	Improvement of customer productivity/ yield	• Promote and implement front-loading and traceability	• Front-loading Reviewed processes for responding to nonconformities to reduce man-hours Re-examined best practices for quality assurance activities • Traceability Examined systems for tracking status and processes for parts
People and workplaces	Diversity and inclusion	• Double percentage of female managers by fiscal year 2021 from 1.8% in fiscal year 2018	• Achieved 2.0% in fiscal year 2020
	Career development	• Increase number of training sessions attended per person by 10% from the fiscal year 2019 level	• 8.3 training sessions attended per person: Reduced by 11.7% from the previous fiscal year[1] (Some group training sessions canceled due to the new coronavirus disease COVID-19)
	Work-life balance	• Reach at least 70% take-up rate of annual paid leave	• Achieved 72.6% (67.2% in fiscal year 2019)
	Health and safety	• Reduce gap between health age[2] and actual age by 1.5 points by fiscal year 2021 (as compared with fiscal year 2018)	• Increased by 0.03 points as compared with fiscal year 2018
		• Ensure that the number of workplace injuries per 200,000 work hours (the total case incident rate) is less than 0.5	• Achieved 0.23
Management foundation	Governance	• Improve on issues identified in evaluations of the effectiveness of the Board of Directors	• Examined and confirmed TEL's ideal organizational structure[3] and composition of directors[4], and partial revision of its director and executive officer compensation system, in meetings of the Board of Directors and internal committees • Finished examining revisions to the criteria for discussion by the Board of Directors, and establishment of a new executive committee to improve the decision-making process of the Board of Directors, and will implement changes from fiscal year 2021 • Revised internal control systems and group company controls through a project to enhance the risk management framework • Held offsite meetings of the Board of Directors and held discussions about medium- to long-term management strategies, and CSR and GRC[5] initiatives and issues
	Compliance	• Reorganize internal hotline and establish hotline for suppliers, etc., at group companies overseas (ongoing) • Achieve at least, 90% recognition among employees concerning internal hotline • Revise Code of Ethics, conduct basic annual training, and achieve pledge rate of at least 90%	• Finished reorganizing internal hotline and establishing a hotline for suppliers, etc. at group companies overseas • Survey of recognition among employees concerning internal hotline was not implemented, and will be carried over to fiscal year 2021 • Revision of TEL's Code of Ethics, conduct of basic annual training, and pledges were not implemented, and will be carried over to fiscal year 2021
	Environmental management	• Reduce energy consumption by 1% from the fiscal year 2019 level (per-unit basis[6]) at each factory or offices	• Achieved goal at 6 of 11 factories or offices
		• Maintain water consumption at the fiscal year 2012 level according to per-unit basis[7] set at each factory or offices	• Achieved 9 of 13 goals
	Supply chain management	• Implement supply chain CSR assessments for 80% or more of suppliers (procurement volume basis)	• Achieved 80% or more of our procurement spend

1 Number of training sessions attended per person in fiscal year 2019 was revised from 11.6 down to 9.4 due to changes to the indicator by the inclusion of non-regular employees
2 An indication of the risk of lifestyle diseases in years, based on the results of health checkups
3 TEL uses the Audit & Supervisory Board System
4 At least one third of directors are outside directors
5 GRC: Governance, risk management, and compliance
6 Per-unit basis: Calculated using complex weighting of the number of developed evaluation machines, units produced, floor area, and labor-hours for each district
7 Per-unit basis: Calculated based on floor area and labor-hours, etc. for each district
8 ERP: Enterprise Resource Planning
9 CRM: Customer Relationship Management
10 PLM: Product Lifecycle Management
11 Shift Left: Refer to p. 17 and p. 31.
12 Senior specialists were included in the 2.0% figure in fiscal year 2019
13 BCP: Business Continuity Plan

FY2021

Material issues	Priority themes	Annual goals	Medium-term goals	Relevant SDGs
Product competitiveness	Tackling technological innovation	• Ensure that 20% or more (three-year moving average) of all equipment models are new products for next generation technologies	Create strong next generation products	9, 13, 17
		• Maintain the previous year's global patent application rate (±10%)		
	Environmental contribution of products	• Reduce per-wafer emissions of CO_2 by 20% by fiscal year 2025 (compared with fiscal year 2014)		
Responsiveness to customers	Solutions that create value for customers	• Increase TEL's value to customers	Become the best and sole strategic partner	9, 12, 17
		• Increase sales-in-field solutions business by 5% or more from the fiscal year 2020 level		
	Improvement of customer satisfaction	• Achieve evaluations of "Very Satisfied" or "Satisfied" for 100% of customer satisfaction survey responses		
Higher productivity	Continuous improvement of business operations	• Target a 10% improvement in operational efficiency as a medium- to long-term goal, achieve centralized data management through adoption of a new ERP[8] system, and build a business foundation where employees can focus even more on higher value work (1) Expand implementation of CRM[9] and PLM[10], and (2) adopt new ERP during fiscal year 2021	Constantly pursue higher management efficiency	8, 12, 17
	Quality management	• Check the impact of important non-conformance item on other equipment and thoroughly implement recurrence prevention measures		
	Improvement of customer productivity/ yield	• Promote Shift Left[11] (front-loading) activities for quality (1) Increase engineer time for high value work in upstream processes, and (2) Implement medium- to long-term action plans to continue to enhance quality assurance activities		
People and workplaces	Diversity and inclusion	• Double the percentage of female managers and experts (with same roles and responsibilities as managers) by fiscal year 2022 from 2.0%[12] in fiscal year 2019	Maximize dreams and drive	3, 8, 10, 17
	Career development	• Foster a culture of learning and development in the workplace through (1) Leader development programs, (2) provision of personalized global learning opportunities, and (3) support for career development throughout working life		
	Work-life balance	• Reach at least 70% take-up rate of annual paid leave		
	Health and safety	• Reduce gap between health age and actual age by 1.5 points by fiscal year 2021 (as compared with fiscal year 2018)		
		• Reduce the number of workplace injuries per 200,000 work hours. Target: TCIR (the total case incident rate) is less than 0.5.		
Management foundation	Governance	• Continue to improve on issues identified in evaluations of the effectiveness of the Board of Directors	Build a management foundation for increasing value	8, 13, 16, 17
	Risk management	• Promote an integrated risk management system throughout the group, (1) Adopt Control Self Assessment (CSA), and (2) establish and operate a risk management committee		
	Compliance	• Achieve 100% recognition among employees concerning internal hotline • Revise Code of Ethics, conduct basic annual training, and achieve pledge rate of 100% • Conduct a compliance awareness survey		
	Environmental management	• Reduce energy consumption by 1% from the fiscal year 2020 level (per-unit basis) at each factory or offices		
		• Maintain water consumption (per-unit basis) at factories and offices at the fiscal year 2012 level in Japan and at individual base year levels overseas		
	Supply chain management	• Implement supply chain CSR assessments for the following percentages of suppliers. Material suppliers: Covering at least 80% of our procurement spend Logistics suppliers: 100% of customs-related operators Staffing suppliers: 100% of employment agencies and contracting companies (internal contractors) • Implement supply chain BCP[13] assessments for the following percentages of suppliers. Material suppliers: Covering at least 80% of our procurement spend		

Value creation through business

Through activities along the entire value chain, Tokyo Electron (TEL) effectively utilizes its management resources to offer products and high-value-added services that are conscious of innovative technologies, productivity improvement, and reducing environmental impact in the semiconductor and flat panel display (FPD) production process. The semiconductors and FPDs produced by our customers are found in various products on the market, including mobile devices, audio/visual equipment, and data servers. These products play a central role in the data society, which is growing ever more quickly with the spread of technologies including IoT, AI, and 5G, helping to build a more convenient and affluent society. Through our business operations, we contribute to the resolution of social issues, development of society, and the achievement of SDGs.

TEL's capital

- Capital through business activities
- Development and production, sales, and service expertise
- Intellectual property
- Personnel able to perform globally
- Relationships of trust with customers and suppliers

Initiatives in the value chain and material issues

Research and development → Procurement and production → Sales → Service

Product competitiveness
- Research and development
- Tackling technological innovation
- Environmental contribution of products

Responsiveness to customers
- Solutions that create value for customers
- Initiatives for field solutions
- Ensuring safety for customers
- Improvement of customer satisfaction

Higher productivity
- Promotion of improved productivity
- Software development initiatives
- Quality management
- Improvement of quality in the value chain

People and workplaces
- Human resource management
- Diversity and inclusion
- Employee growth
- Work-life balance
- Health and safety

Management foundation
- Corporate governance
- Risk management
- Compliance
- Respect for human rights
- Supply chain management
- Environmental management

Value provided to customers and society

Products and services

Leading-edge semiconductor/FPD production technology

Maximizing productivity

Reducing environmental impact

Providing value to customers through products and services

Semiconductors/FPDs

Value provided to society by customers

IoT/AI/5G

Contributing to development and to solving the problems of society and industry

Actualization of Corporate Philosophy

SUSTAINABLE DEVELOPMENT GOALS

Product competitiveness

Medium-term goals

Create strong next generation products

As the transition to a data society accelerates due to the spread of IoT, AI, and the 5G, demand for semiconductors and flat panel displays is increasing, as is the requirement for their diversification and high performance. Tokyo Electron promotes leading-edge research and development to meet the fast-changing demands for technological innovation through product marketing, and provides equipment and services to meet various applications. We also continuously strive to reduce the environmental impact of our products, factories, and offices. By providing technology that contributes to the development of devices with even lower power consumption, we endeavor to preserve the global environment. We will contribute to the further development of industry and society through the timely creation of the best, high-value-added products with cutting-edge technology, and continuing to provide the best service supporting those products.

Main activities

Research and development

Tackling technological innovation

Environmental contribution of products

- **Research and development**
  Research and development for the future, Development system, Shift Left, Product marketing, Intellectual property management, Collaborating with consortiums
- **Tackling technological innovation**
  Research and development for next generation computing, Promoting digital transformation (DX), Addressing advancements in display
- **Environmental contribution of products**
  Medium- and long-term environmental goals, Products that contribute to a sustainable society, Initiatives for product environmental laws and regulations

SDGs initiatives

- Create innovative technologies by promoting innovation, to help build a sustainable society
- Contribute to the reduction of environmental impact on a global level by providing products and services that are conscious of the environment

Industry, innovation and infrastructure

Climate action

Partnerships for the goals

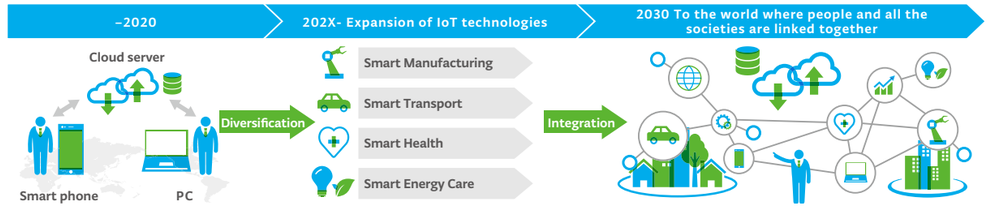
SUSTAINABLE DEVELOPMENT GOALS

Research and development

Research and development for the future

As lifestyles and business models undergo dramatic changes in the era of IoT, it is anticipated that the use of semiconductors will expand in all industries, and there will be demands for even more advanced technologies. In an age where electronics are a more familiar part of people's lives, and there is an ever-growing need for semiconductors, Tokyo Electron (TEL) is continuously engaged in rigorous discussion regarding new, necessary technologies and TEL's contribution. TEL Technology Vision 2030 summarizes these discussions, and is distributed within our company in order to provide information and seek feedback. In addition, our entire company is committed to research and development in the future.

Increase and growth of semiconductor applications



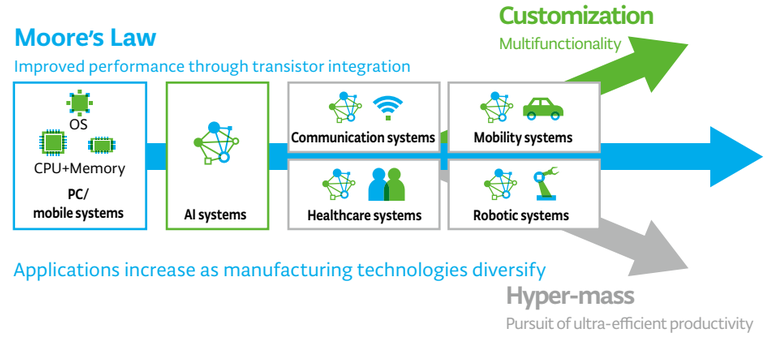
Development system

With advances in the performance of semiconductors resulting from miniaturization technology, the emergence of new devices due to manufacturing technologies capable of accommodating more flexible designs, and the growth of a market requiring large volumes of devices in step with the development of IoT, the semiconductor market is becoming increasingly diversified. Consequently, amid the need for diversification in manufacturing technologies, TEL promotes technology development and technology innovation for the next generations, and has built a system in which its Development & Production Divisions collaborate with Business Divisions to bring high-value-added products into the market in a timely fashion.

Led by our Corporate Innovation Division, which was established in 2018, we have also been implementing further enhancements to our process integration capabilities, such as deposition and etching technologies, based on our wide lineup of semiconductor production equipment. In January 2020, we established TEL Manufacturing and Engineering of America to optimize manufacturing functions in the U.S. region and improve operational efficiency.

We are currently working on utilizing AI to strengthen the development of control software further, and in the testing phase of the manufacturing process, we have succeeded in reducing the number of wafers used from the usual five lots to just one lot. AI technologies have also made it possible for us to cut liquid chemical use by about 20%, helping us to use resources more efficiently.

Market heading toward diversification



Product competitiveness

Shift Left

TEL is focused on advancing the "Shift Left" approach, investing resources (including technology, personnel, and money) into the early processes of product development. Together with customers who conduct research with a vision beyond even the next generation and who aim to accelerate the speed of development further, we have created a technology road map, and are engaged in developing the various technologies required for its realization.

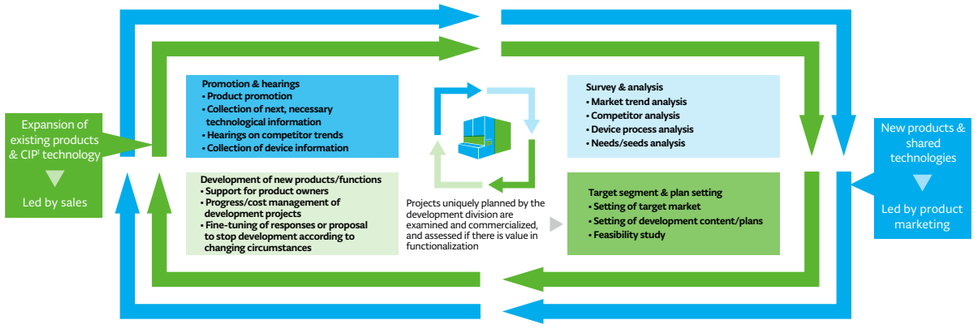
In fiscal year 2020, responding to the growing customer need for production equipment to take up less space, we succeeded in improving equipment efficiency per unit area by maximizing the use of clean rooms and providing more productive equipment. Through proposals of unique technologies, we promote on-site collaboration for early delivery of evaluation units at customers' plants and research and development laboratories, shortening the period between technology development and the conversion to mass production equipment and maximizing efficiency.

- Joint development of multi-generation technology road map with customers
- Promotion of early engagement
- Maximization of yield for customer devices and equipment operating rate from early stages of mass production, and also reduction of environmental impact
- Promotion of improvement in work efficiency and per person productivity, and further increase in investments into human resources and development
- Increase in equipment efficiency per unit area, by achieving higher productivity and using less space

Product marketing

TEL is promoting effective product development by having its sales departments and product marketing departments appropriately play their respective roles. Our sales departments take the lead in making improvements and adding functions to existing products that have already been delivered, and provide customer feedback to our development divisions. Our product marketing departments, meanwhile, take the lead in the development of new products, and share guidelines based on market trends and competitor analysis with the development divisions resulting in product development that contributes to value creation for customers. They also consider the commercialization of plans and the addition of functions proposed by our development divisions, and formulate strategies for collaborating with partner companies and consortiums. Through their activities, our product marketing departments are helping to effectively promote our important "Shift Left" approach.

Involvement in product development by sales departments and product marketing departments



1 CIP: Continuous improvement program

Intellectual property management

In its intellectual property-related activities, TEL's basic policy is to contribute to increased corporate revenues by supporting business activities through appropriate protection of intellectual property (IP). IP personnel assigned at R&D/manufacturing sites and headquarters assess each project from various angles, including R&D and marketing perspectives, building IP portfolios aligned with technology, and product strategies in an effort to boost competitiveness. In 2018, in order to uphold our worldwide advantage in the IP field, we maintained a global patent application rate[2] of approximately 70% for the ninth consecutive year, and achieved high patent approval rates (83% in Japan and 86% in the United States). Furthermore, as we globally expand research and development and industry-academia collaborative initiatives related to our business, the number of joint patent applications in collaboration with partner companies, universities, and other research institutes around the world has reached 51 applications with 20 companies and 10 organizations in the last two years.

Cumulative number of technology inventors

4,300

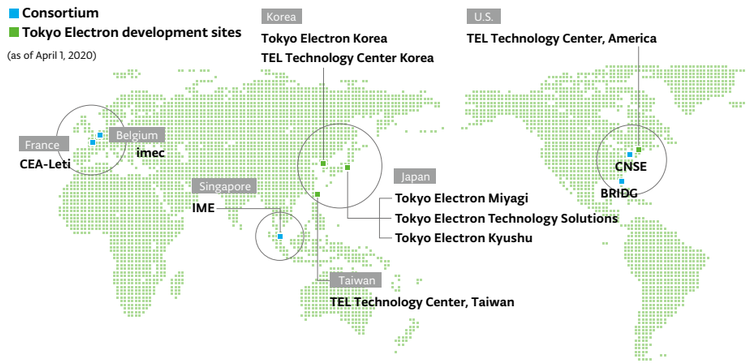
2 Global patent application rate: Percentage of invention applications filed in multiple countries

To increase IP awareness, we continuously educate our engineers, who are the foundation of our R&D strategy, and in total, around 4,300 engineers have become inventors. Additionally, because we often handle highly confidential information, including technological information of our customers and collaborative partners, we also focus on confidential information management education.

Collaborating with consortiums

By collaborating with international and domestic consortiums, TEL is enhancing its own research and development capabilities, and is working to further develop cutting-edge technologies. With three bases in Japan and additional bases in the United States, Belgium, and Singapore, we collaborate with device manufacturers in Japan and abroad and with global research institutes to promote research into next generation semiconductor production technology. In fiscal year 2019, we began participating in a global research hub developing next generation AI hardware, and in fiscal year 2020, we have been promoting collaboration in technologies and applications that speed up evolution, from development to market launch. One example has been our cooperation with BRIDG[1], a not-for-profit, public-private partnership located in the U.S. state of Florida.

Our engagement in these consortiums includes the development of cutting-edge processes for existing devices and the development of manufacturing technology for chips designed for AI computing.



AI chip development

In cooperation with partner companies in the United States, TEL is participating in the development of AI chips. The development system we have built is completely integrated, from the architecture stage examining semiconductor design for AI systems through to incorporation into circuits and physical design, and from manufacturing through to research on the materials development level. Besides developing software necessary for AI to work, we are engaged in the development of materials, processes, and equipment geared for manufacturing, leveraging our partner companies' knowledge of design and architecture.

Initiatives in Japan

Responding to societal demands regarding energy and labor, TEL is participating in a project that brings together a group of advanced companies with the science, engineering, humanities, and social sciences departments of Tohoku University, Kyoto University, and Yamagata University.

The project defines three specific non-competitive areas, namely: (1) edge computing devices for IoT with extremely low power consumption, (2) hybrid integrated power devices for high-efficiency energy conversion, and (3) intelligent electronics systems for highly efficient labor-intensive transportation systems, and carries out research activities designed to create innovative technologies and build a joint industry-academia platform for the development of human resources. Tohoku University, the lead organization in these research activities and projects, hopes to contribute to creating new, world-leading industries by achieving synergies with its competitive project for a center for industry-academia collaboration.

As for project outcomes, as a consequence of developing new processes and process integration technologies in the manufacture of spin-transfer torque-magnetoresistive random access memory (STT-MRAM[2]), in a world first, we succeeded in achieving both high performance and high rewrite tolerance[3] in STT-MRAM, thereby contributing to the practical implementation of STT-MRAM and helping to expand its areas of application.

