

**SUSTAINABILITY  
REPORT 2019**



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## ABOUT THE REPORT

Kulicke & Soffa (“K&S”) is pleased to present its fourth Sustainability Report for the financial year ended September 28, 2019 (FY2019). This report encapsulates policies, practices and performances on economic, environmental, social and governance (EESG) topics that are most relevant to its operations and stakeholders, identified through materiality assessment.

The reporting scope covers all six<sup>1</sup> operational sites for the period October 1, 2018 through September 28, 2019 (FY2019) with FY2018 data for comparison, where applicable.

This report has been prepared in reference to the Global Reporting Initiative (GRI) Standards – Core Option and has applied the reporting principles of materiality, stakeholder inclusiveness, sustainability context and completeness. The GRI Standards have been selected as they represent global best practices for reporting on a range of sustainability topics and enable comparisons of Kulicke & Soffa’s performance among peers. This year, K&S will continue disclosing its efforts and contributions towards the United Nations (UN) Sustainable Development Goals (SDGs) and its relevant impacts.

For any queries in relation to this report or other feedback, please feel free to contact Ms. Helen Siew (Senior Manager, Corporate Quality) at [lhsiew@kns.com](mailto:lhsiew@kns.com).

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<sup>1</sup> The six sites under SR2019 reporting scope are (1) Singapore, (2) Suzhou, China, (3) Eindhoven, Netherlands, (4) Fort Washington, PA, USA, (5) Santa Ana, CA, USA, (6) Haifa, Israel.

## PRESIDENT & CEO'S STATEMENT



Sustainability, climate change and global warming concerns have increasingly become more common-place, creating a call for action. Nations, corporations and individuals are expected to adapt, become more innovative and deliver solution-focused results.

At Kulicke & Soffa (K&S), we take this responsibility seriously and remain very focused. Recently, we have accelerated our environmental stewardship and remain committed to conducting our business ethically and responsibly while consciously giving back to the communities in which we operate. We are pleased to announce our fourth annual sustainability report, our third consecutive year reporting in accordance to the Global Reporting Initiative Standards – Core Option.

This year, we have progressed our sustainability efforts further as we expanded our initiatives in support of the United Nations Sustainable Development Goals. As the industry moves towards Industry 4.0, we will ensure that our workforce is adequately equipped with the necessary knowledge and expertise to deliver. Taking our environmental responsibility seriously, we are exploring tactical design considerations to minimize the cumulative carbon footprint of our products.

Progress was also made on our employee's health and safety framework. K&S will transition from OHSAS 18001 to ISO 45001:2018 Occupational Health & Safety Management System Certification for the Singapore and Suzhou sites, and attain ISO 45001 certification for the Eindhoven, Haifa, Fort Washington and Santa Ana sites by FY2020.

We are proud of our enhanced Corporate Responsibility Policy which underpins our organization's core values. Comprising of four main pillars – Governance, Economic, Environment and Social – it iterates our commitment towards sustainability through our business operations. We owe our sustainability success to the commitment of a dedicated global sustainability committee and are pleased to share our new ambitious sustainability targets, which we aim to outperform in years to come.

At K&S, we will continue to actively engage with our stakeholders, exploring possible collaborations and anticipating their concerns. As we look ahead, we will continue seeking out new opportunities to further align our business priorities with our growing commitment to sustainability.

A handwritten signature in black ink, appearing to read 'Fusen Chen', written in a cursive style.

**Fusen Chen**

President & CEO

# FY2019 HIGHLIGHTS

## Economic



**OVER 65 YEARS**  
of excellence in technology,  
innovation and solutions



Net revenue of  
**US\$540 MIL**



**US\$116 MIL**  
invested into Research and  
Development (R&D)  
**22%**  
of FY2019's revenue

## Environment



**54% RECYCLING  
RATE**  
Achieved above target of  
40% for waste recycling  
through streamlining waste  
generation



**3%  
REDUCTION**  
in energy consumption  
from FY2018

## Supply Chain



Three RoHS-compliant  
core platforms launched  
since FY2018 (OptoLux™  
family, RAPID™ family  
and Asterion™ Ultrasonic  
Welder)



**76%**  
Conflict-Free Smelters  
(CFS) identified or active in  
RY2018



**Zero**  
validated cases of non-  
compliances regarding  
health and safety impacts  
of products and services

## People



**AFR: 0.5**  
Maintained Accident  
Frequency Rate below  
1.0 for the past three  
consecutive years



**>2,400**  
employees globally

**>550**  
R&D employees with  
average tenure of over 11  
years



**100%**  
acknowledgement from  
K&S employees on the  
annual Code of Conduct  
training

## Community



**>30 CSR events**  
carried out globally,  
**US\$739,000**  
in community investment



**>US\$470 MIL**  
economic value distributed  
to employees, government,  
suppliers and communities



# ABOUT KULICKE & SOFFA

Founded in 1951, K&S prides itself on establishing foundations for technological advancement — creating pioneering interconnect solutions that enable performance improvements, power efficiency, form-factor reductions and assembly excellence of current and next-generation semiconductor devices. Headquartered in Singapore since 2010, K&S is positioned to support the broad

and global needs of the semiconductor, automotive and electronics assembly markets. Kulicke & Soffa's global footprint (Figure 1) includes strategically positioned manufacturing facilities, research and development (R&D) centers and sales & service offices.



Figure 1: K&S Global Footprint

# The K&S Vision

## The leading technology and service provider of innovative interconnect solutions enabling a smart future

### K&S Mission

Global solutions provider for advanced interconnect and electronic assembly with long-standing tradition of delivering disruptive innovations	Delight our customers through deeper collaboration and delivering innovative solutions of the highest quality
Enable technology leadership through strategic partnerships across the value chain	Provide solutions for the entire served markets to ensure continuous dominance and relevance to customers
Broaden products and value added services organically and inorganically to be no. 1 in all served and adjacent markets	Evolve to be the supplier of choice in smart manufacturing solutions
Maximize productivity and operation efficiency in all parts of our current and future targeted K&S value chain	Increase market intelligence to improve predictability of our business and alignment of solution development to market needs
Consistently grow and deliver superior financial performance	Foster a creative and positive work environment by embracing our core values

### K&S Core Values



**Delight Our Customers**  
Impress Existing Customers and Win New Ones



**People Matter**  
Develop Our People as Our Primary Asset



**Make A Difference**  
Take Responsibility and Be Accountable for Your Actions



**Learn, Grow, Excel**  
Pursue Personal Growth and Business Excellence through Learning



**Innovate For Success**  
Think and Act in Innovative Ways to Manage and Grow Our Business

Figure 2: K&S Vision, Mission and Core Values

## Code of Business Conduct

Good business ethics and robust corporate governance are at the cornerstone of all businesses. K&S has developed a robust set of policies aimed to engage with internal and external stakeholders. The K&S Code of Business Conduct (“Code”) provides an ethical and legal framework for business practices and conduct. All K&S employees, officers and directors must adhere to this Code and are expected to act prudently in their interaction with colleagues, suppliers, customers and other business associates. All new employees must endorse on the Code as part of onboarding compliance.

The Code is comprised of guiding principles ranging from regulatory compliance, conflicts of interest, corporate opportunities, protection and use of K&S assets and competition and fair dealing. K&S maintains a firm stance on anti-corruption, anti-bribery and any other relevant improprieties. The Audit Committee reviews periodically with management the program established to monitor compliance with the Code. The Code is reviewed annually. Employees are encouraged to reach out to the Compliance Officer for advice should they observe any illegal, unethical behaviour or violations of the Code. K&S also has a Whistleblower Policy which details the procedures for reporting, investigation and treatment of complaints received.

For a more detailed explanation of the Whistleblower comment, please refer to the Code of Business Conduct and our other Corporate Governance policies at - <https://investor.kns.com/corporate-governance-1>.





# Products

Kulicke & Soffa is a leading provider of semiconductor and electronics assembly solutions serving the global automotive, consumer, communications, computing and industrial markets. Its expanding portfolio provides equipment solutions, aftermarket products and services supporting a comprehensive set of interconnect technologies. Recent product successes have been focused on enhancing efficiency of high-volume general-lighting LED production, increasing

the transistor density of high-performance memory and logic applications, and reducing the power requirements of electronic displays.

An overview of the K&S product portfolio comprising of wire bonding, advanced packaging, lithography, electronics assembly and a broader range of expendable tools is shown in Figure 3.

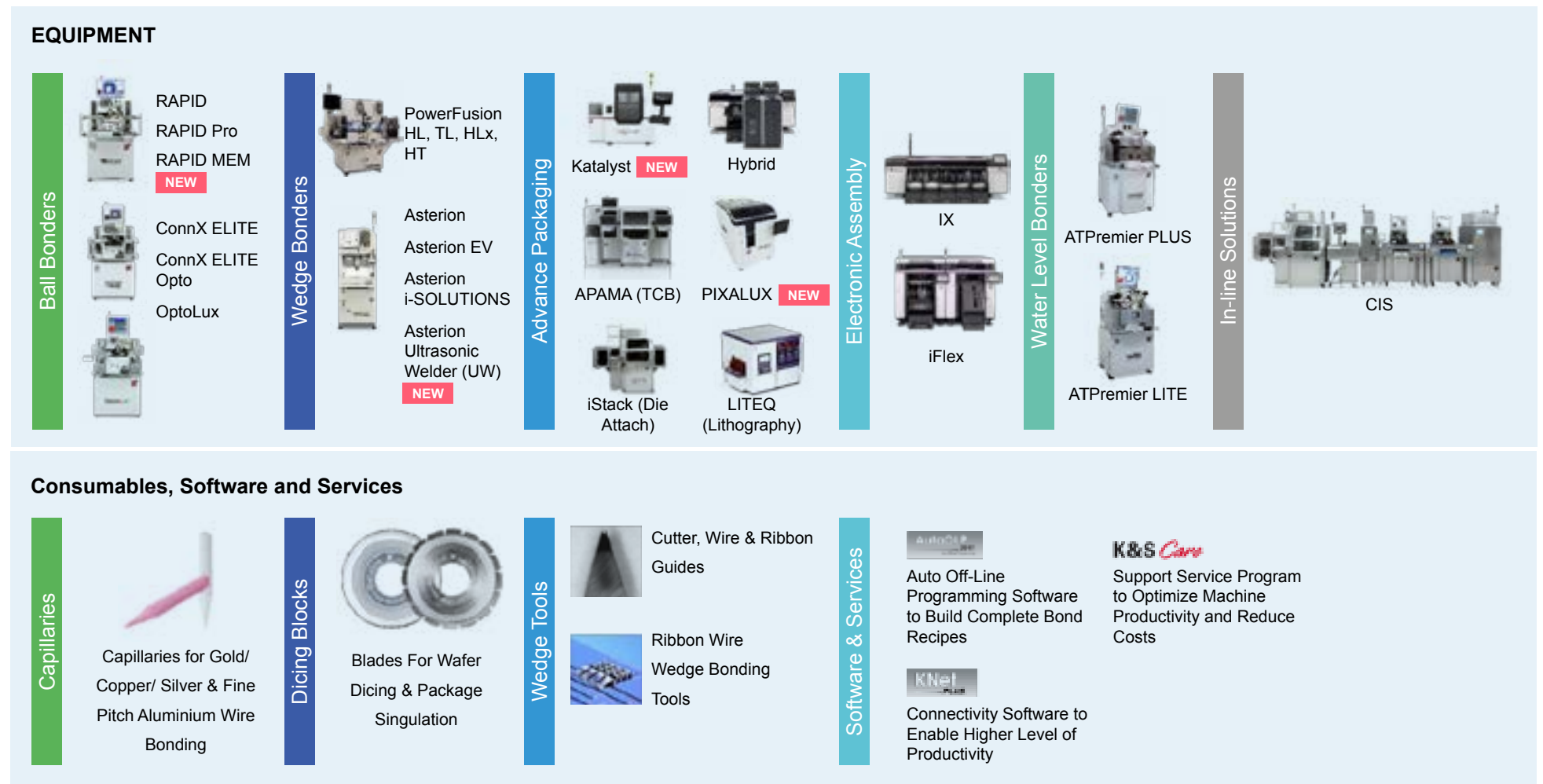


Figure 3: K&S Product Offerings

# Moving Towards Industry 4.0 Readiness

Quality is defined as providing positive customer experience, in meeting and exceeding their expectations. As customers continue to raise their standards, K&S must move ahead in the adoption of smarter technology in manufacturing, that is, Industry 4.0. The operations team in the manufacturing department has progressive plans in advancing factory and data automation. Manufacturing has adopted Augmented Reality (AR) in the training of employees to increase efficiency and product quality consistency. As part of the digital transformation journey, moving from scattered data to predictive analytics, K&S has developed the ability to digitally collect manufacturing data and automatically analyze them for anomalies detection. This gives K&S a competitive advantage over competitors that employ traditional manufacturing methods and goes beyond automation to machine learning. Newly launched equipment in FY2020 is

designed to be smarter, more productive and customized for customers' needs towards Industry 4.0. As the industry moves into digitization and 5G, K&S continues to innovate and engage new technologies in automation, Artificial Intelligence (AI), and predictive analytics to have smoother processes, improved yields and reduced waste.



