Inclusive Workplace

Focus 5

An Attractive Employer

Employees are the most important asset of TSMC. We deeply instill a people-oriented culture and value the mutual commitment between the Company and our employees, building a friendly workplace exceeding domestic and international standards in safety, health, regulations, and human rights. TSMC aims to build a challenging work environment where learning never stops, and pursues the goal of becoming an employer that all employees can be truly proud of.

> 109.9 Billion (NT$)
Total compensation expenses for all employees exceeded NT$109.9 billion

5,087 People
Recruited 5,087 new employees globally and offered high quality jobs

0
Strengthened OHS control measures, with no reported cases of occupational diseases caused by chemical or physical exposure
## Talent Attraction and Retention

### Strategies & 2030 Goals

<table>
<thead>
<tr>
<th>Bolster Employee Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote and fulfill TSMC’s core values</td>
</tr>
<tr>
<td>Provide competitive compensation packages</td>
</tr>
<tr>
<td>Maintain a healthy turnover rate</td>
</tr>
</tbody>
</table>

- **Conduct an Employee Core Values Survey every two years to advocate core values**
  - Over 95% of employees are fully committed to their work
  - Over 95% of employees are willing to continue to work for TSMC in the next five years

- **Commitment to TSMC’s core values is listed as one of TSMC’s recruitment criteria. This requirement has been expanded to two TSMC fabs in China and applied to all job candidates**
  - Target: 100%

- **Continue to maintain a position in the 75th percentile among its industry peers in total compensation**

- **Total turnover shall be maintained at 5% to 10%**

- **Turnover for newly recruited employees within one year shall not exceed 10%**

### 2019 Achievements

- **Commitment to TSMC’s core values is listed as one of TSMC’s recruitment criteria. This requirement has been expanded to two TSMC fabs in China and applied to all job candidates**
  - Target: 100%

- **According to the compensation survey report, the total compensation of employees in TSMC facilities in Taiwan is above the 90th percentile comparing with its industrial peer groups, whereas the total compensation of employees in Overseas Organization is above the 75th percentile**
  - Total turnover stood at 4.9%
  - Turnover for newly recruited employees within one year of service stood at 13.4%
  - Target: less than 15%

### 2020 Targets

- **Conduct an Employee Core Values Survey to advocate core values**
  - Over 95% of employees are fully committed to their work
  - Over 95% of employees are willing to continue to work for TSMC in the next five years

- **Maintain total compensation above the 75th percentile among high-tech industry peers**

- **Total turnover shall be maintained at 5% to 10%**

- **Optimize training programs for new employees and facilitate their integration into TSMC’s corporate culture. Turnover for newly recruited employees within one year of service shall not exceed 13.5%**

### Strengthen Industry-academia Collaboration Through TSMC Campus Programs

- **Develop a series of campus programs to incubate over 5,000 undergraduate and graduate students worldwide, including comprehensive semiconductor programs on device/integration, process/module, and equipment engineering, internship, and contests**

- **In collaboration with National Tsing-Hua University, TSMC launched a semiconductor program and has attracted more than 200 students to enroll**
  - Target: **Exceeded**

- **Develop a series of campus programs to incubate over 2,000 undergraduate and graduate students worldwide, including comprehensive semiconductor programs on device/integration, process/module, and equipment engineering, internship, and contests**
In 2019, TSMC formulated its 2030 Goal for Inclusive Workplace: Talent Attraction and Retention. In the next decade, TSMC aims to maintain its status as one of the best employers and, through partnerships with academic institutions, cultivate new talents not only for its own growth but also for that of Taiwan’s semiconductor industry. To these ends, TSMC will continue to enhance employees’ commitment to the company’s core values and engage with emerging talents through partnerships, such as the TSMC Education Program, with academic institutions.

**Shared Visions and Values**

**Recruitment Criteria**

“Putting right people with shared visions and values in the right positions” has always been TSMC’s guideline for recruiting talents, designing compensation packages, managing employees’ performance, and developing training programs. All employees at TSMC are treated equally regardless of gender, religion, race, nationality or political affiliation. With shared vision, we work toward a common goal under a common commitment. With shared values, we abide by a common set of values and a unified code of conduct. By putting the right person into the right position, TSMC enables its employees to contribute to the company where they are most needed and allows employees to develop with the company.

To hire people with shared visions and values, TSMC prioritizes character and capability over professional skills when assessing candidates. Due to the Company’s expansion and business needs, TSMC also considers mobility as an important criterion. To this end, TSMC has developed a number of selection criteria, including integrity, resilience, initiative, and innovation. Candidates shall be evaluated by selection criteria assessment and interviews.

Responding to technological changes and the rise of a new generation of talent, TSMC recognizes that only through proactive measures in talent incubation, recruitment, and retention, can the Company tap into employees’ capabilities in R&D, manufacturing, and service, thereby sustain TSMC’s long-term competitive advantages in face of global competition and challenges. Furthermore, aiming to develop high quality talent for Taiwan’s semiconductor industry and enhance industry attraction, TSMC has cooperated with prestigious universities in Taiwan to design comprehensive semiconductor education program focusing on device/integration, process/module, and semiconductor equipment. Co-developed by TSMC and the university, the program combines theoretical lectures and practical training. In 2019, “TSMC-NTHU” Semiconductor Program was launched in partnership with National Tsing Hua University. In 2020, TSMC will continue to work with other universities, and has set up a goal to have over 5,000 undergraduate or graduate students worldwide to participate in TSMC’s industry-academia programs.

Note: For more information on TSMC’s partnership with universities, please refer to the “Innovation Management” section of this report.

**Workforce Structure**

In 2019, there were a total of 51,297 employees at TSMC, including 34,137 managers, professionals and administration staff, and the remaining 17,160 were technicians on the production lines. As the semiconductor industry is both knowledge and technology-intensive, over 80% of our managers and professionals hold a Master’s degree or higher.

Around 90% of TSMC’s employees are based in principal place of business, Taiwan, with the remaining 10% in subsidiaries in China, North America, Europe, Japan, South Korea, and other countries.

**Diversity and Inclusion at TSMC**

TSMC believes strongly in the value of a diverse workforce. Developing future semiconductor talents in an inclusive fashion allows the industry to unlock the full potential of the human resources available to the world. TSMC hires and promotes without regard to gender, religion, race, nationality, or political affiliation because we respect differences, and believe that equal employment opportunity strengthens our competitiveness.

In addition, TSMC believes the workforce should reflect society. Diversity among our management and employees gives us an advantage by enabling the Company to better understand all segments of society and the marketplace, and better address their needs and demands.
Global Workforce Structure

<table>
<thead>
<tr>
<th>Categories</th>
<th>Groups</th>
<th>Male</th>
<th>Female</th>
<th>Subtotal and Percentage by Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
<td>Group Percentage</td>
<td>Number</td>
</tr>
<tr>
<td></td>
<td>Managers</td>
<td>4,684</td>
<td>87.3</td>
<td>680</td>
</tr>
<tr>
<td></td>
<td>Professionals</td>
<td>19,950</td>
<td>81.7</td>
<td>4,466</td>
</tr>
<tr>
<td></td>
<td>Assistant Engineers/Clerical</td>
<td>3,556</td>
<td>81.6</td>
<td>801</td>
</tr>
<tr>
<td></td>
<td>Technicians</td>
<td>3,722</td>
<td>21.7</td>
<td>13,438</td>
</tr>
<tr>
<td>Location</td>
<td>Taiwan</td>
<td>28,708</td>
<td>62.4</td>
<td>17,313</td>
</tr>
<tr>
<td></td>
<td>Asia</td>
<td>2,127</td>
<td>57.3</td>
<td>1,586</td>
</tr>
<tr>
<td></td>
<td>North America</td>
<td>1,046</td>
<td>69.1</td>
<td>467</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td>31</td>
<td>62.0</td>
<td>19</td>
</tr>
<tr>
<td>Position</td>
<td>18 - 20</td>
<td>19</td>
<td>54.3</td>
<td>16</td>
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<tr>
<td>Age</td>
<td>21 - 30</td>
<td>8,097</td>
<td>65.8</td>
<td>4,207</td>
</tr>
<tr>
<td></td>
<td>31 - 40</td>
<td>15,541</td>
<td>63.3</td>
<td>9,003</td>
</tr>
<tr>
<td></td>
<td>41 - 50</td>
<td>6,586</td>
<td>55.7</td>
<td>5,235</td>
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<tr>
<td></td>
<td>51 - 60</td>
<td>1,523</td>
<td>63.7</td>
<td>869</td>
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<tr>
<td></td>
<td>60+</td>
<td>146</td>
<td>72.6</td>
<td>55</td>
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<tr>
<td>Education</td>
<td>Ph.D</td>
<td>2,114</td>
<td>96.7</td>
<td>217</td>
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<tr>
<td></td>
<td>Master’s</td>
<td>18,615</td>
<td>81.1</td>
<td>4,333</td>
</tr>
<tr>
<td></td>
<td>Bachelor’s</td>
<td>8,062</td>
<td>62.0</td>
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<tr>
<td></td>
<td>Other Higher Education</td>
<td>1,611</td>
<td>29.5</td>
<td>3,842</td>
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<tr>
<td></td>
<td>High School</td>
<td>1,510</td>
<td>20.0</td>
<td>6,058</td>
</tr>
<tr>
<td>Employment Type</td>
<td>Regular</td>
<td>31,908</td>
<td>62.2</td>
<td>19,381</td>
</tr>
<tr>
<td></td>
<td>Contractor</td>
<td>4</td>
<td>56.0</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>51,297</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Global Workforce Structure only includes regular employees and temporary employees expected to become regular employees. In addition to the two groups mentioned, TSMC employs 241 contract employees, who are not included in the figures listed in the Global Workforce Structure. Contract employees include employees with disabilities (221 individuals) and employees for special projects or short term support (20 individuals).

Female Workers

All employees at TSMC are treated equally regardless of their gender, religion, race, nationality, or political affiliation. Due to the characteristics of the semiconductor industry and Taiwan’s cultural environment, over 60% of our employees are male. Going into more specific details, over 80% of our managers, professionals, and assistants are male, and over 80% of technicians on the production lines are female. As TSMC’s fabs become increasingly automated, there is a declining need for production line operators, a group consisting mainly of female employees, which is leading to a gradual drop in the total percentage of female employees at TSMC.

Despite the decline in the percentage of female employees in recent years, TSMC’s female employees enjoy a similar promotion ratio with their male counterparts, at 0.97:1, an achievement facilitated by TSMC’s proactive efforts in recruitment and retention. Female section managers or above are generally promoted more than their male counterparts at a ratio of 1.14:1. In addition, at TSMC, male and female employees enjoy the same compensation system, which does not discriminate based on gender.

In 2020, TSMC will continue to support its female employees by adopting all possible measures to retain as many female employees as possible, and provide them with the opportunity to live up to their full potential and to make valuable contributions to TSMC and society.

Female Workers in TSMC

Note 1: Junior management positions include first-line managers; top management positions include Vice Presidents and higher, excluding Chairman, board of directors, and CEO.

Note 2: The figures were modified because junior-level and senior managers joined VisEra.