1 BRIDG: BRIDG is a not-for-profit, public-private partnership specializing in advanced system integration, microelectronics fabrication, III-V materials deposition for sensors, optoelectronics, and high-speed transistors. BRIDG offers production process technologies, research and development capabilities, and 200 mm microelectronics fabrication geared toward system miniaturization, device integration, hardware security, and product development key to aerospace/defense and the IoT/AI revolution. Supported by Osceola County, University of Central Florida, Florida High Tech Corridor Council, and others, BRIDG provides the physical foundry infrastructure and collaborative process to connect challenges and opportunities with solutions; "Bridging the Innovation Development Gap" making commercialization possible.

2 Spin-transfer torque-magnetoresistive random access memory (STT-MRAM): A nonvolatile memory based on the operating principle of the tunnel magnetoresistance (TMR) effect (the phenomenon in which electrical resistance changes depending on the direction of magnetization of two ferromagnets separated by a thin insulator in a magnetic tunnel junction (MTJ) element) using spintronics (the engineering use and application of both the charge and spin of electrons in a solid)

3 High rewrite tolerance: Tolerance for an unlimited number of data rewrites

Tackling technological innovation

Research and development for next generation computing

As use of the IoT, linking a multitude of devices to the Internet, expands rapidly in society, demand for semiconductors processing massive amounts of information quickly and efficiently, such as in data collection and management, analysis, and visualization, is continuing to grow. At the same time, progress is taking place in the development of neuromorphic devices, inspired by human neural circuits. When processing information on computers that use conventional architecture, there are considerable losses in energy consumption. Such computers used in data centers consume tens of kilowatts of power, whereas the human brain uses only about 20 W. Similarly, while the operating frequency[1] of today's semiconductor devices is 5 GHz, the human brain is believed to run at just several tens of hertz. Progress is being made in research and development on neuromorphic devices modeled on these human brain movements. They utilize synaptic connections[2] based on analog devices to replace the processing and memory functions, which had previously been only divided between the digital logic and memory of a conventional microprocessor. The aim is to achieve a higher degree of information processing with low power consumption. These neuromorphic devices require an approach of integrating analog to digital. In addition to conventional pursuit of circuit miniaturization, development is underway for functions that mimic human neural circuits, including resistive analog neuro device[3], and nonvolatile resistive random access memory[4]. Furthermore, with a focus on the energy consumed calling memory from arithmetic circuits, much is being done for faster and more energy-efficient processing capacity by devising a better arrangement of arithmetic circuits and memory.

Leveraging its strengths in deposition and patterning technologies, Tokyo Electron (TEL) has initiated research efforts into new materials needed for semiconductors that will be the core of next generation computing, such as neuromorphic devices, quantum computers, logic-memory integration mixing memory with logic (compute-in-memory, memory-driven computing), as well as innovative manufacturing processes for utilizing these materials.

1 Operating frequency (or clock speed): The number of signals per second to adjust the pace of processing of multiple electronic circuits

2 Synaptic connections: A junction formed between neurons (cells making up the nervous system of an animal) regarded as having an important role in learning and memory

3 Resistive analog neuro device: Electronic devices capable of continuously changing resistance

4 Nonvolatile resistive random access memory: Random access memory that uses nonvolatile resistance transformers

Promoting digital transformation (DX[5])

As the environment for utilizing AI has developed and AI has become a more familiar part of people's lives, TEL is expanding the opportunities for AI application, and is continually striving to achieve highly stable equipment operation and greater efficiency in development activities. By monitoring the operating status of semiconductor production equipment in real-time, and using AI to analyze that data, we aim to improve equipment operation efficiency and to use resources more efficiently, such as maintenance of equipment performance, achieving wafer process uniformity, cutting down on test wafers, and avoiding unexpected downtime. TEL's specialized AI department, launched in 2017, plays a key role in the development of algorithms and other projects to use AI to analyze the vast volumes of data output from equipment. Since 2018, we have also been promoting DX across our entire company, not just in development activities but also in the education of personnel who can utilize digital technology. AI workshops, for instance, have been held to share the latest technology trends and to boost internal collaboration.

5 Digital transformation: Digital transformation (DX) refers to the act of utilizing digital technology to transform a product or entire company while responding to changes in society

Addressing advancements in display

As communication devices become more sophisticated and diverse in the age of IoT and 5G, higher performance is required for displays built into those devices. Displays are continuously evolving, in terms of higher image quality, built-in sensors, flexibility of design, and lower power consumption.

In particular, Organic Light Emitting Diode (OLED) displays, which are used widely in smartphones and televisions, are expected to expand to various applications including IT and automotive, because of their high image quality and outstanding design flexibility.

TEL has released Elius™ inkjet printing equipment designed for forming the emitting layer on OLED displays. Elius can significantly reduce the consumption of materials in the manufacturing process compared with the conventional evaporation process. It contributes greatly to cut manufacturing costs for medium and large OLED displays. In order to make the displays compatible with the diverse organic OEL materials that determine their characteristics, TEL is advancing development that allows swift deployment of cutting-edge knowledge into our device technology.

For the manufacturing process of the thin film transistor (TFT) array, which drives liquid crystal displays (LCD) and OLED displays, we also developed Impressio™ and Betelex™ plasma etch systems, as well as the Exceliner™ coater/developer. Impressio and Betelex use PICP™ [6], a plasma reactor with higher energy efficiency, reduces power consumption by up to 20%, and achieving precise processing and stability in mass production. Exceliner, equipped with our original Air Floating Coater, permits higher throughput while maintaining excellent film uniformity and saving chemical costs.

TEL continues to reduce environmental impact by improving productivity and yield.

6 PICP™: Original plasma reactor developed by TEL which produces extremely uniform high-density plasma on panel substrates

Environmental contribution of products

Medium- and long-term environmental goals

Tokyo Electron (TEL) is working toward the conservation of the global environment by upholding the environment related medium- to long-term goals detailed the below.

Medium-term goals (2030)

Products	Facilities	
30% ↓ Reduce per-wafer CO_2 emission (as compared with 2013)	20% ↓ Total CO_2 emissions (as compared with 2018)	1% ↓ Reduce year-over-year energy consumption at each factory and office (per-unit basis, annual goal)

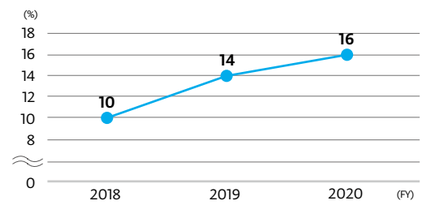
Long-term goal (2050)

As a leading corporation in environmental management, Tokyo Electron works actively to conserve the global environment. We strive to contribute to the development of a dream-inspiring society by proactively promoting the reduction of environmental burden of both our products and facilities, and at the same time, providing evolutionary manufacturing technologies that effectively reduce the power consumption of electronic products.

Products that contribute to a sustainable society

Of the total CO_2 emissions from TEL's value chain, emissions during product use account for 90%. For this reason, TEL has made it a key corporate objective to promote environmentally friendly product design, and lower the energy consumption of its products. In fiscal year 2020, we set a medium-term environmental goal for the key models of each business unit (BU), namely, to reduce per-wafer CO_2 emissions by 30% by fiscal year 2031 (compared with fiscal year 2014). Furthermore, in order to achieve this medium-term goal, we set an interim goal of reducing per-wafer CO_2 emissions for the key models of each BU by 20% by fiscal year 2025 (compared with fiscal year 2014), and we have been promoting specific activities. In fiscal year 2020, we formulated a roadmap for achieving this goal for our key models, and we established guidelines for calculating CO_2 emissions, incorporating the usual energy and water usage, as well as process gas and chemical substance usage, product footprint, volume, and weight, reduced frequency of parts maintenance and increased lifespan, and shorter time to equipment launch. Based on these guidelines, the reduction in CO_2 emissions for equipment shipped in fiscal year 2020 in comparison to baseline equipment was calculated as 16%. We also began examining environmental technology strategies for achieving our medium- and long-term environmental goals. As we work to further raise environmental awareness, we will continue to incorporate environmental technologies as an important added value in our technological strategies. We will continue to promote further activities for achieving our medium- and long-term environmental goals.

Reduction in CO_2 emissions for products



Initiatives for product environmental laws and regulations

In order to comply with each country's environmental laws and regulations pertaining to products, TEL proactively collects information and takes appropriate action as required. An example of our efforts for EU REACH[1] is that we properly investigate and disclose information on the presence of any chemical substances in articles. In terms of the format used for our investigations, we previously used the Article Information Sheet (AIS) format promoted by the Joint Article Management Promotion-consortium (JAMP[2]), but since fiscal year 2021, in order to address chemical substance regulations for concentrations in the parts per billion (ppb[3]), we have adopted the chemSHERPA[4] format, which will become widespread as the industry/international standard. As for efforts for GHS[5] requirements, we provide safety data sheets (SDS[6]) when selling chemical products, and we promote the local procurement of chemical products. In explaining and addressing the frequently revised environmental laws and regulations, we continue to offer "web-based training for Product Environment Compliance" to all employees, and we provide suppliers with information on the relevant environmental laws and regulations. TEL will continue to rapidly monitor each country's environmental laws and regulations and strive to take appropriate action.

1 EU REACH: An EU regulation pertaining to the Registration, Evaluation, Authorization, and restriction of CHemicals

2 JAMP: Joint Article Management Promotion-consortium

3 ppb: One part per billion (1×10^{-9})

4 chemSHERPA: A data entry support tool for appropriately managing information on chemical substances in products across an entire supply chain

5 GHS: Globally Harmonized System of classification and Labelling of Chemicals

6 SDS: Safety Data Sheet (Safety Data Sheet refers to the document containing hazard information about chemical substances that is issued when a company transfers or provides chemical substances, products containing chemical substances, to another company.)

Responsiveness to customers

Medium-term goals

Become the best and sole strategic partner

Tokyo Electron (TEL) helps customers manufacture cutting-edge devices by maintaining an accurate and timely grasp on customer needs and providing innovative technologies for future generations. As a production equipment company with a diverse product range, we propose comprehensive solutions contributing to value creation for customers. Making full use of state-of-the-art AI technologies and knowledge management tools, we also provide high-value-added maintenance services that support the stable operation of various generations of equipment. TEL strives to further enhance customer satisfaction, which is a key management theme it has tackled since our founding, aiming to be the best and sole strategic partner for customers.

Main activities

Solutions that create value for customers

Initiatives for field solutions

Ensuring safety for customers

Improvement of customer satisfaction

- Solutions that create value for customers
  Building systems for creating value for customers, Proposing customer solutions leveraging a broad portfolio of products
- Initiatives for field solutions
  Field solutions business, Development and production of upgraded models, Work optimization, Knowledge management, Total Support Center
- Ensuring safety for customers
  Improving in-house skills, Information provision, Global expansion of training for customers, Safe equipment design
- Improvement of customer satisfaction
  Customer satisfaction survey

SDGs initiatives

- Contribute to customer innovation generation and value creation through the proposal of comprehensive solutions
- Ensure a sustainable form of production and consumption throughout product life cycles by responding to diversifying needs, considering safety and the environment

Industry, innovation and infrastructure

Responsible consumption and production

Partnerships for the goals

SUSTAINABLE DEVELOPMENT GOALS

Solutions that create value for customers

Building systems for creating value for customers

The semiconductor market has been expanding rapidly in recent years, driven by IoT, 5G, automotive automation, and other innovations. Tokyo Electron (TEL) is building an organization to realize more effective global operations, providing the best technologies and services to meet customer needs as the market changes.

Since 2018, we have worked to strengthen our customer responsiveness through two divisions: our Account Sales Division, which leads to new technology development based on the needs of traditional customers of major semiconductor manufacturers for next generation cutting-edge technology such as memory, logic, and foundry; and our Global Sales Division appropriately addresses the needs of more than 100 new customers in Japan and overseas in such fields as electrical appliances, automobiles, medical treatment, and healthcare. By building stronger, close collaborative relationships with each business unit and moreover with each overseas subsidiary, our respective sales divisions provide customers with swift, high-quality support and solutions.

We are working to build globally unified systems and structures in order to further enhance and stabilize the quality of our service and support activities. The Global Service Committee, a regular gathering of the service leaders of each department and each overseas subsidiary, enhances information sharing and in-house coordination, including improving the technical skills and interpersonal skills of our more than 4,000 field engineers worldwide, the localization of start-ups, and improving work efficiency using the work-time management system. Furthermore, through TELeMetrics™ [1], a remote maintenance service offered through our Total Support Centers (TSCs[2]), we provide customers with higher-value-added services, by utilizing our wealth of knowledge and range of tools to enable us to propose customized solutions services for the various challenges they face.

1 TELeMetrics™: Refer to p. 24.

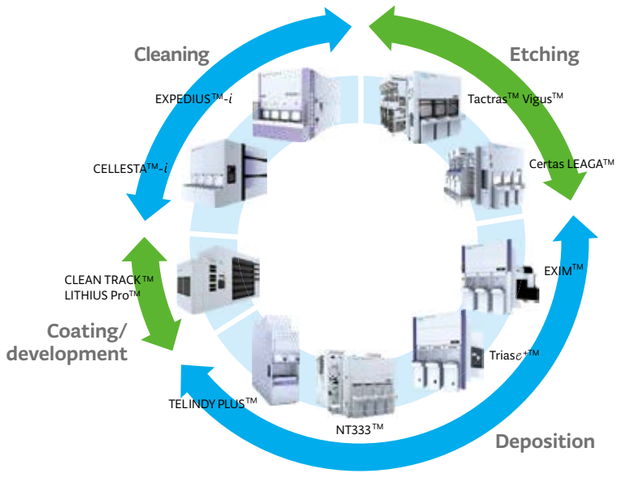
2 Total Support Centers (TSCs): Refer to p. 24.

Proposing customer solutions leveraging a broad portfolio of products

Because semiconductors and FPDs are becoming increasingly sophisticated and diverse, in order to meet the needs of production sites, such as improved yield and improved equipment efficiency per-unit area through enhanced productivity and smaller footprints, TEL's product development is initiated from the customer perspective.

Two of our divisions work closely together in turning these perspectives into products. Specifically, our Account Sales Division identifies customer demands for next-next generation technology and beyond, and based on these, our Corporate Innovation Division reviews the requirements and converts them into actual, tangible products.

In proposing solutions to customers, we leverage a broad portfolio of equipment, including those used in the series of key patterning processes requiring advanced levels of technology, such as deposition, coating/development, etching, and cleaning. Through total solutions that incorporate systems and software in addition to production equipment, we seek to optimize the production process. We strive to develop products that help strengthen our customers' competitiveness by achieving a balance between faster and better quality semiconductor production.



Initiatives for field solutions

Field solutions business

As progressive improvements are made in the performance of CPUs[1] and semiconductor memory, as advances are made in miniaturization for mass production, and as transistors used in autonomous driving systems and VR/AR[2] become increasingly integrated, there is a need for semiconductors across a wide range of fields, such as medical treatment, finance, transportation, and manufacturing. Extending the life cycle of products is another challenge, evidenced by the growing demand for the long-term stable operation of semiconductors for automobiles and industry.

Tokyo Electron (TEL) is working to further strengthen its field solutions business to ensure that shipped equipment can operate stably in the market over a long period. We are engaged in various initiatives to help maximize our customers' business operations, including promoting knowledge management in field service, continuously improving our field engineers' skills, strengthening our global support system through Total Support Centers (TSCs), and expanding upgraded models.

1 Central Processing Unit (CPU): A typical component of a computer, alongside memory and hard disks

2 Virtual Reality (VR): Technology that creates a virtual world resembling reality in a computer
Augmented Reality (AR): Technology that uses computer graphics (CG) and so on to reflect (augment) virtual reality in the real world

Development and production of upgraded models

In order to meet the needs of customers producing IoT-related products, TEL has established a system for developing and producing new upgraded models based on previous-generation equipment supporting 200 mm wafers. Upgraded models help customers to improve productivity and reduce environmental impact by replacing old units and parts with new ones while maintaining compatibility with existing processes and offering performance in terms of transfer speed and so on at the same level as the latest equipment. In fiscal year 2021, we began selling upgraded models of ALPHA-8SE™ [3] and UNITY™ Me[4], systems for peripheral devices that we had previously sold as new equipment. We also began developing upgraded models of coating/developing equipment and cleaning equipment for 200 mm wafers.

3 ALPHA-8SE™: A batch thermal processing system that can accommodate low-temperature to high-temperature processes

4 UNITY™ Me: A dry etch platform developed by TEL for wafers up to 200 mm

5 CUE: Certified Used Equipment

TEL's lineup of small-diameter equipment

Upgraded model complete / Upgraded model under review / * All models CUE[5] compatible

ALPHA-8SE™ i	NS300+ 200 mm Conversion	CLEAN TRACK™ ACT™ 8	UNITY™ Me+
Thermal Processing System	Cleaning System	Coater/Developer	Plasma Etch System
• 150/200 mm • Diffusion • LP-CVD • ALD	• 200 mm • 150 mm (2021–) • Front/Back scrubber	• 75/100/150/200 mm • I-line, Krf, ArF • SOG/SOD, PI	• 100/150/200 mm • Oxide, Nitride, Si, SiC

Work optimization

To improve the work efficiency of field engineers worldwide, and to enhance service quality and streamlining personnel, TEL uses globally common timesheets to conduct detailed work-time management and analysis for each location and product. In addition, intent on further improving work efficiency, we have been particularly focused on reviewing work where considerable improvement is likely based on the types of tasks undertaken by engineers and the time taken, such as work involved in starting up equipment and repair work.

Knowledge management

TEL promotes group-wide knowledge management[1] so that it can deliver high-quality service swiftly to its customers.

In the area of field service, we have been working on globally implementing Service CRM[2] so that we can create a database and centrally manage customers' equipment records (support and incident history). Having started in Japan in fiscal year 2020, Service CRM is being progressively expanded in Singapore and Europe in fiscal year 2021. Accessible to field engineers around the world, it allows us to increase the volume of operational knowledge data. It enables us to respond to calls from customers faster and more accurately efficiently. In addition, regarding our system that allows engineers to perform natural language searches (Japanese, English, and Chinese) for information they require from the vast amount of accumulated technical documentation, efforts have been made to improve the accuracy of searches by utilizing AI in image recognition and natural language processing. As a result, knowledge relating to incidents can be readily searched, and predictions concerning the cause of events can be made with greater accuracy.

Going forward, as we promote efforts to manage the various systems throughout the TEL group using One Platform[3], we remain committed to further improving the efficiency of our customer responsiveness.

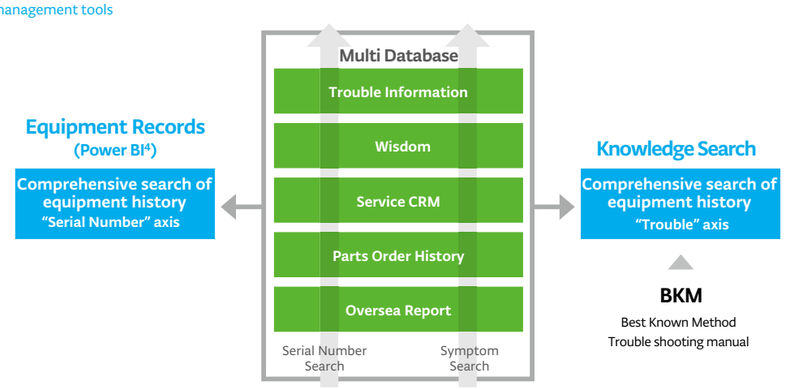
1 Knowledge management: Management approach to promote internal company sharing of tacit knowledge held by individuals, in order to encourage innovation and to improve overall productivity

2 Service CRM: Service Customer Relationship Management

3 Efforts to manage systems using One Platform: Refer to p. 28 "Continuous improvement of business operations."

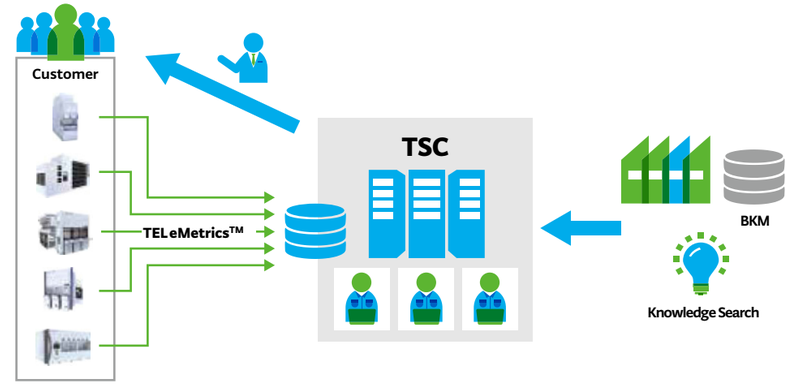
4 BI: Business Intelligence

Knowledge management tools



Total Support Center

TEL has built a global support system, establishing Total Support Centers (TSCs) in Japan, the United States, and China. At each TSC, dedicated representatives maintain and utilize a database of information about customers' equipment and examples of similar incidents. The TSCs also employ TELeMetrics™ to perform remote maintenance. These systems facilitate collaboration between the TSCs, field engineers, and plants, helping us to respond promptly and appropriately to customer inquiries and any problems that arise.



