The widespread use of the Internet of Things (IoT), artificial intelligence (AI), and 5G telecommunications standards is making our society more data-driven than ever, constantly broadening the scope of application for semiconductors and flat panel displays (FPDs). Semiconductor and FPD production equipment offered by Tokyo Electron (TEL) provides the foundation for the information industry, and also serves as core technologies that support innovations and enable the evolution of wide-ranging electronic devices. Robust implementation of advanced information and communication technology (ICT) is essential in dispelling the impact of the coronavirus pandemic and building a stronger and more resilient society. That is why the importance of semiconductors and visualization devices such as displays are now greater than ever.

In this business environment, the global semiconductor market was valued at $412.3 billion in 2019. This is expected to surpass $1 trillion in 2030, however, which implies that a whole new market equivalent to or larger than the current market size will emerge in the next decade. The IoT was instrumental in popularizing the term big data, but we have yet to see how enormous its true potential can be. Upholding the pledge to deliver the Best Products and Best Service, TEL is determined to contribute to the development of both the industry and dream-inspiring society. We appreciate your continued support for TEL and look forward to sharing a brighter future with you.

Toshiki Kawai
Representative Director, President & CEO

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

Vision
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.

Management Policies
The Management Policies highlight the management values that Tokyo Electron regards as essential to achieving the objectives defined in its Corporate Philosophy. They express the logic that underscores our eight general rules of management.

- **Profit is Essential**
  The TEL Group aims to contribute to the development of society and industry and to the enhancement of corporate value while continually pursuing profit.

- **Growth Philosophy**
  We will tirelessly take on the challenges of technological innovation to achieve continuous growth through business expansion and market creation.

- **Employees**
  The TEL Group’s employees both create and fulfill company values, performing their work with creativity, a sense of responsibility, and a commitment to teamwork.

- **Safety, Health, and the Environment**
  The TEL Group gives the highest consideration to the safety and health of every person connected with our business activities as well as to the global environment.

- **Scope of Business**
  The TEL Group leads markets by providing high-quality products in leading-edge technology fields with a focus on electronics.

- **Quality and Service**
  The TEL Group strives to understand the true needs to achieve customer satisfaction and secure customer trust while continuously improving quality and service.

- **Organizations**
  The TEL Group builds optimal organizations that maximize corporate value in which all employees can realize their full potential.

- **Social Responsibility**
  Feeling a strong sense of corporate social responsibility, we strive to gain the esteem of society and to be a company where our employees are proud to work.
The History of TEL and the Evolution of Semiconductor Technology

For approximately half a century, TEL has tirelessly pursued the newest technologies and innovations. The growth of TEL has always been in sync with the history of the semiconductor industry.

Consolidated Sales of TEL (Billion yen)