Note 3: In 2019, three senior managers (from the management team) retired (B.J. Woo, N.S. Tsai, and Irene Sun), two of whom are female, hence the drastic drop in the percentage of females.
TSMC Compensation Ratio by Gender

<table>
<thead>
<tr>
<th>Region/Subsidiary</th>
<th>Position</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taiwan</td>
<td>Managers</td>
<td>1</td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>Professionals</td>
<td>1</td>
<td>0.93</td>
</tr>
<tr>
<td></td>
<td>Assistant Eng./Clerical</td>
<td>1</td>
<td>0.97</td>
</tr>
<tr>
<td></td>
<td>Technicians</td>
<td>1</td>
<td>1.13</td>
</tr>
<tr>
<td>China</td>
<td>Managers</td>
<td>1</td>
<td>0.94</td>
</tr>
<tr>
<td></td>
<td>Professionals</td>
<td>1</td>
<td>0.89</td>
</tr>
<tr>
<td></td>
<td>Assistant Eng./Clerical</td>
<td>1</td>
<td>0.88</td>
</tr>
<tr>
<td></td>
<td>Technicians</td>
<td>1</td>
<td>1.05</td>
</tr>
<tr>
<td>North America, Europe, Japan, and South Korea</td>
<td>Managers</td>
<td>1</td>
<td>0.95</td>
</tr>
<tr>
<td></td>
<td>Professionals</td>
<td>1</td>
<td>0.79</td>
</tr>
<tr>
<td>VisEra</td>
<td>Managers</td>
<td>1</td>
<td>0.72</td>
</tr>
<tr>
<td></td>
<td>Professionals</td>
<td>1</td>
<td>0.86</td>
</tr>
<tr>
<td></td>
<td>Assistant Eng./Clerical</td>
<td>1</td>
<td>1.03</td>
</tr>
<tr>
<td></td>
<td>Technicians</td>
<td>1</td>
<td>1.13</td>
</tr>
<tr>
<td>WaferTech</td>
<td>Managers</td>
<td>1</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>Professionals</td>
<td>1</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>Assistant Eng./Clerical</td>
<td>1</td>
<td>0.91</td>
</tr>
<tr>
<td></td>
<td>Technicians</td>
<td>1</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Talent Recruitment

Around 90% of employees at TSMC are based in Taiwan, while overseas employees are mostly based in Asia, accounting for 7.2% of total employees. Recruitments at global branches mainly focus on hiring local residents. Due to demand for research and development talent and a diversified talent pool, Taiwan has been targeting both new graduates and overseas professionals. TSMC believes that recruiting professional talent from around the world will help enhance the Company’s growth in the long-term.

Campus Recruitment

TSMC’s core values, corporate culture, and world leading business performance are highly recognized by residents in Taiwan, so TSMC has been voted as the best employer for domestic new graduates. The Company vigorously recruits talent with shared vision and values via our official website, campus recruitment, intern programs, JDP (Joint Development Program), RDSS (Research Development Substitute Services), social media, and more. In 2019, TSMC recruited 5,087 new employees, and 76.1% of them are younger generation under 30 years old.

Internship Program is a major annual program in Taiwan, and TSMC North America, TSMC (China), and TSMC (Nanjing) also offer internship opportunities in recent years. In addition to recruiting intern candidates through referrals by professors, campus department offices, and employees, as well as promotions through social media and face-to-face campus recruitment fairs. Through internship program, the Company is able to early engage students in semiconductor research and manufacturing, and inspire young talent to join the semiconductor industry.

In 2019, a total of 240 interns were recruited in Taiwan. Among them, 69 interns were female, accounting for 29% of all interns. After the internship, 92 interns received advance offers after evaluation, accounting for 38% of total participants. Among them, 23% were female. The percentage of female students participating in the internship program, receiving advance offers, or joining TSMC are higher than the current percentage of female professionals at TSMC (18.3%). This shows that TSMC is committed to achieving gender equality in the workplace. In 2019, a total of 75 interns were recruited by TSMC’s overseas subsidiaries and 9 of them were female.

New Employees

Unit: people

<table>
<thead>
<tr>
<th>Year</th>
<th>Global</th>
<th>TSMC Taiwan Facilities and VisEra</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>4,040</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>3,686</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>3,663</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td>2,323</td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td>5,087</td>
<td></td>
</tr>
</tbody>
</table>

Interns Receiving Advance Offers or Hired

Unit: people

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Interns</th>
<th>Female Interns</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>278</td>
<td>79</td>
</tr>
<tr>
<td>2018</td>
<td>259</td>
<td>67</td>
</tr>
<tr>
<td>2019</td>
<td>240</td>
<td>69</td>
</tr>
</tbody>
</table>

Note: Data included TSMC Taiwan Facilities and VisEra
Through TSMC’s internship program, students are able to familiarize themselves with the industry in advance. When they go back to campus, they could register for semiconductor-related courses, and are likely to better adapt to the industry in the future. As of 2019, an average of 40% of the interns from 2017 and 2018 have joined TSMC either through advance offers or regular recruitment, indicating that internship recruitment program is effective in attracting talent for TSMC at an early stage.

**Case Study**

2019 Large-scale Hiring Plan Attracts a Considerable Amount of Talent to Seize TSMC’s Quality Job Offers

In July of 2019, TSMC fabs in Taiwan began mass recruitment for new positions in response to business growth, technology development, and advanced fab expansion. By the end of the year, approximately 3,500 people were recruited, including fresh graduates and experienced professionals. In comparison with recent years, 3,500 new hires is almost equivalent to the number of people recruited throughout the entire year. To achieve its recruitment goal, TSMC not only held interviews and recruitment events on weekdays but also organized six large scale job fairs on weekends in its Hsinchu, Taichung, and Tainan sites, allowing experienced job seekers to attend interviews at convenient time and locations. Furthermore, special bonus was provided as incentives to encourage newcomers to come onboard as early as possible.

TSMC considers its employees as its most important assets. As it is known that TSMC not only provides challenging job and diversified career path, but also offers employees highly competitive compensation packages and benefits, the Company is able to attract talent with shared value in a timely manner.

During large-scale recruitment period, TSMC firmly adhered to its principle of “Putting right people with shared visions and values in right position,” and assess candidates by selection criteria and interview. At the same time, TSMC provides orientation, training programs, buddy program and more to help newcomers to adapt to work environment and role faster. These practices encourage employees to stay with TSMC to push the envelope of technology together.

From the questions asked by HR and hiring managers, I felt respect. They started by asking questions related to my character, past experience, my mindset, and how I deal with things, instead of throwing me difficult questions that made me feel incompetent.

A candidate at the weekend recruitment event in Hsinchu on September 1, 2019
Disabled Workers Hired in Taiwan

According to Article 38 of the People with Disabilities Rights Protection Act in Taiwan, the number of disabled people with the capability to work shall be no less than 1% of a company’s total employees, and when a company employs a person with severe disabilities, that person shall be calculated as two. In addition, companies that do not employ a sufficient amount of people with disabilities shall periodically pay subsidies based on the deficient amount to the Disabled Employment Funds. The amount of the subsidies is based on the deficient amount of employed disabled workers multiplied by monthly basic wage.

In line with the government’s policies and regulations, TSMC endeavored to provide job opportunities to those with disabilities. In 2019, the Company continuously keep its partnership program with numerous universities in Taiwan to provide high quality working opportunities for disabled university students or graduates. Aside from regular openings, TSMC also developed suitable job positions such as “Campus Recruitment Representatives” for university and graduate students with disabilities.

In 2019, TSMC’s fabs in Taiwan employed a total of 315 new employees with mild or moderate disabilities, and 79 with severe disabilities, with the weighted ratio reaching 1% of total employees. In 2019, VisEra also employed three disabled individuals as full-time regular employees. However, due to the nature of available job vacancies, VisEra received a dearth of suitable applicants, leading to its failure to meet the 1% requirement, and has paid subsidies according to legal requirements. VisEra will continue to open vacancies for people with disabilities and attract more suitable candidates to apply.

Fulfill Internal Transfer Policy

To help employees plan on their career paths, TSMC is dedicated to enhancing the transparency of internal job opportunities, thereby encouraging internal transfers, allowing the right people to gravitate toward the right positions, and reducing the turnover rate. In 2019, TSMC achieved 100% internal transfer completion rate, and over 50% of vacancies were filled through internal transfers. Both figures have reached the annual target.
Employee Turnover

To ensure talent mobility and long-term growth, TSMC firmly believes that a healthy employee turnover rate should be between 5% to 10%, which has thus become the company’s long-term goal. In 2019, TSMC’s employee turnover rate was 4.9%, slightly lower than what TSMC believes to be a healthy turnover rate. Fortunately, as the company continues to grow, it is joined by new employees, who play important roles in diversifying and invigorating the company.

Compensation and Benefits

Competitive Compensation Packages

TSMC provides competitive compensation packages to attract and retain the best talent, and to reward employees’ performance and encourage their long-term contribution, which include base salary, allowance, employees’ cash bonus and profit sharing. The total compensation of an employee is determined based on individual expertise, job responsibility, performance, commitment to long-term contribution, and the Company’s operational achievement.

Salary Raise

- In order to maintain the competitiveness of our compensation, TSMC appropriately adjusts employees’ salaries annually, taking into consideration of the results of global salary surveys, market salary scales, and economic indices.
- In April 2019, TSMC conducted salary raises for employees in Taiwan and overseas subsidiaries. The salary increase rate was 3%-5% for employees in Taiwan, 7%-8% for employees in China, and 3%-5% for employees in other regions.
- In addition to the salary raise mentioned above, VisEra, due to the different nature of the industry it belongs to and the need to attract valuable talents, raised the starting salary for newly recruited employees with no prior work experience in 2019. To ensure that its compensation remains competitive in the labor market, the company also announced a structural salary raise in average 3% for existing employees.

Bonus

- The employee incentive programs take into consideration of TSMC’s financial and operational performance, future development and the operational performance of each subsidiary, with linkage to employee’s job responsibilities and performance. The programs are implemented with short-term and long-term incentive schemes according to local industry practices.
- The incentive program of TSMC fabs in Taiwan is implemented over a period of two years. Cash bonuses are paid quarterly to provide timely incentive, and profit sharing is paid annually to encourage long-term service and continuous contribution. The incentive programs of overseas regions are either by annual cash bonus or by 1 to 3 years of long-term scheme.
- In 2019, TSMC employees’ compensation and benefits which include salary, allowances, cash bonus, profit sharing, pensions and other benefits, totaled NT$109.9 billion.
- In 2019, the median of global employees’ annual compensation (excluding pensions and benefits) was about NT$1.63 million, and the ratio between the total annual compensation of the CEO and the median employee compensation was about 180:1. Considering the differences in compensation structure across countries, the data of median annual compensation is based on the actual amount paid to fulltime employees with full-year seniority.
With the continuous growth of the Company’s revenue and profit, the expenses of overall compensation and benefits for employees provided by TSMC fabs in Taiwan increased from around NT$91.6 billion to NT$109.9 billion during the years from 2015 to 2019, and the average annual compensation and benefits per employee increased from NT$2.02 million to NT$2.14 million.

TSMC’s revenue increased and profit decreased slightly in 2019. As a result, around NT$46.3 billion of cash bonuses and profit sharing were granted to TSMC fabs in Taiwan, slightly lower than 2018. The total compensation of a fresh engineer with a master degree is about 31 months of base salary, including 12-month base salary, 2-month year-end bonus, as well as approximately 17 months of cash bonuses and profit sharing. The average total compensation of direct labor is about 26 months of base salary, and the average monthly salary is three times higher than Taiwan’s minimum wage. TSMC’s total compensation for employees outperforms our industry peers.

In addition, in accordance with the law regulated by the Taiwan Stock Exchange, listed companies in Taiwan are required to disclose the number, the average compensation and the median compensation of full-time employees in non-executive positions, and the difference comparing to the previous year. The statistics are calculated in accordance with the regulations of the Taiwan Stock Exchange, which excludes executive officers and employees eligible for exemption. For those not employed with the Company for the entire year, the data is prorated. And the profit sharing amount is at profit-year basis therefore part of the compensation data is projected.

Benefits that Are Better Than Statutory Regulations

To encourage employees in making contributions to the company’s long-term development, TSMC offers employee benefits that are better than the statutory requirements and regulations, including holidays, insurance, pensions, financial assistance for emergencies, subsidies for marriage/childbirth/funerals, and discounts in designated shops. Furthermore, all TSMC facilities are equipped with 24-hour health centers, where healthcare management professionals and appointed on-site physicians provide quality services beyond those required by legal statutes. The centers work closely with partners such as hospitals and Hsinchu Lifeline to offer comprehensive care for employees’ physical and mental well-being.

Parental Benefits

To provide sufficient support in their life and work, TSMC offers employees parental leaves in accordance with local laws and regulations, sets up four kindergartens for fabs in Taiwan, and provides a well-organized leave management system. Employees have flexibility in making use of their leaves to take care of their children. When facing military service or major injuries which require a long period of time to heal, employees also can apply for unpaid leaves, and then apply for reinstatement after the expiration of the period, to fulfill both individual and family needs.