**K&S introduced its Gen-S smart bonder series in FY2019.**

The RAPID™ is the first product of the series that addresses Industry 4.0 requirements:

- Advanced Process Control (APC)
- Data analytics and Traceability
- Predictive maintenance

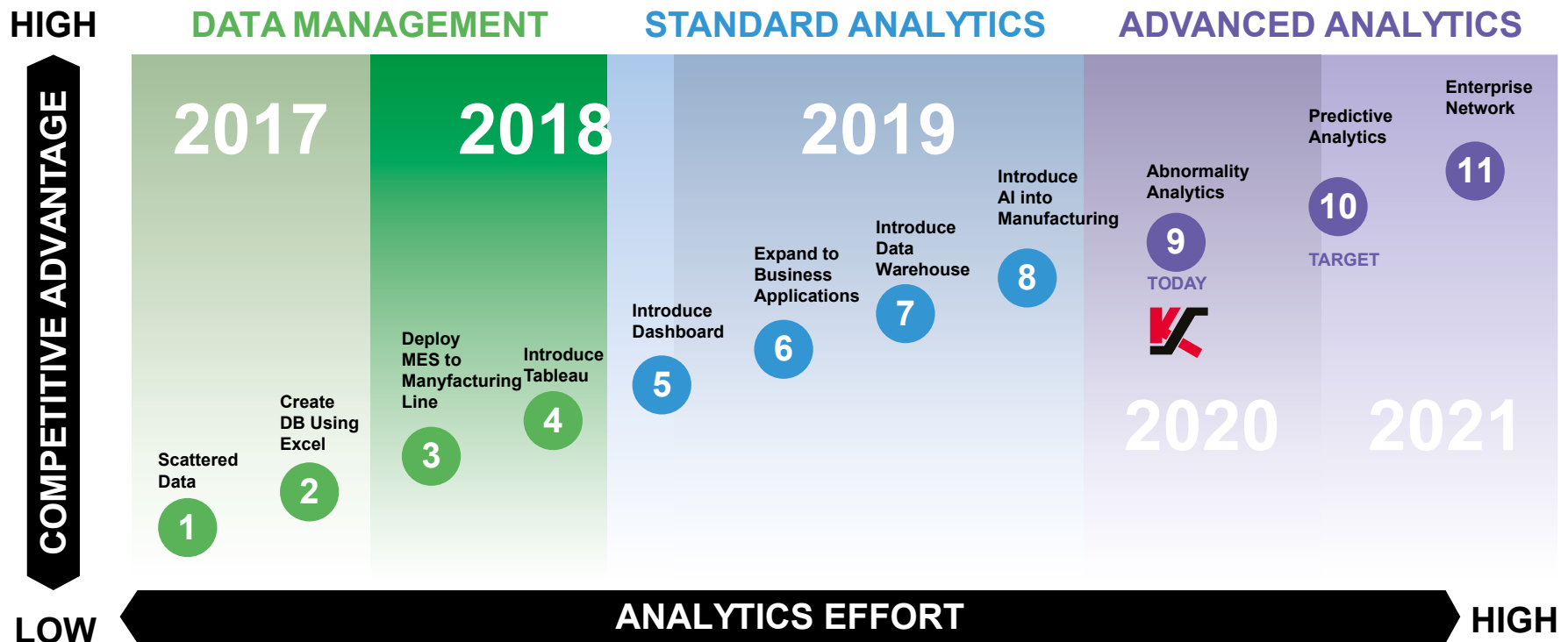


Figure 4: K&S Digitalization and Data Analytics Roadmap

## CASE STUDY

# Augmented Reality Demo Tool

Kulicke & Soffa collaborated with a leading enterprise IT company to create a demo tool that guides customers on performing maintenance on K&S bonders using Augmented Reality (AR). A standard tablet fitted with AR is used to identify the machine part for maintenance. Through AR, the tablet will display the Digital Standard Operating Procedure which provides step-by-step visual guides on the procedures of the maintenance process. This gives an enhanced user experience and reduces human error. Furthermore, K&S has also expanded its use to a similar AR-aided training program for employees in the manufacturing department. This AR demo tool was showcased at the SEMICON Southeast Asia 2019 trade show and it was well received.



## Economic Performance

Despite a challenging FY2019 industry environment, K&S was able to expand its served markets and gain traction on several new growth prospects. As K&S continues to execute this market expansion strategy to further enhance shareholder value creation, it continues to deliver material value to investors.

Over the preceding five fiscal years, K&S generated approximately \$408 million of free cash flow and reduced shares outstanding by over 17%. Direct shareholder returns, during this period, through share repurchases and dividends

totaled \$342 million, of which approximately \$132 million, nearly 40%, was deployed in FY2019 alone.

K&S stands by the belief that prudent market expansion, effective new product development, and direct shareholder returns provide a powerful combination of value creation and delivery.

Financial Results <sup>2</sup>	FY2019 US\$'000	% change from FY2018	FY2018 US\$'000	FY2017 US\$'000	FY2016 US\$'000
<b>Economic Value Generated</b>					
Revenue	540,052	⬇️ 39%	889,121	809,041	627,192
<b>Economic Value Distributed</b>					
Operating costs	232,978		242,809	269,011	234,190
Employee wages and benefits	190,236		217,294	212,612	143,075
Dividends <sup>3</sup> paid to shareholders	31,357		16,233	–	–
Payments to government	22,073		13,180	8,283	10,020
Community investment <sup>4</sup>	739		514	479	315
	477,383	⬇️ 3%	490,030	490,385	387,600
<b>Economic Value Retained</b>	62,669	⬇️ 84%	399,091	318,656	239,592

<sup>2</sup>Information in this table is derived from Kulicke & Soffa's audited financial statements and other accounting/financial data. This information is intended to summarize the overall contribution of K&S to its stakeholders and not intended to replace or provide an alternative to the audited financial statements which is made available in the K&S Annual Report FY2019.

<sup>3</sup>Dividends were distributed in FY2018 and FY2019.

<sup>4</sup>Internships

## GOVERNANCE AT K&S



“

*A pro-active approach and framework to business continuity, enterprise risk assessment, management system harmonization and employee conduct training, collectively enhances our ability to create and deliver shareholder value.* ”

**Lester Wong**  
Chief Financial Officer

# Business Continuity Management

Kulicke & Soffa has established and maintained an effective Business Continuity Management (BCM) framework to enhance its organizational resilience and capability of damage minimization with shorter business recovery time in a disastrous event. It is also to safeguard the sustainable business interests of its stakeholders, brand and value-creating activities.

The Business Continuity Plan (BCP) prioritizes critical business functions, allowing for the resumption of minimum acceptable service levels as quickly as possible in the event of a disaster. The Executive Leadership Team (ELT) has oversight of a global Crisis Management Team (CMT), comprising of key Management Site Leads and Department Leads across six K&S sites, which will carry out the BCP upon its activation.

The CMT will lead the BCP activation in communicating to internal and external parties, managing the crisis and recovering of critical business processes. The BCM is referenced to ISO 22301 and will undergo annual review for continual improvement.

Potential threats that will disrupt K&S operations are grouped accordingly to the four disaster scenarios. The BCP details the crisis management and business recovery for each of these scenarios as follows:



**Loss of use of premises**



**Unavailability of staff**



**Loss of IT services, voice and/or data communication**



**Unavailability of key suppliers**

Periodically, desktop simulation tests are conducted at each site to familiarize the CMT with the various scenarios and the business recovery tasks. The CMT and relevant departments will review the simulation test results and take actions to improve the BCP effectiveness, further enhancing resilience of the BCP.

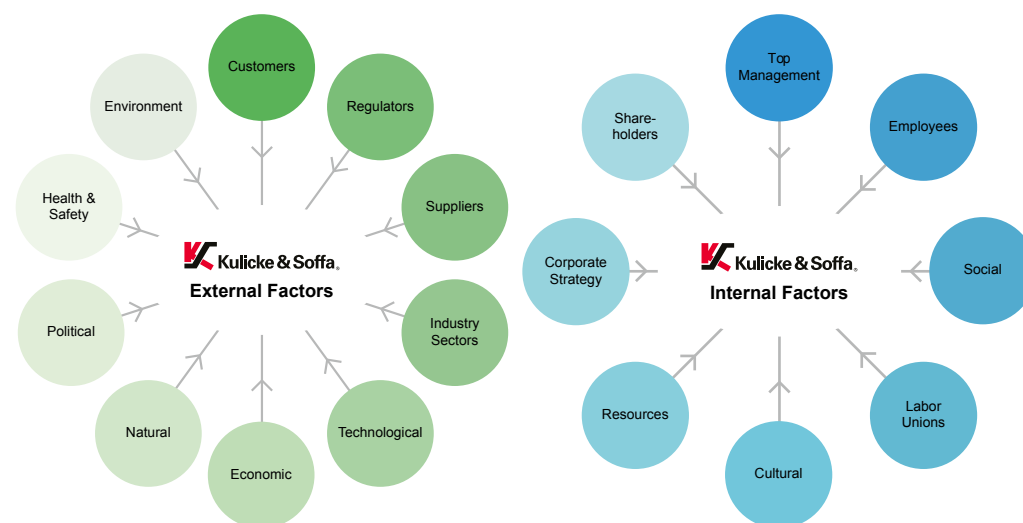
All K&S employees will undergo a mandatory BCP awareness online training and refresher training will be conducted once every two years. Additionally, all BCP information are accessible to all employees on the K&S Intranet Portal.



# Enterprise Risk Management

Every day, businesses are exposed to a variety of risks which can affect their ability to survive and thrive. In August 2019, K&S conducted a holistic Enterprise Risk Assessment (ERA) to determine, prioritize and mitigate critical business risks and opportunities. Through the collaboration of Internal Audit and Corporate Integrated Management System (IMS) teams, the enhanced risk assessment considered all internal and external factors affecting K&S' business. Furthermore, this assessment achieved a higher engagement of

over 70 employees involving the ELT, global site leaders, functional Heads of Department in ERA workshops, interviews and online assessments. The risks identified were assessed and classified into high, medium and low risks. The ERA register documents the risks, their mitigation actions for periodic monitoring and management review. Through this assessment, K&S strives to promote a proactive culture of prevention and improvement.



## Classification of Risks

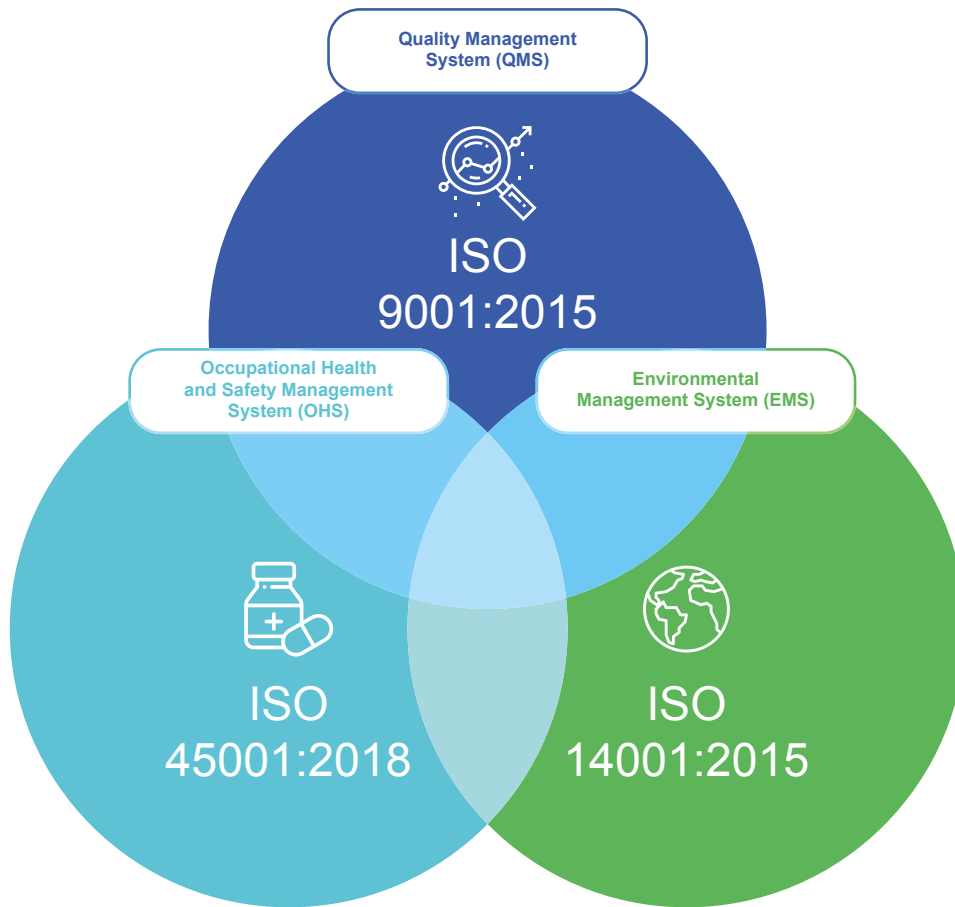
High	risk management <b>has not demonstrated</b> improvement in the inherent risk exposure
Medium	risk management <b>has begun to demonstrate</b> improvement in the inherent risk exposure
Low	risk management <b>resulted in demonstrated improvement</b> to adequately address inherent risk

Figure 5: K&S Risk Management Framework and Classification of Risks

# Integrated Management System

It is K&S' goal to achieve the Quality, Environmental, Occupational Health & Safety (QEHS) Integrated Management System (IMS) certification at the Corporate level across its six design and manufacturing sites with harmonized QEHS objectives and processes. Since FY2014, K&S has achieved IMS corporate certification for the six sites, with Singapore and Suzhou sites certified for ISO 9001:2015, ISO 14001:2015 and OHSAS 18001:2007 and the other four sites certified for ISO 9001 and ISO 14001 standards. The IMS adopts a holistic approach towards quality, environmental and safety management in

all K&S' processes and documentation in ensuring consistency, improving its performance and meeting the expectations of internal and external stakeholders. In FY2019, K&S adopted and implemented the new ISO 45001:2018 Occupational Health and Safety Management System standard, replacing the OHSAS 18001:2007 standard. To further improve K&S' emphasis on health and safety management, it aims to achieve corporate certification at all six sites in FY2020 for ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 standards.