- 1963: Tokyo Electron Laboratories, Inc. is established in Akasaka, Minato-ku with capital of five million yen invested by Tokyo Broadcasting System, Inc.
- 1964: TEL acquires importing and selling rights for diffusion furnace manufactured by Thermco Products Corp. (U.S.) and begins sales.
- 1972: Pan Electron Inc. begins import and sales of microprocessors as an agent of Intel Corp.
- 1976: TEL-Thermco Engineering Co., Ltd. develops the world's first high-pressure oxidation furnace.
- 1978: Tokyo Electron Laboratories, Inc. renamed Tokyo Electron Ltd.
- 1983: Ranked 4th in the Nikkei Excellent Companies Ranking.
- 1984: Listed on the First Section of the Tokyo Stock Exchange.
- 1986: Export of semiconductor production equipment begins.
- 1990: TEL makes a major move into development and marketing of FPD production equipment.
- 1991: Top sales among semiconductor production equipment manufacturers attained for three consecutive years.
- 1994: The first year for globalization. Begins establishing the structures for direct sales & technical support in Europe and the U.S.
- 1999: Category of industry on the Tokyo Stock Exchange First Section changed from “Wholesale Trade” to “Electrical Appliances”.
- 2001: Participation in Albany NanoTech Program for industry-academia joint research.
- 2002: Participation in Albany NanoTech Program for industry-academia joint research promotion and support.
- 2004: TEL receives Tokyo Stock Exchange’s Tenth Annual Award for Excellence in Disclosure for the second time since 1999.
- 2005: Overall ranking No. 2 in the FY2007 Thomson Ranking (ranking of excellent companies).
- 2006: TEL receives Prime Minister’s Award for the second time since 2003.
- 2007: TEL is chosen for the Dow Jones Sustainability Asia Pacific Index for two years in succession.
- 2008: TEL cited as Thomson Reuters’ (Current Refinitiv) “Top 100 Global Tech Leaders”.
- 2010: Tetsuro Higashi (Former Chairman, President & CEO) receives the Order of the Rising Sun, Gold and Silver Star.
- 2011: TEL is chosen for the Dow Jones Sustainability Asia Pacific Index for two years in succession.
- 2012: TEL is chosen for the Dow Jones Sustainability Asia Pacific Index for two years in succession.
- 2013: TEL receives Tokyo Stock Exchange’s 50th anniversary Remembering Award.
- 2014: TEL becomes a serious player in the swiftly growing global market. TEL’s overseas sales exceeded domestic sales, illustrating its transformation towards becoming the new TEL.
- 2015: TEL is chosen for the Dow Jones Sustainability Asia Pacific Index for two years in succession.
- 2017: TEL is chosen for the Dow Jones Sustainability Asia Pacific Index for two years in succession.
- 2018: TEL cited as Thomson Reuters’ (Current Refinitiv) “Top 100 Global Tech Leaders”.
- 2019: Formed a partnership with BRC.
- 2020: Toshiaki Higashi (former Chairman, President & CEO) receives the Order of the Rising Sun, Gold and Silver Star.
- 2021: TEL cited as Thomson Reuters’ (Current Refinitiv) “Top 100 Global Tech Leaders”.
- 2022: TEL is chosen for the Dow Jones Sustainability Asia Pacific Index for two years in succession.
- 2023: TEL receives Prime Minister’s Award for the second time since 2003.

In the 1990s, TEL focused on satisfying its domestic group network by setting up subsidiaries to overseas its service and manufacturing operations. At the same time, overseas subsidiaries were set up around the world to build a direct sales and technical support network. TEL is a serious player in the swiftly growing global market, TEL’s overseas sales exceeded domestic sales, illustrating its transformation into a global company.
An autonomous driving system requires intelligent control of the steering wheel, accelerator, and brakes. This technology for ensuring a safe and enjoyable ride depends largely on semiconductors.

Production processes are becoming thoroughly automated as we enter the age of IoT. Semiconductors are crucial for maintaining optimal control of the industrial machinery.

Some wearable terminals can measure and record the users’ health data on the fly. These devices rely heavily on electronic technologies and semiconductors. The collected data can also be used to assist in the advancement of healthcare.

Ever since the invention of the transistor, the demand for semiconductor-based products has grown steadily, giving rise to a wide range of electronic devices. Semiconductor applications are set to expand further, requiring ever higher levels of chip performance. TEL is investing some 10% of its revenues into R&D, not only to strengthen its existing areas of expertise but also to aggressively cultivate new business fields.

From Everyday Items to Equipment in Space
Semiconductor chips are used everywhere today, from smartphones that we regularly carry around to satellites that orbit high above the Earth. Their use is not limited to digital devices but extends to diverse everyday applications, including cars, industrial machinery, home appliances and public infrastructures.

Evolution in Step with the Semiconductor Market
As we enter the age of IoT, semiconductors with far higher processing power than ever before will be needed in huge quantities. As a supplier of equipment that produces semiconductors, TEL is evolving in step with the advancement of the semiconductor market.

Investing in Advanced Technologies for the Next Generation
Ever since the invention of the transistor, the demand for semiconductor-based products has grown steadily, giving rise to a wide range of electronic devices. Semiconductor applications are set to expand further, requiring ever higher levels of chip performance. TEL is investing some 10% of its revenues into R&D, not only to strengthen its existing areas of expertise but also to aggressively cultivate new business fields.
TEL has several principal development locations in Japan, which are cooperating with a network of global R&D bases, consortia, and research institutes to maintain a steady flow of innovations.