In 2019, a total of 582 employees in TSMC’s Taiwan facilities and VisEra applied for unpaid parental leaves,

### Benefits that Are Better Than Statutory Regulations

<table>
<thead>
<tr>
<th>Item</th>
<th>Labor Law</th>
<th>TSMC Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Holidays</td>
<td>National holidays per year</td>
<td>National holidays and 7 additional memorial days</td>
</tr>
<tr>
<td>Annual Leave</td>
<td>3 days for new hires with more than 6 months and less than one year of employment</td>
<td>In order to take care of newly hired employees, 1 day annual leave for every 2 months of service in the first year</td>
</tr>
<tr>
<td>Sick Leave</td>
<td>38 days of half-paid sick leave per year</td>
<td>120 hours fully-paid and 120 hours half-paid sick leave per year</td>
</tr>
<tr>
<td>Personal-affairs Leave</td>
<td>14 days of personal-affairs leave per year</td>
<td>In addition to personal affairs leave, employees are entitled to 90 days of special personal leave with approval by authorized supervisors if they have important personal affairs</td>
</tr>
<tr>
<td>Insurance Plan</td>
<td>Employee shall be covered by the Labor and National Health Insurance from the first day on board</td>
<td>In addition to the Labor Insurance and National Health Insurance, TSMC provides comprehensive group insurance plans to employees free of charge. Coverage includes life insurance, accident insurance, hospital insurance, cancer insurance, and business travel insurance. Besides, employees have the flexibility to participate in group insurance plans for their families at lower price</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The group insurance coverage is extended free of charge to employees on unpaid leave for purposes identified by labor law</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The group insurance plans that VisEra provides is somewhat different from those mentioned above. VisEra provides group insurance for employee’s family free of charge, and group insurance for six months free of charge to employees on unpaid leave for purposes identified by labor law</td>
</tr>
<tr>
<td>Nursing Staff</td>
<td>57 staff in accordance to the number of company employees</td>
<td>In addition to meeting the statutory standards, TSMC partners with hospitals to assign 50 nursing staff to provide TSMC employees with emergency care and health management services</td>
</tr>
<tr>
<td>Health Examination</td>
<td>Depending on age:</td>
<td>Once a year for employees above age of 65</td>
</tr>
<tr>
<td></td>
<td>Once every five years for employees between 40 to 64</td>
<td>Once a year for all ages</td>
</tr>
<tr>
<td></td>
<td>Once every five years for employees under 40</td>
<td></td>
</tr>
<tr>
<td>Counseling Services</td>
<td>None</td>
<td>Free psychological, legal, or financial counseling services</td>
</tr>
</tbody>
</table>

**Average and Median Compensation**

<table>
<thead>
<tr>
<th>Item</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Compensation</td>
<td>2.009</td>
<td>1.981</td>
</tr>
<tr>
<td>Median Compensation</td>
<td>1.648</td>
<td>1.596</td>
</tr>
</tbody>
</table>

**Total Number of Employees**

<table>
<thead>
<tr>
<th>Item</th>
<th>Up by</th>
<th>Down by</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Employees</td>
<td>824</td>
<td>28,000</td>
</tr>
</tbody>
</table>

Unit: NT$ million

TSMC supported its employees in fulfilling their family needs through providing parental benefits.
and a total of 505 employees were scheduled to return from unpaid parental leaves, of which 398 employees returned either as scheduled or ahead of schedule, leading to a return rate of 78.8%. The retention rate, on the other hand, was 77.9%, since 345 out of 443 employees who resumed duty in 2018 were still in service by the end of 2019. Such a high retention rate shows that TSMC provides effective support for employees who return from unpaid leaves.

In addition, the number of TSMC employees aged between 20 and 64 in Taiwan in 2019 accounted for 0.29% of Taiwan’s population of the same age group. Meanwhile, the number of employees’ newborns was 2,531, which was 1.4% of the total number of newborns in Taiwan. This is all thanks to a positive result achieved from TSMC’s high-quality benefits system.

Newborn Babies in TSMC/ in Taiwan

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>1.3</td>
<td>1.3</td>
</tr>
<tr>
<td>2016</td>
<td>1.4</td>
<td>1.5</td>
</tr>
<tr>
<td>2017</td>
<td>1.4</td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Data included Taiwan facilities and VisEra

Effective Time Management for Work-life Balance

To help employees have balance between work and life, TSMC enforces a legally compliant work hour management. Through training, advocacy, work hour management system for managers, and warning SMS or emails to employees who stay at company for unusually long hours, such measures may help employees work more efficiently and are thereby conducive to employees maintaining a work-life balance.

Employees on Unpaid Parental Leave in TSMC’s Taiwan Facilities and VisEra

<table>
<thead>
<tr>
<th>Return rate</th>
<th>78.8% (398 / 505)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>81.0%</td>
</tr>
<tr>
<td>Female</td>
<td>78.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Retention rate</th>
<th>77.9% (345/ 443)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>77.3%</td>
</tr>
<tr>
<td>Female</td>
<td>78.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Application rate</th>
<th>7.6% (582/7,677)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>2.3%</td>
</tr>
<tr>
<td>Female</td>
<td>19.1%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employees qualified for parental leave in 2019</th>
<th>700 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>5,270 people</td>
</tr>
<tr>
<td>Female</td>
<td>2,407 people</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employees applied for parental leave in 2019</th>
<th>436 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>123 people</td>
</tr>
<tr>
<td>Female</td>
<td>459 people</td>
</tr>
</tbody>
</table>
Solid Pension System

TSMC’s employee pension system includes the Defined Benefit Plan under the Taiwan Labor Standards Act, the Defined Contribution Plan under the Taiwan Labor Pension Act, as well as the regulations of the labor law in overseas regions. In addition to statutory contributions, we invite professional accountants and consultants to conduct precise calculations of our company’s pension fund, so as to assure sufficient funding for employee pension payments in the future.

Rewarding Excellence

TSMC recognizes and encourages employee performance through performance management, profit sharing bonus system, development system, and promotion system. For outstanding technical talents, TSMC provides a dual career ladder system as an appropriate evaluation and recognition approach. For entry level employees, TSMC annually holds Excellent Labor Awards and invites the families of awardees to join the ceremony and banquet. In order to appreciate the commitment and contribution of senior employees to the Company, TSMC also provides service awards and retirement acknowledgments.

In addition, TSMC encourages employees to compete for distinguished talent awards offered outside of the company. In 2019, a number of TSMC employees received national awards, including the Model Labor Award of each Science Park, Outstanding Engineer Award, Excellent Young Engineer Award, and National Manager Excellence Award.

Pension Allocation and Preparation

TSMC’s Practices

- TSMC provides a defined benefits plan based on an employee’s length of service and average monthly salary for the six-month period prior to retirement under the Labor Standards Act.
- The money was administered by the Labor Pension Fund Supervisory Committee and deposited in the Committee’s name in the Bank of Taiwan.
- TSMC contributes an amount equal to 2% of salaries paid each month and VisEra contributes a fixed amount to the pension fund.
- The fair value of TSMC’s planned assets in Taiwan was NT$4,301,594,000 at the end of 2019. In accordance with the above provisions, the amount of recognized expenses of TSMC in 2019 was NT$259,596,000. The amount of accrued pension liabilities to be contributed in accordance with the law was NT$9,182,496,000 at the end of 2019.
- VisEra’s pension reserve amount was NT$1,854,199.

Preparation in 2019

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- VisEra’s pension reserve amount was NT$1,854,199.
Employee Commitment

TSMC’s four core values of integrity, commitment, innovation, and customer trust were defined since Founder Dr. Morris Chang established the company. Today, Chairman Mark Liu and Chief Executive Officer C.C. Wei carry on the legacy by requiring all employees to serve with the four core values of TSMC in mind. Through interactive websites, microfilms, employee-made films, conferences, lectures, and internal journalism, TSMC’s leadership continuously engages with managers and employees to communicate the company’s vision, core values, and business philosophy as part of efforts to consolidate corporate culture, and deepen mutual commitment between the company and its employees.

To monitor employees’ commitment to TSMC’s core values and to the company, TSMC conducts biennial surveys on how employees perceive the company’s core values, covering 95% of all employees at TSMC and its subsidiaries, including TSMC’s Taiwan facilities, TSMC (China), TSMC (Nanjing), TSMC North America, TSMC Canada, TSMC Europe BV, TSMC Japan, and TSMC Korea. WaferTech and VisEra are not included in the survey due to their different backgrounds.

The results of the employee opinion survey on core values conducted in 2018 showed an overall average significant improvement compared with that two years ago. In terms of employee engagement, among the two questions in the "commitment" section, 98% of the staff expressed their willingness to devote themselves to work and make the Company better. 96% of the staff expressed their willingness to grow with the company and show their expertise in the next five years. The results of the above two questions exceeded the expected target of 95%, indicating that the company’s current policies and promotion programs have achieved positive results, and colleagues generally agree on the implementation of the company’s core values. The next employee opinion survey on core values will be conducted in 2020.

Survey Results on Employee Perception of Core Values

"Commitment" Questions from the Employee Opinion Survey on Company Core Values

Note 1: The Employee Opinion Survey On Company Core Values is composed of five subscales. The highest score, 5 points, indicates that the surveyee “strongly agrees” with the question while the lowest score is 1 point. Among the respondents, the number of employees who answered 4 points (agree) and 5 points (strongly agree) totalled 40,511, which is 98% of the total 41,390 respondents.

Note 2: The Employee Opinion Survey On Company Core Values is composed of five subscales. The highest score, 5 points, indicates that the surveyee “strongly agrees” with the question while the lowest score is 1 point. Among the respondents, the number of employees who answered 4 points (agree) and 5 points (strongly agree) totalled 39,875, which is 96% of the total 41,390 respondents.
Talent Development

Strategies & 2030 Goals

Encourage Job Rotation
Underscore on-the-job training with systematic job rotations to cultivate future talent

- No less than 50% of job vacancies shall be filled through internal transfers
- No less than 75% of manager positions shall be filled through internal promotions

Enable Self-directed Learning
Provide diverse learning resources and channels to encourage self-directed learning among employees. This will enhance individual performance and potential

- Non-required courses on the e-Learning Platform offered by the Self-Directed Learning Program shall register a usage rate of at least 60%

2019 Achievements

- 50.8% of job vacancies were filled through internal transfers
  Target: No less than 50%

2020 Targets

- No less than 50% of job vacancies shall be filled through internal transfers
- No less than 50% of job vacancies shall be filled through internal transfers
- Self-learning accounted for 66.3% of learning programs designed for the specific needs of organizations
  Target: No less than 50%
- Fab18’s personnel were equipped with necessary skills to complete equipment installation in 2019 and prepare for mass production in 2020
  Target: Equip Fab18 personnel with necessary skills to complete equipment installation in 2019 and prepare for mass production in 2020
- Self-learning shall account for no less than 50% of learning programs designed for the specific needs of organizations
- New fab personnel shall be supported and trained with the completion rate of 100%
In 2019, TSMC formulated its 2030 Goal for Inclusive Workplace: Talent Development to ensure that employees’ skillsets remain relevant, to support the company’s long-term growth, and to promote lifelong learning among employees. In the next decade, TSMC will enhance on-the-job training, offer diversified learning resources, and build comprehensive self-learning programs to promote self-learning among employees, enhance the learning agility of organizations, and help employees grow. To these ends, TSMC has formulated two major strategies: encouraging job rotation and promoting self-learning. In addition to increasing the percentage of job vacancies filled through internal transfers, the Company has also set a target for the percentage of manager vacancies filled through internal promotions. Furthermore, since self-learning has accounted for more than 50% of learning programs, the Company has entered the next phase of self-learning advocacy by encouraging employees to take non-required online learning courses.

**Fulfill Talent Development**

Encouraging job rotations and promoting self-directed learning are important strategies for talent development at TSMC. In terms of encouraging job rotations, TSMC has proactively implemented on-the-job training and certification systems, allowing employees to learn and improve their work performance in the workplace. The Company not only systematically designs job rotation programs to cultivate future talent, but also encourages its employees to complement their career plans with the Company’s organization development, so as to increase internal talent mobility and allow them to utilize their talents and grow. TSMC’s efforts have yielded concrete results: In 2019, 50.8% of all job vacancies were filled through internal transfers, thereby achieving the Company’s short-term target. As part of its long-term strategy for human resource development, TSMC has set another target: by 2030, no less than 75% of manager positions shall be filled through internal promotions.

TSMC promotes self-learning by cultivating a self-learning mindset in employees and offering diversified learning resources and learning tools. Employees are encouraged to engage in learning at all places, at all times, and in all forms in line with the company’s direction of development, the specific needs of each organization, and personal requirements. A self-learning culture enhances work performance, facilitates corporate growth, and contributes to social progress.