Ensuring safety for customers

Improving in-house skills

In October 2019, we established a training operations center to enhance the skills management, training structure, and globalization of field engineers. Having built a group-wide skills management system in accordance with SEMATECH (a U.S. consortium for the joint development of semiconductors), we deploy the most suitable human resources to provide customers with service, based on an objective understanding of the skills of our engineers. We are also committed to continuously reviewing and improving our training curricula and content from a global perspective, including establishing a system whereby field engineers can choose the training programs they need to attend in order to improve their skills.

Information provision

Tokyo Electron (TEL) is committed to providing sufficient information on its products to ensure that customers can safely use the products. All products purchased by customers come with a TEL Safety and Environmental Guidelines manual. The manual describes potential risks associated with using our products together with the methods for averting those risks, as well as safety measures applied to products and recommended methods for product disposal. It is divided into such categories as chemical, electrical, mechanical, and ergonomic. The manual is available in 12 languages[1] to ensure that customers around the world can understand the content accurately and safely use the products. Customers are also provided product-specific manuals tailored to the relevant product specifications.

If new safety warnings become apparent after a product ships, we contact affected customers individually and share that information with them.

TEL Safety and Environmental Guidelines

We also pay close attention to safety when delivering products that involve the use of hazardous chemicals or high voltage electricity. Furthermore, when delivering products to a customer's new production line, in accordance with TEL regulations, we thoroughly consider all safety aspects beforehand by checking the customer's facilities, equipment, safe work standards, and so on.

Global expansion of training for customers

TEL has established training centers all over the world, mainly at its development and production sites, and is providing customers with training on equipment operation and maintenance to ensure they are able to use the products safely. In July 2019, we opened a new training center at Tokyo Electron Korea. Using actual equipment, practical training is being rolled out at training centers globally, delivered by about 50 dedicated instructors whose skills have been recognized by our own internal certification system. In addition, we also implement online education as well as on-site training at customer's plants.

By conducting online surveys in order to respond more quickly to our customers' needs, and by collecting and analyzing customer feedback, we are working to improve the content of our training programs and the equipment used. Going forward, we will continue to give priority to customer safety as we put effort into further developing our training environment.

Safe equipment design

Taking the entire product life cycle into consideration, TEL carries out product risk assessments as early as possible in the development phase. Based on the assessment results, we implement safe equipment design[2] to reduce the risks posed to humans. We also examine and ensure compliance with increasingly strict laws and regulations around the globe, and have a system in place for all safety regulations of the regions where our equipment is delivered.

Equipment shipped from TEL is checked by a third-party inspection organization to ensure that it complies with international safety standards such as SEMI S2[3] and CE marking[4]. We also obtain Certificates of Conformity (CoC) from Notified Bodies in Europe in line with the Machinery Directive and EMC Directive[5]. In addition, we are actively working to comply with KC Mark, KCs Mark, and other certifications as Korea, China, and elsewhere in the Asian region strengthen their safety laws and regulations.

1
12 languages: Japanese, English, German, French, Italian, Dutch, Russian, Portuguese, Korean, Traditional Chinese, Simplified Chinese, and Finnish

2
Safe equipment design: A design concept that eliminates the cause of the machine's harm to humans through the safety design of the machine.

3
SEMI S2: This is a set of environmental, health, and safety guidelines for semiconductor production equipment. It is used mainly by the leading manufacturers of semiconductor equipment in the United States and Europe, not only for ICs but also as safe procurement guidelines for electric and electronic device manufacturing equipment around the world.

4
CE marking: When exporting into the European Union, CE marking defines rules for displaying a CE mark as proof that the equipment is safe and complies with EU-defined rules (Directives).

5
EMC Directive: This is one of the New Approach Directives that apply to the 27 EU member states. This directive applies to all electric and electronic devices that are at risk of being disturbed by electromagnetic interference or that may interfere with other equipment. The current directive is 2014/30/EU.

Improvement of customer satisfaction

Customer satisfaction survey

Tokyo Electron (TEL) conducts a customer satisfaction survey (TEL CS Survey) every year with the goal of making continual improvements based on customer feedback. The survey started in fiscal year 2004, aimed at just a limited number of divisions. It was expanded to include all semiconductor production equipment divisions in fiscal year 2014, and later the flat panel display production equipment division and overseas subsidiaries in fiscal year 2016, and currently, it is implemented company-wide as the Customer Satisfaction Survey Program (CSSP).

Under the CSSP, we survey customers once a year, at the same time each year, and ask specific questions that will lead to improvements on a practical level. Results from the survey are analyzed by product, account (customer), and function (software, development, etc.), and given as feedback to customers. We also share the results with relevant divisions, such as sales, production, and support, and implement initiatives for improvement. Improvements are also made continuously to all aspects of the survey method, including the questions asked, the analytical methods used, and the overall operation of the survey activities.

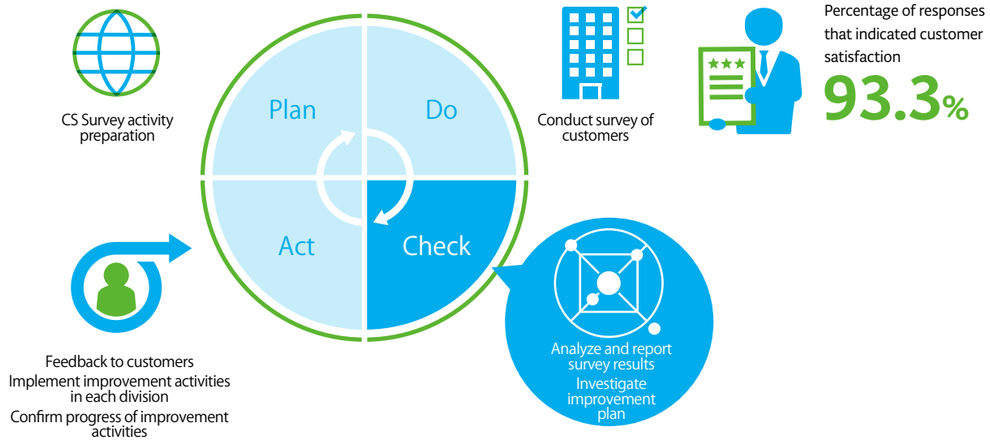
In the customer satisfaction survey for fiscal year 2020, responses were received from approximately 1,400 individual customers, which is 69.5% of all customers. We received evaluations of three points or higher* on 93.3% of all questions asked.

When we receive an evaluation of one point (Very Dissatisfied), we respond to the customer as quickly as possible as part of a Shift Left approach to implementing early-stage improvements throughout the survey process. Going forward, we will continue to aim for three points or higher for 100% of the questions asked, and the entire company will work as one to implement customer-driven improvements.

* On a four-point scale, three points or higher represents "Very Satisfied" or "Satisfied"

Improvement example

As a result of the customer satisfaction survey, issues that would not normally be identified were brought to light, and persons-in-charge and managers at TEL, who are in direct contact with customers, made improvements with the cooperation of the relevant divisions. This led to improved evaluations of three points or higher for the question relating to software support for problem-solving, which was one of three questions we focused on during fiscal year 2020. We believe these improved evaluation scores from customers result from our efforts to enhance support for software operating across multiple pieces of equipment, which we have been working on for some time.



Medium-term goals

Constantly pursue higher management efficiency

Tokyo Electron is striving to improve productivity along the entire value chain, promoting greater standardization, efficiency, and automation of operations throughout the group, such as by integrating business systems in each division and unifying databases. Recognizing the importance of quality management, we are enhancing the awareness and capabilities of each employee regarding productivity by rolling out various educational programs. In addition, we are implementing continuous quality improvement activities throughout the supply chain in collaboration with suppliers. We will strive to enhance corporate value, constantly pursuing higher management efficiency by implementing more streamlined business operations and quality-focus operations.

Main activities

Promotion of improved productivity | Software development initiatives | Quality management | Improvement of quality in the value chain

- Promotion of improved productivity
  Continuous improvement of business operations
- Software development initiatives
  Streamlining product development, expanding global activities, Developing smart equipment
- Quality management
  Quality policy, Management system
- Improvement of quality in the value chain
  Improvement of quality in the value chain, Raising awareness and skills, Initiatives at the development and design stages, Response to quality problems, Response to safety laws and regulations, Initiatives with suppliers

SDGs initiatives

- Promote productivity, continuously increase management efficiency, contribute to the development of the industry and society, and contribute to sustainable economic growth
- Promote streamlined business operations and quality management throughout the value chain, ensuring sustainable forms of production and consumption

Decent work and economic growth | Responsible consumption and production | Partnerships for the goals

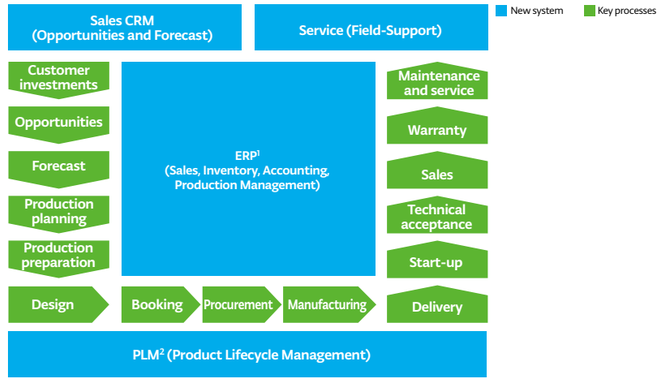
SUSTAINABLE DEVELOPMENT GOALS

Promotion of improved productivity

Continuous improvement of business operations

As part of its business innovation for productivity and quality improvement, Tokyo Electron (TEL) is tackling system and data integration across the entire TEL group value chain, such as development and manufacturing divisions, as well as sales and administration divisions. The primary objective of our project to introduce a new ERP[1] system is to integrate each of our division's previously discrete business systems, and to aggregate previously disaggregated internal data, enabling more centralized management. By freely utilizing the aggregated data in each business operation, we can quickly collect data needed for business decisions, make production schedules more reasonable and more efficient, visualize delivery dates for parts, and achieve stronger coordination between sales planning and production/procurement/inventory planning. To make the system fully operational in fiscal year 2024, we are proceeding with introducing the system in a way that does not disrupt existing production lines. Given that the system involves business operations performed by a range of employees, as we seek to bring the system to fruition, we are building an internal framework for cooperation, sharing the merits of migrating to the new system and updates on progress in a timely manner with all employees, including the project members.

Overview of ERP system



Software development initiatives

Streamlining product development, expanding global activities

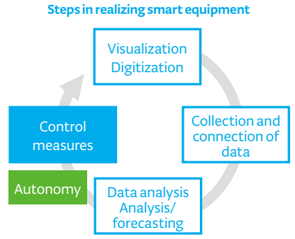
Since 1995, Tokyo Electron (TEL) has incorporated platform software developed in-house in its semiconductor production equipment, and has worked on streamlining operations and improving product quality. By standardizing platform software, we have been able to reduce the hours spent on developing duplicate functions for each type of equipment, leading to guaranteed real-time[3] control and enhancement of our response to new demands and technologies. Having adopted such concepts as object-oriented[4], we are also working on more efficient development of new platform software for the development of next generation equipment.

In addition, we are engaged in global activities to promote digital transformation (DX) development. As well as sharing information and various tools among responsible personnel in Japan and overseas, we are expanding a range of training programs, such as drawing up a data analysis skills map designed to improve DX skills throughout the TEL group.

Developing smart equipment

Amid advances in manufacturing that make the most of innovative technologies such as IoT and AI, our customers are forging ahead in improving productivity by taking advantage of visual representations of data, and building smart fabs[5] to improve consistency in quality. In this context, we are developing necessary software and systems for sites producing equipment, such as automation, for reducing work time. Our specialized development and manufacturing divisions, and business units work in cooperation to develop various functions for smart equipment, such as simple operation, presentation of the causes and resolutions of troubles, and autonomous operation through prediction of results.

Steps in realizing smart equipment



1 ERP (enterprise resource planning): A system that integrates the core business operations of an enterprise, such as accounting, personnel, production, logistics, and sales, for better efficiency and centralized information

2 PLM (product lifecycle management): The technique of keeping track of a single product in a centralized manner, managing the stages and processes in an integrated, cross-divisional manner with an aim of overall optimization

3 Real-time: The property of time limitation until the completion of work

4 Object-oriented: A software engineering theory

5 Smart fab: A fab that utilizes digital data to realize continual, progressive reforms of operational processes and improvements in quality and productivity

■Example initiative

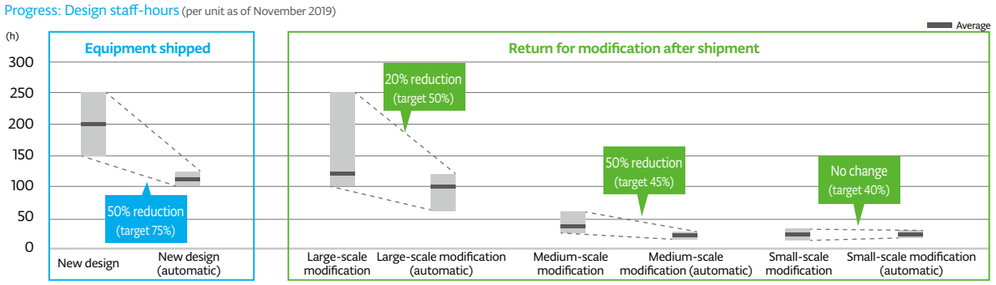
The Software Engineering Department at Tokyo Electron Kyushu is involved in designing, developing, and the testing and post-release maintenance of control software for coater/developer tailored to customer requests. In addition, it works to develop competitive software by constantly improving the development process and environment and nurturing human resources.

The department reviewed and redesigned the configuration and structure of software, mindful of any risk of bugs that might corrupt a program when making a design change due to the problem of the complexity in upgrading them as a result of years of software revisions. This eliminated complexity and improved maintainability, enabling the team to respond rapidly to customer needs.

Furthermore, over the years, the department has engaged in PDCA activities to improve the development process. After identifying that work quality had declined due to past operational practices and preconceptions, and that there had been a deficiency in sharing information on improvement measures, it renewed its appreciation of the importance of doing the simple things well. It consequently worked on re-learning the definitions, procedures, and measures in each step of the development process. It succeeded in reducing the amount of work spent on following up on non-conformance.

In the past, setting the hundreds of thousands of parameters necessary for control software to work in mass production design relied on veteran engineers' experience. In order to improve this individualized work and to generate accurate parameters more swiftly, the department developed "HCube"—an auto-generation tool. HCube was put into action in April 2019, and since then, the department has seen about a 50% reduction in time spent designing new equipment and upgrading shipped equipment. Other outcomes include a decrease in non-conformance attributable to human error. This achievement was also praised in a third-party audit as an endeavor worthy of note.

Progress: Design staff-hours (per unit as of November 2019)



Quality management

Quality policy

Tokyo Electron (TEL) has a quality policy shared by all group companies which it has developed and is rolling out.

1. Quality Focus
   Focusing on quality to satisfy customers, meet production schedules, and reduce required maintenance even with temporary cost increases.
2. Quality Design and Assurance
   Building quality into products, assure in-process quality control, from the design and development phase throughout every process.
3. Quality and Trust
   When a quality-related problem occurs, working as a team to perform thorough root cause analysis and resolve problems as quickly as possible.
4. Continual Improvement
   Ensuring customer satisfaction and trust by establishing quality goals and performance indicators and by implementing continual improvement using the PDCA cycle.
5. Stakeholder Communication
   Listening to stakeholder expectations, providing timely product quality information, and making adjustments as needed.

Management system

To provide consistent, high-quality products, TEL is building quality assurance systems under the leadership of the Representative Director and President. We have been promoting ISO 9001 quality management system certification, and all of our manufacturing companies have completed transition to ISO 9001: 2015.

ISO 9001 certified factories and offices

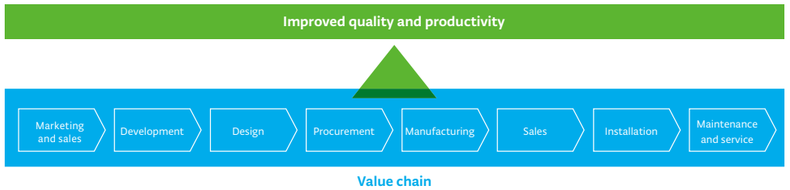
Company name	Factory/Office name	Certification date
Tokyo Electron Technology Solutions	Fujii Office/Hosaka Office	September 1994
	Tohoku Office	December 1994
Tokyo Electron Kyushu	Koshi Office	March 1997
TEL Magnetic Solutions	—	November 2009
Tokyo Electron Korea	Balan Factory	September 2011
Tokyo Electron Miyagi	Taiwa Office	September 2012
TEL Manufacturing and Engineering of America	Chaska Office	March 2013
	Billerica Office[1]	May 2014
Tokyo Electron (Kunshan)	—	May 2018

1 The Billerica Office was relocated in May 2020.

Improvement of quality in the value chain

Improvement of quality in the value chain

Tokyo Electron (TEL) believes that making ongoing improvements in all work processes contributes to improved quality and productivity of products and services. We will continue working hard to promote quality management throughout the value chain while keeping track of customer needs and strengthening internal and external collaboration.



Raising awareness and skills

TEL is striving to enhance the awareness of every employee toward quality by conducting various education programs. In addition to the basic education on quality that new employees receive, we have also globally rolled out PDCA Education and other programs that target all TEL group employees. In PDCA Education, employees learn about the need for continuous improvement through the four processes of plan, do, check, and act. As of FY2020, 84% of employees had completed this program.

QC certification holders

2,400

(as of FY2020)

We also implement our own education program, called TEL 6-Step, for employees closely involved in quality control, such as developers, designers, quality managers, and service personnel, through which they acquire a problem-solving model to handle important issues. The program is a modified version of the eight discipline (8D) problem-solving method[2], widely used in quality control, customized to replace our problem-solving process. The program cultivates the ability to resolve problems quickly and to take measures preventing recurrence, by thoroughly investigating the true nature of problems, and determining the technical factors and root causes. As of FY2020, approximately 5,800 employees had attended this program. We also conduct group training targeted at quality control leaders to provide them exercise-based learning opportunities for resolving quality-related issues to further enhance their work improvement skills at production and development sites.

Moreover, so that employees can tackle quality improvement autonomously, we advocate QC certification[3] and encourage them to acquire fundamental skills. Since fiscal year 2012, the number of QC certified employees has increased yearly to approximately 2,400 as of FY2020.

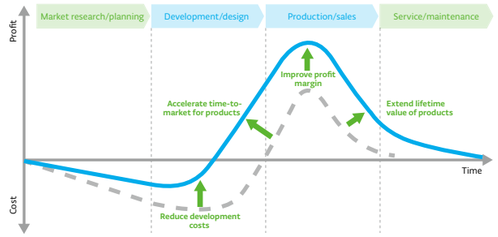
2 8D problem-solving method: A method for solving problems in quality improvement through eight disciplines or processes

3 QC certification: Quality management certification operated by the Japanese Standards Association and the Union of Japanese Scientists and Engineers. The total number of certified people nationwide exceeds 580,000 (as of September 2019)

Initiatives at the development and design stages

Promotion of Shift Left (front-loading) and self-process assurance systems

In order to improve the quality of products, it is important to prevent non-conformance from occurring in upstream processes, and to ensure thorough quality control in each process so that non-conforming products are not allowed to flow into later processes. From this perspective, TEL promotes "Shift Left" and self-process assurance systems. With Shift Left, in order to raise the degree of product quality at an early stage, we implement thorough risk detection and mitigation measures (FMEA[1]) from the initial stages of product design in an effort to suppress the occurrence or outflow of non-conformance. As for self-process assurance systems, we carry out thorough inspections in each process and conduct verifications using simulation. In conjunction with these promotion activities, we are also focusing on the deployment of Product Lifecycle Management (PLM). By deploying and promoting PLM, we comprehensively manage and analyze all processes from product planning, development, design, and production through to service, in an effort to facilitate the earlier release of products, enhance work efficiency, improve quality, and reduce costs.