**Development and Manufacture**

Create a leading-edge

Semiconductor and flat panel display technologies hold the key to tomorrow’s social infrastructure, which explains why they are entering a new phase of growth. Ensuring sustainable business growth under these circumstances requires timely delivery of competitive products with high added value. Accordingly, TEL is focusing on developing advanced next generation products powered by breakthrough technologies.

**TEL’s Global R&D Bases**

TEL has several principal development locations in Japan, which are cooperating with a network of global R&D bases, consortia, and research institutes to maintain a steady flow of innovations.

- **TEL R&D Base**
  - Tokyo Electron Technology Solutions
  - Tokyo Electron Kyushu
  - Tokyo Electron Miyagi
  - TEL Technology Center, Americas
  - TEL Technology Center Korea
  - TEL Technology Center Taiwan

- **Consortium**
  - CENIM (France)
  - IMEC (Belgium)
  - CNIB (U.S.)

**COLUMNS**

**Reliable Quality and Support**

In product development processes, TEL places an emphasis on the “Shi/f_t-Le/f_t” practice, which involves investing resources (technologies, talents, spending, etc.) as early in the development cycle as possible. Assiduously identifying risks and taking countermeasures early in the product design project has proven effective in reducing/preventing troubles, resulting in consistently high product quality.

Once the equipment has been delivered and installed, TEL’s proprietary information network remotely monitors and analyzes the equipment data, enabling predictive maintenance and quickly providing suitable support services tailored to each customer’s needs.

**To Deliver the Best Products and Best Service**

As we enter the age of IoT, semiconductors and flat panel displays are finding broader applications than ever before, while customers’ requirements for production equipment are becoming even more diverse and complex. That is why TEL is not only committed to developing innovative technologies, but also to delivering reliable support services. By contributing to the customers’ value creation processes, TEL seeks to become their irreplaceable strategic partner.

**TEL’s Business Operations**

R&D >> Manufacturing >> Sales >> Support

**Sales and Support**

Provide optimal products

TEL provides optimal products to customers by discussing advanced technology and deciding specifications. We also perform repairs and maintenance for semiconductor production equipment installed at customers’ sites and propose and perform functional enhancements and field upgrades to extend the service life of the equipment. Anticipating the ever-diversifying industry trends and customer needs, TEL offers global support services using its network of field engineers.

**Field Solutions**

Provide services that meet various needs

TEL provides high-quality services to its worldwide customers, ensuring the products address their needs to the fullest extent. With an installed base of over 72,000 equipments at customer sites around the world, TEL offers total support for its products throughout their lifecycle, drawing on the specialized know-how and experience of its service engineers.

**Services**

- Procurement and support of refurbished equipment
- Upgrading of installed equipment
- Service life extension support for equipment that has been out of production for at least eight years
- Supplying proprietary spare parts and providing parts repair services
- Remote equipment monitoring and optimization service (TELmetrics™)
Silicon nitride film

Assembly and Test process (Back-end)

The surface of semiconductors is intricately

Metal film

PRODUCTS

Semiconductor Manufacturing Process

Innovative Technologies and Unique Initiatives

Optimizing Manufacturing on a Global Scale with

System

Thermal

Deposition System Plasma Etch System Coater/Developer Single Wafer Cleaning system CVD* etch, etc.*

Testing

CMOS image sensor Photosensitive mask

Logic

Data processing

3D NAND Storage Memory

FPD Production Equipment

Flat panel displays (FPDs) are ubiquitous today as they are commonly used in PCs, flat screen TVs, and smartphones. Having gained considerable manufacturing experience through the semiconductor production equipment business,

TEL has produced to date has satisfied many FPD

manufactures semiconductor production equipment covering all major chip-making processes, and supplies the equipment to semiconductor manufacturers around the world along with excellent support services. Many of our products command top positions in the global market.

FPD Production Equipment

What is the Nano-level World?

The surface of semiconductors is intricately structured with feature dimensions typically in the order of tens to hundreds of nanometers. This is a scale comparable to that of viruses and the diameter of the DNA double helix.