**Transparent Framework for Employee Development and Job Rotation**

To retain talents, TSMC offers a comprehensive framework for employee development, whereby a dual career ladder system covering both management and technical positions allows employees to explore their full potential in either of the two types of positions according to personal characteristics and skills.

Furthermore, the promotion system in the employee development framework is based on two major principles: transparency on internal vacancies and respect for employees’ transfer decisions. It considers development potential as an important indicator for evaluating candidates for promotion. A handbook on promotion procedures and numerous relevant tools are offered to managers to help them assess candidate potential.

**Human Resource Development Strategies**

- **Dual Career Ladder System**: Develop a comprehensive employee development framework, strengthen HR-related systems and supplementary measures, and build an environment where each employee is put in the position that best suits their abilities.
- **Talent Mobility**: Facilitate talent mobility by ensuring transparency on internal vacancies, respecting employees’ transfer decisions, and allowing employees to plan for their own careers.
- **Promotion Indicators**: Potential has been listed as one of the indicators for evaluating candidates for promotion.
- **Building a Customer-oriented Culture**: Customer trust is one of the pillars that underlie TSMC’s competitive edge. TSMC succeeds when customers succeed. Thus, TSMC is committed to helping customers excel and strengthen customer-oriented culture.
- **Developing Capabilities**: Provide R&D support and train personnel for new fabs, offering training courses on topics such as process and physics to ensure employee capabilities.
- **Improving Learning Systems and Resources**: Encourage self-learning among employees by offering diversified learning channels and tools; enhance learning management system to facilitate knowledge sharing.
- **Enhancing Management Literacy**: Enhance management literacy among managers at all levels, thereby strengthening employee commitment.
- **Promoting Corporate Culture**: Enhance employees’ commitment to TSMC’s core values and strengthen TSMC’s core values as the company expands.

**Employee Development**

Explore employees’ potential and create an environment that encourages employees to pursue personal growth.

**Learning Development**

Help organizations and employees grow rapidly to adapt to changing environments and fulfill the organization needs.
In 2019, 38.2% of managers and 33.2% of professionals were transferred or rotated due to either individual or organizational development. Due to expansion projects, more new employees were recruited in 2019 than in the previous year, leading to a slight decrease in the percentage of vacancies filled through internal transfers compared with the previous year. However, the rate still reached 50.8%, a testimony to TSMC’s commitment to internal mobility and comprehensive leadership development.

Going forward, TSMC will continue to improve the dual career ladder system of employee development and, by enhancing internal transfer management, ensure that no less than 50% of vacancies are filled through internal transfers, a strategy that drives both organizational and personal development.

**Employee Development Framework — Dual Career Ladder System**

**Management Positions**
- Junior-level Managers
- Mid-level Managers
- Senior Managers

Employees can continue to grow or switch between management positions and technical positions according to personal aptitude and organizational needs. Potential career pathways for a junior-level technical/project manager can be found below:

1. Strengthen professional skills and advance into mid-level technical/project management positions
2. Transition into management roles and transfer into junior-level management positions
3. Transition into management roles and advance into mid-level management positions

**Technical Positions**
- Junior-level Technical/Project Manager
- Mid-level Technical/Project Manager
- Senior Technical/Project Manager

Focus on technology or other professional fields.

**Key Objectives of Personnel Development**

**Diverse and Equal Opportunities for Learning and Development**

Given that the Company’s growth is closely related to employees’ personal learning and development, TSMC designs employee learning and development programs based on three key elements: goal, plan, and discipline. The company is committed to building a diverse and equal learning environment that encourages continuous learning and offers rich content. It has also formulated the TSMC Employee Training and Education Procedures to integrate internal and external resources, enhance employee capabilities, and help employees grow with the company.

**Dual Career Ladder Approach**

Develop a comprehensive employee development framework, strengthen HR-related systems and supplementary measures, and build an environment where each employee is put in the position that best suits their abilities.

**Talent Mobility**

Facilitate talent mobility by ensuring transparency on internal vacancies, respecting employees’ transfer decisions, and allowing employees to plan for their own careers.

**Promotion Indicator — Employee Potential**

Potential has been listed as one of the indicators for evaluating candidates for promotion.

- Clarified the definition of “Potential” and its evaluation method to make it one of the criteria for promotion.
- Established related managerial policies of internal job position transparency and job transfer effectiveness among transfer procedures. Helped managers better understand and implement regulations via communication.
- Provided different training courses for managers, and technical and professional managers.
- Regularly selected Fellow and Academician of TSMC Academy to support the career development of technical staffs.
- Completed the promotion procedures handbook and related tools to help managers conduct potential evaluation for employee promotion.
TSMC’s employees set individual development plans according to personal requirements, mid-year and year-end performance review, and career development goals. Employees’ personal development plans form one of the bases on which the company’s annual training program is designed. In 2019, employee performance assessment registered a completion rate of 100%. In 2019, TSMC provided over 740,000 hours of training programs and activities for learning and development to over 700,000 participants. Each employee received, on average, over 14 hours of training. The total expense on training reached NT$59 million.

To ensure the effectiveness of training programs, TSMC measures the outcome with four levels of evaluation - reaction, learning, behavior, and results - based on the theory proposed by American scholar Donald L. Kirkpatrick. In 2019, all open courses were evaluated on the reaction level, including contents, instructor, administration, and satisfaction scores. The courses received an overall satisfaction score of 93. A total of 584,749 participants completed 3,534 online courses and learning evaluations. 5% of the open courses and customized courses were further evaluated on the behavioral level. Most on-the-job training offered by internal organizations were further evaluated at the learning and behavioral level, and evaluations at the results level have been built into the employee performance management and development system.

### Historical Training Index

<table>
<thead>
<tr>
<th>Year</th>
<th>Training Hours</th>
<th>Trainees Who Completed Training</th>
<th>Certified Internal Instructors</th>
<th>Average Evaluation Score of Course Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>780,546</td>
<td>623,711</td>
<td>639,852</td>
<td>10.6</td>
</tr>
<tr>
<td>2016</td>
<td>527,513</td>
<td>450,756</td>
<td>548,376</td>
<td>9.4</td>
</tr>
<tr>
<td>2017</td>
<td>527,513</td>
<td>450,756</td>
<td>548,376</td>
<td>9.4</td>
</tr>
<tr>
<td>2018</td>
<td>527,513</td>
<td>450,756</td>
<td>548,376</td>
<td>9.4</td>
</tr>
<tr>
<td>2019</td>
<td>527,513</td>
<td>450,756</td>
<td>548,376</td>
<td>9.4</td>
</tr>
</tbody>
</table>

Note: Due to the design differences between training systems, the average evaluation score excluded data from TSMC North America.

### Average Hours of Training per Employee

<table>
<thead>
<tr>
<th>Year</th>
<th>Manager</th>
<th>Indirect Labor</th>
<th>Direct Labor</th>
<th>Unit: hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>16.3</td>
<td>23.2</td>
<td>10.6</td>
<td>9.2</td>
</tr>
<tr>
<td>2016</td>
<td>9.2</td>
<td>15.3</td>
<td>10.9</td>
<td>10.3</td>
</tr>
<tr>
<td>2017</td>
<td>5.9</td>
<td>16.9</td>
<td>7.4</td>
<td>7.4</td>
</tr>
<tr>
<td>2018</td>
<td>5.7</td>
<td>15.1</td>
<td>5.4</td>
<td>5.4</td>
</tr>
<tr>
<td>2019</td>
<td>8.4</td>
<td>19.0</td>
<td>5.6</td>
<td>5.6</td>
</tr>
</tbody>
</table>

Note: Due to the design differences between training systems, the average evaluation score excluded data from TSMC North America.
2019 Key Objectives for Learning and Development Programs

**Professional Training for Engineers/ Junior-level Managers**

**Technical Depth Enhancement Project**

- **Objectives**
  - Deepening engineers'/ junior-level managers' domain knowledge in front-end and back-end processes

- **Completion rate among participants**
  - 100% Completed
  - (10,279 / 10,279)

- **Status**
  - A devolved three-phase training program executed by fab-level managers
    - 1. Training on wafer processes
    - 2. Professional development for process engineers
    - 3. Study group presentation sessions
  - Through lectures, self-study sessions, group study sessions, and practice, the program aimed to refine engineers' professional skills and domain knowledge in production processes
  - Offered in 13 fabs with a completion rate of 100%

**Management Training in Operation Organizations**

**A Program for Mid-level Management**

- **Objectives**
  - Equip managers with the ability to foster a work environment conducive to mutual respect and high employee commitment, thereby building an open communication environment

- **Completion rate among participants**
  - Ongoing
  - 59.3% Completed
  - (178 / 300)

- **Status**
  - Three major learning objectives
    - 1. Empathy and respect: managers must be empathetic and respect individual differences
    - 2. Effective communication: managers must be open-minded and able to listen and ask the right questions, thereby communicating effectively with employees
    - 3. Conflict management: managers must adopt conflict management strategies to address conflicts and exert positive influence

**Encourage Self-learning**

"All You Can Learn!"

- **Objectives**
  - Encourage the use of online learning resources and promote self-learning concept among employees

- **Completion rate among participants**
  - 10.3% Completed
  - (3,080 / 29,950)

- **Status**
  - Introduce the concept of and methods for self-directed learning
  - Offer online courses on eight major topics, each of which comes complete with a variety of learning resources including online lectures, articles on professional knowledge from internal and external sources, video clips, and books. Online courses received 11,958 clicks

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2019 Corporate Social Responsibility Report

Our Business  Sustainable Governance  Our Focuses and Progress

Ethical Management  Innovation and Service  Responsible Supply Chain  Green Manufacturing  Inclusive Workplace  Common Good

Appendix
Human Rights

Strategies & 2030 Goals


- No material regulatory violation (where fines exceed NT$1 million)
  - Target: No material regulatory violation
- E-voting system was adopted for the election of new labor representatives in one of TSMC’s Taiwan facilities
  - Target: Adopt e-voting system for the election of new labor representatives in any one of TSMC’s facilities

2019 Achievements

- No material regulatory violation
- E-voting system was adopted for the election of new labor representatives in one of TSMC’s Taiwan facilities
  - Target: Adopt e-voting system for the election of new labor representatives in any one of TSMC’s facilities

2020 Targets

- No material regulatory violation
- All of TSMC’s Taiwan facilities shall adopt an e-voting system for the election of new labor representatives and list e-voting systems as the only voting method for all future elections of the same kind
In 2019, TSMC formulated its 2030 Goal for Inclusive Workplace: Human Rights to continue to live by its commitment to human rights. Guided by the core value of Commitment, TSMC considers employees as its most important asset, offering them meaningful job responsibilities, a safe and healthy work environment, and rewarding compensations and benefits. At the same time, TSMC encourages employees to achieve work-life balance by engaging with family, friends, and personal interests. In the future, TSMC will continue to enforce its human rights policy in accordance with the United Nations Guiding Principles on Business and Human Rights and Responsible Business Alliance Code of Conduct.

**Human Rights Risk Mitigation**

As the largest dedicated semiconductor foundry in the world, TSMC is committed to building a safe work environment for its employees and in its supply chain, respecting and protecting the dignity of its employees, protecting the environment, and enforcing strict ethical standards. To these ends, TSMC has become a full member of the Responsible Business Alliance (RBA), the largest electronics business alliance in the world, conducting due diligence to ensure that its code of conduct complies with or outperforms the Responsible Business Alliance Code of Conduct.

Using RBA’s self-assessment questionnaire (SAQ), TSMC conducts annual assessments to identify internal operations bearing the highest social, environmental, and moral hazards. In 2019, TSMC’s headquarters and all facilities worldwide scored over 90 on SAQ, thus classifying TSMC facilities as low risk. Between 2016 and 2018, TSMC commissioned a third-party institute trained in social and environmental audit to conduct RBA’s Validated Assessment Program (VAP) on all fabs in addition to TSMC’s annual SAQ assessment. Of the 16 fabs, 14 scored full marks. In 2019, TSMC, responding to customer demand, conducted VAP audits on seven fabs, six of which scored full marks again. TSMC’s customers can access a complete audit report on RBA-Online.