1 FMEA (failure mode and effects analysis): Method to identify, prevent, and mitigate risks in advance

Response to quality problems

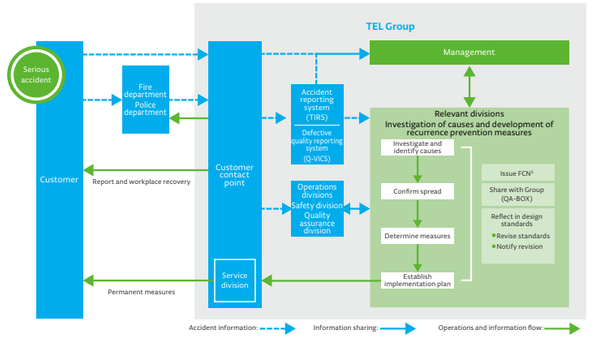
To comply with ISO and EN[2] safety standards and to achieve higher levels of safety, TEL has established its own design rules for each of its products. As an equipment manufacturer, we have developed systems for manufacturing products, which include safety considerations. We have other systems in place for responding to equipment design and production non-conformance and any occupational accidents.

In the event of an accident, we use our TIRS[3] accident reporting system to distribute information to safety and quality personnel in each division, officers, and management, including senior management. An accident investigation is also conducted immediately to identify the cause and plan preventive measures.

We also use a proprietary system called QA-BOX[4] to share information on equipment quality and any major non-conformance across all quality departments within the TEL group. Measures obtained from the results of an accident investigation are promptly applied, not only to the problem equipment, but also to relevant equipment operated by other customers, and revisions are made to current design standards. In the case of an accident caused by the wrong cable being connected, for instance, in addition to verifying the position and shape of the slot for inserting the cable and analyzing the factors that led to the human error, we are working to prevent a recurrence of the accident, such as by preparing procedures that are easier to understand.

Through QA-BOX, as well as getting relevant departments collaborating to share data on issues, remedies, and other accident-related information, we also assign the right personnel and work hard to prevent accidents from recurring.

Accident-related data accumulated in QA-BOX is utilized for the cumulative analysis of trends to visualize the types and frequency of problems for individual equipment, whereby we implement countermeasures that have an immediate impact. As we strive to prevent problems from recurring and their associated ripple effects, this is leading to a reduction in the number of accidents attributable to equipment.



Response to safety laws and regulations

TEL has systems in place to check and comply with the latest trends in laws, regulations, and guidelines for equipment safety. Equipment is checked by a third-party inspection organization before shipment, to ensure that it complies with safety requirements, such as international safety standards and SEMI S2[6]. Also, in response to the Machinery Directive and EMC Directive[7], we obtain certificates of conformity from the Notified Bodies in Europe.

2 EN (European Norm): Uniform standard for the European Union complimenting parts of technical standards not stated in European Commission directives ("New Approach" directives)

3 TIRS: TEL Incident Report System

4 QA-BOX: Tool for the sharing and horizontal expansion of important quality-related information within the TEL group

5 FCN (Field Change Notice): Refers to general recall notice

6 SEMI S2: Refer to Note 3 on p. 25.

7 EMC Directive: Refer to Note 5 on p. 25.

Initiatives with suppliers

Continuously improving quality based on strong partnerships with suppliers is essential for providing high-quality products quickly to the market. Since fiscal year 2001, TEL has conducted its unique Supplier Total Quality Assessments (STQA) in an effort to ensure its suppliers properly understand the level of quality it expects from them. Before starting business with new suppliers, an STQA is conducted via self-assessment to evaluate their product quality, costs, and information security. The assessment also includes their CSR initiatives, including human rights, ethics, safety, and the environment. If a risk is identified, we visit the supplier and confirm the area of non-conformance on site. Once our approach to quality has been confirmed, we request that they plan and implement improvement measures, and we provide continuous support until all of them have been completed. In addition, we also conduct on-site audits once every three years for suppliers who handle important components and for suppliers where quality issues have been found. Since STQA is a system shared by our whole group, STQA-L meetings are held regularly, gathering together leaders selected from among manufacturing companies to share supplier information and to resolve any issues.

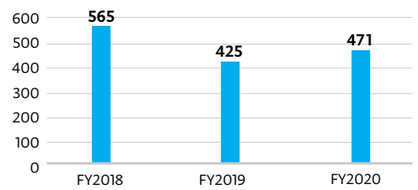
We are also focused on process improvement activities using SPC[1]. Invariably, our customers' production sites require limited variations in quality between equipment, accurate process repeatability, and high productivity. To meet these requirements, we get our suppliers who handle specific important parts to understand the importance of SPC, and we work on implementing SPC together with our suppliers to reduce variations in the quality of parts and to maintain and improve processes manufacturing good-quality products.

Example initiative

In the event a flaw, defect, or other non-conformance is found in a delivered part, time and money is spent in the production process, working to replace the part, investigate the cause, change production schedules due to process delays, and to implement other changes as needed.

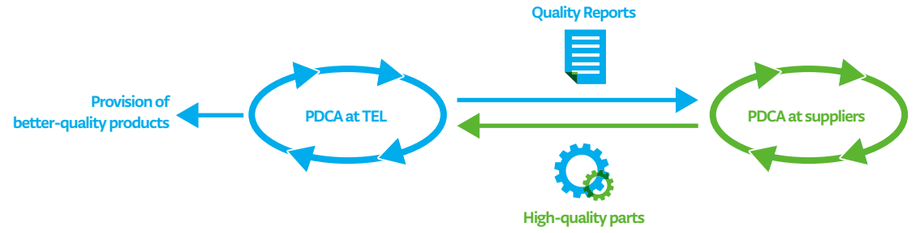
The Quality Assurance Division at Tokyo Electron Miyagi had previously limited its quality improvement activities to those suppliers with a large number of non-conforming parts. During the process of confirming the overall percentage of non-conformance and the associated causes, it came to the realization that these activities needed to be conducted for all suppliers. For this reason, since fiscal year 2019, it has issued its own Quality Report to all suppliers from which parts were found to be non-conforming, and by including statements on the supplier's level of quality and the monthly number of non-conforming parts, it has worked to reduce non-conforming parts and foster awareness for quality.

Number of non-conforming parts (full year)



In fiscal year 2020, the division issued reports to 108 suppliers, and as a result, non-conforming parts decreased by 17%[2]. One supplier acknowledged, "Using the Quality Report as a guideline to clarify issues related to quality helped us strengthen our overall capacity to supply parts." In addition to achieving a concrete outcome, that is, a decrease in the number of non-conforming parts, by sharing quality improvement activities based on qualitative data with suppliers, we are also working to raise our level of active communication.

Going forward, we will enrich the content of the reports by incorporating the feedback of suppliers and we will further accelerate our efforts to improve the quality of parts.



1 SPC (statistical process control): Refers to monitoring for abnormal values for the mean of a characteristic subject to control, and implementing process improvements

2 This figure is the actual result for FY2020 compared to FY2018

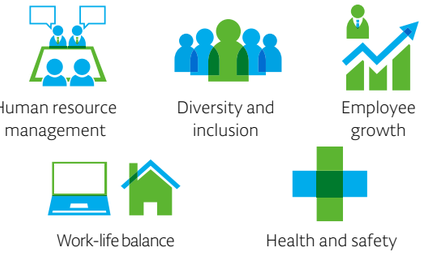
People and workplaces

Medium-term goals

Maximize dreams and drive

While conducting sustainable operations, it is also important for companies to meet new demands of society from people and workplaces' perspectives, such as responding to workstyle reforms and employing people with diverse values. Based on the recognition that people are the source of a company's growth, Tokyo Electron deeply appreciates the new value created by individual employees exercising their capabilities, while respecting their individuality and values and encouraging work styles in sync with their respective lifestyles. In addition to developing a common global human resource system, placing the right personnel for the right job across countries and regions, and implementing employee performance evaluations that are fair and highly transparent, by working to strengthen human resource development programs and to promote health and safety, we strive to nurture employees full of vitality and develop inspiring workplaces.

Main activities



- Human resource management
  Approach to human resource management
- Diversity and inclusion (D&I)
  Systems and initiatives
- Employee growth
  Global human resources system, Human resource development concept at TEL UNIVERSITY, Human resource development system
- Work-life balance
  New work styles, Encouraging use of leave, Childcare and nursing systems, Employee life support
- Health and safety
  Health and productivity management promotion, Activities for safety, Incident reporting system, etc.

SDGs initiatives

- By globally promoting a highly transparent human resource system, together with fair hiring and compensation, strive to facilitate rewarding, human-focused employment (decent work)
- Proactively develop work-life balance, diversity, and inclusion, and pursue equality among people and in the workplace

Human resource management

Approach to human resource management

For Tokyo Electron (TEL), corporate growth is about people. Employees are a foundation for creating value. Our aim is for both the company and employees to grow together by engaging each employee at work, and linking this to increased productivity for the company as a whole. Specifically, we focused on: (1) improving employee development and engagement, such as through promoting support for career development, encouraging them to stretch themselves, and providing opportunities for skill and leadership development, (2) improving productivity through developing the workplace environment, such as by using IT for better operational efficiency and promoting smart work, and (3) attracting outstanding talent such as through employer branding, strengthening partnerships with universities and labs, and promoting internships, including international ones. To expand these initiatives effectively, human resources function has deployed a team supporting business on a global level.

Diversity and inclusion (D&I)

Systems and initiatives


D&I Talk

It is important for Tokyo Electron (TEL) to expand its business globally and address social changes and diversifying needs by creating new value and continuing to grow. To achieve this in situations where there is diversity, not just in gender, disability, nationality, or other personal circumstances, but also different work styles and stages of life, it is essential we have an environment where personnel can exercise their capabilities and tackle challenges while staying highly motivated. To provide all employees with a "pleasant workplace where anyone can work with strong motivation," we respect and promote D&I.

In July 2019, we launched the Global D&I Council, and at a meeting held that December attended by members from Japan and overseas, we formulated a D&I vision and slogan for the entire TEL group. At the meeting, the topic of D&I for the TEL group was again taken up for discussion, and we reaffirmed that it is not just about gender, but is a more inclusive endeavor.

To realize a workplace where diverse employees have a better understanding of each other and can play an active role, we have been implementing harassment prevention education and awareness activities globally. In January 2020, we held a D&I Talk event at our headquarters in Akasaka. The event included guest speakers and a panel discussion, and was well attended by employees. The event was streamed live to business sites in Japan and overseas in an effort to raise awareness for D&I among all employees in the TEL group. The Employee Resource Group (ERG) has also been launched, and is promoting initiatives whereby the company supports employees with interest in D&I, voluntarily planning and administering activities designed to contribute to the community and reform the corporate culture. Looking ahead, we will work to further promote D&I throughout the entire TEL group, by formulating a three-year plan ending in 2022, and rolling out initiatives tailored to the actual circumstances at each of our business sites in Japan and overseas, such as expanding our training programs and organizing events.

Employee growth

Global human resources system

The globally integrated human resources programs introduced in fiscal year 2018 clarify the roles and responsibilities of each employee in order to effectively support talent management. In coordination with development programs, Tokyo Electron (TEL) supports the career development and growth of our employees by presenting the skills required for a job in the TEL group, the knowledge they should/can acquire, and a description of expected duties at higher levels. We are also working to build workplaces where diverse individuals can flourish, by conducting talent assessments across countries and regions, realizing fair total rewards for employees, and utilizing a performance management system and a global common human resource system.

Human resource development concept at TEL UNIVERSITY

TEL has established TEL UNIVERSITY as an in-house educational establishment, helping employees to independently build their careers and realize their personal goals for their growth and development. Our aim is to stand shoulder to shoulder with each employee, supporting their self-growth and fruitful career development throughout their working life, and create a foundation that enables the organization and individuals to trust each other and grow. TEL UNIVERSITY plays an important part in employees realizing TEL's vision of being "a truly global company generating high added value and profits in the semiconductor and flat panel display industries through innovative technologies and groundbreaking proactive solutions that integrate diverse technologies." Through the following four initiatives, we are focusing on employee growth that leads to corporate growth.

First is the provision of personalized learning opportunities. Since each employee's growth is different, we are putting effort into the practice of on-demand education[1] as a mechanism that allows individuals to learn as they want, when they want and according to their own needs. In addition to group training, by proactively utilizing e-learning programs, we are providing opportunities for employees to learn from any location.

Second is support for career development. We are expanding programs designed for employees to quickly acquire basic skills according to their different levels and goals through our global human resources system. Effort is being put into providing information and tools so that employees can gain a more concrete image of their own learning, experience, and career development.

Third is leader programs. In nurturing the next generation of leaders to support TEL's future, we are globally expanding our succession programs to identify and systematically nurture staff to take on the role of realizing medium- to long-term improvement of corporate value. Selected next generation management candidates are provided growth opportunities with an eye to the future, through participating in external training, building networks outside the company, and cultivating a broader perspective.

Fourth is the provision of global learning opportunities. For employees to acquire skills related to their duties and to gain a broader insight, we encourage them to actively participate in both internal and external seminars. Besides training, we are also considering a study abroad program for fiscal year 2021. Furthermore, we are moving to standardize our core programs on a global basis so that employees are able to learn using consistent TEL group content and guidelines regardless of whether they are in Japan or overseas.

1
On-demand education: Education programs that allow employees to learn at the own convenience, anywhere, anytime

Human resource development system

TEL provides programs adapted to different levels and goals for employees to gain world-class knowledge and skills.

We are also providing opportunities for employees to improve their understanding and to acquire knowledge on the latest trends in TEL's core technologies by running ongoing skill enhancement training and holding technical workshops for skills acquisition.

Corporate education system (TEL UNIVERSITY)

	Management	Executives	Leaders	Mid-level employees	Junior employees New employees
Level-based programs		Introductory programs (new graduates, mid-career recruits)			
		OJT[2] programs (new graduates, mid-career recruits)			
		Manager programs		Mid-level employees	Junior employee programs
	Leader programs				
Goal-based programs	Compulsory WBT[3]				
	Business skills				
	Global communication				
	Employee life support				
	Technical programs (seminars & workshops)				

2
OJT: On the Job Training

3
WBT: Web Based Training

Work-life balance

New work styles

Tokyo Electron (TEL) recommends work styles that incorporate work-life balance, and is continuously developing work environments to enable this. We are promoting efficient ways of working suited to our employees' lifestyles, such as reducing commuting time and making the most of work hours, by introducing a teleworking system in addition to a flextime system.

Encouraging use of leave

Based on the belief that taking appropriate leave and properly managing work hours also contributes to better employee productivity, TEL strives to correct long work hours, and aims to enhance the leave system and promote taking leave.

Since fiscal year 2019, we have set an annual target of 70% annual paid leave use, and have promoted employee awareness for planned use of leave. We are also promoting regular monitoring of leave use status and urging management to improve leave use rates, ensuring that five days of compulsory annual leave are taken as required by law since April 2019. As a result, leave use rates were 72.6% in Japan and 81.2% overseas during fiscal year 2020.

Take-up rate of annual paid leave (overseas)

81.2%

Our goal is to provide refreshment for employees and thereby to boost their motivation to work. The system grants special (paid) leave from two weeks to one month per five years of service to employees who have worked for more than 10 years. In fiscal year 2020, 901 employees in Japan and 514 employees overseas took refreshment leave.

Childcare and nursing systems

TEL respects the various lifestyles of its employees and is investing effort into providing an environment where each employee can thrive. In addition, to the system made available by existing laws, we are independently building a substantial framework that allows employees to adopt a flexible approach to work that accords with diverse life events such as raising children or caring for family members.

Percentage of those who returned to work after childcare leave (Japan)

94.1%

With regard to the situation in Japan, we have acknowledged the maximum extension of the childcare leave period to the day a child reaches three years of age, as well as expanding our provision of a reduced working hours program for childcare to include employees rearing children as far as graduation from elementary school. In addition to leave to care for a sick or injured child, we are enriching the provision of support through establishment of our own childcare leave, etc. As a result, currently in Japan, 42% of female TEL employees are working mothers. To further our support for the compatibility of work, and nursing care, nursing care leave on full pay is available for up to five days. We are advancing improvement of the system, for instance, by allowing nursing care leave to be taken up to three times per person requiring nursing care for a one year in total.

Employee life support

TEL is enacting a diverse range of support toward achieving a workplace environment where employees can work energetically while each making full use of their abilities. We present regular opportunities for employees aged 50 or over to attend seminars providing necessary information and review of financial planning, encouraging them to consider their way of working after retirement. Furthermore, we support employees' everyday lives by offering assistance to all age groups on familiar topics such as nursing care for family members and inheritance.

Health and safety

Health and productivity management promotion

Having every employee lead a fulfilling life's work and achieve their maximum performance is also important for the future advancement of Tokyo Electron (TEL). To create healthy and comfortable workplaces for employees, we are working to further develop our systems. Besides conducting various medical checkups in accordance with the law, we also offer face-to-face consultations by designated occupational health physicians for employees who work long hours. Health help desks supported by occupational health physicians can also be accessed by workers' families, and we also offer counseling opportunities supported by external industrial counselors for those who ask. Furthermore, we are working on strengthening health-related support, organizing regular "line-care[1]" seminars aimed at management, and, where necessary, holding liaison meetings with the health officers and health professionals at each TEL group company.

2020 健康経営優良法人 Health and productivity ホワイト500

Based on the "collaborative health[2]" concept, in cooperation with the Tokyo Electron Health Insurance Society, we are actively expanding data health[3] initiatives, providing employees health guidance and effective prevention and health promotion according to their individual circumstances by utilizing data from medical checkup tests. As a result, we helped raise the health literacy of employees in fiscal year 2020, demonstrated, for instance, by an increase in the percentage of employees receiving specific health guidance[4].

Furthermore, during fiscal year 2020, following a widening of the scope from the previous year, all TEL group companies operating in Japan received recognition as a White 500 company under the 2020 Certified Health & Productivity Management Outstanding Organization Recognition Program[5]. We will continue to promote various initiatives at the global level to maintain and improve our employees' health.

Wellness declaration

Based on the wellness declaration announced in 2012, TEL has promoted a variety of initiatives addressing health issues from the perspectives of Eat-Rest-Walk-Talk. Specifically, these include body composition measurement sessions[6], health counseling workshops, and walking events, healthy food choices offered at company cafeterias, and smoking cessation advice. In addition to raising employee awareness for health promotion in their daily lives, we provide support leading to implementation of the wellness declaration.

Stress checks

In terms of mental health management, employees in Japan complete a stress check once a year using a questionnaire recommended by the Ministry of Health, Labour and Welfare. Occupational health physicians or public health nurses meet and talk with employees who, as a result of the questionnaire, are determined to be under high stress, as well as any other employees who ask. We also strive to ensure thorough mental support for our employees, such as by utilizing organizational analysis and promoting improvements in organizations which have a comparatively heavy burden. During fiscal year 2020, the stress check was taken by 92.9% of employees.

Self-care platform

TEL has introduced the Pep Up personal healthcare platform as a means of health management. The platform helps employees care for their own health by enabling them to easily check their blood pressure, weight, body fat ratio, and health age[7] using the results of their medical checkups. Through Pep Up, in addition to providing information related to their own health condition, and holding walking events, we also distribute activity trackers so that employees can manage their exercise and calorie consumption.

1 Line-care: A workplace measure for mental health, in which managers and supervisors take a lead role in responding to requests by workers for advice, with an aim of improving the workplace environment

2 Collaborative health: Situation where a company actively cooperates with an insurer, such as a health insurance society, to effectively and efficiently promote the health of its employees and their families

3 Data health: Refers to a more effective and efficient health care program which is implemented in line with the health status of insured persons, by utilizing and analyzing the health and medical information held electronically by the medical insurer

4 Specific health guidance: Health guidance provided for reducing the number of people with metabolic syndrome (visceral fat syndrome) or at risk of metabolic syndrome, and for the early detection and early treatment of lifestyle diseases and cancer, etc.

5 Certified Health & Productivity Management Outstanding Organization Recognition Program: The program publicly recognizes particularly outstanding organizations that are practicing health-oriented business management, based on initiatives attuned to local health-related challenges and on health-promotion initiatives led by the Nippon Kenko Kaigi

6 Body composition measurement session: An opportunity to measure skeletal muscle mass and body fat mass using a body composition monitor, for the purpose of preventing lifestyle diseases and understanding one's own physical condition

7 Health age: An indicator showing risk of lifestyle diseases, calculated based on the results of an employee's medical checkup. The difference in years with the employee's actual age is displayed, helping them understand their equivalent age in terms of their health conditions.