Certified since 2014	QMS	EMS	OHS OHSAS 18001
Singapore (HQ)	✓	✓	✓
Suzhou, China	✓	✓	✓
Fort Washington, USA	✓	✓	
Santa Ana, USA	✓	✓	
Haifa, Israel	✓	✓	
Eindhoven, Netherlands	✓	✓	

↓  
**FY2020 Goal**

FY2020 IMS Certification	QMS	EMS	OHS ISO 45001
Singapore (HQ)	✓	✓	✓
Suzhou, China	✓	✓	✓
Fort Washington, USA	✓	✓	✓
Santa Ana, USA	✓	✓	✓
Haifa, Israel	✓	✓	✓
Eindhoven, Netherlands	✓	✓	✓

Figure 6: K&S Integrated Management System and transition from OHSAS 18001 to ISO 45001



## Ethics, Bribery and Corruption

K&S has an internal Code of Business Conduct for all employees and Code of Ethics for Senior Officers. Every year, K&S conducts e-training to reiterate its expectations on conduct to all employees. They are expected to exercise sound judgement towards fair and just behaviour in their interactions and decision making. A 100% completion rate was attained for the annual training in FY2019.

**100% completion rate for annual Code of Conduct training course was attained in FY2019**



# SUSTAINABILITY APPROACH AT K&S

In FY2019, K&S enhanced its CR Policy, committing to continually improving its effectiveness on economic, environmental, and social impacts to make a difference for a better future. The CR policy identified four strategic aspects, Economic, Environment, Social and Governance, which is mapped to support five of the United Nations Sustainability Development Goals (SDGs).

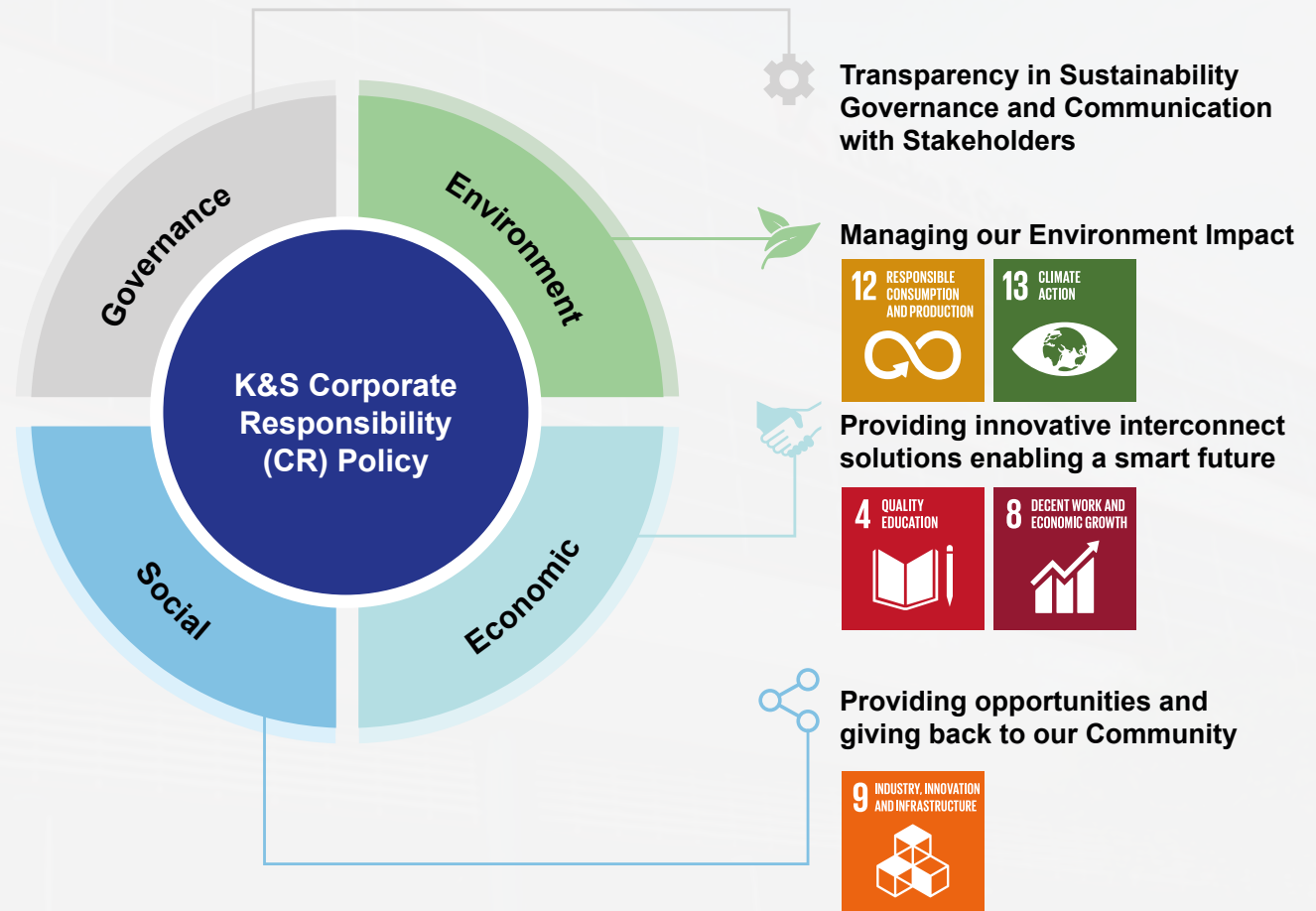


Figure 7: K&S CR Policy



## Sustainability Governance

As seen in K&S' CR policy, sustainability lies at the core of its business and is a critical part in corporate planning. The Executive Leadership Team at K&S established a Global Sustainability Committee (GSC) in FY2016. It is responsible for integrating sustainability practices and monitoring performance across the six K&S sites. Comprising of multi-disciplinary functions at each site, it ensures sustainability initiatives are carried out and performance is recorded. Every quarter, the global sustainability committee reviews K&S' sustainability metrics performance and supports its initiatives to achieve the set annual goals and targets<sup>5</sup>.

Thereafter, the GSC ensures that sustainability performance is communicated to the Executive Leadership Team on an annual basis through the Sustainability Report.





Figure 9: K&S Sustainability Governance Structure

<sup>5</sup>K&S has set out various targets for each of the five material and four additional matters chosen for reporting. For more information, please refer to the respective sections in the report.

# Stakeholder Engagement

Effective communication brings about stronger and long-lasting relationships with each of K&S' stakeholders. Through regular engagement, it facilitates better understanding of stakeholders' needs and concerns which will guide K&S on formulating corresponding strategies and goals. The channel of engagements and K&S' responses are presented in the charts below.

 <b>Employees</b>	
Key Concerns/ Interests	Employees look to K&S to be a fair and just employer, upholding human rights through equal provision of benefits, training opportunities, health and safety.
Engagement Methods and Frequency	<p>K&amp;S holds the Employee Engagement Survey every two to three years. Annually, employees will be involved in educational site visits and voluntary activities.</p> <p>Training and workshops are available through the HR training plan to address employees' training needs. Employees receive communication and are continually updated through corporate and site townhalls, K&amp;S intranet, staff meetings, emails and notice boards.</p>
Responses from K&S	<p>Ensure competitive remuneration and benefits provided to all employees.</p> <p>Maintain a holistic learning and development program for career progression, also encouraging work-life balance.</p> <p>Engage with employees through various channels to gather feedback.</p> <p>ISO 45001 certified to improve the management system of employee health and safety.</p>

 <b>Shareholders/Investors</b>	
Key Concerns/ Interests	Long-term business growth of K&S resulting in positive financial performance.
Engagement Methods and Frequency	Quarterly announcements on K&S website and annual publication of Annual Report and Sustainability Report on performance. Investor meetings are held frequently.
Responses from K&S	<p>Investor relations website provides access to relevant strategic and financial related goals and announcements.</p> <p>Investors are updated frequently on goals and progress of longer-term R&amp;D investments.</p> <p>Periodic and transparent communication of financial and non-financial information.</p>



## Suppliers

Key Concerns/ Interests	To build and maintain good and long-term business relationship with K&S.
Engagement Methods and Frequency	K&S conducts quarterly business reviews with its key suppliers and engages them through supplier engagement survey and events. All suppliers are required to endorse and comply to K&S' Supplier Code of Conduct and Business Ethics. Periodic training and on-site supplier audits are conducted.
Responses from K&S	Review suppliers' deliverables. Ensure suppliers comply with K&S Supplier Code of Conduct and Business Ethics. K&S has engaged with suppliers at Suzhou in August 2019 where they invited equipment and consumable suppliers to share K&S' expectations on RoHS & Conflict Minerals, Code of Business Ethics and Quality Management.



## Government, Regulators and Certification Bodies

Key Concerns/ Interests	Implement and enforce standards and regulatory requirements in countries of operations.
Engagement Methods and Frequency	K&S participates in industry and technology conferences as and when appropriate. Periodic monitoring of additions and/or changes to existing legal and other applicable regulations.
Responses from K&S	To comply with all regulations in fair trade, environment, workplace health and safety.



## Communities

Key Concerns/ Interests	K&S to increase and have regular engagement with various beneficiaries. Through site-specific initiatives, K&S also provides goods and services to the communities in which it operates.
Engagement Methods and Frequency	K&S engages with the community through three methods, (1) Monetary and in-kind donations to local communities such as fund raising through Festive Bazaar and donation drives, (2) Provision of internships and scholarship opportunities (i.e. SgIS) and (3) Volunteerism such as beach clean-up and participation in Earth Hour. These methods are held annually.
Responses from K&S	Organize and participate at various local Corporate Social Responsibility (CSR) events across six sites. Raise awareness and encourage employees to participate in CSR events.



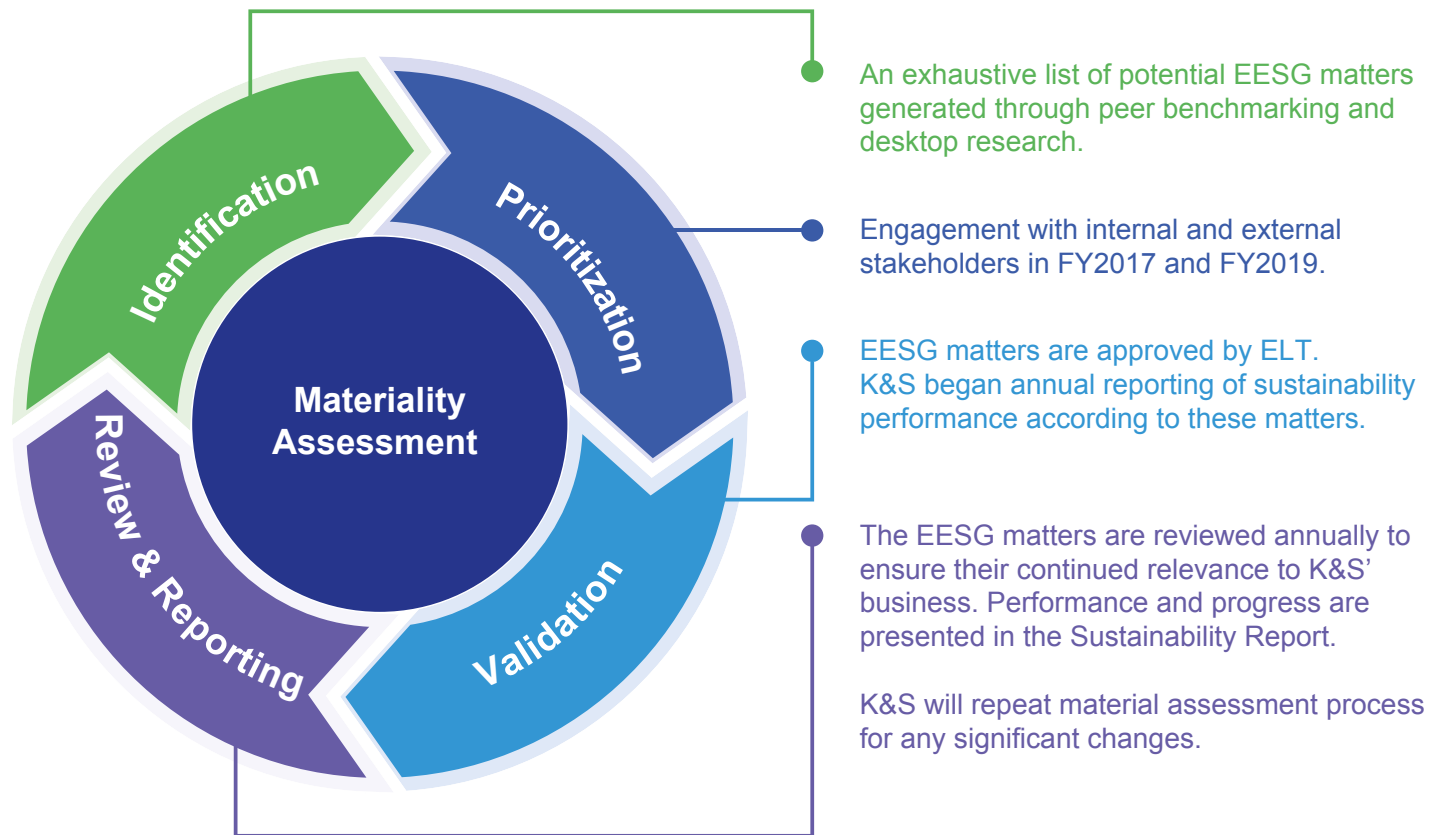
## NGOs and NPOs

Key Concerns/ Interests	Kulicke & Soffa's social responsibility to the local communities and environment as a manufacturing company.
Engagement Methods and Frequency	K&S participates in community and environmental initiatives as and when appropriate.
Responses from K&S	Timely, transparent and prompt information disclosure on environmental, social and other related aspects.

Figure 10: K&S Stakeholder Engagement

# Materiality Assessment

K&S conducted its first formal materiality assessment in FY2017 with over 90 internal multi-functional stakeholders. In FY2018, K&S progressed to engage its key suppliers and community partners in a materiality assessment to identify material matters of their concerns. Annually, the material matters are reviewed to ensure the topics that K&S prioritizes are also deemed significant to our stakeholders and businesses. This year, to bring further clarity in the report, K&S has included the boundaries, impact and involvement for each material matter. They are seen in Figure 11.