### Risk Assessment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low risk (≥ 85)</strong></td>
<td>Fab14A - 92.6</td>
<td>Full marks = 200</td>
</tr>
<tr>
<td><strong>Medium risk (≥ 65 &amp; &lt;85)</strong></td>
<td>Fab14B - 92.4</td>
<td>Fab15A - 93.0</td>
</tr>
<tr>
<td><strong>High risk (&lt;65)</strong></td>
<td>Fab15B - 93.4</td>
<td>Fab15B - 93.4</td>
</tr>
<tr>
<td>Corporate Headquarters</td>
<td>95.6</td>
<td>Advanced Backend Fab1 - 94.7</td>
</tr>
<tr>
<td>Fab2</td>
<td>93.6</td>
<td>Advanced Backend Fab2 - 94.5</td>
</tr>
<tr>
<td>Fab3</td>
<td>93.6</td>
<td>Advanced Backend Fab3 - 94.7</td>
</tr>
<tr>
<td>Fab5</td>
<td>93.4</td>
<td></td>
</tr>
<tr>
<td>Fab6</td>
<td>93.1</td>
<td></td>
</tr>
<tr>
<td>Fab8</td>
<td>92.9</td>
<td></td>
</tr>
<tr>
<td>Fab12A</td>
<td>93.3</td>
<td></td>
</tr>
<tr>
<td>Fab12B</td>
<td>93.1</td>
<td></td>
</tr>
<tr>
<td>TSMC (China)</td>
<td>93.0</td>
<td></td>
</tr>
<tr>
<td>TSMC (Nanjing)</td>
<td>91.6</td>
<td></td>
</tr>
<tr>
<td>WaferTech</td>
<td>90.5</td>
<td></td>
</tr>
</tbody>
</table>

Note: Advanced Backend Fab3 and VisEra are expected to be included in the 2020 SAQ assessment.
**Targets and Actions**

- Occupational Disease Investigation Committee
- Provide compensatory leave and subsidies according to the need for overtime work.
- Provide adequate medical assistance.
- Immediate Removal from current position.
- Quarterly meetings on occupational health management.
- Self-help participation rate indicates the effectiveness of preventive measures.
- Record whether any occupational diseases were caused by chemical exposure.
- Implement occupational disease prevention and promote physical and mental health of employees.

**Risk Assessment**

- Occupational Safety and Health
- Risk Assessment
- Record whether any occupational diseases were caused by chemical exposure.
- Self-help participation rate indicates the effectiveness of promoting employee health.

**Risk Reduction Measures**

- Quarterly meetings on occupational health management are convened by vice presidents. Participating members include ESH, fab directors, the Department of Industrial Safety and Environmental Protection, the Legal and Human Resources functions, and the Wellness Management Section.
- Allocate exemplary qualified medical personnel to provide a wide spectrum of 24/7 health services, including special protection, healthcare services, health promotion, and employee assistance services.

**Channels for Employees**

- Internal communication includes the Employee Opinion Box and Ombudsman System. There are also special communication channels and convened communication meetings in all fabs to raise awareness and inspect for any forced labor.
- Conduct regular communication meetings for employees to report any issues.
- Collaborate with members of the TSMC Employee Welfare Committee and activity organizers to promote activities and encourage participation.
- Provide a variety of activities, including art, sports events, family activities, and parent-child activities. Promote and implement internal control procedures by making known the non-discrimination policy in the TSMC Candidate Interview Process.
- Professional training courses for Human Resources managers. In notifications for internal interviews in TSMC, interviewers will be explicitly reminded not to ask applicants about any personal information that is not job-related during the interview.
- From the beginning of recruitment, applicants submit their resumes through the Company’s resume system, including the non-discrimination policy in training courses for Human Resources managers.
- Applicants are required to provide identity documents, such as a National Identification Card driver’s license, National Health Insurance Card, or a diploma, to prove they are over 18 years old.
- From the beginning of recruitment, all TSMC hiring procedures are to comply with the law and eliminate illegal discrimination.

**Prohibit Forced Labor**

- In line with the "TSMC Human Rights Policy," the company amended and implemented the "TSMC Internal Control Procedures for Conducting Interviews." In compliance to the procedures, TSMC only accepts applicants over 18 years old and will double check the age of new employees to avoid any mistakes or omissions.
- In strict compliance with government labor laws, international labor standards, and the "TSMC Human Rights Policy," the company will not force nor threaten any non-voluntary personnel to carry out work-related tasks.
- Work regulations stipulate that should the need for overtime work arise, employee consent must be received. Following overtime work, overtime pay or compensatory leave must be provided to employees.

**Prohibit Child Labor**

- From the beginning of recruitment, all TSMC hiring procedures are to comply with the law and eliminate illegal discrimination.
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- Applicants are required to provide identity documents, such as a National Identification Card driver’s license, National Health Insurance Card, or a diploma, to prove they are over 18 years old.
- From the beginning of recruitment, all TSMC hiring procedures are to comply with the law and eliminate illegal discrimination.
Employee Communication

TSMC highly values employee opinions and rights, and provides several communication channels. The highest-level executives of the HR organization are responsible for ensuring that employee opinions are handled in an efficient and confidential way to ensure open and transparent communications between managers and employees. Furthermore, TSMC respects employees’ right to take part in collective bargaining and peaceful rallies. In accordance with legal requirements in Taiwan, the company holds labor-management meetings periodically to brief employees on corporate operations.

### Human Rights Protection Training and Participation

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Attendees</th>
<th>Number of Training Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>16,372</td>
<td>67,712</td>
</tr>
<tr>
<td>2016</td>
<td>16,372</td>
<td>55,913</td>
</tr>
<tr>
<td>2017</td>
<td>61,047</td>
<td>68,624</td>
</tr>
<tr>
<td>2018</td>
<td>75,903</td>
<td>57,885</td>
</tr>
<tr>
<td>2019</td>
<td>92,971</td>
<td>116,907</td>
</tr>
</tbody>
</table>

Note: The data between 2014 and 2016 excluded TSMC (Nanjing) and VisEra.

### Face-to-face Communication
- Chairman/C.E.O's Communication Meeting
- Labor-Management Meeting
- Communication Meetings in Individual Functions/Divisions
- Functional Activity

### Employee Voice Channels
- Ombudsman System
- Employee Opinion Box
- Whistleblower Procedures
- Fab Caring Circle
- Sexual Harassment Investigation Committee
- SMS
- 113 Caring Hotline

### TSMC Internal Communications Structure

<table>
<thead>
<tr>
<th>Managers of All Levels</th>
<th>Human Resources</th>
<th>Board of Directors and Management Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Human Rights Protection Training Practices

**Promote Regulatory Compliance in New Employee Orientation**

Contents include prohibition on forced labor and child labor, anti-discrimination, anti-sexual harassment, working hours management, and humane treatment.

**Provide E-learning Courses for Sexual Harassment Prevention**

Contents include the definition and prevention of sexual harassment and approaches to deal with sexual harassment.

**Promote Prevention of Workplace Bullying**

Help employees understand what workplace bullying is and how to avoid any form of it in order to create a friendly, bully-free work environment.

**Provide Comprehensive Occupational Safety Training**

Provide employees with training for different work situations. Training includes fire safety, emergency response, first-aid, general safety and health education, fab safety, and safety training for newly-promoted managers.

In 2019, TSMC provided employees with a total of 116,907 hours of human rights protection training. In total, 48,763 employees (92,971 training attendances) completed the training program, accounting for 95% of TSMC’s total employees. Going forward, TSMC will continue to focus on human rights protection and offer training programs to raise awareness of human rights among employees to minimize risks.
and discuss with employees on issues such as working conditions and benefits. To facilitate labor-management communication, TSMC’s plants in the Central Taiwan Science Park adopted an e-voting system for the election of new labor representatives in 2018. In 2019, TSMC’s Longtan plant also adopted an e-voting system for the election of five labor representatives, thereby expanding employee participation.

In 2019, TSMC’s internal communication channels handled a total of 3,998 cases of employee opinions and complaints, including four through the Sexual Harassment Investigation Committee, 141 through the Ombudsman System, 643 through the Employee Opinion Box, 3,151 through the Fab Caring Circle, and 59 cases through the Irregular Business Conduct Reporting System. All reported cases have been processed and addressed by competent organizations. Cases reported through the Sexual Harassment Investigation Committee and the Ombudsman System were investigated and reviewed by committee members. Cases reported through the Employee Opinion Box were handled by responsible persons, who would then communicate with employees about the solutions and outcome. Employees can access these internal communication channels via the internal employee portal. These channels are also introduced to new employees to ensure that all employees are well-informed.

With these effective internal communication channels, the relationship between the management level and employees has been harmonious over the years. TSMC has always respected employee rights to form a labor union, but so far none have been formed.

### Number of Cases Reported Through Internal Communication Channels

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Number of Cases</th>
<th>Fab Caring Circle Cases</th>
<th>Employee Opinion Box Cases</th>
<th>Ombudsman System Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>4,317</td>
<td>60</td>
<td>712</td>
<td>3,697</td>
</tr>
<tr>
<td>2016</td>
<td>4,117</td>
<td>35</td>
<td>79</td>
<td>3,256</td>
</tr>
<tr>
<td>2017</td>
<td>4,688</td>
<td>80</td>
<td>79</td>
<td>3,632</td>
</tr>
<tr>
<td>2018</td>
<td>4,989</td>
<td>16</td>
<td>589</td>
<td>3,351</td>
</tr>
<tr>
<td>2019</td>
<td>3,998</td>
<td>59</td>
<td>141</td>
<td>2,956</td>
</tr>
</tbody>
</table>

**Note 1:** The figures for Ombudsman System, Sexual Harassment Investigation Committee, Irregular Business Conduct Reporting System, and Employee Opinion Box cover all TSMC facilities, while the figure for Fab Caring Circle covers only TSMC’s Taiwan facilities.

**Note 2:** Cases reported through the Irregular Business Conduct Reporting System were included for the first time in 2019, thus increasing the total number of cases reported.

### Employee Voice Channels

- **Fab Caring Circle**
  - Various Issues in Fabs
  - Person in Charge: Fab Directors

- **Employee Opinion Box**
  - Various Issues in Fabs
  - Person in Charge: Vice President, Human Resources

- **113 Caring Hotline**
  - Personal and Work-related Issues
  - Person in Charge: Vice President, Human Resources

- **Sexual Harassment Investigation Committee**
  - Sexual Harassment Issues
  - Person in Charge: Deputy Director, Legal

- **Ombudsman System**
  - Major Management Errors / Workplace Violence and Financial Auditing Issues
  - Person in Charge: Senior Director

- **Whistleblower Procedures**
  - Complaint Regarding Account and Legal Matters
  - Person in Charge: Chairman of TSMC Audit Committee

**Note:** Cases reported via 113 Caring Hotline and SMS are handled by designated people and directed to other voice channels.
Occupational Safety and Health

### Strategies & 2030 Goals

#### Build a Safety Culture
Deeply instill a people-oriented safety culture, manage safety risks, and establish an intrinsically safe working environment

<table>
<thead>
<tr>
<th>2019 Achievements</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incident Rate per 1,000 employees &lt; 0.20&lt;sup&gt;Note 1&lt;/sup&gt;</td>
<td>Incident Rate per 1,000 Employees: 0.425&lt;sup&gt;Note 5&lt;/sup&gt;</td>
</tr>
<tr>
<td>Disabling Injuries Frequency Rate (FR) &lt;0.45&lt;sup&gt;Note 2&lt;/sup&gt;</td>
<td>FR: 0.93; Work-related Disabling Injuries Frequency Rate: 0.5&lt;sup&gt;Note 4&lt;/sup&gt;</td>
</tr>
<tr>
<td>Disabling Severity Rate (SR) &lt;6</td>
<td>SR: 15; Work-related Disabling Severity Rate: 9&lt;sup&gt;Note 6&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

#### Comprehensive Health Management
Safeguard the physical well-being of employees by preventing occupational diseases

<table>
<thead>
<tr>
<th>2019 Achievements</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero cases of occupational disease caused by exposure to chemicals</td>
<td>Zero cases of occupational disorders caused by exposure to chemicals</td>
</tr>
<tr>
<td>Health Program Participation Rate ≥ 55%</td>
<td>Health Promotion Program Participation Rate: 52.79%</td>
</tr>
<tr>
<td>FR: 0.93; Work-related Disabling Injuries Frequency Rate: 0.5 &lt;sup&gt;Note 4&lt;/sup&gt;</td>
<td>SR &lt; 6</td>
</tr>
</tbody>
</table>

#### Internal-External Alliance
Collaborate with external parties to establish safer working environments in our supply chain