Safety management framework

Based on a culture of "Safety First," TEL carries out ongoing activities for safety promotion. In its effort to raise the overall level of safety and occupational health, TEL uses a management system based on OHSMS[1] to manage safety and occupational health and follows the PDCA cycle, to reduce the potential risk of work-related incidents. Moreover, by sharing information of any issues at internal meetings, such as those of the EHS Council and the Manufacturing Company Presidents' Council, the company promotes safety management as a company-wide initiative.

Activities for safety

On-site safety inspections

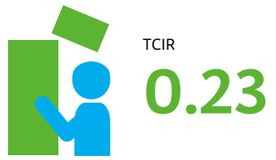
At each factory and office, monthly safety and health committee meetings are held to discuss measures for any workplace safety or employee health issues and to conduct safety inspections. TEL has also set up a system for autonomous problem-solving at manufacturing sites, with safety inspections by representatives from appropriate departments at least once per month.

Risk assessment and stop work authority (SWA)

Before starting work at TEL manufacturing sites, the details of the job and the risks are shared with all workers involved, and they each increase their awareness in an effort to prevent incidents. In addition, effort is also being directed to safety managers giving advice on how to manage hazards, as well as to make workers stop work and take corrective action in the event of an unforeseen incident while on the job.

Safety education

In addition, TEL is implementing two education programs globally for the establishment of safe work environments. First is TEL's program on basic safety targeting all employees. This is provided as introductory training for new hires as well as refresher training every third year of employment. More than 6,000 employees completed this program in fiscal year 2020. Our second program, advanced safety, targets employees working in cleanrooms and on production lines. Participants are required to complete the course every year. Some portions of rules pertaining to safety are based on Japanese law, therefore when employees are transferred overseas, they undertake additional necessary training in a language that they understand, with the aim of standardizing education.



To eliminate incidents, TEL also provides online training and risk assessment training for employees in Japan and overseas. Also, to expand the concept of safe equipment design[2] to our design, manufacture, and service operations, in addition to online training on equipment safety, we also hold a semiannual seminar at each factory and office, inviting an external guest to speak. Finally, we also promote our initiatives to prevent accidents, by providing our suppliers and customers with safety information as circumstances demand.

As a result of having maintained a high priority on creating safe work environments, TCIR[3] has been maintained at less than the company's target of 0.5, with 0.23 in fiscal year 2020.

Incident reporting system

If a safety-related incident occurs, the information is shared with related parties and persons in charge through the incident reporting system, creating a system which resolves issues and leads to the proposal of measures to prevent reoccurrence.

Since fiscal year 2019, we have been operating the TEL Incident Report System (TIRS), a newly developed incident reporting system, to improve the accuracy of report content further.

1 OHSMS (Occupational Health and Safety Management System): A management system to improve the overall level of safety and occupational health

2 Safe equipment design: Refer to p. 25.

3 TCIR (Total Case Incidence Rate): The number of workplace incidents per 200,000 work hours

Management foundation

Medium-term goals

Build a management foundation for increasing value

In its pursuit of more highly effective governance, Tokyo Electron (TEL) is working to further improve its corporate governance framework, strengthen its risk management, and ensure thorough compliance. Our aim is to enhance the supervisory and oversight roles of management and improve corporate value in the short term, but also in the medium to long term. In terms of practical initiatives for respecting human rights, based on our Human Rights Policy, which summarizes our group-wide guiding principles on human rights, as well as implementing extensive education and awareness-raising efforts, we are expanding human rights due diligence (impact assessment and remediation) and grievance processes. As for supply chains, we are promoting activities in compliance with global standards to achieve sustainable operations together with customers and suppliers. Regarding problems of climate change and abnormal weather, which have increased in severity in recent years, endeavoring to preserve the global environment, we have been working hard to achieve the medium- and long-term environmental goals for our products, factories, and offices in order to reduce environmental impact along our entire value chain. As we aim to further enhance corporate value, we are endeavoring to build a strong and sound management foundation that supports our whole group's business activities.

Main activities

Governance, Risk management, Compliance | Respect for human rights | Supply chain management | Environmental management

- **Corporate governance**
  Supervision and evaluation of strategic decision-making, Process for evaluating the effectiveness of the Board of Directors and management issues, Investor relations activities, etc.
- **Risk management**
  Risk management system and initiatives, Auditing by the internal audit department, etc.
- **Compliance**
  Compliance system, Compliance initiatives
- **Respect for human rights**
  Approach to human rights, Human rights initiatives
- **Supply chain management**
  Initiatives in the supply chain, etc.
- **Environmental management**
  Initiatives to prevent global warming and save energy, Initiatives to reduce water consumption, Initiatives to reduce waste, Management of chemical substances, etc.

SDGs initiatives

- Steadily developing highly effective governance and establishing a solid management base in order to contribute to the development of sustainable society in order to improve corporate value
- Promoting compliance as an important business strategy, and developing operations in consideration of the environment and human rights, in order to contribute to the creation of a fair and equal society

Decent work and economic growth | Climate action | Peace, justice and strong institutions | Partnerships for the goals

SUSTAINABLE DEVELOPMENT GOALS

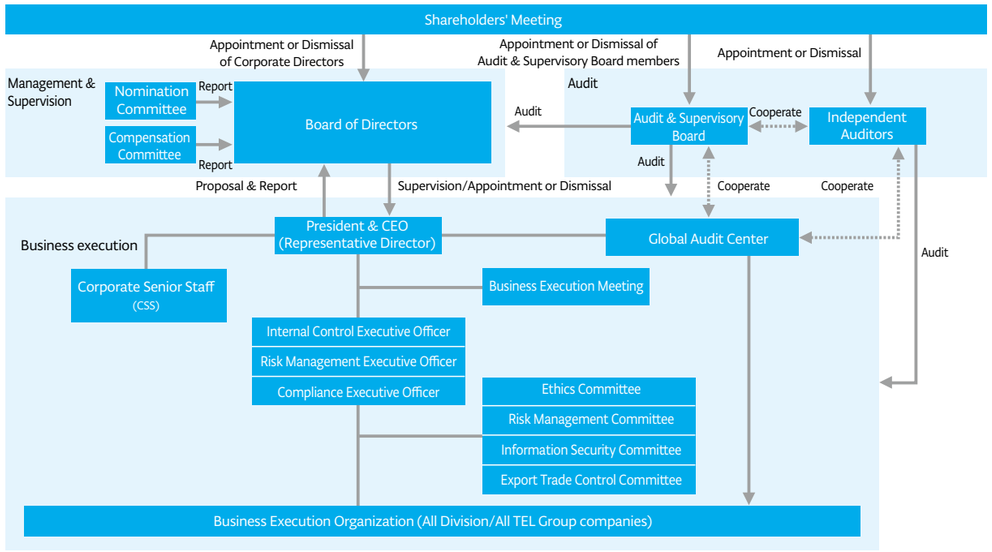
Corporate governance

Corporate governance framework

Tokyo Electron (TEL) upholds the vision of being "a truly global company generating high added value and profits in the semiconductor and flat panel display industries through innovative technologies and groundbreaking proactive solutions that integrate diverse technologies." In an environment where over 80% of our sales come from overseas, we regard building governance structure as essential in order to become a real global company that achieves success in global competition and achieves sustainable growth. To that end, TEL has built a framework to maximize use of worldwide resources, and has worked to incorporate a wide range of opinions to strengthen our management platform and technology base, establishing a governance structure capable of ensuring that TEL attains global-level earnings power.

TEL uses the Audit & Supervisory Board System, which consists of a Board of Directors and an Audit & Supervisory Board, and has achieved effective governance based on the supervision of management by the Audit & Supervisory Board. Furthermore, in addition to the Board of Directors, whose role is to make major operational decisions and play a supervisory role in the execution of those, and support appropriate risk-taking by executive management, we have established systems that will facilitate growth-oriented governance directed at sustainable growth for TEL, including the following: (1) The Nomination Committee and Compensation Committee to ensure fair, effective, and transparent management; (2) The Corporate Senior Staff (CSS) to formulate and advance company strategy; and (3) The Business Execution Meeting, to play a role in deliberations of the executive management.

Diagram of the corporate governance framework, internal control system, and risk management framework



Sustainability of a Board of Directors appropriate for resolution of management issues

Based on an effective governance structure that supports increasing corporate value over the medium- to long-term, the Board of Directors is capable of properly supervising and evaluating (monitoring) the strategic decision making of the management responsible for business execution. The CEO and Representative Directors will play the primary role in continually anticipating candidates for succession, primarily from among executive officers, and working to develop such candidates in order to develop human resources who will assume management of operations in the next generation to support the sustainable growth of TEL. The CEO and Representative Directors continually evaluate the skills, character, dignity, and insight of successor candidates from multiple perspectives in the course of performing day-to-day duties, and continually support education of the candidates through assignment, training, and other opportunities.

Meanwhile, to supervise the soundness of management by the Board of Directors, the Audit & Supervisory Board has developed a structure that enables its board members to obtain sufficient information necessary for audits through on-site surveys conducted by the full-time Audit & Supervisory Board members as well as appropriate coordination with the internal audit department and independent auditors. In addition, as advisory bodies, the Nomination Committee and the Compensation Committee make proposals to the Board of Directors regarding the election of candidates for the management team and compensation, thereby ensuring fair, effective, and transparent management.

We operate the Board of Directors under the system described above to maintain the sustainability of the Board of Directors appropriate for resolving management issues.

Skills and diversity of the president and the management

In electing executive directors, the Nomination Committee places importance on, among others, superior execution abilities underpinned by experience, insight, and a track record in management, high sensitivity to all possible risks, and being able to properly analyze and judge matters and frankly state the opinion that they believe to be correct during debates. At the same time, in order to ensure constructive debate in Board of Directors meetings born out of a broad range of backgrounds and knowledge, the Committee proposes personnel with an in-depth knowledge of various divisions as corporate director candidates to the Board of Directors, taking into consideration the balance between Sales and Service, Manufacturing, R&D, and Corporate Administration.

The role of Executive Directors does not end with referring and explaining proposals as the representative of each division. They also contribute to active debate, proper decision-making, and supervision of execution through objective, constructive opinions coming from different perspectives of each Corporate Director.

Skills and diversity of outside directors

Independent outside directors and outside Audit & Supervisory Board members state their unreserved opinions from an independent perspective so that the debates do not follow the same line of discussion proposed by internal corporate directors. By doing so, they play the role of guiding Board of Directors debates in the proper direction to win global competition. In electing independent outside directors and outside Audit & Supervisory Board members, we place importance on maintaining a good balance among human resources who have qualities such as knowledge of global business; broad insight into related industries; an extensive network of personal contacts; social viewpoints; objectivity from the perspective of the capital market and others; knowledge of finance and accounting; and broad legal knowledge.

Supervision and evaluation of strategic decision-making

Setting the strategic direction of the TEL group is recognized as the main role of the Board of Directors. It engages in constructive debate of management strategy, management plans, and other matters that have been debated by the Corporate (CSS). It serves as the venue for supervising progress on the Medium-term Management Plan and other matters. The Board of Directors also seeks reports and explanations on the status of deliberations at the Business Execution Meeting to monitor whether decision making by executive management functions properly in relation to matters for which approval authority has been delegated to executive management.

At Board of Directors meetings, independent outside directors and Audit & Supervisory Board members actively provide advice and ask questions to the explanations and statements made by executive directors well versed in business. The combined perspectives of both parties have enabled the Board of Directors meetings to achieve an appropriate sense of productive tension and constructive discussions that are essential for business execution decisions and supervision.

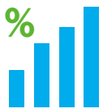
To obtain appropriate advice and questions from independent outside directors and Audit & Supervisory Board members, the administrative office provides them with explanations on proposals in advance of the Board of Directors meeting as needed. For matters of particular importance, we establish a venue for dialog between independent outside directors and Audit & Supervisory Board members and TEL executive management, striving to provide sufficient information to, and engage dialog with, independent outside directors and Audit & Supervisory Board members.

Policies for allocation of earnings

TEL's basic approach is for appropriate allocation of company earnings to all stakeholders.

Our basic policy of allocation to shareholders is to link dividend payments to business performance on an ongoing basis and maintain a payout ratio of around 50% based on net income attributable to owners of the parent company. Furthermore, in light of stable distribution of dividends, we also set the minimum full-year dividend at 150 yen per share.

TEL effectively uses internal capital reserves to raise corporate value through earnings growth by concentrating investment in high-growth areas and provide returns directly to shareholders by linking dividend payments to business performance and earnings. Furthermore, TEL flexibly considers implementing share buybacks as part of shareholder returns.



Dividend payout ratio

50.0%

* Annual DPS of not less than 150 yen
* Review dividend policy if the company does not generate net income for two consecutive fiscal years.

Planning and outcomes of the director compensation system

As its basic policies on executive compensation, the TEL group emphasizes (1) Levels and plans for compensation to secure highly competent management personnel with global competitiveness; (2) High linkage with business performance in the short term and medium- and long-term increase of corporate value aimed at sustainable growth; and (3) Securement of transparency and fairness in the decision process of compensation and appropriateness of compensation. Compensation for internal corporate directors consists of fixed basic compensation, annual performance-linked compensation, and medium-term performance-linked compensation.

For outside directors, TEL introduced non-performance-linked stock-based compensation, starting for fiscal year 2020, while abolishing the annual performance-linked compensation (cash bonuses). As a result, compensation for outside directors now consists of fixed basic compensation and non-performance-linked compensation. Compensation for Audit & Supervisory Board members consists solely of fixed basic compensation in consideration of their role being primarily the audit and supervision of management.

In order to secure transparency and fairness in management and appropriateness of compensation, the Compensation Committee, which is chaired by an independent outside director, utilizes advice from an external expert, performs an analysis of wage levels and other compensation compared to industry peers in Japan and overseas. The Committee then proposes to the Board of Directors a compensation system that is globally competitive and most appropriate for the TEL group, and individual compensation amounts for the Representative Directors.

Fixed basic compensation

Fixed basic compensation has been established in reference to the compensation standards of industry peers in Japan and overseas, with the scale of job responsibilities based on the job grade framework provided by the external specialist organization.

Annual performance-linked compensation

Annual performance-linked compensation consists of cash bonuses and stock compensation-based stock options. It is profit-sharing compensation that is linked to the business performance in the relevant fiscal year. Actual net income attributable to owners of parent and actual consolidated ROE performance are incorporated in the formula.

Medium-term performance-linked compensation

Medium-term performance-linked compensation is performance share (stock-based) compensation designed to encourage corporate directors to share a shareholder perspective by holding TEL shares and raise their awareness toward enhancing corporate value. The number of TEL shares awarded to each corporate director varies according to the payout rate based on their respective responsibilities and performance goal achievement levels for the three-year coverage period. Consolidated operating margin and consolidated ROE have been adopted as the indicators for measuring the performance goal achievement levels that are linked to the Medium-term Management Plan.

Non-performance-linked (share-based) compensation

Non-performance-linked compensation is share-based compensation applicable to outside directors. It has been introduced for the purpose of making the compensation system for outside directors more consistent with their expected role of giving advice to the management from the perspective of increasing corporate value over the medium to long term and in addition to their duties of supervising management. Under this share-based compensation system, TEL shares are granted after the expiration of the period covering three fiscal years.

Process for evaluating the effectiveness of the Board of Directors and management issues

TEL discusses and evaluates the effectiveness of the Board of Directors every year in accordance with the TEL Corporate Governance Guidelines. In fiscal year 2020, we again conducted a questionnaire of all corporate directors and Audit & Supervisory Board members regarding major items for evaluating the effectiveness of the Board of Directors, the Nomination Committee, and the Compensation Committee. In addition to the results of this questionnaire, opinions exchanged and deliberations held mainly by outside directors and outside Audit & Supervisory Board members were shared with the whole Board of Directors. In this way, we deliberated on and comprehensively evaluated the effectiveness of the Board of Directors. Regarding this questionnaire, in an effort to obtain highly objective supervisory insight and evaluation, we seek perspective and input from external consultants, and analyze the results. Issues identified through such analysis and evaluations are discussed in depth by the Board of Directors, and efforts are taken to make improvements as appropriate.

In fiscal year 2020, gender diversity increased in the composition of the Board of Directors, and the appropriate ratio of outside directors was also discussed by the Board of Directors. Moreover, we held off-site meetings, aside from Board of Directors meetings, where matters that are important in the medium to long term were predominantly discussed, such

as management strategy, risk management, group governance, and CSR. With regard to the Compensation Committee, an outside director was appointed as chairman to improve its independence. Discussions at the Compensation Committee regarding the topic of what executive compensation should be going forward, as well as discussions at the Nomination Committee about succession plans, were both shared with the Board of Directors.

We believe that, under the systems described above, our Board of Directors ensure, with a high level of effectiveness in general, that they appropriately fulfill the major roles of the Board of Directors prescribed in the TEL Corporate Governance Guidelines, such as "indicating the management strategy and vision" and "making major operational decisions based on strategic direction." We also recognize that other bodies, establishing the Nomination Committee and the Compensation Committee, function effectively.

Based on the results of the evaluation of effectiveness conducted this time, TEL's Board of Directors strives to secure sufficient opportunities and time to discuss our medium-to-long-term management strategies fully. It will also work on further strengthening TEL's risk management system and group governance. With regard to the Nomination Committee, we will consider the relationship of the Committee and the Board of Directors, while conducting a review toward an appropriate member composition in order to increase the objectivity of the Committee. Moreover, we will strengthen dialog with our stakeholders, with ESG and SDGs in mind.

Investor relations (IR) activities

At TEL, we understand that appropriate information disclosure and dialog with capital markets improve management transparency and contribute to improved corporate value, so our senior management is actively involved in IR activities. The Chairman of the Board of Directors and president act as spokespeople when necessary at Japanese and overseas IR conferences and individual interviews to ensure two-way communication with capital markets. The IR Department, which was established under the direct control of the president, also regularly reports capital market feedback to senior management to help inform management decisions.

Annual Report

Risk management

Approach to risk management

Reflecting changes in society and the business environment, the risks facing businesses are growing increasingly complex and diverse. Tokyo Electron (TEL) considers understanding and appropriately addressing the risks that it may face in its businesses, as well as their impacts, to be essential to its sustainable growth.

Risk management system and initiatives

In order to promote more effective risk management, TEL carries out enterprise risk management* through a body established within the General Affairs Department at its headquarters. This body works with the respective departments responsible for each operation to identify a wide range of risks arising in corporate activities (such as compliance risk, human resource and labor risk, and business continuity risk). It then classifies risks with high impact and probability as key risks within the TEL group. The body also formulates and executes measures to minimize these key risks, monitors the effect of said measures, works to understand the status of risk control, and implements the PDCA cycle for risk management. In fiscal year 2020, in addition to these activities, the body conducted interviews with the responsible departments at the corporate headquarters, and Japanese and overseas subsidiaries to understand the status of risk management. From fiscal year 2021 onward, it also plans to enhance the various functions and systems of risk management and internal audits to further promote highly effective risk management activities. The status of these activities is regularly reported to the Board of Directors and the Audit & Supervisory Board.

* Enterprise risk management: Group-wide systems and processes related to risk management activities

Auditing by the internal audit department

The Global Audit Center serves as the internal audit department for the entire group and implements audits based on the audit plan. Based on the results of these audits, it provides instructions for making improvements as needed, confirms the progress of these improvements, and provides any necessary support. The group's internal control over financial reporting in fiscal year 2020 was also evaluated as effective by the independent auditors.

Risk management initiatives

Each year, TEL identifies key risks for the group and steadily works to reduce those risks. In fiscal year 2020, we reinforced measures in the following areas[1].

1 Refer to p. 45 for information on reinforced measures for compliance risk.

2 TCFD: Refer to p. 8 for TCFD.

Environment

With climate change and abnormal weather becoming an urgent issue on a global scale, it is becoming increasingly important for companies to comply with environmental laws and regulations, and industry codes of conduct, and to reduce environmental impacts throughout the value chain. In addition to initiatives to reduce the environmental impacts of its products, factories, and offices, to help achieve its medium- to long-term environmental goals, TEL is working to reduce operating costs and create business opportunities related to the environment, including the provision of production technologies for developing more energy-efficient devices. We are also promoting environmental management across the entire company. We have also declared our support of the TCFD[2] recommendations and analyzing and disclosing the impacts and opportunities of climate change on our businesses in line with the international framework.

Human rights

In our global society, human rights issues such as inequalities, discrimination, and forced labor are becoming increasingly serious. At the same time, it is becoming more important for companies to conduct sustainable operations by eliminating human rights-related business risks and respecting the rights of the people behind their business activities. While clarifying its approach to human rights, identifying human rights risks, and implementing corrective actions in accordance with the United Nations Guiding Principles on Business and Human Rights, TEL is making further improvements to its reporting systems and other grievance mechanisms. We are working to ensure such human rights as freedom, equality, non-discrimination, freely chosen employment, health and safety, and working hours. We are incorporating respect for human rights in every aspect of our business activities. In this way, we are striving to further improve employee engagement and create new value.