As nanotechnology-enabled semiconductor production equipment breaks the feature size of semiconductors, it became possible to make mobile devices such as laptops and smartphones thinner, faster, and lighter.

More about Nanoscience at:

www.tel.com/museum/


column

10µm

2 nm

22 nm

10 nm

100 nm

DNA

Virus

Nanometer World?
TEL operates its business in countries and regions across the world. The company is supporting the global electronics industry with its expansive business presence in Japan, the U.S., Asia, and Europe.

**Business Operations Spanning the World**

TEL establishes a direct sales/support structure for Europe and the U.S. at the same time.

Tokyo Electron Europe, the first TEL group company in Europe, began with several employees assigned from Japan to a British town of Crawley. They recruited local engineers and opened offices in all over Europe one after another. TEL’s mandate to “be close to customers and swiftly respond to their requirements” firmly guided its business abroad, and before long its overseas operations expanded to other countries in Asia.

**World Top 10 SPE Makers CY2019 Revenue Ranking**

<table>
<thead>
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<th>Rank</th>
<th>Company</th>
<th>Revenue (Billions of US$)</th>
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</tbody>
</table>

**Net Sales by Division (Consolidated)**

- Semiconductor Production Equipment: 1,060.9
- FPD Production Equipment: 66.0

**Net Sales by Region (Consolidated)**

- Japan: 18.3%
- Korea: 13.7%
- China: 22.1%
- North America: 18.3%
- Europe: 5.2%
- Taiwan: 23.2%
- S.E. Asia, Others: 3.1%

**Close to Customers**

In 1994, TEL established a direct sales/support structure for Europe and the U.S. at the same time. Tokyo Electron Europe, the first TEL group company in Europe, began with several employees assigned from Japan to a British town of Crawley. They recruited local engineers and opened offices in all over Europe one after another. TEL’s mandate to “be close to customers and swiftly respond to their requirements” firmly guided its business abroad, and before long its overseas operations expanded to other countries in Asia.
TEL’s Sustainability Programs for the Continued Advancement of Society

TEL’s CSR Policy
TEL not only pursues sustainable operations from the viewpoint of corporate governance, compliance, and ethics, but also creates value through its products and services, and engages in corporate social responsibility (CSR) activities to become a part of the solution to the social problems.

Medium-term Environmental Goals for 2030
Under the slogan “Technology for Eco Life,” TEL assesses the environmental impact of its entire value chain and conducts business in a manner that minimizes harmful effects on the environment. For a business entity to increase its value not only in the short term but also in medium to long term, it is essential to develop resilience to global environmental changes by examining possible future scenarios. All of us at TEL is working in concert to reduce the ecological burden arising from our products and business offices, while also striving to develop innovative manufacturing technologies that help reduce the power consumption of electronic products.

Initiatives for ESG

Environment
As it is vital for a business to be aware of the planet-wide environmental impact of its activities, TEL is committed to reducing the output of CO2 throughout its value chain. TEL is pursuing product designs that use less energy and is encouraging a further reduction in the consumption of power, water, and chemical substances at its offices and factories.

Society
TEL is making every effort to provide a good working environment for its employees. Examples include the promotion of the employee’s well-being, provision of employee-friendly vacation and leave of absence programs, and promoting awareness and respect for human rights. These measures can help elevate employee morale and bring harmony to the workplace.

Governance
To reinforce environmental, social, and governance (ESG) activities and achieve sustainable growth, we believe it is essential to build an effective governance mechanism. TEL is encouraging lively discussions on this subject at the board meetings and has been regularly upgrading its global compliance management program.

Continue to be a company trusted by all stakeholders
Many rating agencies have highly acclaimed TEL’s corporate social responsibility (CSR) activities throughout the world. TEL has been chosen as a constituent of several major global ESG investment indices.

TEL FOR GOOD™ is a brand name for the company’s social contribution activities. The four focus areas of these activities are innovation and technology, education, environment, and community involvement. TEL hosts various social contribution events and programs, donations, and volunteer activities around the world under this brand.