<table>
<thead>
<tr>
<th>2019 Achievements</th>
<th>2020 Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completion rate of providing consultation to all vendors with high risk operations and auditing health and safety standards in their facilities: 100%&lt;sup&gt;Note 3&lt;/sup&gt;</td>
<td>Provided coaching to all vendors with high risk operations and audited health and safety implement status in their facilities</td>
</tr>
<tr>
<td>Assist all contractors with high risk operations in obtaining ISO 45001 certification for occupational health and safety management system&lt;sup&gt;Note 4&lt;/sup&gt;</td>
<td>Assisted 50% of our contractors engaged in high risk operations in obtaining ISO 45001 certification for occupational health and safety management system</td>
</tr>
</tbody>
</table>

### Notes
- Note 1: Beginning in 2020, all TSMC employees and contractors will be included in the calculation of incident rate per 1,000 employees.
- Note 2: Beginning in 2020, Disabling Injuries Frequency Rate (FR) and Disabling Severity Rate (SR) will include both work-related and non-work related injuries. See Statistical Analysis of Disabling Injuries for detailed information.
- Note 3: Vendors with high risk operations include vendors who scored lower than 70 in the last annual audit, new vendors, and vendors covered by the annual coaching project (e.g., parts cleaning service providers). Since the portfolio changes year to year, TSMC continues to coach and audit those identified as such.
- Note 4: Contractors with high risk operations include those engaged in confined space work, live-line work, hot work, or gas/chemical tubes cutting. Since new contractors are recruited every year, TSMC continues to coach and audit those identified as such.
- Note 5: The target for Incident Rate per 1,000 Employees was missed. Please see Safety Performance Index for details on corrective measures.
- Note 6: The targets for Disabling Severity Rate (SR) and Disabling Injuries Frequency Rate (FR) were missed. Please see Statistical Analysis of Disabling Injuries for reasons identified.
To ensure occupational safety and health, TSMC established an organization with a clear division of roles and responsibilities to meet the needs and expectations of internal and external stakeholders. In 2019, TSMC continued to promote safety culture and improve risk management procedures. Due to expansion projects, TSMC premises were visited in 2019 by an average of 32,168 contractors staff each day. Therefore, TSMC published The Blue Book on Environmental Safety and Health for Contractors to strengthen safety management and create a safe and friendly environment together with its contractors. To help TSMC (China) and TSMC (Nanjing) build healthy and safe workplaces, TSMC launched in 2019 a special project on environmental safety and health for businesses, which is responsible for conducting regular reviews on relevant regulations and communicating with stakeholders about the feasibility of regulations, thereby helping TSMC’s subsidiaries optimize their workplaces.

Note: The Blue Book on Environmental Safety and Health for Contractors by TSMC covers 6 major categories in 73 chapters: guidelines for contractors entering TSMC premises, regulations on the handling of proprietary information, emergency response, rules on cleanrooms, regulations on applying for construction permits, and regulations on general operations. This guidebook uses visual illustrations in lieu of written descriptions to allow for easier comprehension and stricter adherence, thereby better ensuring the safety of TSMC’s operations.
A comprehensive safety culture lies at the foundation of a healthy workplace. TSMC promotes safety culture in three aspects—people, environment, and behavior—by encouraging employees to proactively raise suggestions on improving safety at work. By starting from minutiae, TSMC seeks to nip potential threats in the bud and build a people oriented safety culture.

### Safety and Health Measures

Following the Company’s Safety and Health Policy, TSMC implemented the following measures and used the Safety Performance Index (SPI) to track performances to build a safety culture and manage risks.

<table>
<thead>
<tr>
<th>Specific Measures</th>
<th>SPI</th>
<th>Taiwan Facilities</th>
<th>Overseas Facilities</th>
<th>VisEra</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Regulation Inspection</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>⊗ Relevant regulations and the compliance of all facilities were reviewed on a regular basis. A total of four safety and health related regulations were amended</td>
<td>✓</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Standardized Management Procedures</strong></td>
<td></td>
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</tr>
<tr>
<td>⊗ A total of 54 documents on safety and health management procedures were standardized, and 46 documents were amended after review</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ In 2019, all Taiwan facilities obtained ISO 45001 certification on occupational health and safety</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Training Programs on Safety and Health</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ Training programs on safety and health were offered to employees and contractors to reinforce compliance and enhance emergency response capabilities</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ Occupational health and safety specialists were invited to provide professional training to a total of 154 participants in order to better prevent occupational hazard</td>
<td>✓</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Hazard Identification</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ A total of 6,966 operation environments and operation procedures were reviewed to identify potential hazards</td>
<td>✓</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Change Management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ A total of 2,997 cases of change management were completed with zero related incidents</td>
<td>✓</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Chemicals Management</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>⊗ A total of 175 chemicals were introduced with zero related incidents</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Contractor Management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ Contractors engaged in a total of 24,563 high risk operations with zero related incidents</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Execution Review</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ A total of 1,581 improvements were suggested after internal audit. All improvements were addressed within the timeframe specified</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Emergency Response</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>⊗ To enhance the company’s capacity to respond to compound disasters, regular drills began to cover major disasters, and results were used as a basis for amendment to 108 drill scripts.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Occupational Accident Prevention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ To reduce and improve the number of occupational injuries, ad hoc meetings on employee injuries were convened on a regular basis to analyze the underlying causes and promote improvement measures in all facilities.</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Job Observation Safety Analysis</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>⊗ Employees were encouraged to proactively raise suggestions for possible improvements to their own work environment. A total of 1,611 suggestions for improvements were raised, and all were addressed with responsive measures</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note 1:** Includes TSMC (China) and TSMC (Nanjing).

**Note 2:** A regulation review platform that covers TSMC’s Taiwan facilities, TSMC (China), and TSMC (Nanjing) was scheduled to be launched in 2019 to address discrepancies in legal regulations in different jurisdictions where TSMC operates. The launch was postponed to 2020 due to problems in the setup of domain firewalls.

**Note 3:** TSMC (China) and TSMC (Nanjing) are scheduled to be certified in 2020.

**Note 4:** 2019 Training Program Statistics
Encourage Employees to Speak Up; Ensure Both TSMC & Our Employees Safeguard a Culture Safety

As part of its effort to build a safety culture mutual protection between both the company and its employees, TSMC aims to reduce the number of incidents and the rate of repeated injuries. In 2019, jobs observation safety analysis was included in the Safety Performance Index. Employees were encouraged to observe their own working area and proactively raise suggestions for possible improvements. Safety and health management specialist will work together with employees to identify opportunities for improvement, and confirm the validity of the improvement. In 2019, a total of 1,611 job observation analysis were raised and were classified into three risk levels: A, B, and C.

### Employee Suggestions

**Level** | **Definition** | **Suggestions in 2019**
--- | --- | ---
A | Able to prevent incidents or significantly reduce the risk of major injuries that require hospitalization. E.g. crush injuries, exposure to chemicals/occupational diseases | 340
B | Able to significantly reduce potential safety and health risks of equipment of the same type and to be applied in all facilities | 309
C | Able to significantly reduce the chance of injury among personnel in a specific functional unit. | 757

### Case Study

**Before Improvement**

Operators had to carry the maintenance tools onto the top of the tank when performing quarterly pump oil change for the waste water and pure water system.

To collect waste oil, the operator had to keep a fixed posture and waste oil effluent into the bucket by gravity. Each operation took 6.5 hours.

### After Improvement

The operators designed a special jig. By injecting air into the system, the jig automatically pushes out the residual oil, which then flows through a tube into the waste bucket. The time needed for the operation was thus reduced to 1 hour.
Safety Performance Index

TSMC’s Safety Performance Index (SPI) were classified into four levels and two subtypes—active index and passive index. The active index encourages employees to participate in safety and health programs and raise suggestions for safety improvements, while the passive index shows the number of safety related defects, false alarm incidents. In 2019, the "blue light" indicator appeared slightly less frequently than the previous year, from 89.4% to 88.8%. The decline was mainly caused by the increase of the number of near miss, and false alarm incidents from 10 to 21, 11 of which were personal injuries, 6 of which were fire false alarms, and 4 of which were gas false alarms.

Safety Performance Index Chart

### SPI Index

**Active Indicators**
- Number of Changed Safety Management within Foundries
- Safety and Health Program Targets (Set annual targets, and execute job observed analysis and complete implement)
- Completion Rate of Safety and Health Trainings
- Number of Safety and Health Promotion Activities
- Improving Measures of Occupational Hazards
- Share Improving Actions of Safety and Health with Other Foundries

**Passive Indicators**
- Number of False Alarm Incident
- Number of Self-evaluated Safety and Health Errors
- Completion Rate of Legal Inspection Implementation
- Number of Errors Found During Safety and Health Inspections
- Contractor Management (incl. numbers of errors, miss operations, and improving measures)
- Number of Work-relative Occupational Injury

### Historical Incidents

- Gas false alarm
- Chemical leakage
- Personal injury
- Fire false alarm

### Historical Near Miss Incidents and False Alarm

- Number of near miss incidents and false alarms
- Number of near miss incidents and false alarms/number of employees
- Number of incidents/total number of individuals entering TSMC companies

Note: The figures include TSMC’s Taiwan facilities, TSMC (China), and TSMC (Nanjing)
Improvement Measures in 2019

Employees

- Equipment maintenance shall add cover on conveyor belt and clippers, or equip with protection plates in order to reduce injuries caused by machinery.
- Stricter rules on the use of herringbone ladders and the cutout and fencing of elevated floors to prevent falling.
- In 2019, a two-year LOTO (Lock out Tag out) project was launched. Equipment engineers are now required to lock out and tag out all moving parts that may cause crush injuries and include this procedure in the maintenance procedure handbooks. The results of this project shall be published in 2020 CSR report.

Contractors

- TSMC and Contractors Launch Contractor 100 Campaign to Create Safe and Friendly Working Environment Together. Please refer to "TSMC and Contractors Launch Contractor 100 Campaign to Create Safe and Friendly Working Environment Together" for details.
- Video surveillance equipment was installed at work sites to send live footage to an emergency response center responsible for monitoring every high risk operating works in real time to ensure safe work and environment.

Out of 6 cases of employee injury, 2 were bone fractures as a result of falling while walking and were confirmed to not have been caused by unsafe work environment. Other incidents have resulted in the following improvement measures:

<table>
<thead>
<tr>
<th>Employees</th>
<th>Contractors</th>
</tr>
</thead>
<tbody>
<tr>
<td>In 2019, TSMC received an average of 32,168 incoming contractors every day, up from 22,293 in 2018, who performed an average of 24,563 high-risk operating works every day. 5 cases of contractor injuries have resulted in the following measures:</td>
<td></td>
</tr>
<tr>
<td>TSMC and Contractors Launch Contractor 100 Campaign to Create Safe and Friendly Working Environment Together. Please refer to &quot;TSMC and Contractors Launch Contractor 100 Campaign to Create Safe and Friendly Working Environment Together&quot; for details.</td>
<td></td>
</tr>
<tr>
<td>Video surveillance equipment was installed at work sites to send live footage to an emergency response center responsible for monitoring every high risk operating works in real time to ensure safe work and environment.</td>
<td></td>
</tr>
</tbody>
</table>

Reducing Personal Injuries

- Since many false alarms were caused by cast resin transformers installed in TSMC facilities, a special project to prevent faults in cast resin transformers was launched, and the number of fire false alarms declined from 5 in 2018 to 1 in 2019.

Reducing Fire False Alarms

- The TSMC Chemicals Management Procedure was amended to include acceptance quality levels (AQL) for chemical-related containers, components, and parts and to enforce stricter installation check procedures and tightening the pressure specification of leakage check for pressurized toxic gases such as Silane (SiH4).

Reducing Gas False Alarms

- Through 3L5W, the safety standards for selecting equipment materials were set. The rules for selecting materials were written into procurement regulations and covered by safety management of change to reduce near misses caused by mis-selection of materials.

Near Miss Investigation with Quality Analysis Tool 3L5W

- Due to a significant increase in incoming contractors, contractors were included in the calculation of incidents. In 2020, contractor management and premise entry control systems will be integrated. Contractors that fail to complete TSMC’s safety and health training course will be barred from entering TSMC. This policy is expected to facilitate the company in reaching its goal of reducing the Incident Rate per 1,000 Employees to no more than 0.2.
Statistical Analysis on Disabling Injuries

Occupational injuries were calculated according to important indicators determined by the Ministry of Labor and GRI Standards. The Disabling Injuries Frequency Rate (FR) and the Disabling Severity Rate (SR) served as the main indicators, while at-work or off-work road traffic incidents were not included. In 2019, a total of 78 occupational injuries transpired in TSMC facilities, resulting in 1,265 work days lost. Specifically, the Disabling Injuries Frequency Rate (FR) and Disabling Severity Rate (SR) for females were significantly higher than those for males.