Research and development

To maintain a competitive advantage and continue growing in markets where technological innovation is rapid, it is important for businesses to continuously create innovation and to provide high value-added products and services. While actively investing in research and development of leading-edge technologies to enhance its own research and development capabilities, TEL is also focusing on collaboration with Japanese and international consortiums. In addition, we are sharing technology roadmap with our customers and collaborating with them in the early stages of development to ensure our research and development activities properly reflect future needs. Going forward, we will continue to drive technological development for the next generation through a group-wide development structure for collaboration between the Development & Production Divisions and Business Divisions.

Supply chain management

For manufacturers of semiconductor and flat panel display production equipment, implementation of sustainable supply chain management is an essential part of such activities as development, production, and providing services. To prepare for disruptions to the procurement of important parts or production due to earthquakes or other natural disasters, TEL works, on an ongoing basis, to establish alternative production structures within its network and to develop a multi-source system for important parts. Furthermore, in addition to formulating business continuity plans (BCPs) and holding regular drills, we are building seismically isolated production buildings, adopting appropriate inventory controls, and taking other steps to establish stable product supply systems.

Information security

With information security becoming increasingly important as more and more of society is data-driven, it is equally important that companies work to improve their information literacy and build robust information infrastructure. TEL is focusing on information security risk from the two perspectives of cybersecurity and confidential information management. To improve cybersecurity, we use a combination of industry-leading security systems, providing security training for employees, and work to protect our information from the sabotage of our servers or computers as well as data theft, data manipulation and other forms of cyberattacks. The information security environment, including cyberattack methods, is continually changing. TEL is always working to stay ahead of these changes and formulating and implementing the necessary countermeasures on a global basis. To improve confidential information management, our Human Resources Department and Intellectual Property Department work in close collaboration to strengthen measures to prevent leaks of confidential information, particularly targeting employees who retire or resign to ensure proper management of confidential information, including the return and destruction of data.

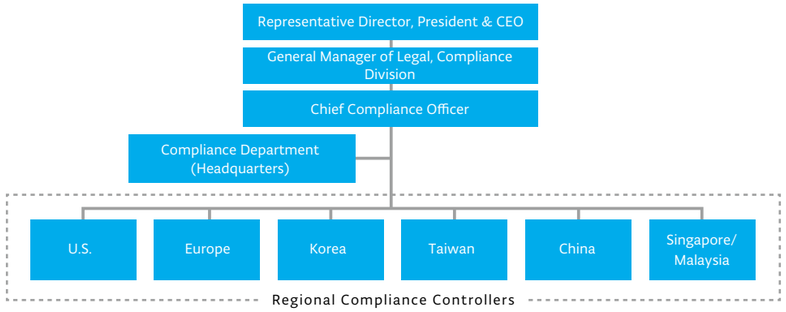
Compliance

Approach to compliance

Stakeholder trust is essential to business activities. In order to maintain this trust, it is essential to continuously ensure compliance and enhance corporate ethics. The Code of Ethics of the Tokyo Electron group establishes the "appropriate actions to be taken" in conducting business operations in an honest and fair manner in accordance with the laws and regulations of the countries and regions in which the Tokyo Electron (TEL) group operates as well as with internal regulations and rules, and stipulates that all executives and employees must understand and apply the Code of Ethics.

Compliance system

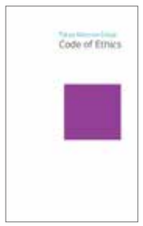
In order to strengthen our compliance system and to ensure efficacy, people responsible for compliance (Regional Compliance Controllers) have been appointed at key overseas sites, creating a system for direct reporting to the newly established Chief Compliance Officer and Compliance Department. The primary role of the Compliance Department is to formulate and review practical compliance programs for the TEL group, establish and implement corporate ethics, plan and implement education and training, and establish and operate internal reporting systems.



Compliance initiatives

Corporate ethics

In addition to establishing the Code of Ethics as common and minimum standards of conduct by which all executives and employees should abide, we have also established a Business Ethics Committee for the purpose of promoting and raising awareness of compliance and corporate ethics more effectively within the TEL group. We have also set up the Disciplinary Committee as a subordinate organization of the Business Ethics Committee for the purpose of ensuring that reasonable and appropriate punishments are imposed, and proper procedures followed when taking disciplinary action.



Code of Ethics

To ensure awareness of the Code of Ethics, we arrange to translate it into five languages for local use, including Japanese, and distribute it in the form of a booklet to all executives and employees. In May 2020, the Code of Ethics was revised. In addition to reflecting standards required as a global company, we added a number of new provisions on such important issues as personal data protection, information security, and money laundering. The revisions, including changes to the booklet design and adoption of a bullet point format, were made in pursuit of clarity and usability. We strive to further strengthen compliance and corporate ethics by annually obtaining confirmation from all executives and employees that they understand and comply with the Code of Ethics.

Global policies on anti-bribery and competition laws

In fiscal year 2021, we will establish common global policies on anti-bribery and competition laws. Under our anti-bribery policy, we reviewed our standards concerning gifts, entertainment, and donations, and we thoroughly enforce a process requiring preapproval if undertaking conduct outside these standards. As for our policy on competition laws, we have compiled different types of violations in an easy-to-understand format, based on applicable laws and regulations in the countries and regions in which we operate.

Compliance training

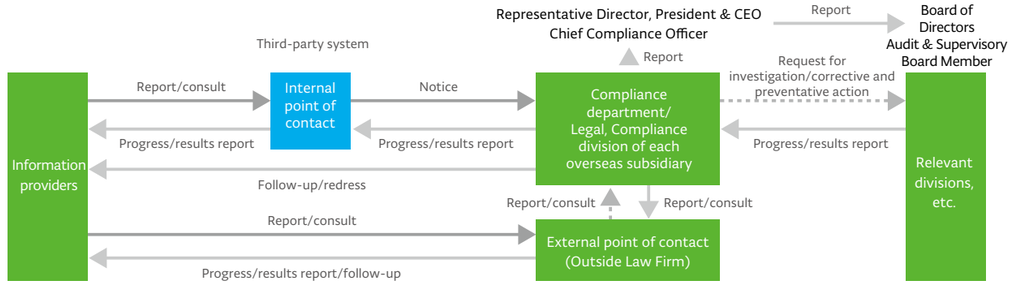
We conduct online and face-to-face training adapted to different levels for all employees[1]. In fiscal year 2021, we will deploy a more comprehensive and systematic training program and advance multilingual support to reinforce efforts to foster compliance awareness and behavior-oriented awareness-building activities in the TEL group.

Internal reporting system

As a means for employees to provide information and seek redress outside the chain of command about behavior that is, or may be, in violation of laws, regulations, or corporate ethics, we have established internal reporting mechanisms that ensure confidentiality, anonymity, and the prohibition of retribution. Apart from an internal point of contact that can also be accessed by suppliers, our reporting mechanisms include an external point of contact at a law firm that can be contacted directly. In March 2020, we enhanced the internal reporting system, and renamed TEL group Ethics & Compliance Hotline—a global common point of contact that uses a third-party system—thereby ensuring a greater level of confidentiality and anonymity. This hotline can be accessed via phone or a dedicated website 24 hours a day, 365 days a year, and accommodates all languages used by employees.

Internal reporting system utilization

64



In the event of a report or request for advice, the TEL group undertakes an investigation in accordance with internal regulations. If, as a result, a compliance violation is found, a disciplinary action is imposed in accordance with the Rules of Employment[2]. Preventive measures and corrective measures, such as improvements to the workplace environment, are also implemented as necessary.

In fiscal year 2020, a total of 64 cases were received via internal reporting mechanisms (excluding overseas subsidiaries), primarily concerning harassment, attendance management, and work environment. Among these, there were no reports or cases of non-compliance with laws, regulations, or the Code of Ethics that could have had a material impact on the TEL group's business or local communities.

1 Training and seminar topics include basics of corporate ethics and compliance, anti-corruption, export compliance, insider trading prevention, the Act for Subcontracting, and the prevention of harassment. Some training is limited to certain employees.

2 A leniency system has been introduced whereby any disciplinary action may be reduced or exempted in the event the employee involved in a compliance violation has made a report or sought advice on his/her own volition.

Respect for human rights

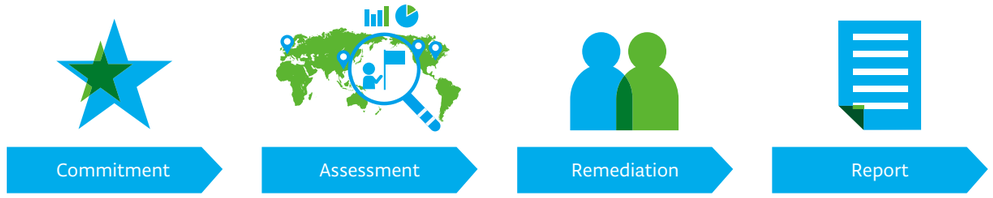
Approach to human rights

URL www.tel.com/csr/employee/diversity/

Conscious of its corporate social responsibility, Tokyo Electron (TEL) recognizes that it is important to conduct itself with a strong sense of integrity. Based on this recognition, TEL has firmly upheld human rights since its founding, as reflected in the spirit of its Corporate Philosophy and Management Policies. For TEL, respecting human rights means a significant undertaking, not only to fulfill its responsibility for eliminating adverse impacts on people caused through business activities, but to respect those people who support the company's business activities, and contribute to the realization of a sustainable, dream-inspiring society. TEL incorporates the concept of respect into every aspect of its business activities, and strives to nurture a dynamic corporate culture where each person can realize his or her full potential.

Human rights initiatives

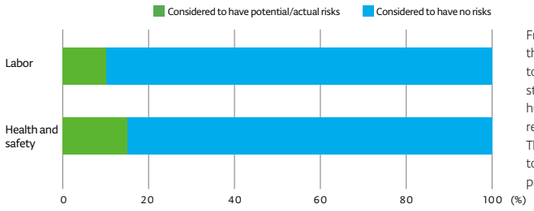
In fiscal year 2018, TEL formulated its Human Rights Policy, summarizing its approach to human rights. TEL has specified the human rights it believes are particularly important in business activities as Freedom; Equality & Non-Discrimination; Freely Chosen Employment; Product Safety & Workplace Health and Safety; Freedom of Association; and Appropriate Working Hours & Breaks/Holidays/Vacations. In preparing the Human Rights Policy, we referred to the United Nations' Guiding Principles on Business and Human Rights and the International Bill of Human Rights and the ILO Declaration on Fundamental Principles and Rights at Work referred to therein, the Ten Principles of the United Nations Global Compact, and the RBA Code of Conduct[1].



TEL is focusing on ensuring awareness and implementation of the Human Rights Policy internally and by suppliers. In fiscal year 2019, we published the policy on our website and made it available for everyone inside and outside the company, and implemented an online human rights education program targeting all TEL executives and employees.

In fiscal year 2020, we also conducted due diligence on human rights, conducted human rights risk surveys, and identified and assessed impacts. As part of the surveys, we utilized a self-assessment questionnaire (SAQ) for internal use based on the RBA Code of Conduct, and a CSR survey[2] for suppliers of materials, staffing, and logistics, to understand the current situation throughout the value chain. We are using the results of these surveys to identify and assess impacts, and to clarify and implement corrective action.

Supplier CSR survey results * 500 employees or more



From the internal assessment results, we identified potential human rights risks in the areas of labor, and health and safety. In the area of labor, we will continue efforts to ensure working hours are in compliance with laws and regulations while further streamlining operations. In the area of health and safety, we will work to reduce human rights risks by improving relevant equipment. From the supplier assessment results, we identified potential human rights risks in labor, health and safety. Therefore, we have requested they reconfirm working hour requirements according to laws and regulations, industry codes of conduct, and take other actions, including preparing for emergencies.

TEL recognizes the importance of having highly effective grievance mechanisms and it is working to establish and operate those mechanisms. In fiscal year 2020, we further strengthened our internal and external reporting systems in Japan and overseas for employees and suppliers, and started operation.

By continuing to conduct due diligence on human rights going forward, we will assess and correct any human rights issues we identify in our business activities, and further improve the grievance mechanisms we provide.

1 RBA Code of Conduct: The RBA establishes a set of standards for supply chains in the electronics industry for a safe labor environment, to ensure that workers are treated with respect and dignity, and that companies take responsibility for environmental impact in the manufacturing process.

2 CSR survey: Refer to Supply Chain Management on p. 48.

Supply chain management

Supply chain principles and system

Procurement principles and system

The high-value manufacturing that Tokyo Electron (TEL) strives for is based on the functions of all materials and components that make up the products and the pursuit of high quality. TEL values communications with suppliers and seeks to grow manufacturing on a global scale with its suppliers based on ongoing trusting relationships.

We engage in procurement activities in line with our own procurement policy, which we formulated based on the laws, regulations, and social norms of each country, as well as the RBA Code of Conduct. We then disseminated it within the TEL group to suppliers. Under the leadership of the TEL Representative Director, President & CEO, as the top of the procurement system, issues identified during procurement activities are shared with the manufacturing company presidents' council and the purchasing department manager council for consideration of specific improvements.

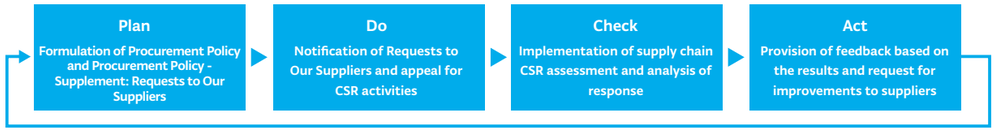
Initiatives in the supply chain

CSR operations

To keep track of its suppliers' engagement in CSR activities, TEL has conducted a CSR Survey since fiscal year 2014. The survey is in accordance with the RBA Code of Conduct. We analyze the responses from suppliers and use them as feedback to assist with further improvement activities. In accordance with auditing standards stipulated by the RBA, the survey targets materials suppliers[1] from which we procure parts and raw materials. In the fiscal year 2020 survey, improvements in overall rating level were observed at 36% of suppliers and improvements in the overall raw score were seen at 56%. Also, no suppliers were engaged in any of the practices given particular emphasis in the RBA Code of Conduct, namely, child labor, forced labor, bonded labor, inhumane treatment, false reports, falsification of records, or bribery. Neither were any suppliers of a sufficient size[2] to be considered high risk in terms of compliance.

From fiscal year 2019, we also began surveying staffing suppliers who provide temporary employees, contractors, and other workers, and logistics suppliers[3] with a focus on major logistics/customs clearance operators.

Supply chain CSR process



Responsible procurement of minerals (conflict minerals)

TEL regards taking action against conflict minerals (3TG[4]) obtained through illegal exploitation, including sources with human rights violations or poor working conditions, an important part of corporate social responsibility. The company's resolute goal is to eliminate the use of raw materials made from these conflict minerals, as well as any parts or components containing them.

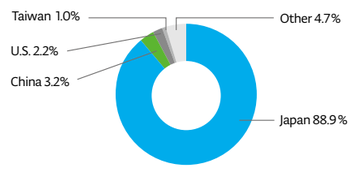
In fiscal year 2020, TEL conducted its sixth annual survey on potential conflict minerals, using the reporting template (CMRT[5]) developed by the RMI[6]. As a result, TEL identified 261 RMAP[7] conformant smelters, providing the company confidence that 3TG sourced from these smelters were conflict-free. None of the materials procured were found to contain conflict-affected 3TG.

Procurement BCP

As part of its Business continuity plans (BCP), TEL collaborates with the suppliers for disaster preparation. The company maintains a database of suppliers' production sites so that if a crisis arises, it can promptly identify impacted suppliers and quickly collaborate in recovery efforts. During fiscal year 2020, about 18,000 supplier sites were registered, and post-disaster impact surveys were conducted eight times.

In addition, for key suppliers accounting for more than 80% of the TEL's procurement spend, it conducts a BCP survey[8], analyzes their responses, and gives the results to suppliers as feedback to promote further improvement. In the fiscal year 2020 survey, improvements in overall rating level were observed at 16% of suppliers, and improvements in the overall raw score were seen at 40%.

Percentage of supplier sites by country (FY2020)



1 Surveys have been conducted since fiscal year 2014 for suppliers accounting for more than 80% of TEL's procurement spend.

2 500 employees or more

3 Staffing suppliers: 100% of employment agencies and contracting companies (internal contractors)
Logistics suppliers: 100% of customs-related operators

4 3TG: Tantalum, tin, tungsten, and gold

5 CMRT: Conflict Minerals Reporting Template

6 RMI (Remote Method Invocation): An organization that inspects 3TG smelters to certify they do not have conflict minerals

7 RMAP (Responsible Minerals Assurance Process): A program promoted and led by the RMI for auditing smelters/refiners that do not use conflict minerals

8 BCP survey: A survey that has continuously been conducted to key suppliers accounting for more than 80% of the TEL's procurement spend since FY2013

Environmental management

Environmental management system

Tokyo Electron (TEL) has established two new bodies, the Council of Environmental General Managers and the TEL Corporate Environmental Council, to promote activities in the medium to long term, responding to the rising importance of environmental issues, such as climate change, and meeting the environmental/ESG needs of its customers and other stakeholders. The councils are composed of TEL representatives in charge of the environment as well as members from related division. They are responsible for reviewing our overall environmental direction and our progress in achieving our medium- and long-term environmental goals. Furthermore, to continuously improve our environmental activities, we have operated an environmental management system based on ISO 14001 since 1997, primarily at our manufacturing subsidiaries. In March 2017, we acquired multi-site ISO 14001 certification for our factories and offices in Japan that had previously acquired certification separately. Coinciding with this multi-site certification, we have developed a standardized group format for environmental impact assessments, the identification of useful environmental aspects, environmental management programs, and internal audit checklists. During fiscal year 2020, we established approximately 100 environmental goals for different levels across the entire group and carried out these improvement activities. Progress of activities and compliance with laws and regulations are confirmed through internal audits and third-party audits. Any issues identified through these activities are reviewed by the EHS Council, reported to the Manufacturing Company Presidents' Council, and reflected in environmental activities across our entire group.

Under such an environment management system, fiscal year 2020 was again free from environmental incidents, accidents, violations, and associated legal proceedings.

ISO 14001 certified factories and offices

Company name	Factory/Office name	Certification date
Tokyo Electron	EHS Promotion Center (Fuchu Technology Center)	May 1998
Tokyo Electron Technology Solutions	Fujii Office/Hosaka Office/Tohoku Office	
Tokyo Electron Kyushu	Koshi Office/Ozu Office	
Tokyo Electron Miyagi	Taiwa Office	
Tokyo Electron (Kunshan)	—	March 2013
TEL Manufacturing and Engineering of America	Chaska Office	March 2013
	Billerica Office*	May 2018
Tokyo Electron Korea	Balan Factory	July 2014

* The Billerica Office was relocated in May 2020.

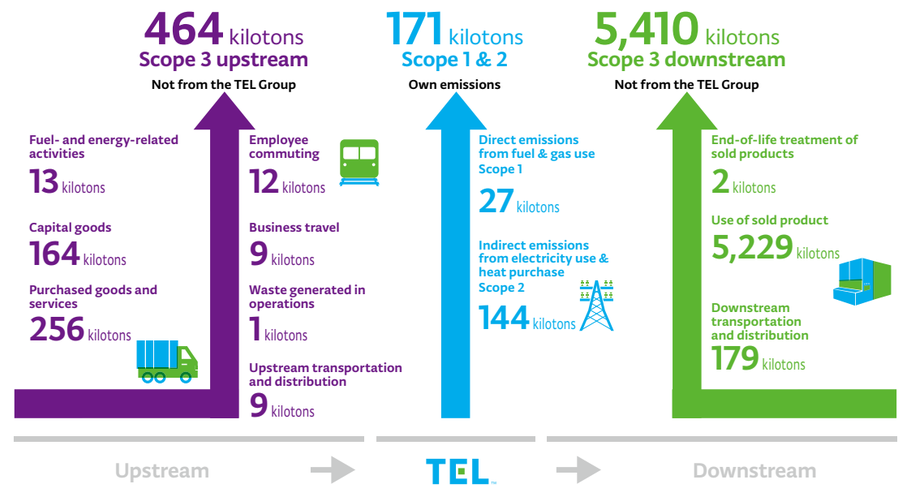
Environmental risks and opportunities

The various issues related to the environment impact on our daily lives and the business activities of companies. Physical risks, such as rising average global temperatures, strong winds, disasters, and water shortages caused by climate change and abnormal weather, heighten the risks in business, such as damage to assets, increased operating costs, and impacts on the supply chain. In terms of legal risks, we recognize that stronger environmental laws and regulations, more stringent regulations on greenhouse gas emissions, the introduction of carbon taxes, and so on will lead to higher costs for associated measures. At the same time, promoting environmental initiatives leads to more opportunities to sell outstanding, environmentally friendly products, reduce operating costs, and further improve corporate value. As a participant in the semiconductor and flat panel display (FPD) industry, by leveraging our advanced technological prowess to create added value, we can contribute to the creation of semiconductor and FPD products with low power consumption and the building of an energy-saving society that makes the most of information technology.