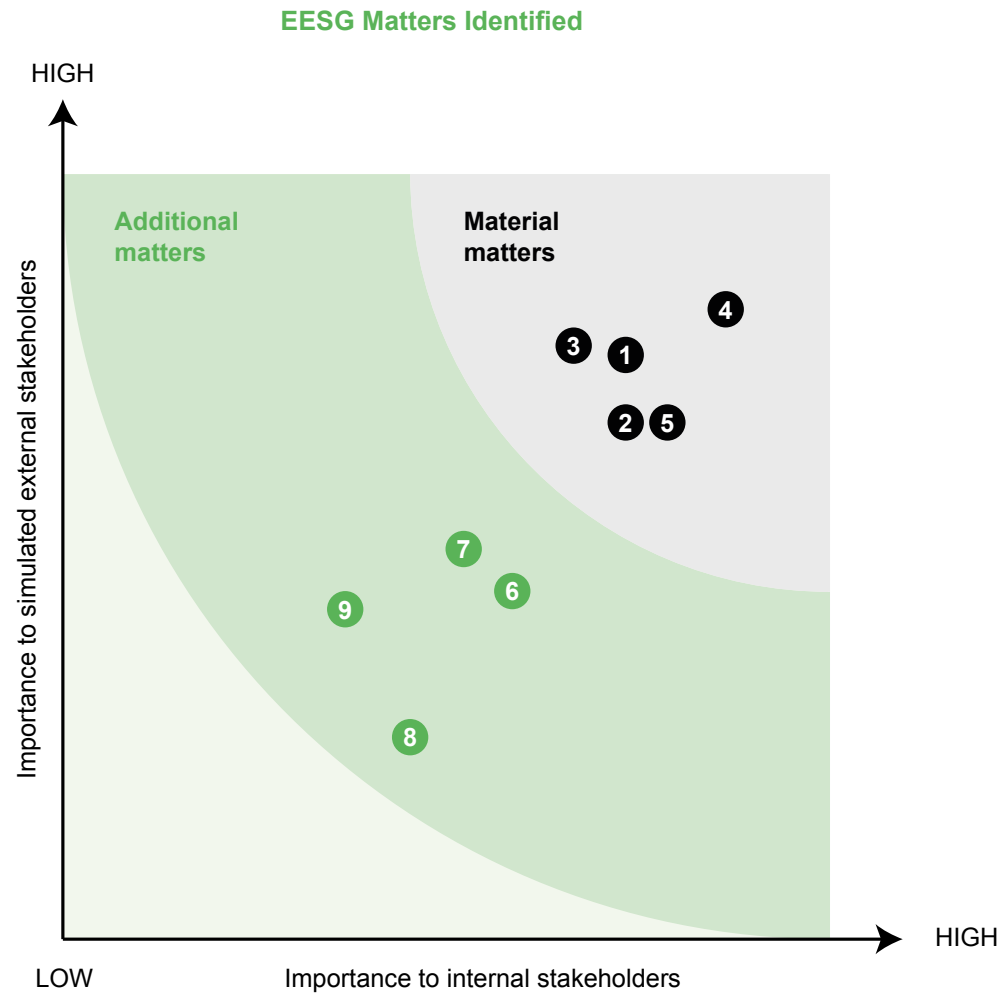


Figure 11: K&S Materiality Matrix

No.	GRI Dimension	Material Matters	Boundary of Impact for K&S	K&S Involvement in Impact	Relevant Stakeholders
1	Economic	Ethics, Bribery and Corruption	Within K&S	Direct impact	<ul style="list-style-type: none"> <li>Government, Regulators and Certification Bodies</li> <li>Employees</li> <li>Suppliers</li> </ul>
2	Non-GRI (Social)	Product and Service Innovation	Outside K&S	Direct impact	<ul style="list-style-type: none"> <li>Customers</li> </ul>
3	Social	Customer Health and Safety	Outside K&S	Direct impact	<ul style="list-style-type: none"> <li>Customers</li> </ul>
4	Social	Customer Satisfaction	Within and Outside K&S	Direct impact	<ul style="list-style-type: none"> <li>Customers</li> </ul>
5	Social	Occupational Health and Safety	Within K&S	Direct impact	<ul style="list-style-type: none"> <li>Employees</li> </ul>
No.	GRI Dimension	Additional Matters	Boundary of Impact for K&S	K&S Involvement in Impact	Relevant Stakeholders
6	Social	Employment and Labor Practices	Within K&S	Direct impact	<ul style="list-style-type: none"> <li>Employees</li> <li>Communities</li> </ul>
7	Environment	Material Use	Within K&S	Direct and Indirect	<ul style="list-style-type: none"> <li>NGOs/NPOs</li> <li>Communities</li> </ul>
8	Environment	Energy Usage and Associated GHG Emissions	Within and Outside K&S	Direct and Indirect	<ul style="list-style-type: none"> <li>Government, Regulators and Certification Bodies</li> <li>NGOs/NPOs</li> <li>Communities</li> </ul>
9	Economic	Economic Performance	Within K&S	Direct impact	<ul style="list-style-type: none"> <li>Shareholders and Investors</li> <li>Employees</li> </ul>



K&S has established targets for the identified material matters to compare yearly performance. This facilitates K&S to calibrate courses of action and achieve targets on a continual basis.

No.	EESG Matters	FY2019 Targets	Performance for FY2019
1	Ethics, Bribery and Corruption	Zero tolerance towards unethical acts, bribery or corruption across K&S	Achieved
2	Product and Service Innovation	'On time, on target' approach in delivery of products and services	Achieved
3	Customer Health and Safety	Zero validated cases of non-compliances regarding health and safety impacts of products and services	Achieved
4	Customer Satisfaction	<ul style="list-style-type: none"> <li>Achieve an improved response rate from previous survey</li> <li>Achieve an improved percentage of customers who rated "Good" and above from previous survey</li> </ul>	Voice of Customer survey will be conducted in May 2021 where results will be reported in SR2021
5	Occupational Health and Safety	<ul style="list-style-type: none"> <li>All six sites to attain ISO 45001:2018 certification by FY2020</li> <li>Lower Reportable Accident Frequency Rate (AFR) and Reportable Accident Severity Rate (ASR) from FY2018</li> </ul>	On-track Achieved
6	Employment and Labor Practices	<ul style="list-style-type: none"> <li>Voice of K&amp;S is conducted in January 2020</li> <li>Maintain global women workforce above 35%</li> <li>100% of annual performance reviews to be completed and delivered to our employees</li> </ul>	Survey results to be reported in SR2020 Achieved Achieved
7	Material Use	<ul style="list-style-type: none"> <li>Achieve waste recycling above 40%</li> <li>Reduce paper usage from previous year by 3%</li> </ul>	Achieved Missed target for normalized usage due to low FY2019 net revenue but reduced amount usage by 20%
8	Energy Usage and Associated GHG Emissions	Reduce total electricity consumption from FY2018 by 2%	Missed target for normalized usage due to low FY2019 net revenue but reduced amount usage by 3%
9	Economic Performance	Please refer to Annual Report 2019	Please refer to Annual Report 2019

# Alignment with the United Nations Sustainable Development Goals (UN SDGs)

In 2015, the United Nations General Assembly announced 17 Sustainable Development Goals<sup>6</sup> to address global challenges in social, environmental, governance and economic aspects. These 17 goals and 169 sub-targets serve to guide nations on adopting the UN SDGs so as to achieve them by 2030.

In FY2018, K&S conducted a high-level mapping to determine the SDGs most relevant to its business. This exercise resulted in the adoption of the five most relevant UN SDGs. Figure 12 showcases K&S initiatives mapped to the relevant SDGs and the corresponding EESG matters. This year, the four priorities set out in our CR policy have also been aligned with the adopted SDGs, allowing K&S' actions to contribute to a greater impact.



Figure 12: Five SDGs K&S has adopted for SR2018 (Source: <https://sustainabledevelopment.un.org/sdgs>)

<sup>6</sup>“Sustainable development goals” United Nations, <https://www.un.org/sustainabledevelopment/>



**Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**

**Examples of K&S' contribution**

- Internship openings and opportunities
- Organizing Open House to undergraduates and potential candidates to introduce operations and technologies at K&S
- Offer grants and scholarships to university students
- Employee development and mentoring programs

**EESG matters mapped to**

- Employment and Labor Practices



**Promote inclusive and sustainable economic growth, employment and decent work for all (promote safe and secure working environments)**

**Examples of K&S' contribution**

- Ensuring diversity and female representation in workforce
- Safety committee formed in each of the K&S facilities to ensure safe and healthy workplace and compliance
- Annual CEO Occupational Health & Safety challenge across sites in promoting safety awareness and culture
- Adopting ISO 45001 for all K&S design and manufacturing sites

**EESG matters mapped to**

- Occupational Health and Safety
- Employment and Labor Practices



**Build resilient infrastructure, promote sustainable industrialization and foster innovation**

**Examples of K&S' contribution**

- Increasing investments and human capital in R&D
- Collaborating with industry peers and customers to deliver innovative solutions to the market

**EESG matters mapped to**

- Economic Performance
- Product and Service Innovation



**Ensure sustainable consumption and production patterns**

**Examples of K&S' contribution**

- Efficient use of natural resources
- Management of waste in proper disposal and recycling
- Commitment towards compliance to Restriction of Hazardous Substances (RoHS)
- Commitment towards Conflict Minerals Free

**EESG matters mapped to**

- Material Use



**Take urgent action to combat climate change and its impacts**

**Examples of K&S' contribution**

- Responsible energy consumption and monitoring carbon emissions
- Target of reducing energy consumption intensity from the previous year

**EESG matters mapped to**

- Energy Usage and Associated GHG Emissions

Figure 13: K&S Initiatives and the UN SDGs

## RESPONSIBLE VALUE CHAIN

### Why is this important to K&S?

The supply chain is the core of every business and provides the foundation for it to operate. K&S seeks to influence its supply chain through stringent 'Supplier Code of Conduct' and other expectations which reduces impact on the environment and ultimately working towards sustainable growth for its business ecosystem.

### GRI Topic-Specific Disclosures

K&S has been reporting to the SEC on Conflict Minerals, annually, since FY2013. Supply chain had not been identified as a material matter in the materiality assessment. This year K&S presents the concept of its value chain and will report this as a material matter in the next Sustainability Report.

### Relevant UN SDGs



### FY2019 Highlights



**100%**

of new core platforms launched from FY2018 are RoHS-compliant (6 hazardous substances).



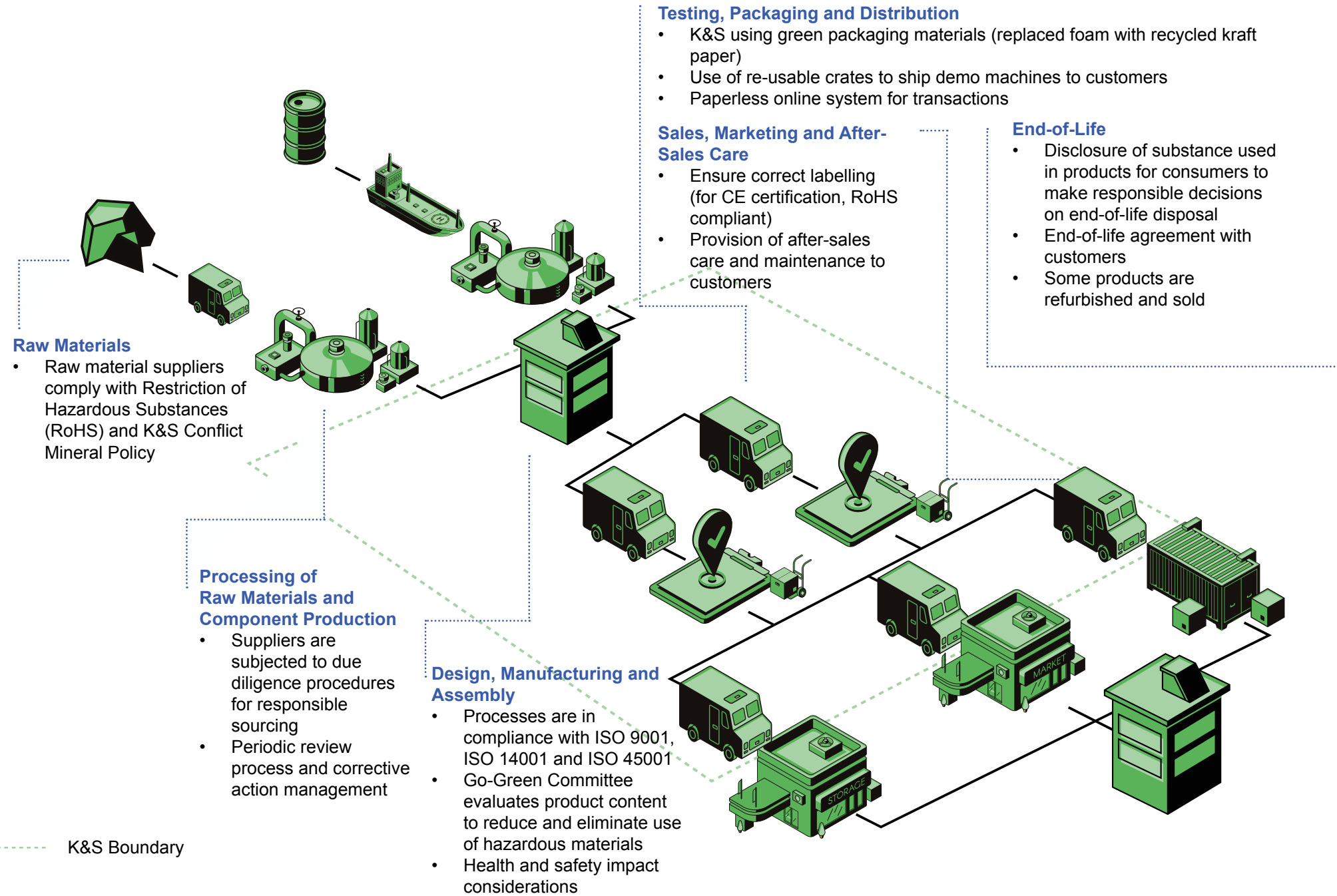
**76%**

Conflict Minerals Free Smelters (CFS) and smelters active in the CFS program identified in Reporting Year 2018.