Fall-related injuries were the most common, accounting for 32% of the cases and 49% of work days lost. To be specific, fall-related injuries and the resultant work days lost were significantly higher for females than males. Females accounted for 95% of fall-related injuries and 91% of work days lost. Among injured females, 71% were technical staff aged 45-55 years. Investigations and interviews revealed that the main causes of fall were distracted walking and loss of balance while turning. Time to recovery averaged 15-60 days.

In addition to posters, safety officers conducted regular inspections on collision-prone and fall-prone environments, including lighting in operation environment checks, and added osteoporosis prevention and treatment to the 2020 health education program.

Total Working Hours, Injury Cases, and Working Days Lost

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Work Hours</th>
<th>Injury Cases</th>
<th>Working Days Lost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>86,524,246</td>
<td>49</td>
<td>734</td>
</tr>
<tr>
<td>2017</td>
<td>82,115,207</td>
<td>44</td>
<td>644</td>
</tr>
<tr>
<td>2018</td>
<td>94,146,363</td>
<td>83</td>
<td>1,244</td>
</tr>
<tr>
<td>2019</td>
<td>84,141,102</td>
<td>78</td>
<td>1,256</td>
</tr>
</tbody>
</table>

Disabling Injuries Frequency Rate by Gender

<table>
<thead>
<tr>
<th>Year</th>
<th>Male FR</th>
<th>Female FR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>0.40</td>
<td>0.82</td>
</tr>
<tr>
<td>2017</td>
<td>0.30</td>
<td>0.92</td>
</tr>
<tr>
<td>2018</td>
<td>0.76</td>
<td>1.09</td>
</tr>
<tr>
<td>2019</td>
<td>0.60</td>
<td>1.47</td>
</tr>
</tbody>
</table>

Disabling Severity Rate by Gender

<table>
<thead>
<tr>
<th>Year</th>
<th>Male SR</th>
<th>Female SR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>0.88</td>
<td>0.93</td>
</tr>
<tr>
<td>2017</td>
<td>1.13</td>
<td>1.15</td>
</tr>
<tr>
<td>2018</td>
<td>1.24</td>
<td>1.25</td>
</tr>
<tr>
<td>2019</td>
<td>1.36</td>
<td>1.38</td>
</tr>
</tbody>
</table>
The Disabling Severity Rate (SR) and the Disabling Injuries Frequency Rate (FR) slightly increased in 2019 compared to 2018 mainly due to larger staff size. The main types of injury remained the same as last year: bone fractures and sprained ankles caused by falls and collisions. Time to recovery lengthened, resulting in a significant increase in work days lost.

To prevent fall accidents in 2020, reflector stickers and warning signs will be installed in fall-prone stairways. Weekly poster campaigns will be launched to promote awareness among employees. To reduce work-related injuries, equipment maintenance zones and temporary storage zones will be reorganized and renovated. Manual carrying of items will be automated, and impact protection strips will be installed on the sides of trolleys. In 2020, TSMC will continue to put in place measures to prevent falls and collisions, raise safety awareness among employees, and review results through the Safety and Health Committee.

### Preventative Measures for Falls and Collisions

**Raise staff awareness through warning posters and announcing measures in meetings**
- Refrain from using the phone and talking on the phone in stairways
- Refrain from wearing high heels and slippery footwear
- Follow instructions when using trolleys
- Non-work-related operations banned in aisles
- Improved lighting and enforced speed limits in parking lots

**Create a safer workplace to prevent falls and collisions**
- Fall-prone areas improved
- Reflector labels installed
- Equipment maintenance zones and temporary storage zones reorganized and renovated
- Lifting and carrying automated

**Safety Committee regularly convenes for injury cases**
- Injury frequencies were calculated monthly and sent to the highest-ranking managers at each facility
- Materials for annual safety and health education were amended to include new regulations
- Maintained a reporting system

### Disabling Injuries Frequency Rate by Types of Injuries in 2019

<table>
<thead>
<tr>
<th>Type of Injury</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>35</td>
<td>16</td>
<td>5</td>
<td>23</td>
</tr>
<tr>
<td>Sports injury</td>
<td>9</td>
<td>43</td>
<td>12</td>
<td>32</td>
</tr>
<tr>
<td>Cut, scrape, puncture</td>
<td>6</td>
<td>6</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Collision</td>
<td>7</td>
<td>3</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Ergonomic injuries</td>
<td>23</td>
<td>11</td>
<td>20</td>
<td>18</td>
</tr>
</tbody>
</table>

### Disabling Severity Rate by Types of Injuries in 2019

<table>
<thead>
<tr>
<th>Type of Injury</th>
<th>Unit: %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>32%</td>
</tr>
<tr>
<td>Sports injury</td>
<td>1%</td>
</tr>
<tr>
<td>Cut, scrape, puncture</td>
<td>18%</td>
</tr>
<tr>
<td>Collision</td>
<td>4%</td>
</tr>
<tr>
<td>Others</td>
<td>26%</td>
</tr>
<tr>
<td>Ergonomic injuries</td>
<td>13%</td>
</tr>
<tr>
<td>Crush</td>
<td>6%</td>
</tr>
<tr>
<td>Others</td>
<td>6%</td>
</tr>
</tbody>
</table>
Comprehensive Health Management

Work-related diseases and personal health issues undermine productivity and may significantly impact the company's operation. A comprehensive health management plan identifies health risks posed by work environments, takes responsive measures, prevents occupational diseases, and promotes physical and mental well-being among employees.

Occupational Disease Prevention

Moving beyond traditional approaches to occupational health, TSMC has been committed to building a safe and healthy work environment, where each work item is assessed to identify 5 major potential risks, including chemical, physical, ergonomic, biological, and social/psychological risk factors, and to design preventive measures accordingly. To build a healthy workplace, TSMC enlisted external assistance in 2019 by inviting Professor Yi-Wen Luo from China Medical University and Peng-Chi Tsai from National Cheng Kung University to assess ergonomics risks and conduct chemicals analysis at working environments.

Achievements

- Computerized assessments were conducted on 18 employees with above-average or below-average heights (>190 cm or <150 cm). Office chairs were raised and foot mats were provided to maximize their comfort. Target employee satisfaction rate stood at 100%
- Ergonomic risk assessment form received 100% user satisfaction rate
- The risk of lifting and carrying heavy loads and equipment were proactively assessed to ensure the physical well-being of employees in the Operations organization. Every single high-risk operation was covered
- Manual lifting and carrying in 6-inch facilities, 8-inch facilities, and back-end processes were automated, with satisfaction rate reaching 100%
- Arsenic-exposed work zones were renovated and improved.
- Chemical exposure risks in abrasive-blasting rooms were mitigated by requiring that the fume hoods shall draw air at 36,000 liters per minute in addition to operating at a wind speed of 0.5 meters per second.
- Toxicological assessments of unknown substances were conducted in collaboration with the National Health Research Institutes to provide valuable data for the development of new processes, and create a standardized method for toxicological assessment and testing to effectively mitigate health risks
- Similar Exposure Groups (SEGs) were identified. The properties, storage locations, amounts, and equipment safety mechanisms of the chemicals they use were identified, recorded, and put under risk assessment. Results showed low risk for all groups

New Measures Taken in 2019

- An ergonomic risk assessment system was created for office and equipment maintenance staff
- The ergonomic risk assessment form was streamlined to ensure instant risk level assessment
- The use of hazardous substances is rigorously controlled and managed.

Permanent Measures

- Computerized ergonomic risk assessment systems are used to identify operations with high-ergonomic risks. Health centers conduct questionnaire surveys, keep track of employees who apply for pain relief patches, and provide necessary support to employees requesting leave due to soreness and pain and arrange interviews with occupational physicians.
- Operations involving group 1 carcinogenic substances, teratogenic substances, and substances that induce germline mutation are inspected by occupational physicians, who provide suggestions for improvements.
- The use of hazardous substances is rigorously controlled and managed.

For further information, please refer to the official website of TSMC: TSMC Introduces Ergonomics Engineering E-System to Build a Safe Workplace

Preventative Measures & Efficacy against Occupational Disease

TSMC worked with experts to enhance its digital ergonomic risk identification system

New Measures Taken in 2019

- Preventive measures against arsenic exposure were launched.
- A "Toxicological assessment System for Unknown Substances" was built in collaboration with the National Health Research Institutes.
- A digital health risk assessment system was created.

Achievements

- Arsenic-exposed work zones were renovated and improved.
- Chemical exposure risks in abrasive-blasting rooms were mitigated by requiring that the fume hoods shall draw air at 36,000 liters per minute in addition to operating at a wind speed of 0.5 meters per second.
- Toxicological assessments of unknown substances were conducted in collaboration with the National Health Research Institutes to provide valuable data for the development of new processes, and create a standardized method for toxicological assessment and testing to effectively mitigate health risks.
- Similar Exposure Groups (SEGs) were identified. The properties, storage locations, amounts, and equipment safety mechanisms of the chemicals they use were identified, recorded, and put under risk assessment. Results showed low risk for all groups.

(Continue on next page)
Achievements

● Psychological counseling services were provided to employees with high perceived stress levels to help them cope with pressures. Satisfaction rate stood at 95%.

● Promote employee assistance resources in the newcomer training courses. Counseling service cards with related information are given to all employees, and encourage them to use the counseling services.

● Psychologists are recruited to proactively provide care to employees with high perceived stress levels, and referrals are arranged if necessary.

● Provide assistance to meet employees’ needs.

● Provide lectures about psychological health

Social/Psychological Risk Factors

Provide counseling services to employees who feel high levels of pressure

New Measures Taken in 2019

✔ Perceived Stress Questionnaire was reviewed to confirm its validity in identifying employees with high stress levels.

Permanent Measures

• Promote employee assistance resources in the newcomer training courses. Counseling service cards with related information are given to all employees, and encourage them to use the counseling services.

• Psychologists are recruited to proactively provide care to employees with high perceived stress levels, and referrals are arranged if necessary.

• Provide assistance to meet employees’ needs.

• Provide lectures about psychological health

Achievements

• Psychological counseling services were provided to employees with high perceived stress levels to help them cope with pressures. Satisfaction rate stood at 95%.

Biological Risk Factors

Updates from CDC are closely tracked to provide employees with the latest health information

New Measures Taken in 2019

✔ A response plan for collective food poisoning in the TSMC Kindergarten was created.

Permanent Measures

• Developing response protocols for collective food poisoning and food safety management.

• Providing up-to-date information on seasonal flu and Dengue Fever.

• Any outbreak of communicable diseases domestically and abroad are closely monitored, preventive measures for notifiable diseases are being developed, and the Disease Control Committee will convene whenever necessary.

• Employees on business trips to areas with disease outbreaks are briefed and provided with disease prevention toolkits.

• A system for disinfection will be developed.

Achievements

• Collective food poisoning drill scripts and response protocols were developed for the four Kindergartens located in Hsinchu, Taichung, and Tainan. Drills were conducted.

• A total of 538 cases of notifiable disease and non-notifiable disease were effectively managed to contain spread.

• A total of 239 disease prevention toolkits were distributed to employees on official business trips.

Physical Risk Factors

Physical hazards are better identified

New Measures Taken in 2019

✔ A record of non-ionizing radiation levels of all relevant equipment was created. Individuals with cardiac pacemakers were barred from operating such equipment and warned before hire.

Permanent Measures

• Developing measurement systems for ionizing radiation levels to monitor the radiation protection of all relevant equipment.

• Addressing noise issues in cleanrooms.

• Process equipment is tested for non-ionizing radiation levels every six months.

• Developing a management system for radioactive sources.

Achievements

• All equipment tested normal for non-ionizing radiation levels.

• Noise issues in cleanrooms improved.

• No cases of radiation exposure.
Assisting Employees in Health Management: Health Risk Management and Health Care

### Health Risk Management

TSMC’s occupational health risk management plan covers both occupational hazards and personal health. Addressing both factors is the key to employees’ well-being.