Based on the requirements of ISO 14001, we identified and analyzed internal and external issues in relation to the environment, namely, our relationship with the climate, air quality, and water quality. We also clarified the environmental needs and expectations of customers, suppliers, governments, and employees, and identified the compliance obligations of our group. From this information, TEL has set the following as its risks and opportunities to address: (1) environmental management by reducing the environmental impact of its business activities, (2) compliance with applicable laws, and (3) enhancing product competitiveness with the environmental contribution of products.

CO_2 emissions across the value chain

By recognizing environmental impact throughout the value chain, TEL develops business activities that are conscious of reducing this impact. Based on its environmental slogan "Technology for Eco Life," it aims to resolve environmental problems through leading technology and reliable services.



The total of Scope 1 and Scope 2 of the TEL group is 171 kilotons, while Scope 3 accounts for a total of 5,874 kilotons, which is approximately 97% of the total. TEL believes that it is particularly important to develop products with low CO_2 emissions during operation, as CO_2 emissions from the use of products sold amount to 5,229 kilotons, which is approximately 87% of the overall total.

Scope 1:
Direct GHG emissions from use of fuel and gas owned or controlled by TEL

Scope 2:
Indirect GHG emissions from use of electricity, steam and heat purchased by TEL

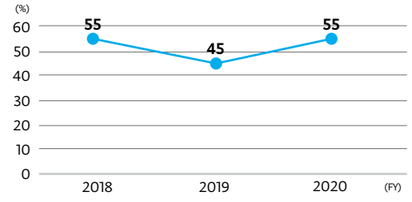
Scope 3:
Emissions from corporate value chains (excluding scope 1 and 2 emissions), such as product transportation, employee business travel, and major outsourced production processes

* Scope 3 is divided into upstream activities, which include emissions associated with purchased or procured products and services, and downstream activities, which include emissions associated with sold products and services.

Initiatives to prevent global warming and save energy

Each TEL plant and office has an established goal of reducing energy consumption by at least 1% year-over-year. Initiatives to achieve this goal include energy-saving cleanroom operation, appropriate temperature settings for office cooling and heating, the introduction of highly energy-efficient equipment, and the adoption of renewable energies. As a result of these initiatives, in fiscal year 2020, we increased energy consumption per unit sales at our factories and offices by 20% year-over-year. However, an increase in its volume of production and an increase in energy consumption associated with product development and evaluation resulted in power consumption of 318 GWh in fiscal year 2020, up 4% year-over-year; and energy-derived CO_2 emissions* of 144 kilotons, down 2% year-over-year. Based on the correlation between business operations and energy use, we changed to a more appropriate metric in fiscal year 2019, and have since applied it as standard at factories and offices across Japan. Specifically, we adopted a metric calculated using a complex weighting of data from each area on the number of evaluation units used in development, the number of units produced, total floor area, and staff-hours. As a result, goals were achieved at 6 out of 11 factories and offices in Japan and overseas.

Percentage of factories and offices achieving energy intensity target



* In fiscal year 2020, the adjusted emission factors of the respective electrical power providers are used for the emission factor for electricity consumption in Japan, and the emission factor in Emissions Factors (2019 edition) published by the International Energy Agency (IEA) is used for the emission factor for overseas electricity consumption.

Example initiative 1

Tokyo Electron Technology Solutions (Tohoku Office) is using energy more efficiently, having put heat-insulating materials around steam pipes in boiler rooms to prevent heat from discharging. As a result, we expect to reduce our use of heavy oil by 31,000 liters a year, which will also reduce emissions of 84 t-CO_2.

Example initiative 2

Tokyo Electron Miyagi is reusing waste oil from the staff cafeteria to produce biofuel. In fiscal year 2020, it began using this biofuel in generators and forklifts at the same site.

Renewable energy initiatives

TEL promotes the use of renewable energies. At the Tokyo Electron Miyagi (Taiwa Office) and Tokyo Electron Technology Solutions (Fujii Office, Hosaka Office), renewable energy generated from solar panels is used to power the factories, and monitors displaying their energy profile have been set up at the entrances to the factories. At its Tokyo Electron Kyushu (Koshi Office), generated energy is sold, helping to prevent global warming. In fiscal year 2020, TEL generated a total of 3,804 MWh of renewable energy in Japan.
In addition, Tokyo Electron U.S. Holdings has continued to purchase green power, 3,334 MWh, in fiscal year 2020.

Initiatives to reduce water consumption

With the growing importance of water resource preservation in global environmental initiatives, the TEL group has established a goal of keeping water consumption at the same level or below that of the baseline year (fiscal year 2012 for factories and offices in Japan and a fiscal year of their choosing for each overseas operation). TEL's ongoing efforts to achieve these goals include reusing pure water from its manufacturing operations, installing water-saving devices, watering lawns with rainwater, and implementing the intermittent operation of cafeteria faucets.

During fiscal year 2020, as a consequence of new buildings coming online and an increase in water consumption associated with product development and evaluation, water consumption amounted to 1,305,000 m^3, up 5% year-over-year. Moreover, we achieved 9 of the 13 goals in our factories and offices worldwide. It also discharged an estimated 1,078,000 m^3 of wastewater.

Example initiative

At Tokyo Electron Miyagi, we have promoted a reduction in blow-off water[1] by installing a system in the cooling tower to prevent scale[2] from building up. In addition to achieving a reduction in water consumption, it is expected that introducing this system will also eliminate the need for liquid chemicals that were previously used for preventing scale build-up, and will result in less power being consumed because of an improvement in heat exchange efficiency. Other added benefits of the system are that it lengthens the life of pipes by preventing corrosion, and it reduces cleaning time by controlling algae.

1 Blow-off water: Water that is drained from equipment and pipes to prevent an overconcentration of impurities in the water

2 Scale: An inorganic salt compound (calcium, magnesium, etc.) contained in water, which hardens on the surface of equipment and pipes

Initiatives to reduce waste

To curb the amount of waste generated and to recycle it wherever possible, the TEL group promotes initiatives to reduce waste. In addition to participating in the electronic manifest system[3] to ensure proper waste management, we are engaged in maintaining an appropriate amount of parts inventory and in reusing cushioning material. We are also achieving lower waste processing costs by promoting waste sorting activities, and by modifying space used for storing waste to increase storage capacity and reduce the frequency of collection. In fiscal year 2020, we surveyed waste disposal operators in Japan using a unified on-site checklist, and we shared the results. In fiscal year 2020, we generated 142 tons of incinerated and landfill waste in Japan. As a result of our waste-reduction initiatives, the recycling rate[4] at sites in Japan in fiscal year 2020 was 98.9%, achieving our single-year goal of maintaining a recycling rate of 97% or higher for the 14th consecutive year since fiscal year 2007. We have also maintained a high level of recycling at its overseas factories and offices of 90.3%.

Recycling rate

98.9%

3 Electronic manifest system: A system for electronically tracking the flow of industrial waste instead of using paper-based manifests (i.e. paper forms for tracking industrial waste). The system uses a communications network of data processing centers, businesses that generate waste, and waste collection/disposal companies

4 Recycling rate: (Recycled amount/Amount of waste generated) × 100

Management of chemical substances

TEL constantly monitors and manages its use and release of any chemical substances used in product development and manufacturing subject to the Japanese PRTR[1] law. Whenever TEL introduces a new chemical substance or changes the way an existing substance is used, we check for environmental, health, and safety risks beforehand. In response to the Act on Rational Use and Proper Management of Fluorocarbons, we conduct simple checks, regular inspections, and so on based on law in an effort to monitor the amounts of fluorocarbons filled and recovered. In fiscal year 2020, none of our factories or offices had fluorocarbon leakages requiring notification.

1 PRTR (Pollutant Release and Transfer Register): A framework for tracking, tabulating, and disclosing quantitative data on chemical substances that may be hazardous to human health and the ecosystem, including the amounts used and discharged into the environment and the amounts transferred (as part of waste) off the original business's premises

Biodiversity

URL www.tel.com/csr/environment/office/

In carrying out its business activities, the TEL group has a not insignificant impact on biodiversity, and yet without the benefits yielded from biodiversity, we could not sustain its activities. In recognition of this, the group will develop a framework for promoting initiatives to conserve biodiversity. In fiscal year 2020, we set a goal of conducting at least two ecosystem tours or conservation activities at our factories and offices in Japan. A total of 18 events were held, attracting a total of 368 participants.

Green procurement

URL www.tel.com/csr/environment/green-procurement/

TEL began implementing its Green Procurement Guidelines in January 2001, and has since promoted green procurement, prioritizing the purchase of environmentally friendly parts, products, and materials. Through these guidelines, we strive to gain the understanding and cooperation of our suppliers with respect to building environmental management systems, monitoring, reducing, and disclosing information on the environmental impacts of business activities; and developing environmentally friendly products.

Logistics initiatives

URL www.tel.com/csr/environment/product/

TEL has been promoting activities designed to reduce the environmental impact of its logistics. We have been implementing a modal shift[2] from air to ocean transportation for the overseas shipping of our semiconductor and FPD production equipment, and at the same time, we have been working hard to reduce production lead times. We have also been endeavoring to reduce CO_2 emissions and costs by adopting the shelved trolleys used in shipping FPD production equipment to semiconductor production equipment, thereby improving the load factor of trucks. We are also pushing for fewer resources to be used in packaging when shipping products.

2 Modal shift: Efforts to transform the means of transportation

Environmental communication

URL www.tel.com/csr/environment/office/

In promoting initiatives for the environment, TEL maintains close communication with all its stakeholders. Our environmental policy requires that we promote cooperative partnerships with our stakeholders, and respond appropriately as a company to their expectations and wishes.

In fiscal year 2020, we revamped our online environmental education programs to better promote environmental communication within us. Our online programs consist of an environmental program for new employees and mid-career recruits, plus a refresher program for existing employees. In fiscal year 2020, more than 11,000 employees attended these programs in Japan. In fiscal year 2021 and beyond, we plan to expand these education programs overseas.

TEL FOR GOOD (social contribution activities)

Expanding TEL FOR GOOD activities

The social contribution activities of Tokyo Electron (TEL) aim to contribute to the development of local communities and the resolution of social issues through various initiatives while deepening relationships of trust with all stakeholders. We are expanding activities globally with Innovation and Technology, Education, Environment, and Community Involvement as our four focus areas.

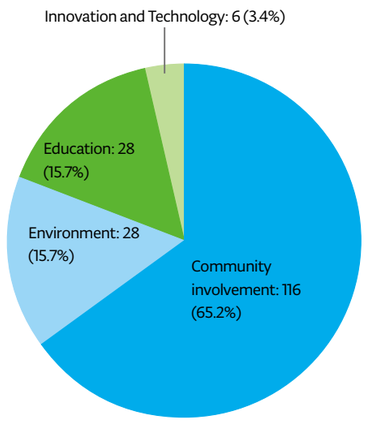
TEL FOR GOOD is the new brand name that represents TEL's social contribution activities. From fiscal year 2019, we are using it as a collective term for social contribution events and various programs, donations and volunteer activities sponsored by our company around the world.

4 focus areas

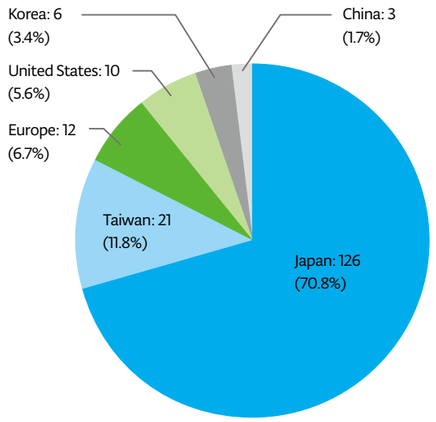
- Innovation and Technology
- Education
- Environment
- Community involvement

Number of TEL FOR GOOD activities (178 in total for FY2020)

By focus area



By region



Initiatives around the world

Japan — Tohoku Forum for Creativity: 2020 program activities

The Tohoku Forum for Creativity (TFC) is an international visitor research institute located within Tohoku University. TEL has been providing comprehensive support to the TFC ever since the House of Creativity was established in fiscal year 2014. The program theme adopted for fiscal year 2021 is "Designing the Human-Centric IoT Society," which was jointly proposed with the university. Through this industry-academia cooperation, research is being conducted to overcome challenges expected in an Internet of Things (IoT) society, and realize a future society centered on human well-being. The Kick-off Symposium for this program was held in October 2019.

Taiwan — TEL Robot Combat

TEL Robot Combat is a robot contest that has been held every year since fiscal year 2017 for university students and graduate students specializing in science and technology. One of the event sessions assesses each robot on characteristics such as maneuverability, stability, precision, and creativity, with the design being assessed along with performance. Through industry-academia cooperation, TEL creates opportunities for students to develop their skills and abilities and provides opportunities for companies and associations to exchange ideas.

Japan — Physics Challenge: All-Japan physics contest

Recognizing that physics underpins modern science and technology, TEL started providing support to the Physics Challenge, for the top junior high school students and high school students across Japan, from the 15th challenge in fiscal year 2020. The Physics Challenge is a contest offering a variety of programs that also demonstrate the appeal of physics. About 1,200 students took part in Round 1, with the top 100 going on to Round 2. Finally, five students were selected to represent Japan in the International Physics Olympiad 2020 in Lithuania.

Japan — Work experience support

TEL's domestic manufacturing facilities offer work experience programs every year to help foster human resources and contribute to local communities. These activities offer opportunities for participants to get a deeper understanding of the roles of industry and companies, and the significance of work done there. The program focuses specifically on actual business, including factory tours and training on exchanging business cards and other Japanese customs, 3D CAD design and wafer inspections, and onsite lessons about logistics processes.

U.S. — Keep Portland Beautiful

In April 2019, as part of Earth Month, employees of Tokyo Electron America held a cleanup of Rock Creek Park, located close to the Portland Branch Office, and picked up rubbish along roads leading to the office. With park visitors also participating on the day, about 30 people collected 200 kg of waste and helped maintain the beauty of the area. The event offers a great opportunity to consider our own communities and the environment.

Japan — Companies Creating Forests—Afforestation activity

As part of an agreement with Oshu City in Iwate Prefecture to participate in its Companies Creating Forests program, Tokyo Electron Technology Solutions plants trees around its office in Iwate Prefecture. Participating in this activity for the ninth time in fiscal year 2020, employees and family members cooperate each year to plant about 700 seedlings. Conducted as part of environment conservation and greening efforts in the surrounding area, pictures of these activities are also published as an example of CSR activities in the social studies textbooks of some junior high schools.

China — Fun run

Tokyo Electron (Shanghai) participates in a public fun run hosted by the Shanghai Zhangjiang Hi-Tech Park. The event is held to promote health among employees of companies in the area to build a mutually supportive community through human connections. On the day of the event, donations are collected for the Giving Tree Community Center Shanghai as well. In fiscal year 2020, 41 employees helped run the event and also collected 8,000 yuan in donations.

Europe — Children in Need

Tokyo Electron Europe participates in Children in Need, a charity event held in November every year to help improve the lives of sick children and children with disabilities. Employees bake and sell cakes within the company, and the company adds a matching amount to the money they raise, which is then donated together. During fiscal year 2020, a Funny Hats Competition was also held to build excitement for the event.

Performance summary: Social

The scope for calculating social data is the Tokyo Electron group (34 consolidated companies), and the calculating period is fiscal year 2020 (April 1, 2019 to March 31, 2020).
Japan: Tokyo Electron Ltd. and six consolidated subsidiaries (including Tokyo Electron Technology Solutions Ltd., Tokyo Electron Kyushu Ltd., Tokyo Electron Miyagi Ltd., and Tokyo Electron FE Ltd.)
Overseas: 27 consolidated subsidiaries (including Tokyo Electron America, Inc., Tokyo Electron Europe Ltd., Tokyo Electron Korea Ltd., Tokyo Electron Taiwan Ltd., Tokyo Electron (Shanghai) Ltd., and Tokyo Electron Singapore Pte. Ltd.)

Composition of employees

		FY2016	FY2017	FY2018	FY2019	FY2020
Regular employees (Region/Group)	Number of regular employees	10,306	10,920	11,696	12,469	13,542
	Japan	6,737	6,967	7,268	7,526	7,806
	Rest of Asia	1,543	1,850	2,218	2,832	3,494
	Europe and Middle East	440	448	492	513	528
	North America	1,586	1,655	1,718	1,598	1,714

		FY2016	FY2017	FY2018	FY2019	FY2020
Employees (Employment type/Japan)	Number of employees	7,060	7,288	7,516	7,797	8,100
	Regular employees	6,737	6,967	7,268	7,526	7,806
	Men	5,874	6,079	6,292	6,479	6,681
	Women	863	888	976	1,047	1,125
	Non-regular employees	323	321	248	271	294
	Men	201	209	181	220	263
	Women	122	112	67	51	31

Recruitment/employment (Japan)

☑ denotes data with third-party assurance.

		FY2016	FY2017	FY2018	FY2019	FY2020
New graduates hired	Number hired	25	72	167	199	281
	Under 30 yrs old	24	72	163	198	280
	Men	20	70	131	166	233
	Women	4	2	32	32	47
	30–49 yrs old	1	0	4	1	1
	Men	1	0	4	1	1
	Women	0	0	0	0	0
	50 and over yrs old	0	0	0	0	0
	Men	0	0	0	0	0
	Women	0	0	0	0	0
	Percentage of women	16.0	2.8	19.2	16.1	16.7
Career-track recruits	Number hired	66	279	262	239	150
	Under 30 yrs old	17	102	102	85	42
	Men	13	85	85	67	35
	Women	4	17	17	18	7
	30–49 yrs old	47	170	156	145	96
	Men	31	155	135	119	82
	Women	16	15	21	26	14
	50 and over yrs old	2	7	4	9	12
	Men	2	6	3	5	10
	Women	0	1	1	4	2
	Percentage of women	30.3	11.8	14.9	20.1	15.3
Employees with disabilities	Percentage hired (TEL)	1.96	2.13	2.22	2.18	2.06
	Percentage hired (Group)	1.98	1.98	1.91	2.04	2.01
Female managers (Group)[1, 2, 3]	Number of people	39	42	20	22	23
	Percentage	1.5	1.6	1.8	2.0	2.0 ☑
Reemployment system	Number of users	101	125	156	201	242
	Men	98	123	155	196	235
	Women	3	2	1	5	7
Second career support system	Number of users	49	34	31	30	23
	Men	43	30	30	28	18
	Women	6	4	1	2	5
Percentage of regular employees who received regular performance and career evaluations		100.0	100.0	100.0	100.0	100.0

1 Percentage of female managers Calculation method: Number of female managers/Number of managers × 100
2 Grade resetting through global human resources system since FY2018
3 As of March 31

Employee retention (Japan)

		FY2016	FY2017	FY2018	FY2019	FY2020
Employee retention	Retention after three years of joining TEL[1]	93.6	92.9	93.4	93.0	93.8
	Men	94.1	94.1	94.3	93.5	94.6
	Women	90.2	85.2	87.1	88.0	88.6
	Average service years	17 yrs. 0 mos.	17 yrs. 1 mos.	17 yrs. 1 mos.	17 yrs. 2 mos.	17 yrs. 2 mos.
	Men	17 yrs. 2 mos.	17 yrs. 4 mos.	17 yrs. 4 mos.	17 yrs. 5 mos.	17 yrs. 5 mos.
	Women	16 yrs. 0 mos.	15 yrs. 5 mos.	15 yrs. 7 mos.	15 yrs. 8 mos.	15 yrs. 11 mos.
Turnover	Employee turnover	131	102	103	108	82
	Men	94	82	82	88	54
	Women	37	20	21	20	28
	Turnover percentage	1.8	1.4	1.4	1.4	1.0

1 Average in recent five years

Work-life balance (Japan)

☑ denotes data with third-party assurance.