# Kulicke & Soffa's Value Chain

Kulicke & Soffa's manufacturing facilities for semiconductor packaging equipment and consumables are located in Singapore, Suzhou, Netherlands and Israel. Its supply chain is divided into direct materials used in the products and indirect materials for its operations. There are a total of over 1,300 suppliers supporting our global requirements for manufacturing related and non-manufacturing related materials.

To meet customer demand for shorter lead-time and quick ramp up flexibility, we collaborated with our suppliers on burst capacity expansion with 20% to 30% upside capability and lead time reduction strategies including localization of components, reducing supply chain touch-points and inventory stock buffer, and long lead time material position. We minimized our supply chain risks and enhanced responsiveness to upside ramp with dual source strategy for single sources, long term partnership agreements with sole sources and internal Business Continuity Planning with strategic suppliers.



K&S has an extensive supply chain of over 1,300 suppliers located across Asia, United States, Europe and the Middle East. Overall, suppliers provide K&S with a variety of semi-finished products, equipment and services. In FY2019, Tier 1 strategic suppliers make up 27% of its supply chain, attributing to 81% of annual procurement amount. Direct suppliers provide manufacturing-related materials

such as mechanical modules, consoles, and fabricated sub-assemblies. Indirect suppliers provide packaging or non-manufacturing-related materials and services such as IT and facility-related services. In FY2019, over 60% of direct material was procured from suppliers in Asia.

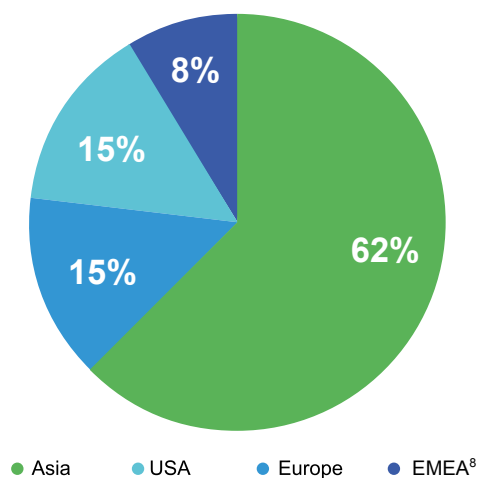


Figure 14: K&S Supply Chain Ecosystem

As K&S strives to build stable and lasting partnerships with suppliers, it considers procuring from regional suppliers as it represents lower costs, shorter lead time and reduces environmental impacts from transportation at the same time. Over 70% of procurement at Singapore, Suzhou and Netherlands comes

from their region<sup>7</sup>. Figure 15 showcases information on the breakdown of K&S supply chain across geographical regions and proportion spent on regional and non-regional suppliers.

Amount Spent by Geographical Region



Breakdown of Regional and Non-Regional Suppliers

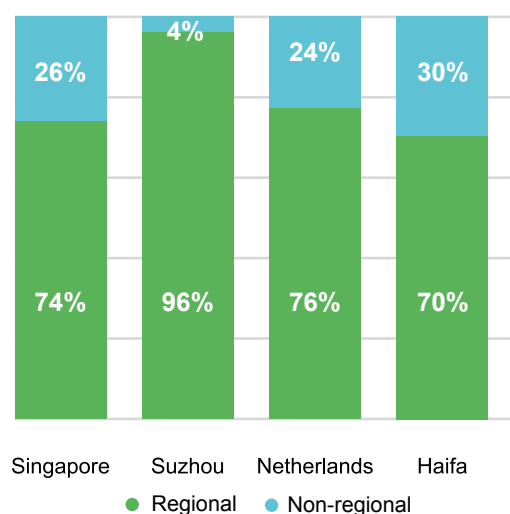


Figure 15: Information on K&S Supply Chain

<sup>7</sup>Singapore and Suzhou's regional suppliers are from Asia. Their non-regional suppliers are located in California, USA and Europe. This grouping will also apply for the other sites.

<sup>8</sup>EMEA stands for Europe, the Middle East and Africa. This is a separate region from Asia and Europe.

K&S adopts a procurement procedure which is responsible and ethical in nature. K&S undertakes a rigorous four-step supplier evaluation process (Figure 16) to assess, rank and review any potential suppliers before they become an approved supplier for K&S. All approved suppliers will be required to endorse and adhere to the Direct Supplier Code of Business Conduct and Ethics (Direct Supplier Code) and Distributor and Representative Code of Business Conduct and Ethics (D&R Code) of K&S. These codes convey K&S' firm stance on responsible and ethical business dealings, encouraging all suppliers and distributors to support, align and act in accordance with its requirements. All distributors and suppliers are required to submit written confirmations periodically.

## Suzhou Supplier Excellence Workshop

One of the key engagements with suppliers this year was through the Supplier Excellence Workshop held at Suzhou. Across the two days, the event engaged around 60 suppliers of equipment and manufacturing materials. The two-day workshop aimed to foster better relationships with suppliers and reinforce K&S' expectations on RoHS, Conflict Minerals, Code of Business Ethics and quality management.



*Equipment and consumable suppliers giving presentations and sharing information*



*Figure 16: K&S Supplier Management Process*

## Conflict Minerals

The use of Tin, Tantalum, Tungsten and Gold (3TGs) is necessary in K&S' equipment. K&S is aware of the issues surrounding the extraction of 3TGs especially in environments that violate human rights and where the proceeds are used to finance unlawful activities by armed groups. The Conflict Mineral (CM) committee is a global cross-functional team led by Corporate Quality that oversees K&S' due diligence progress<sup>9</sup> and annual reporting<sup>10</sup> to the Securities and Exchange Commission (SEC). K&S has been reporting its CM due diligence process annually since Reporting Year 2013 and is committed to achieving annual progress towards declaring conflict minerals free in its products.

Conflict Mineral reporting is based on SEC's requirement from January to December, denoted as a Reporting Year (RY).

K&S' suppliers will have to read, acknowledge and act in full compliance with the K&S' CM Sourcing Policy. Likewise, suppliers are expected to perform due diligence on their supply chains to identify smelter sources. K&S relies on its Tier-1 suppliers to provide information on the origin of the 3TGs contained in components and sub-assemblies supplied, including sources of 3TGs that are supplied to them by their sub-tier suppliers. In RY2018, K&S reported 76% Conflict-Free Smelters (CFS) identified or are active in the CFS program, a 24% increase from RY2017.

For more information on CM Disclosure, please refer to the CM Report 2018 found on K&S website at <https://www.kns.com/Corporate-Responsibility>. RY2019 CM report will be published on K&S' website by May 2020.

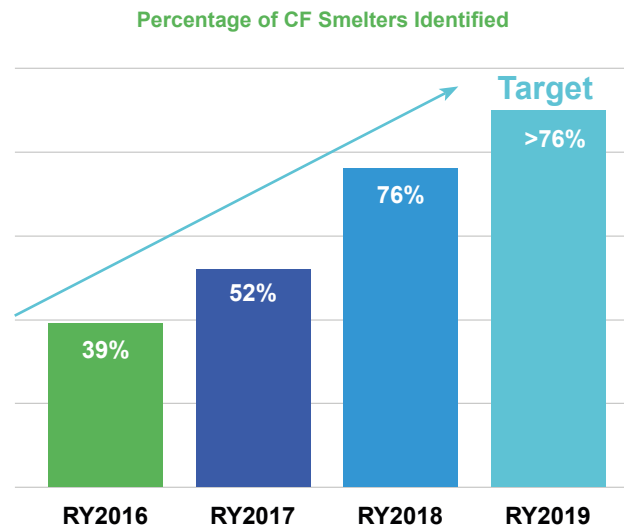


Figure 17: K&S Conflict Mineral Roadmap

This year, a total of five suppliers were subjected to K&S' Conflict Minerals Audit. All the findings were resolved and have been closed. The nature of these audit findings included ensuring suppliers had a relevant CM policy with proper monitoring of their suppliers' due diligence response, status and updates. In addition, K&S emphasized the importance of filling up the Conflict Minerals Reporting Template (CMRT) accurately and submitting it annually. The CM audit achieved its objective to improve the suppliers' CM program and data accuracy to meet K&S' expectations.

<sup>9</sup>The due diligence process is consistent with the Organization for Economic Co-Operation and Development (OECD) Due Diligence Guidance.

<sup>10</sup>Reporting cycle for Conflict Minerals Disclosure has been mandated on a calendar year basis by the Securities and Exchange Commission (SEC).



# Restriction of Hazardous Substances

Electrical and electronic equipment contains hazardous content which can cause major environmental and health problems if they do not undergo proper disposal. The European Union (EU) has set an environmental directive which restricts certain hazardous substances in electrical and electronic products exported to the EU (RoHS). Although K&S equipment are excluded from this RoHS directive, it is in voluntarily compliance with RoHS regulations<sup>11</sup>. In July 2019, the EU added four new phthalates<sup>12</sup> to its existing list of restricted substances. K&S has been working towards full compliance to the revised EU directive.

The Go-Green Committee actively conducts product content evaluation to reduce and eliminate use of hazardous materials in K&S products. This is performed through a three-step process:



The information from product content evaluation are recorded and maintained on K&S' RoHS database.

Since FY2018, K&S core platforms (ball bonders and wedge bonders) launched are declared RoHS-compliant. Currently, both the RAPID™ and OptoLux™ product families are RoHS-compliant. The new Asterion™ Ultrasonic Welder will attain the RoHS-compliant certification in FY2020. K&S is working towards the target of achieving all its new equipment platforms to be RoHS-compliant starting from FY2020



Figure 18: List of RoHS-compliant equipment released by K&S

<sup>11</sup>K&S equipment fall under the category of large-scale industrial tools which are out of the EU RoHS scope. Currently, K&S' RoHS-compliant equipment are 100% compliant for following six hazardous materials namely, Lead, Mercury, Cadmium, Hexavalent Chromium, Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl Ethers (PBDE). The regulation specifies maximum levels of 1000 ppm each (except for Cadmium, which is 100 ppm).

<sup>12</sup>Products containing butyl benzyl phthalate (BBP), di(2-ethylhexyl) phthalate (DEHP), dibutyl phthalate (DBP) or diisobutyl phthalate (DIBP) cannot be transacted on the EU market.

## CUSTOMERS AND PRODUCTS

### Why is this important to K&S?

K&S is a leading provider of semiconductor packaging solutions for its customers. Their satisfaction is an important indicator which guides K&S on adopting the appropriate strategies. With its extensive insights from customer engagements and technological expertise, K&S strives to deliver products and services that continue to meet and exceed customer expectations.

### FY2019 Highlights



**US\$116 MIL**

invested into R&D  
22% of FY2019 revenue

### GRI Topic-Specific Disclosures

GRI 416 Customer Health and Safety

### Relevant UN SDGs



**ZERO**

cases of non-compliance regarding health and safety impacts of products and services

# Product and Service Innovation

K&S strives to consistently deliver appropriate solutions to meet its customers' needs and expectations. Through regular interactions, K&S understands its customers' technology roadmaps on products and services requirements. This serves as a direction for K&S to work on delivering robust solutions to meet future requirements. In close collaborations with its customers, K&S has regularly introduced enhanced features in existing products and developed new generation products.

The Knowledge Driven Product Development (KDPD) procedure defines the product development process in all its business units from conception to market

release. The process starts with gathering input of product requirements from market research, customer interactions, product history data and experiences and participation at various industry forums. Subsequently, the product development leverages on competencies from various engineering disciplines such as mechanical, electrical, software, systems and process. Through the KDPD phases, key deliverables are reviewed by cross-functional teams to ensure the product meets its specifications, compliance and other customer requirements. The final step is the product launch at trade shows, product seminars and publication of product information on the K&S website.

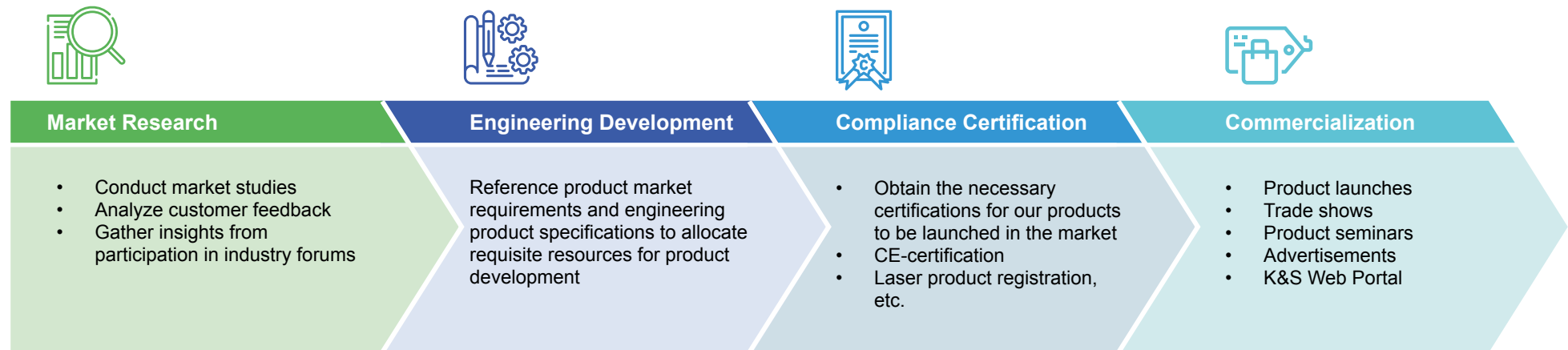


Figure 19: K&S Knowledge Driven Product Development (KDPD) process

In FY2019, K&S recorded the highest percentage of net revenue invested into R&D despite the 3% decrease in actual amount from FY2018. This can also be attributed to the decrease in revenue for FY2019.