#### Occupational Health Risk

- **Special Health Examination Management**: 4,146 employees
- **Brain and Cardiovascular Disease Prevention and Management Program**: 1,389 employees
- **Maternal Health Management Plan**: 670 employees
- **High Stress Support Plan**: 994 employees
- **Occupational Musculoskeletal Disorder Prevention Plan**: 166 employees
- **General Employee Health Care**: 48,699 employees

### Health Care

Employees were offered a supportive environment and a variety of health care programs to maintain their well-being.

#### Health and Wellness Programs in 2019

- **Cancer Screening**: 9,244 employees
- **Clinic Services**: 20,668 outpatients
- **Weight Loss Challenge**: 1,041 participants
- **Health Quizzes**: 12,458 users
- **Physical & Mental Health Lectures**: 2,103 people
- **Massage Service**: 5,872 users
- **Exercise Center**: 178,296 users
- **Assistance for Employees**: 3,125 users of the free consulting service

### New Measure

#### Brain & Cardiovascular Disease Prevention and Management Program

TSMC proactively manages the workload of employees according to their health conditions to prevent cerebrovascular and cardiovascular diseases. Since 2015, TSMC has conducted health risk assessment and classification every year. In accordance with the Guidelines on Prevention of Health Disorders Resulting from Abnormal Workload, TSMC assesses employees’ risk of developing cardiovascular conditions within ten years (Framingham Point Score), and in 2019, TSMC’s Taiwan facilities began to offer cerebrovascular and cardiovascular health analysis services and worked with occupational physicians to develop a set of screening criteria for medium and high risk employees. Screening through questionnaires and work hour data, the team expanded the plan to cover an additional 1,389 employees. Furthermore, work hour monitoring was conducted every month instead of every half year to better manage the health risks of employees. A total of 2,586 employees were selected to receive support, including health education, medical assistance, and advice from physicians on how to manage work hours.
Internal-External Alliance

As it grows, TSMC exerts an ever greater influence on societies and industries. Therefore, TSMC recognizes its obligations in creating a healthy workplace together with its vendors and contractors. Working proactively with external parties in 2019, TSMC learnt from others and shared its own experience in promoting safety and health in the workplace by offering a variety of training programs. Through collaboration with partners in academia, the public sector, and the private sector, TSMC spares no effort in reducing safety and health risks at workplaces in its supply chains and of its contractors.

Working with External Parties to Optimize Work Environment

Using the Taiwan Semiconductor Industry Association as a platform, TSMC shares with other actors in the industry its experience in managing safety and health risks at the workplace. It also regularly attends the Joint Steering Committee ESH Working Group of the World Semiconductor Council on behalf of Taiwan’s semiconductor industry to conduct exchange with overseas peers on occupational safety and health. In 2019, TSMC worked with the Occupational Safety and Health Administration and the Institute of Environmental and Occupational Health Sciences of National Yang-Ming University to create capacity-building programs for TSMC’s occupational health officers. Focusing on chemical and ergonomic risk factors, the program developed advanced materials for on-the-job training and offered practical courses in north, central, and south of Taiwan to enhance occupational health officers’ capability to identify hazards and address problems, thereby building a safe and healthy workplace.

I would like to express my sincere gratitude to TSMC for sharing with us their experience in protecting the well-being of employees and promoting active management of chemicals in Taiwan’s businesses. During the course of our joint project, I was deeply impressed by TSMC’s commitment to the safety and health of its employees.

Mei-Lien Chen
Distinguished professor at the Institute of Environmental and Occupational Health Sciences of National Yang-Ming University and chairperson of Taiwan Occupational Hygiene Association
Contractors under high risk of chemical exposure were identified through analyses on risks of chemical exposures and the frequency and nature of their operations. 3% of contractors were identified as high risk bearers, and TSMC has been committed to reducing their risks of developing occupational diseases as a result of exposure to chemicals. In 2019, contractors registered higher Disabling Injuries Frequency Rate (FR) and Disabling Severity Rate (SR) than the previous year because two contractors were injured by electrical shocks, resulting in a total of 462 work days lost. In the aftermath of the incident, TSMC enhanced preventive measures against electrical shocks and included operations with risks of electrical shocks into the category of high risk operations. Following the US National Electrical Code, the company developed rules for the use of protective gears in operation involving arc flash and live-line, and incorporated those rules into The Blue Book on Environmental Safety and Health for Contractors. In addition, a security guard died on duty due to cerebrovascular and cardiovascular conditions, resulting in 6,000 work days lost. TSMC has thoroughly investigated the incident and found that the work hours of TSMC’s security personnel are in compliance with government regulations. However, in response to the incident, TSMC will further strengthen training and occupational safety awareness for security personnel working in factories. We hope to remind our security personnel to look out for any signs of fatigue and take necessary precautions. Starting in 2020, we will also be launching a Care Program to support TSMC’s cleaning staff, canteen workers, truck drivers, and other employees from contractors.

### New Measures in 2019

- Reporting of abnormal results from special health examinations: Contractors are required to report to TSMC any abnormal results from special health examinations that can be attributed to work-related causes according to the Labor Health Protection Act.
- TSMC dispatched its occupational physicians to inspect the operations on on-site contractors and analyze their risks of chemical exposure.
- The Blue Book on Environmental Safety and Health for Contractors was created.

### Permanent Measures

- The Disabling Injuries Frequency Rate (FR) and Disabling Severity Rate (SR) of contractors are analyzed to inform responsive measures. Safety training and outreach for contractors are being improved. Contractors are required to follow standard protocols and procedures.

### Achievements

- Zero reported cases of abnormal health examination results.
- On-site contractors are guaranteed zero risk of chemical exposure in TSMC premises.
- Contractors are ensured easy access to safety and health management procedures.

### Education Programs for Contractors

- Safety and health training
- Protection gear training for on-site contractors that work with chemicals
- On-site contractors that work with chemicals are asked to attend TSMC’s annual emergency drill

### Disabling Injuries in Contractors

#### 2017 2018 2019

- Disabling Injuries Frequency Rate (FR)
- Disabling Severity Rate (SR)

Note: The figures cover TSMC’s Taiwan Facilities
Working with Supply Chain Partners to Achieve Sustainable Development

TSMC has conducted safety and health on-site inspection on suppliers and offered guidance whenever needed. During 2017 and 2019, TSMC worked with the Occupational Safety and Health Administration and Associate professor Yu-Wen Lin from the Department of Public Health of the Medical College of Fu-Jen Catholic University in carrying out the Supply Chain Occupational Health Promotion Program. The joint task force co-inspected 37 TSMC suppliers in fields including parts/wafer cleaning, pump repair, chemicals supply, and recycling, and provided instant feedback for improvements. Common challenges faced by similar businesses were identified, and their solutions, including ventilation system maintenance, respiratory protection plan, and dermal protection practices, were incorporated into education programs. Furthermore, TSMC sought to enhance the capabilities of safety officers to identify and address problems. In education programs, therefore, lectures were gradually replaced with interactive discussions to help vendors develop the capacity to proactively improve their environments.

In addition, TSMC organized in 2019 a conference on ISO 45001 Certification for Occupational Safety and Health Management System. Of the contractors identified as high-risk construction contractors and conducted “Safety Management Assessment for High Risk Contractors” on all of them. Then, TSMC interviewed the management of each of those contractors to ensure that they understood their responsibilities as specified by Occupational Safety and Health Act, and oversaw their improvement by requiring them to sit on the Safety and Health Committee. At the same time, on-site workers were granted the right to suspend work if necessary.

Furthermore, contractors are required to obtain ISO 45001 Certification for Occupational Safety and Health Management System. Of the contractors identified as high risk bearers, 33 have become certified, and all will be certified by the end of 2020. In 2020, TSMC will enlist the support of external experts and launch an incentive program for construction safety. Experts will be invited to inspect the safety policies, oversight, and auditing systems of TSMC’s contractors and provide constructive suggestions for improvement. A monetary incentive award will be offered to encourage firm execution of safety policies and enhance contractor’s ability to self-manage.

For further information, please refer to the official website of TSMC: To Ensure Construction Safety, TSMC Enhances Management of Safety and Health.

Enhancing Safety Management at Construction Sites Managed by Contractors

Construction firms under contract with TSMC for fab construction are fully responsible for managing the construction site. To ensure the safety of the workforce, TSMC works with contractors to build a safe working environment and strengthen the management of construction sites. Thus, a three level management system by builders, the Construction Site Safety Committee, and TSMC is in place to ensure the safety of workers on site.

Based on the occupational hazards specified in Article 6 of Occupational Safety and Health Act, TSMC identified 34 high-risk construction contractors and conducted “Safety Management Assessment for High Risk Constructors” on all of them. Then, TSMC interviewed the management of each of those contractors to ensure that they understood their responsibilities as specified by Occupational Safety and Health Act, and oversaw their improvement by requiring them to sit on the Safety and Health Committee. At the same time, on-site workers were granted the right to suspend work if necessary.

Furthermore, contractors are required to obtain ISO 45001 Certification for Occupational Safety and Health Management System. Of the contractors identified as high risk bearers, 33 have become certified, and all will be certified by the end of 2020. In 2020, TSMC will enlist the support of external experts and launch an incentive program for construction safety. Experts will be invited to inspect the safety policies, oversight, and auditing systems of TSMC’s contractors and provide constructive suggestions for improvement. A monetary incentive award will be offered to encourage firm execution of safety policies and enhance contractor’s ability to self-manage.

Construction Safety Management

<table>
<thead>
<tr>
<th>Level 3</th>
<th>TSMC and the Management Teams of Constructors</th>
<th>Construction Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TSMC and the Management Teams of Constructors</td>
<td>Construction Projects</td>
</tr>
<tr>
<td></td>
<td>Authorizing Safety Officers with the Right to Supervise and Manage</td>
<td>TSMC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level 2</th>
<th>Safety Supervisors Independently Recruited by the Safety Committee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supervising All Workers</td>
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<tr>
<td></td>
<td>Construction Safety Committee</td>
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<tr>
<td></td>
<td>Supervisor</td>
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<tr>
<td></td>
<td>Construction Safety Engineer</td>
</tr>
<tr>
<td></td>
<td>Environmental Safety Engineer</td>
</tr>
<tr>
<td></td>
<td>Electricity Use Engineer</td>
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</table>

<table>
<thead>
<tr>
<th>Level 1</th>
<th>Safety Officers and Construction Supervisors from Construction firm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Supervising Their Own Workers</td>
</tr>
<tr>
<td></td>
<td>Construction Company 1</td>
</tr>
<tr>
<td></td>
<td>Construction Company 2</td>
</tr>
<tr>
<td></td>
<td>Construction Company N</td>
</tr>
</tbody>
</table>

Construction sites are inspected, infractions and deficiencies are identified, and improvement measures are supervised.

Contractors are required to maintain rigorous supervision on their construction operations and enhance the capabilities of their safety officers through effective training programs.

Contractors are required to obtain certification for their occupational safety and health management system.
Measures for Construction Safety and Results in 2019

**Measures**

- **Requiring Contractors to Develop Occupational Safety and Health Management System**
  - 34 construction firms in contract with TSMC identified as high risk bearers were required to gain ISO 45001 certification.

- **Ensuring Rigorous Oversight of Construction Operations and Enhancing the Capabilities of Safety Officers**
  - Construction personnel were required to undergo safety training before being granted work permits.
  - Personnel who violate safety protocols will have their work permit suspended or revoked. In the latter case, workers must pass safety training again before their permit can be restored.
  - Facial recognition systems were installed to record the identities, numbers, and duration of stay of all incoming personnel.

- **Inspecting Construction Sites Managed by Contractors, Supervising Improvement Measures, and Implementing Preventive Practices**
  - The number of safety supervisors were increased >1/15.
  - Contractors were inspected on 9 major categories. Penalties and deadlines for improvement were set in a manner consistent with the levels of infractions.

**Achievements**

- **97%**
  - Certified Contractors
  - The rest expected to become certified in 2020.

- **100%**
  - All Relevant Personnel Underwent Construction Safety Education
  - If construction personnel were found overworking, contractors were asked to improve their compliance with the Labor Standards Act.

- **0.34%**
  - Infraction Rate
  - Double hook safety harness training

**Safety Training for Construction Workers**

- Fall prevention training for personnel working in elevated environments
- Head impact simulation
- Daily toolbox safety meeting — announcing safety regulations
- Facial recognition system and entry control