		FY2016	FY2017	FY2018	FY2019	FY2020
Annual paid leave	Take-up rate[2]	62.6	64.1	64.3	67.2	72.6 ☑
Refreshment leave	Number of those who took leave	1,045	586	639	605	901
	Men	926	499	556	507	773
	Women	119	87	83	98	128
Paternity leave	Number of those who took leave	172	179	180	155	184
Childcare leave	Number of those who took leave	42	44	41	56	46
	Men	2	2	4	8	12
	Women (percentage who took leave)	40 (93.3)	42 (95.7)	37 (93.2)	48 (100.0)	34 (97.9)
	Number of those who returned to work after leave	46	44	44	43	48
	Men	1	2	6	6	8
	Women	45	42	38	37	40
	Percentage reinstated	85.2	93.6	93.6	93.5	94.1
	Retention rate	91.3	95.7	90.0	88.9	91.3
Shorter working hour system	Number of those who used	188	170	176	153	149
	Men	13	23	24	8	11
	Women	175	147	152	145	138
Leave to care for a sick/injured child	Number of those who took leave	453	464	455	517	625
	Men	245	263	281	334	428
	Women	208	201	174	183	197
Childcare support leave	Number of those who took leave	103	106	120	129	125
	Men	15	16	19	26	26
	Women	88	90	101	103	99
Extended nursing care leave	Number of those who took leave	0	2	3	5	2
	Men	0	1	2	2	2
	Women	0	1	1	3	0
Short nursing care leave	Number of those who took leave	31	50	47	63	95
	Men	10	31	25	38	56
	Women	21	19	22	25	39
Shorter working hour system for nursing care	Number of those who used	0	0	0	2	2
	Men	0	0	0	0	1
	Women	0	0	0	2	1

2 Take-up rate of annual paid leave Calculation method: (Days of paid leave taken by employees**)/(Days of paid leave provided to employees**) × 100 ** Incl. non-regular employees

Customers

	FY2016	FY2017	FY2018	FY2019	FY2020
Percentage of respondents who selected "Very Satisfied" or "Satisfied" in the customer satisfaction survey[3]	46.2	67.6	59.4	84.4	93.3

3 Past figures have been revised due to change in indicator

Performance summary: Social

Products/Innovation

		FY2016	FY2017	FY2018	FY2019	FY2020
Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services		0	0	0	0	0
Active issued patents (Region/Country)	Number of active issued patents	16,300	16,023	16,767	17,473	18,137
	Japan	5,172	4,984	5,091	5,304	5,348
	North America	4,361	4,224	4,321	4,415	4,606
	Europe	241	199	185	179	191
	Korea	2,784	2,672	2,864	3,076	3,223
	Taiwan	2,131	2,387	2,675	2,817	2,948
	China	1,611	1,557	1,631	1,682	1,821

		CY2014[1]	CY2015[1]	CY2016[1]	CY2017[1]	CY2018[1]
Global patent application rate		68.0	70.0	76.1	81.2	79.8
Patent application success rate	Japan	78.0	66.5	71.5	82.9	83.1
	North America	71.2	72.3	78.0	85.1	85.5

1 Calendar year when patents were filed/granted

Safety

	FY2016	FY2017	FY2018	FY2019	FY2020
Percentage of employees who received training on basic safety	100	100	100	100	100
Percentage of employees who received training on advanced safety	100	100	100	100	100
Lost time incident rate (LTIR)	0.42	0.46	0.77	0.40	0.51
Number of workplace injuries per 200,000 work hours (TCIR)	0.21	0.28	0.38	0.20	0.23

Procurement

	FY2016	FY2017	FY2018	FY2019	FY2020
Percentage of new important suppliers screened using social criteria	100	100	100	100	100
Rate of improvement after supply chain CSR assessment (including green procurement survey)	33.8	16.9	20.7	—[2]	35.8
Rate of improvement after supply chain BCP assessment	26.5	32.3	21.2	19.4	16.0
Number of identified RMAP conformant smelters	204	237	249	253	261

2 Unable to compare with previous fiscal year due to comprehensive revisions, including the survey

Governance

	FY2016	FY2017	FY2018	FY2019	FY2020
Total number of critical incidents notified to Board of Directors	—	1	0	0	0
Total number of incidents subject to legal action on the basis of anti-competitive conduct, anti-trust activity, or monopolistic practices where the governance body's involvement was revealed	0	0	0	0	0
Number of executive officers who received training on anti-corruption[3]	—	12	13	0	0
Total number (percentage) of directors who provided instructions on the body's policies and procedures in relation to anti-corruption[3]	—	11 (100)	12 (100)	12 (100)	11 (100)
Total number (percentage) of directors who received training on anti-corruption[3]	—	9 (81.8)	9 (75.0)	0 (0)	11 (100)
Payment to industry groups, etc. (thousand yen)	—	—	16,616	17,374	26,042
Payment to politically affiliated organizations (yen)	—	—	0	0	0
Average tenure of directors	—	—	8.04	7.36	4.84
Average rate of attendance for board meetings	—	—	99.46	98.24	99.39

3 Scope: Japan

Compliance

	FY2016	FY2017	FY2018	FY2019	FY2020
Percentage of employees who have received online training on business ethics and compliance[4]	98.4	98.0	99.4	99.2	63.7[5]
Percentage of employees who have consented to the information security agreement	99.9	99.9	99.9	100.0	100.0
Significant fines and non-monetary sanctions for noncompliance with laws and regulations in the social and economic area	0	0	0	0	0

4 Scope: Japan 5 Value from March 16 (start date for training) to March 31. Training will continue to be provided in fiscal year 2021.

Social contribution

		FY2016	FY2017	FY2018	FY2019	FY2020
Spending on social contribution (million yen)		277	242	238	281	250
Cash donations breakdown	Charity donations (providing donations/relief supplies to charity organizations)	14	17	13	11	4
	Community investment (charitable expenses for long-term cause for community)	52	43	49	55	68
	Commercial initiatives (charitable expenses with anticipated effects on business growth)	34	40	38	34	28

Performance summary: Environment

The scope for calculating environmental data is the Tokyo Electron group (34 consolidated companies), and the calculating period is fiscal year 2020 (April 1, 2019 to March 31, 2020).
Japan: Tokyo Electron Ltd. and six consolidated subsidiaries (including Tokyo Electron Technology Solutions Ltd., Tokyo Electron Kyushu Ltd., Tokyo Electron Miyagi Ltd., and Tokyo Electron FE Ltd.)
Overseas: 27 consolidated subsidiaries (including Tokyo Electron America, Inc., Tokyo Electron Europe Ltd., Tokyo Electron Korea Ltd., Tokyo Electron Taiwan Ltd., Tokyo Electron (Shanghai) Ltd., and Tokyo Electron Singapore Pte. Ltd.)

Greenhouse gas consumption/emissions

☑ denotes data with third-party assurance.

	Scope	FY2016	FY2017	FY2018	FY2019	FY2020	
CO_2 from energy consumption	Emissions metric (sales) (t-CO_2/billion yen)	2.22	1.77	1.34	1.24	1.38	
	Emissions (kt-CO_2)	148	141	152	159	155	
	Japan	115	110	119	127	127	☑
	Overseas	33	31	33	32	28	
CO_2 by scope	Scope 1[1] emissions (kt-CO_2)	8	8	9	9	11	
	Japan, energy-derived	6	6	7	7	10	☑
	Overseas, energy-derived	2	2	2	2	2	
	Scope 2[2] emissions (kt-CO_2)	140	133	143	150	144	
	Japan	109	104	112	120	118	☑
	Overseas	30	29	31	30	26	
	Scope 3[3] emissions (kt-CO_2)	3,491	4,028	5,855	6,467	5,874	
Non-energy-derived greenhouse gas	Emissions (kt-CO_{2e}) (Japan)	33	28	26	47	59	
	HFCs	1	3	3	3	6	
	PFCs	8	8	11	18	24	
	SF6	17	9	4	11	11	
	Other	6	8	8	15	18	
	Scope 1[4] emissions (kt-CO_{2e})	12	9	8	15	16	

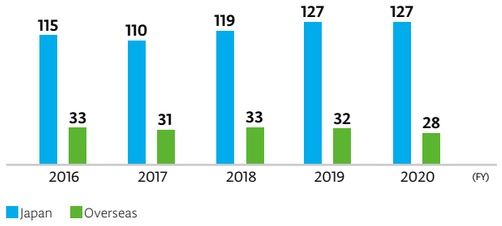
1 Scope 1: Direct GHG emissions from use of fuel and gas owned or controlled by TEL.
Calculation method: Emissions = Σ (fuel consumed × CO_2 emission factor)
Emission factor based on Japan's Act on Promotion of Global Warming Countermeasures
2 Scope 2: Indirect GHG emissions from use of electricity purchased by TEL.
Calculation method: Emissions = Σ (purchased electricity × CO_2 emission factor)
Adjusted emission factors for the electrical power providers concerned based on Japan's Act on Promotion of Global Warming Countermeasures were used as the emission factor for Japan
Emission factors based on values from the Emissions Factors 2019 edition published by the International Energy Agency (IEA) were used as the emission factor for overseas electricity consumption
3 Scope 3: Emissions from corporate value chains (excluding scope 1 and 2 emissions), such as product transportation, employee business travel, and major outsourced production processes.
The entire scope is divided into 15 categories, of which calculations were made for categories 1, 2, 3, 4, 5, 6, 7, 9, 11, and 12. Calculations for categories 8, 10, 13, 14, and 15 were not made as they are either not included in TEL's activities, or have already been included in other categories.
4 Scope 1: Non-energy-derived CO_2 and greenhouse gases other than CO_2.
Calculation method: Emissions = Σ (consumption × emission per unit consumption − amount recovered and properly treated) × global warming factor
Global warming factor is based on Japan's Act on Promotion of Global Warming Countermeasures

Resource consumption

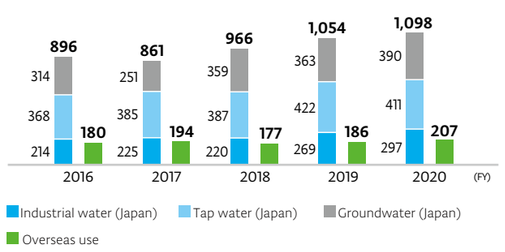
☑ denotes data with third-party assurance.

	Scope	FY2016	FY2017	FY2018	FY2019	FY2020	
Water	Consumption (thousand m³)	1,076	1,055	1,143	1,240	1,305	
	Japan	896	861	966	1,054	1,098	☑
	Groundwater	314	251	359	363	390	
	Tap water	368	385	387	422	411	
	Industrial water	214	225	220	269	297	
	Overseas	180	194	177	186	207	
Copier paper	Use (t) (Japan)	128	157	194	165	132	

CO_2 emissions from energy consumption
(kt-CO_2)



Water consumption
(thousand m³)



Performance summary: Environment

Energy consumption/generation

	Scope	FY2016	FY2017	FY2018	FY2019	FY2020
Energy	Emissions metric (sales) (kL/billion yen)	1.02	0.84	0.66	0.63	0.75
	Consumption (crude oil equivalent) (kL)	67,499	67,457	75,033	80,918	84,931
	Japan	52,002	52,676	59,613	65,757	70,520
	Overseas	15,497	14,781	15,420	15,161	14,411
Electricity	Consumption (MWh)	254,201	253,300	282,274	305,795	317,614
	Japan	198,404	200,547	226,747	250,911	265,293
	Overseas	55,797	52,753	55,527	54,884	52,321
Gas	Consumption (crude oil equivalent) (kL)	2,748	2,877	3,083	2,991	3,565
	Japan	1,602	1,666	1,947	1,948	2,611
	Overseas	1,146	1,211	1,136	1,043	954
Fuel	Consumption (crude oil equivalent) (kL)	706	797	875	915	1,482
	Japan	706	796	874	915	1,481
	Overseas	0	1	1	0	1
Green power	Purchase (MWh)	3,833	3,334	3,458	3,834	3,334
	Japan	0	0	0	0	0
	Overseas	3,833	3,334	3,458	3,834	3,334
PV power generation system	Power generation (MWh)	4,486	4,436	4,414	4,392	3,804
	Japan	4,486	4,436	4,414	4,392	3,804
	Overseas	0	0	0	0	0
Power sales	Power sales (MWh)*	1,331	1,346	1,386	1,382	1,225
	Japan	1,331	1,346	1,386	1,382	1,225
	Overseas	0	0	0	0	0

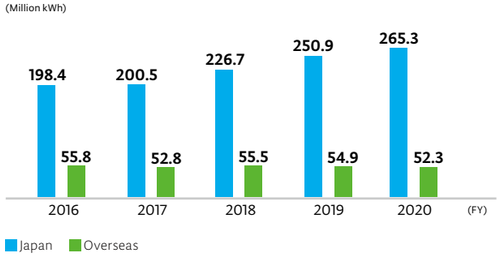
* Heating, cooling and steam not sold

Environmental impact of logistics

	Scope	FY2016	FY2017	FY2018	FY2019	FY2020
CO_2	Emissions (kt-CO_2)	65	97	122	146	186
	Japan	6	7	12	9	9
	Overseas	59	90	110	137	177
Proportion of marine transportation (international)		36.1	31.9	36.4	35.9	31.9

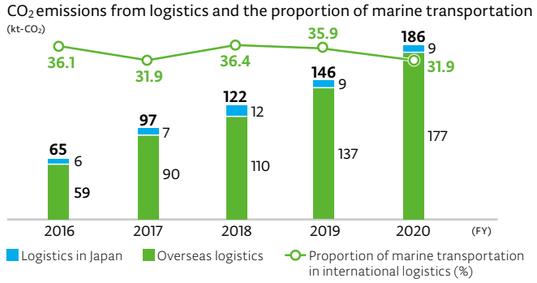
Electricity consumption

(Million kWh)



CO_2 emissions from logistics and the proportion of marine transportation

(kt-CO_2)



Amount of waste generated

	Scope	FY2016	FY2017	FY2018	FY2019	FY2020
Waste	Amount generated (t)	8,384	12,318	14,435	14,960	13,989
	Japan	7,721	11,393	13,694	14,208	12,973
	Overseas	663	925	741	752	1,016
Specially controlled industrial waste	Emissions (t) (Japan)	2,125	3,683	4,904	6,619	5,911
Recycling	Recycled amount (t)	8,182	12,128	14,211	14,770	13,748
	Japan	7,599	11,281	13,561	14,092	12,831
	Overseas	583	847	650	678	917
Incinerated and landfill waste	Amount of waste (t)	202	190	224	190	241
	Japan	122	112	133	116	142
	Overseas	80	78	91	74	99
Water discharges	Water discharge volume (thousand m^3)	904	874	905	1,006	1,078
	Japan	750	709	759	850	900
	Overseas	154	165	146	156	178

Chemical substances consumption/emissions (Japan)

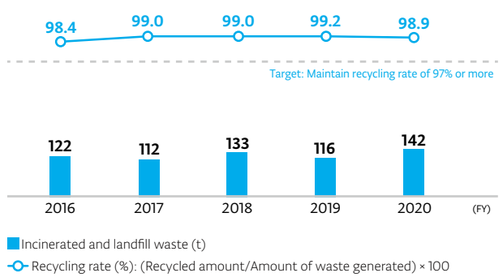
	Scope	FY2016	FY2017	FY2018	FY2019	FY2020
PRTR Class I designated chemical substances	Volume handled (t)	35	64	100	101	121
	Ferric chloride	21	33	82	84	98
	Hydrogen fluoride and its water-soluble salts	9	25	12	11	12
	Methylnaphthalene	4	5	5	5	10
	Other	1	1	1	1	1
	Amount transported (waste amount) (t)	31	59	95	96	111
	Consumption (t)	4	5	5	5	10
NOx	Emissions (t)	7.5	7.9	11.5	9.6	11.9
SOx	Emissions (t)	2.2	2.5	2.7	2.8	4.0

Other

	Scope	FY2016	FY2017	FY2018	FY2019	FY2020
ISO 14001	Number of certified offices	7	8	9	9	9
	Japan	4	5	5	5	5
	Overseas	3	3	4	4	4
Biodiversity	Number of ecosystem tours*	15	18	22	17	18
	Number of ecosystem tour participants*	281	396	718	595	368
Environmental laws and regulations	Number of breaches of environmental laws and regulations	0	0	0	0	0
	Amount of fines for breaches of laws and regulations	0	0	0	0	0
Total product shipment (t)*		17,342	20,445	34,110	32,715	31,184

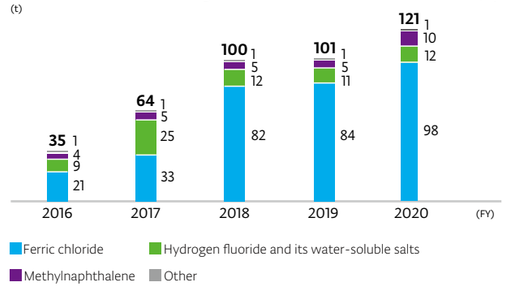
* Scope: Japan

Recycling rate/generation of incinerated and landfill waste in Japan



Volume of PRTR Class I designated chemical substances handled in Japan

(t)



Independent practitioner's assurance

Deloitte.
デロイト トーマツ

(TRANSLATION)

Independent Practitioner's Assurance Report

July 3, 2020

Mr. Toshiki Kawai,
Representative Director, President & CEO,
Tokyo Electron Ltd.

Masahiko Sugiyama
Representative Director
Deloitte Tohmatsu Sustainability Co., Ltd.
3-2-3, Marunouchi, Chiyoda-ku, Tokyo

We have undertaken a limited assurance engagement of the CO_2 Emissions from energy consumption in Japan, the Water consumption in Japan, Female managers percentage in Japan and Annual paid leave take-up rate in Japan indicated with ✉ for the year ended March 31, 2020 (the "Sustainability Information") included in the "TOKYO ELECTRON SUSTAINABILITY REPORT 2020" (the "Report") of Tokyo Electron Ltd. (the "Company").

The Company's Responsibility

The Company is responsible for the preparation of the Sustainability Information in accordance with the calculation and reporting standard adopted by the Company (indicated with the Sustainability Information included in the Report). CO_2 quantification is subject to inherent uncertainty for reasons such as incomplete scientific knowledge used to determine emissions factors and numerical data.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behavior. We apply International Standard on Quality Control 1, *Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Sustainability Information based on the procedures we have performed and the evidence we have obtained. We conducted our limited assurance engagement in accordance with the International Standard on Assurance Engagements ("ISAE") 3000, *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, issued by the International Auditing and Assurance Standards Board ("IAASB"), ISAE 3410, *Assurance Engagements on Greenhouse Gas Statements*, issued by the IAASB and *the Practical Guideline for the Assurance of Sustainability Information*, issued by the Japanese Association of Assurance Organizations for Sustainability Information.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records. These procedures also included the following:

- Evaluating whether the Company's methods for estimates are appropriate and had been consistently applied. However, our procedures did not include testing the data on which the estimates are based or reperforming the estimates.
- Performing interviews of responsible persons and inspecting documentary evidence to assess the completeness of the data, data collection methods, source data and relevant assumptions applicable to the sites.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had we performed a reasonable assurance engagement.

Limited Assurance Conclusion

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that the Sustainability Information is not prepared, in all material respects, in accordance with the calculation and reporting standard adopted by the Company.

The above represents a translation, for convenience only, of the original Independent Practitioner's Assurance report issued in the Japanese language.

Member of
Deloitte Touche Tohmatsu Limited

Corporate profile

Corporate profile

Company name: Tokyo Electron Limited

Address: Akasaka Biz Tower
3-1 Akasaka 5-chome, Minato-ku, Tokyo
107-6325, Japan

Established: November 11, 1963

Representative: Toshiki Kawai
Representative Director,
President & CEO

Main business: Semiconductor production equipment business,
flat panel display (FPD) production equipment business

Capital: 54,961 million yen

Number of employees: 14,079 (consolidated)
1,645 (non-consolidated)

Number of locations: Japan: 7 companies at 26 locations
Outside Japan: 23 companies at 52 locations
in 17 countries and regions
Worldwide total: 30 companies at 78 locations
in 18 countries and regions (consolidated)

(as of April 1, 2020)

Financial data

Earnings Release:

URL www.tel.com/ir/library/report/

Securities Report:

URL www.tel.co.jp/ir/library/fs/

Annual Report:

URL www.tel.com/ir/library/ar/

Tokyo Electron's logo

TEL™

Our logo was created as a symbol for Tokyo Electron (TEL)'s next stage of growth, based on our corporate philosophy and vision.

This simple design represents our reliability and the engaging presence we bring to a competitive industry. The green square at the center of the logo signifies the core of innovation supporting development in industry; the translucent blue expresses TEL's leading-edge advanced technology.

We contribute to the development of a dream-inspiring society through our leading-edge advanced technology and reliable service and support.