Percentage of Net Revenue Invested into R&D				
	FY2019	% change	FY2018	FY2017
Amount invested into R&D (US\$'000)	116,169	⬇️ 3%	119,621	100,203
Percentage of net revenue invested into R&D	22%	⬆️ 8%	13%	12%

The increase in the R&D investment has resulted to the development of next generation high accuracy advanced packaging products, high quality welding products, next generation mini and microLED placement solutions, and also performance improvements in wire bonding products.

## A Boost in Productivity with the RAPID™ MEM

RAPID™ MEM is an equipment with the latest response-based processes which boosts a 10% to 20% increase in units per hour. Here are some of the benefits it brings to customers:

### 1. Detection, prevent quality excursion

- Real-time Process & Performance Monitoring
- Equipment Health Monitoring
- Advanced Data Analytics & Traceability
- Predictive Maintenance Monitoring & Analysis
- Detection & Enhanced Post-bond Inspection

### 2. Productivity

- Latest Response-based Process



## Supporting Innovation in Clean Energy

A student-run team from the University of Michigan unveiled their first ever electric race car at the Michigan Electric Racing (MER) in June 2019. In response to the changing trends in the automotive industry, the team decided to transition from hybrid to full-electric vehicles (EVs). These EVs do not produce emissions and can be charged with energy generated from renewable sources, thus reducing the reliance on fossil fuels.

K&S is proud to be one of MER's platinum sponsors supporting the wedge bonding of the electric battery pack, powering the all-electric vehicle. The electric race car subsequently led MER to be placed second out of 13 teams at Formula North in Canada. The team completed all dynamic events and was placed within the top three in each event. K&S sends its heartiest congratulations to the MER19 team!



## Customer Health and Safety

Looking beyond product specifications, customers have increased emphasis on the environmental and health impacts of K&S products through their life cycles. Customer safety and health, as an end user of K&S products, is of utmost importance and K&S is committed to ensure that product safety is a key deliverable in its KDPD process. The Program Engineering Team conducts comprehensive assessments of potential health and safety risks posed to customers through various stages of the product development process. Finally, products will have to attain the relevant certifications requirement depending on the customers and industry to which they will be sold.

All current K&S equipment are CE-certified, being assessed to meet health, safety and environmental protection requirements, and can be traded freely within the European Economic Area (EEA). New launched bonders have also attained RoHS compliance, for example, the RAPID™ series wire bonders.

**In FY2019, K&S achieved zero validated cases of non-compliance regarding the health and safety impacts of products and services – a target K&S aims to maintain.**



### CASE STUDY

## Enabling the needs of EV – Asterion™ Ultrasonic Welder

Asterion™ Ultrasonic Welder is ideal for hybrid automotive and power module applications. With an expanded bond area, new robust pattern recognition capabilities and tighter process controls, it delivers higher productivity, bonding quality and reliability. As the use and manufacturing of EVs expand in the European Union and China, the Ultrasonic Welder can create a better user experience for customers.

The latest release of the welder is engineered with a refined process and delivers improved quality control derived from the addition of a Welder Control Unit. Traditionally, customers would require a higher current (power) to bond components using Aluminium or copper bond wires. Through ultrasonic welding, the requirement of multiple wedge bonding is replaced by one single weld. Additionally, the use of copper terminal welds lowers the operating temperature by about 80°C while improving the package design.

To maintain familiarity of use with clients and reduce training, it operates on a similar software to existing Asterion family products.

## Customer Satisfaction

K&S aims to be a leading provider of semiconductor packaging and electronic assembly solutions to a wide variety of customers, from markets ranging from automotive, consumer, communications to industrial. K&S seeks to help customers achieve success and become their trusted, longstanding business partner. Their satisfaction is a critical indicator of success for K&S.

The K&S Quality Policy sets out its commitment towards maintaining the quality management system through providing products and services with the objective of achieving Total Customer Satisfaction.

K&S offers a series of scheduled after-sales service and on an ad-hoc basis to respond to customer needs. The service program encompasses: Basic, Professional and Comprehensive plans, which are designed to suit each customer's needs to help them operate machines optimally.

**The Customer Quality Team reaches out to customers with the Voice of Customer (VoC) survey which is conducted once every three years. Customers will assess K&S' performance across various categories, from technical expertise, order processing, timely delivery, quality of products to after-sales support. The results would be collated and shared with various Marketing and Program Engineering teams to brainstorm actions, objectives and targets to improve the customer satisfaction. The next VoC survey will be conducted in year 2021 with the target to achieve improvement in the response rate to more than 50% and customer satisfaction score of more than 80%.**

The Customer Support team is also committed to delivering quality after-sales support such as providing solution-based training to customers. K&S ensures that adequate training is provided to employees to equip them with the necessary technical and problem-based solving skills.



K&S also employs an Issue Escalation Flow system which handles customer feedback and grievances. For Escalation Levels 1 and 2, Field Service Teams and Technical Support Teams will engage with customers to resolve issues faced such as performance issues, part failures or technical enquiries. Should the issue remain unresolved, the Issue Tracking System (ITS) owners will step in to support the investigation and expedite the resolution with the customer. Issues escalated to Level 3 and above will be logged in the ITS. The Customer Quality

Engineering (CQE) team periodically monitors the escalated issues to ensure timely and effective closure. Through work instruction (WI) enhancements or introduction of early detection methods, they aim to prevent recurrences in the future. Cases will also be shared with team members during technical toolbox meetings. In FY2019, about 80% of field issues were resolved at escalation level 1. K&S continues to improve its field support team's capability and effectiveness.

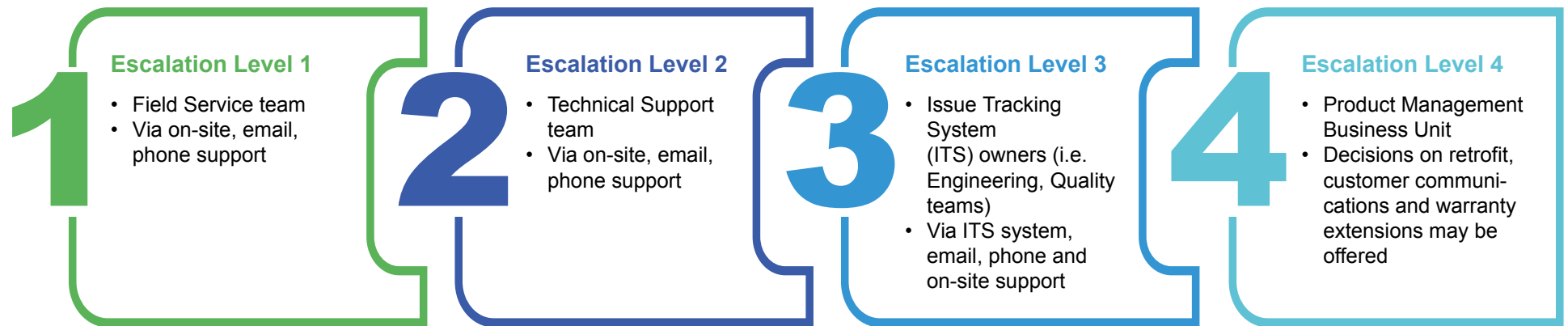
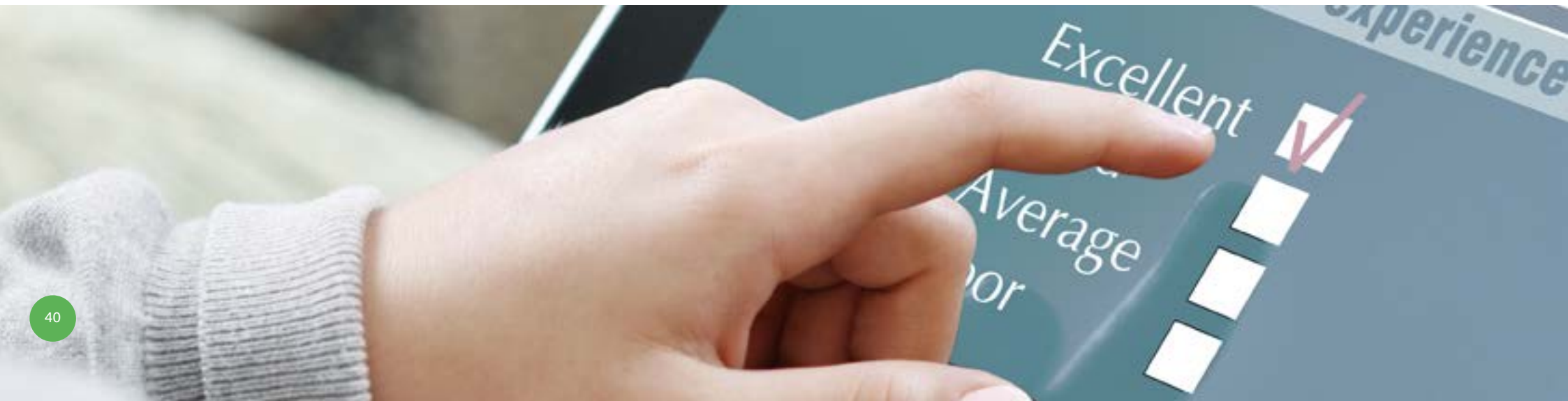


Figure 20: K&S Issue Escalation Flow





# WORKPLACE

## Why is this important to K&S?

K&S is committed to providing a workplace that provides its employees with exciting and challenging opportunities to grow their careers. Our five Core Values guide our employees' conduct and behaviors and provide a common framework on how we conduct business to achieve K&S goals and strategy. K&S provides its employees with the tools and training they need to be successful within a safe and healthy workplace.

## FY2019 Highlights



**41%**  
women in K&S workforce



**ZERO**  
fatalities, occupational diseases

## GRI Topic-Specific Disclosures

GRI 401: Employment 2016

GRI 403: Occupational Health and Safety 2016

## Relevant UN SDGs



**Accident Severity Rate 3.6**

lowest in three years  
> 50% reduction from FY2018 reportable ASR at 8.2.

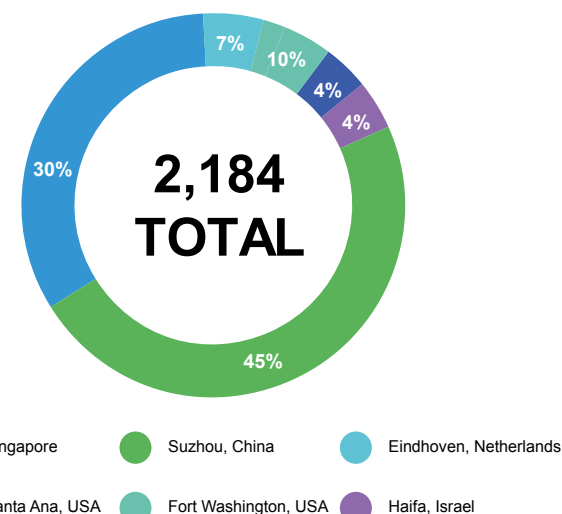
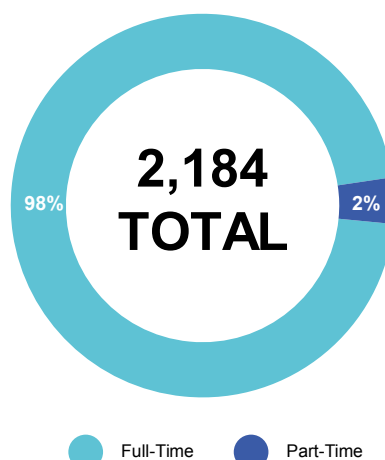
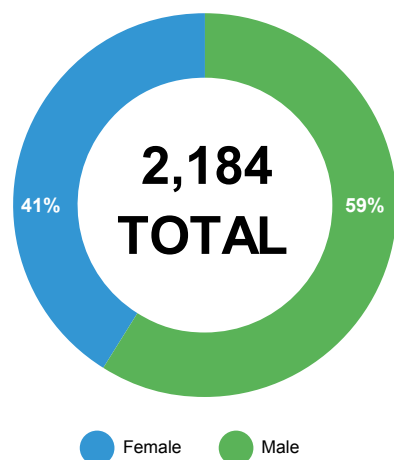
## Employee Workforce Profile

A dedicated and competent workforce is at the core of our operations at K&S. As of FY2019, K&S has a total headcount of 2,184 employees across our six largest sites. 98% of our employees are full time. Our sites in Singapore and Suzhou account for the majority of the workforce at K&S.

K&S also has 104 workers comprised of interns, contractors and temporary agency staff<sup>14</sup>. Contractors are hired on an adhoc basis to supplement

engineering resources for certain projects and temporary agency staff to help Operations, IT or other areas as required.

While Singapore and Suzhou are subject to union dues and regulations, there are no collective bargaining agreements in place in these locations. Currently 7% of K&S employees are covered under collective bargaining agreements.



Employment Contract	Male	Female
Permanent	1,271	887
Temporary	19	7
<b>Total</b>	<b>1,290</b>	<b>894</b>

Employment Type	Male	Female
Full-time	1,279	868
Part-time	18	19
<b>Total</b>	<b>1,297</b>	<b>887</b>

Sites	Permanent	Temporary
Singapore	661	11
Suzhou, China	975	4
Eindhoven, Netherlands	152	0
Fort Washington, USA	211	10
Santa Ana, USA	76	1
Haifa, Israel	83	0

Figure 21: Breakdown of Employees by Employment Contract, Employment Type, Sites and Gender

<sup>14</sup>Temporary agency staff are hired through recruitment firms where as temporary employees are hired directly by K&S and are included under its payroll.

## Employment and Labor Practices

K&S is committed to treating employees with dignity and respect, and to providing market-relevant benefits in all countries where we work. We provide an environment that encourages employees to learn and to grow their careers.

Under the leadership of our Global Vice President of Human Resources, we have centers of excellence in Talent Management, Talent Acquisition, HR Management Information System (HRMIS) and Compensation, ensuring best practices in these important areas. At each site, regional Human Resource (HR) managers support the local leaders and managers, ensuring employment and labor practices adhere to regional and local regulations. K&S continually reviews these policies and benchmarks them against market peers so as to implement leading practices on recruitment, onboarding and employee development. K&S adopts a three-pronged approach which aims to provide an inclusive workplace with ample opportunities for personal growth and to attract the best talents.



Diversity



Talent Acquisition



Learning and Development

Figure 22: K&S Human Resource Approach



### Diversity

Diversity is important at K&S because we believe that the combined knowledge and diverse views across our global locations strengthens our competitive edge. In an industry where women have traditionally been a small minority, we are proud that 41% of our workforce is female. We continue to seek to hire more female engineers and have a larger representation among our leadership team.

In order to ensure fair and equitable pay for all employees, K&S participates in several globally recognized compensation surveys (Radford, Mercer) annually. The survey organizations pool our data together with all of the responding companies to determine market relevant pay ranges for all of our positions.





## Talent Acquisition at K&S

In FY2019, K&S established a global team to improve its existing talent acquisition processes.

This team has recently focused on enhancing K&S' social media presence to share a glimpse of what it is like to work at K&S for its potential future employees. K&S has also enhanced its talent acquisition online resources to include information on various college internship programs. Hiring metrics have also been clearly defined to track K&S' hiring efficiency so as to recruit the best talents. Plans are in the pipeline to implement a survey which will provide insights on global new hire and recruitment effectiveness. The results will help ensure that K&S hires top talents to help us achieve K&S' strategic goals.

### CASE STUDY

## Internships and Learning Opportunities for All

Kulicke & Soffa's China team gave a campus talk to students from the Suzhou Research Institute at the University of Science and Technology of China about its internship program – AreYouThe1? K&S employees shared their experience at work and how opportunities for continuous learning were put in place to help tackle challenges. The talk ended with a very interactive and inspiring Q&A session.



In June 2019, K&S hosted the Executive MBA intake from the NUS Business School on a half-day visit to its corporate headquarters in Singapore. The group was engaged with K&S executives in a 90-minute high-level sharing session on the impacts of data analytics and smart manufacturing on the semiconductor industry.

The guests marvelled at the numerous examples of automation seen on the manufacturing floor which demonstrated increased quality and throughput.



The NUS Executive MBA Intake  
Visits K&S Corporate HQ in Singapore



## Learning and Development

K&S wants all employees to have the required technical skills in every role to contribute and be successful. Aside from on-the-job training and stretch assignments, each site conducts their own training needs assessment. The regional HR team works closely with the site leadership to determine the appropriate training to be conducted for the employees. Some of the sites, such as Singapore and Fort Washington, have engaged with government or state agencies that provide funding to subsidize training costs. K&S offers a wide range of training opportunities, some of which are outlined below.

Types of Training Programs	Examples
Core Quality Program	Enhanced Value Engineering Basic Statistical Process Control Comparison Test for Quantitative Data and Qualitative Data Design and Process Failure Modes and Effects Analysis (FMEA)
Technical (Transferable skills)	LAMDA <sup>15</sup> Problem Solving Value Stream Mapping Design of Experiment (DOE) Passive Data Analytics
Professional and Core Supervisory Development	Basic Management for Emerging Leaders and Supervisors Manage Self
Onboarding (for new hires)	K&S Orientation Program comprising of Plant Tour, Departmental familiarization briefing, Online training such as IMS, Safety Training, 6S <sup>16</sup> and Visual Management, and Business Continuity Management, Core Values Workshop

## Fort Washington Mentoring Program

K&S' Fort Washington site started a mentoring program that has been well received both by mentors and mentees. In pilot launch, 34 sets of mentor/mentee partnerships were created and at the six month mark, the teams were surveyed for their reactions. We were gratified to note that both mentors and mentees found the experience to be positive and rewarding. Not only did the mentees learn relevant technical and leadership skills, it turns out that the mentors also gained knowledge from the mentees.



<sup>15</sup>Look, Ask, Model, Discuss, Act

<sup>16</sup>Sort, Store, Shine, Standardize, Sustain, Safety



## Employee Benefits

K&S strives to ensure that benefits for our regular employees are in compliance in the cities, states and countries in which we operate. We conduct annual benchmarking to ensure that our benefits are comprehensive and attractive to the markets where we compete for talent. For more information on K&S' benefits, please visit our website at <https://www.kns.com/Careers/Careers/Life-at-K-S#Benefits>.



## Engagement and Communication

K&S recognises the need to maintain regular interactions with employees to understand and respond to their expectations. Feedback received guides K&S to adopt the right approach in order to engage and motivate employees as they grow in their respective careers. K&S maintains an Open Door Policy and provides multiple avenues for employees to voice their concerns and raise suggestions. Every two to three years, K&S conducts a global employee engagement survey, the Voice of K&S, to gather feedback from worldwide employees. The survey is conducted in January 2020 and the results will be reported in SR2020.

Employees can report any grievances through the global Whistleblower Hotline. All calls received will be investigated and reviewed by Legal, HR and Audit departments where appropriate and reported to the Audit Committee on a quarterly basis. Employees also have access to local HR representatives and the Global Vice President of HR.



**Any and all concerns employees may have related to employment practices or other HR matters are immediately reviewed and managed by local HR for prompt response.**

## Occupational Health and Safety

K&S is committed to providing a safe and healthy workplace for its employees. With the IMS certification, all six sites are aligned in the implementation of their Environmental, Health and Safety policy and procedures. This enables the harmonization of EHS practices, objectives and performance targets.

K&S constantly consults and involves its employees in establishing a safe and healthy work environment and in performing their daily work in a safe and responsible manner. Each K&S site has established a Safety committee lead by the EHS Manager or Safety Representative with members from all functions. The committee is responsible to promote safety awareness, ensure compliance to legal and operational controls, conduct safety audits and improve safety performances. Periodic hazard<sup>17</sup> risks assessments on work processes are conducted to identify potential risk and mitigate any significant risks identified. Employees are encouraged to report any potential risks, near misses and safety incidents in their work immediately to the Safety committee or their manager. Every safety issue reported will be thoroughly investigated and safety alerts will be sent to all employees for their awareness.

Regular health and safety-related trainings are conducted for all levels of employees to raise awareness and refresh knowledge on safe working practices. In FY2019, K&S attained close to 100% attendance rate on planned OHS training for employees. Santa Ana recorded a highest training hour at 11.6 hours per headcount<sup>18</sup>. Emergency readiness and response training such as fire drill evacuation, first-aid training, fire-fighter training and hazardous chemical spillage response are conducted periodically.



Launched since 2015, the annual CEO OHS Challenge awards the K&S winning site for its best and sustained performance in the OHS metrics. The metrics assess each site in leading indicators such as training hours, attendance rates and lagging indicators such as accident frequency and severity rates. In FY2019, K&S Santa Ana site emerged as the champion site with zero incidents and achieving overall best performance for all categories.

<sup>17</sup>A hazard is any source of potential damage, harm or adverse health effects on something or someone. Some examples of hazards may include use of hand tools, machines, wet floors, working at height, etc.

<sup>18</sup>Calculated by taking total training hours per site divided by total employees.

## EHS Benchmarking with Peers

K&S organized an exchange program together with a global leading organization in patient-focused medical innovations. The program, with topics focused on Environmental, Health & Safety, was held at K&S' Singapore facility in June, 2019. Participants from both companies shared and exchanged knowledge on EHS best practices, standards and procedures. K&S looks forward to future EHS exchange programs with other companies for continual EHS benchmarking and improvement.



### CASE STUDY

## Corporate Safety Training for All Employees

In FY2019, K&S developed an online interactive safety training based on the Semi-S19 safety guidelines<sup>19</sup>. The standardized corporate safety training was launched to all employees to enhance their safety knowledge and awareness in line with K&S' objective to promote a safety culture.

Based on safety risks exposure of the employee job scope, he/she will be assigned to take the basic or advanced modules as listed below:

Levels	Basic	Advanced
Work Scope	Support desk bound functions	Operational hands-on functions
Training Topics	<ul style="list-style-type: none"> <li>Housekeeping</li> <li>Workplace Environmental Hazards</li> <li>Fire Safety</li> <li>Emergency Procedures</li> <li>Accident / Incident Reporting</li> </ul>	Topics in Basic module and: <ul style="list-style-type: none"> <li>Ergonomics</li> <li>Hand and Portable Power Tools</li> <li>Material Handling Equipment</li> <li>Robotics</li> <li>Elevated Work</li> <li>Walking and Working Surfaces</li> <li>Electrical Work</li> <li>Control of Hazardous Energy</li> <li>Radiation (Ionizing and Non-Ionizing)</li> <li>Mechanical Hazards</li> <li>Chemical Hazards</li> <li>Personal Protective Equipment (PPE)</li> <li>Hazard Analysis</li> </ul>



The training requires the employee to study an interactive training material and to pass a quiz with a minimum score of 90%. Upon completion of the course, the system will issue the trainee with a Certificate of Completion.

In FY2019, K&S attained a 100% completion rate for this training with the active participation of global employees. This training is also included in the on-boarding program for new hires. Refresher training is planned to be conducted once every two years.

<sup>19</sup>Safety guidelines for training of manufacturing equipment installation, maintenance and service personnel.





## Safety Performance

In FY2019, K&S saw a declining trend in the both reportable and internal Accident Frequency Rate<sup>20</sup> (AFR) and Accident Severity Rate<sup>21</sup> (ASR) metrics. This year, Singapore, Suzhou, Santa Ana and Netherlands have achieved zero reportable AFR and ASR. Two reportable accidents<sup>22</sup> were recorded at Fort Washington and Haifa where employees sustained light injury while performing work due to carelessness. Investigation and actions have been taken in reminding all employees to work safely and to be vigilant of their surroundings.

Overall, K&S is glad to have achieved more than a 50% reduction from the previous year's reportable ASR at 3.6. Across all six sites, there were zero fatalities and a zero occupational disease rate. Absentee rates<sup>23</sup> across both years have also been consistent. The figures on the next page provide a breakdown of safety statistics and absentee rates of all sites.

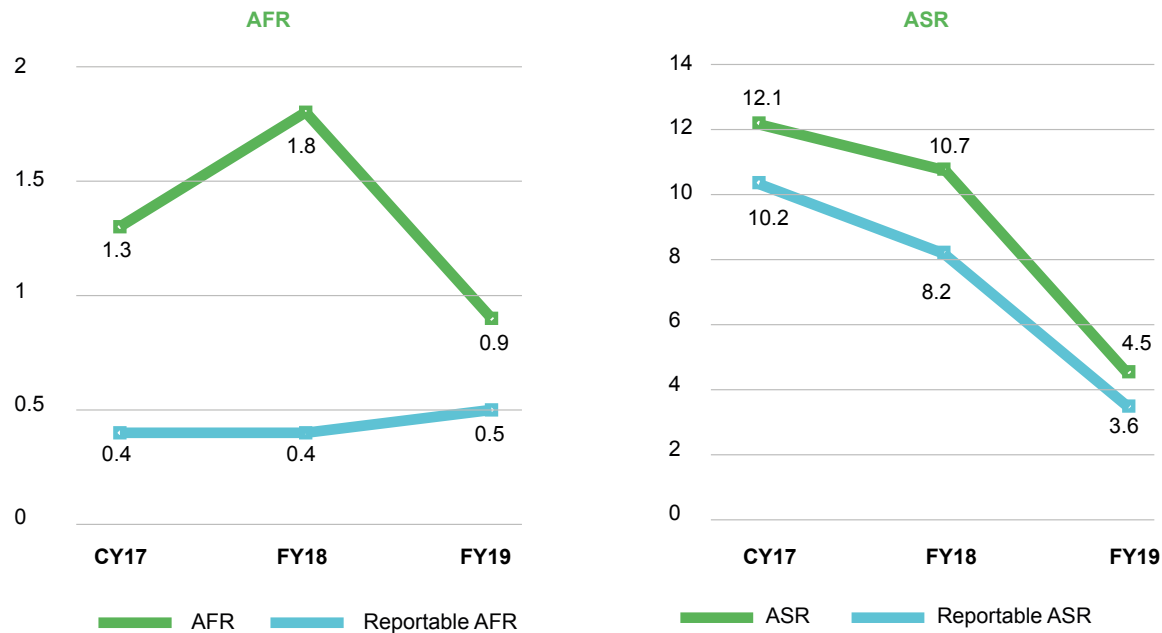


Figure 23: Reportable AFR (left) and ASR (right) performance against K&S Internal Safety Performance

<sup>20</sup>AFR = (Total incidents / total employee work hours) x 1,000,000.

<sup>21</sup>ASR = (Total man-days lost as a result of an incident / total employee work hours) x 1,000,000.

<sup>22</sup>A reportable accident is defined as a non-fatal injury or illness which results in a medical leave taken of four or more days. A non-reportable accident tracked on K&S' internal metrics is defined as a non-fatal injury or illness which results in a medical leave taken of one or more days.

<sup>23</sup>Absentee rate is calculated as the number of days absent from work due to incapacity of any kind, not just as the result of work-related injury or disease. It is expressed as a percentage of total days scheduled to be worked for the same period. This includes medical leave and lost days due to injuries sustained.

	FY2018	FY2019
<b>Accident Frequency Rate</b>	<b>Total</b>	<b>Total</b>
Singapore	0	1.3
Suzhou, China	0.5	0
Eindhoven, Netherlands	0	0
Santa Ana, CA, USA	0	0
Fort Washington, PA, USA	0	2.0
Haifa, Israel	5.4	5.4
<b>Global Reportable AFR</b>	<b>0.4</b>	<b>0.5</b>
<b>Accident Severity Rate</b>	<b>Total</b>	<b>Total</b>
Singapore	0	2.0
Suzhou, China	2.1	0
Eindhoven, Netherlands	0	0
Santa Ana, CA, USA	0	0
Fort Washington, PA, USA	0	8.0
Haifa, Israel	205.3	64.2
<b>Global Reportable ASR</b>	<b>8.2</b>	<b>3.6</b>

Table 1: K&S Safety Performance

	FY2018			FY2019		
<b>Absentee Rate</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
Singapore	2.2%	2.1%	2.2%	2.3%	2.3%	2.3%
Suzhou, China	0.8%	1.4%	1.2%	1.3%	1.1%	1.2%
Eindhoven, Netherlands	1.2%	3.5%	1.6%	1.9%	10%	3.3%
Santa Ana, CA, USA	1.2%	1.4%	1.2%	1.5%	1.8%	1.5%
Fort Washington, PA, USA	0.7%	1.1%	0.7%	0.9%	1.0%	0.9%
Haifa, Israel	3.5%	4.4%	4.0%	0.3%	4.5%	2.6%
<b>Global Absentee Rate</b>	<b>1.4%</b>	<b>1.8%</b>	<b>1.6%</b>	<b>1.6%</b>	<b>1.8%</b>	<b>1.7%</b>

Table 2: K&S Absentee Rate

FY2019's safety statistics are a testament to the continuous efforts of K&S to increase safety trainings and ensure effective communication with employees. K&S strives to upkeep this positive performance, continuously engaging employees through initiatives to build a safe working environment for all.

# Promoting Safety, Quality and Environment

Annually, employees at the Singapore site come together to celebrate and reaffirm K&S' unwavering commitment to Quality, Environment, Health & Safety (QEHS), and Corporate Social Responsibility. The slogan for the event in FY2019 was: **“Safety is OUR Priority  
Quality is OUR Standard  
Environment is OUR Responsibility.”**

The two day QEHS event features a series of activities, game booths, retail booths and competitions to emphasize the three pillars organized by a committee consisting of the EHS, Quality and representatives from all departments. The QEHS event received over 400 employees participation where they had fun participating in the games, workshops and competitions, winning gifts and prizes and at the same time gaining knowledge on work safety, eating healthily, being eco-friendly and keeping consistent quality standards.

Here are some of the activities employees actively participated in:



Safety



Fastest Fire Fighter Turnout Competition



Quality



Augmented Reality (AR) assembly game  
QEHS policy awareness game



Environment



Build a snowman with recycled materials competition



Two workshops were organized for employees to learn making mosaic art on recycled glass containers. The pieces were sold at the QEHS event and all sales proceeds were donated to MINDS<sup>24</sup>.

<sup>24</sup>Movement for the Intellectually Disabled of Singapore

# ENVIRONMENT RESPONSIBILITY



## Why is this important to K&S?

The semiconductor industry is a fast paced and resource-intensive sector. As one of the leading providers of solutions to customers, K&S seeks to optimize usage of its resources while delivering quality products. Through the Integrated Management System, company-wide monitoring and analysis of consumption trends guides K&S on implementing appropriate initiatives to minimize the impacts of its operations.

## FY2019 Highlights



### 54% Recycling Rate

Achieved more than 40% target for FY2019



### 20% Reduction

in total paper usage from FY2018

## GRI Topic-Specific Disclosures

GRI 302 Energy  
GRI 303 Water  
GRI 305 Emissions

## Relevant UN SDGs



### 2% Decrease

in Scope 2 GHG emissions

K&S continues to uphold its commitment towards conducting its global operations in an environmentally responsible manner. The EHS Policy ensures that each site maintains its compliance with relevant environmental laws and regulations. Since 2014, all six sites have achieved ISO 14001:2015 Environmental Management Systems certification which ensures alignment of periodic environmental aspect and impact review, compliance to legal and other requirements, standardization of procedures and harmonizing of energy usage metrics, programs and targets.

The Global Sustainability Committee, under the guidance of the K&S Executive Leadership Team and supported by EHS managers at each site, has overall responsibility for environmental management. Respective EHS teams oversee the day-to-day operations, ensuring efficient monitoring and use of energy. Highlights of recent initiatives are illustrated in the figure on the right.

## Energy Usage and Greenhouse Gas

### Monitoring and reporting

Regular checks are conducted to ensure equipment are functional, faults promptly detected and rectified across all sites.

### Building enhancement

Netherlands and Israel sites installed external building shades to lower energy used for cooling the building.

### Lower energy requirements in machines

New product design with more efficient energy usage in operation.

### Optimizing energy use in the facility

Singapore: Switched to energy efficient compressors based on loading demand and monitoring.

Netherlands: Excess heat from compressors is recycled for heating purposes in warehouses.

### Energy-saving technology in lighting

- Replacement to LED lightings in Singapore and Suzhou
- Replaced metal halide lights at Fort Washington to LED lights
- Motion sensors installed at Israel

### Education and Awareness

Posters are displayed to promote an energy saving culture across all K&S sites.

### Green Day Cycling Challenge

Employees at Netherlands are encouraged to cycle to work. The site tracks the number of cyclists each day and quantifies CO<sub>2</sub> savings.



Figure 24: Energy saving initiatives at K&S

Energy consumption data collection and analysis are conducted to ensure systems are operating efficiently and that anomalies in consumption can be identified. This allows for prompt actions to be taken to prevent further unaccounted losses. Quarterly energy management meetings are held to monitor progress and evaluate effectiveness of energy conservation measures.

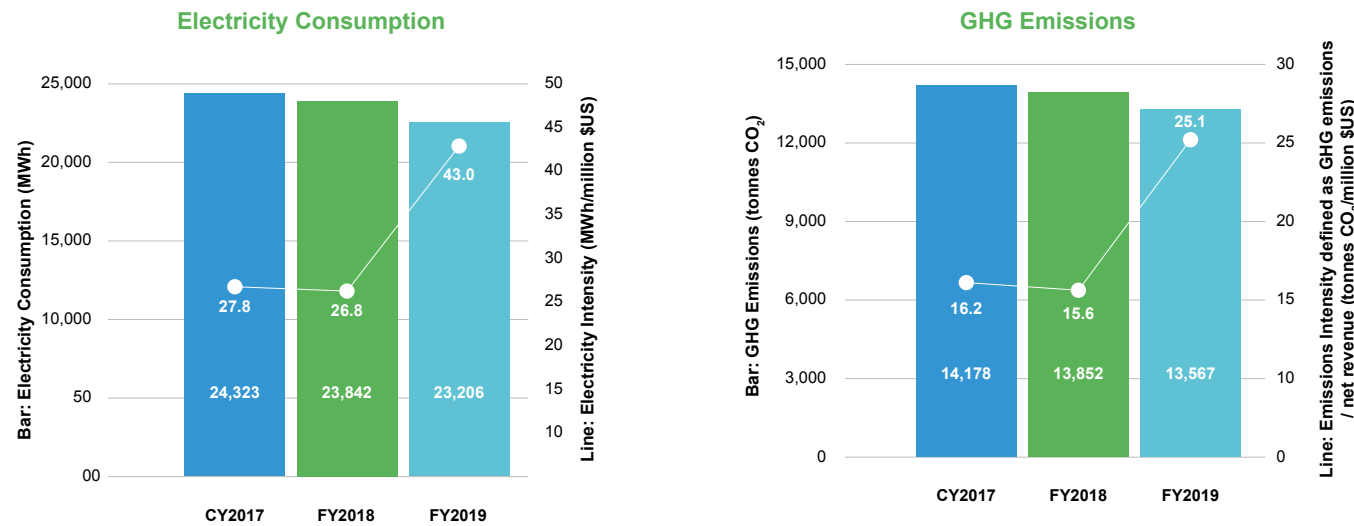


Figure 25: K&S Electricity Consumption & Intensity (left) and Scope 2 GHG Emissions & Intensity (right)

The total of 83,542 GJ of energy was consumed across the six sites in FY2019. This year, natural gas consumption<sup>25</sup> at Eindhoven was also included. Electricity from the grid still remains as the main source of energy used across the six sites at 23,206 MWh, a 3% reduction from FY2018 levels. This led to a 2% corresponding decrease in Scope 2 GHG emissions<sup>26</sup>.

Both electricity and Scope 2 emissions intensities have increased significantly due to a drop in net revenue recorded for FY2019, brought about by a decrease in demand in semiconductor, LED, memory and automotive markets. Moving forward, K&S will continue to seek ways to improve energy efficiency and maintain its target of year on year reduction in energy usage by 2%, thereby lowering its carbon footprint.

<sup>25</sup>Eindhoven recorded a total of 0.768 GJ of natural gas which translates to 40 kg of CO<sub>2</sub> emissions.

<sup>26</sup>GHG emissions are a result from the generation of purchased electricity, heating, cooling and steam consumed by K&S. They are calculated by multiplying an emission factor to the electricity consumed by each of the six sites. In Singapore, the emission factor used is the grid emission factor for 2018 which is obtained from "2019 Singapore Energy Statistics", published by the Energy Market Authority of Singapore. In China, the grid emission factors are obtained from the national grid emission factor with 2012 values being the most updated source. Santa Ana and Fort Washington grid emission factors were obtained from Emissions & Generation Resource Integrated Database (eGRID) 2016 published by the US EPA. In the Netherlands, grid emission factors were obtained from the grid emission factors published by Covenant of Mayors. For Israel, grid emission factors were obtained from Institute for Global Environmental Strategies (IGES).



From 1 January 2020 onwards, Netherlands site will be operating on 100% renewable energy generated from Dutch wind farms and solar parks. Zero carbon!

## Water Usage

Water is an essential resource across all K&S manufacturing sites, especially at Suzhou where water is used for product cleaning during fabrication and for the cooling towers. 100% of water used across the six sites were drawn from municipal sources. In FY2019, water consumption decreased by 9% from FY2018 due to lower production volume. The Suzhou site remains the highest consumer of water in its manufacturing, constituting over 90% of overall K&S global usage. In spite of a decrease in overall water consumption, water intensity in FY2019 has increased significantly due to the lower revenue recorded this year.

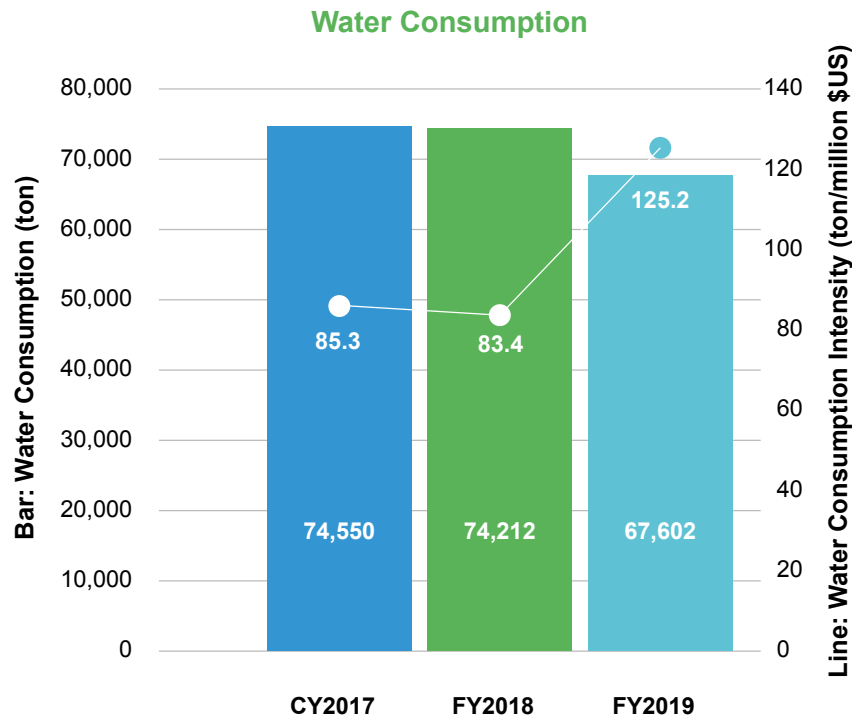


Figure 26: K&S Water Consumption and Intensity

## Waste Management

The issue of waste generation and disposal is critical in the manufacturing industry. With metals, minerals and many other chemicals used in K&S' manufacturing facilities, proper waste management and disposal is imperative. In addition to optimizing resource usage to reduce consumption, K&S has set a target to increase its recycling rate.

Additionally, various sites have also been practicing the 3Rs (Reduce, Reuse and Recycle) such as eliminating single-use disposables at their offices and collecting used items for recycling and reuse. Moving forward, K&S hopes for each of its sites to continuously brainstorm and integrate such practices throughout its day-to-day operations. Some of the initiatives are summarized below. The EHS and Facilities Managers at each site regularly monitor performance to ensure they are on track towards the targets.

Reducing Consumption	Responsible Waste Disposal
<ul style="list-style-type: none"> <li>Eliminate the use of paper and styrofoam cups at Suzhou, Israel and Singapore</li> <li>Paperless initiatives rolled out across six sites, encouraging employees to conserve paper and only print when necessary</li> </ul>	<ul style="list-style-type: none"> <li>Collection of empty ink cartridges at Netherlands by Eeko recycling centre who sold them to re-manufacturers for recycling and reuse</li> </ul>




Figure 27: Reducing Consumption and Responsible Waste Disposal at K&S

In FY2019, K&S generated a total of 502 tons of solid waste which was a 35% reduction compared to FY2018. This reduction was mainly attributed to the drop in production volume recorded for FY2019. On the contrary, K&S has improved its recycling rate to 54% from 50% in the previous year. Specifically, in its Suzhou site, the waste handling program improved its recycling rate by 14% in FY2019. Solid waste comprises mainly of packaging materials like plastics, wood and paper. Electronic waste such as batteries and lamps were recycled. Hazardous waste increased in FY2019 due to inclusion of chemical packaging, liquid and sludge chemicals in Suzhou. Higher capacity and lowering pollutant concentration in waste water resulted in increase in hazardous waste. Paper is used in supporting K&S' mainstream business operations. The paper reduction initiatives include educating employees on 3Rs (reduce, reuse, recycle), implementing paperless processes and periodic monitoring and reporting of paper usage. In FY2019, paper usage achieved 20% reduction by weight.

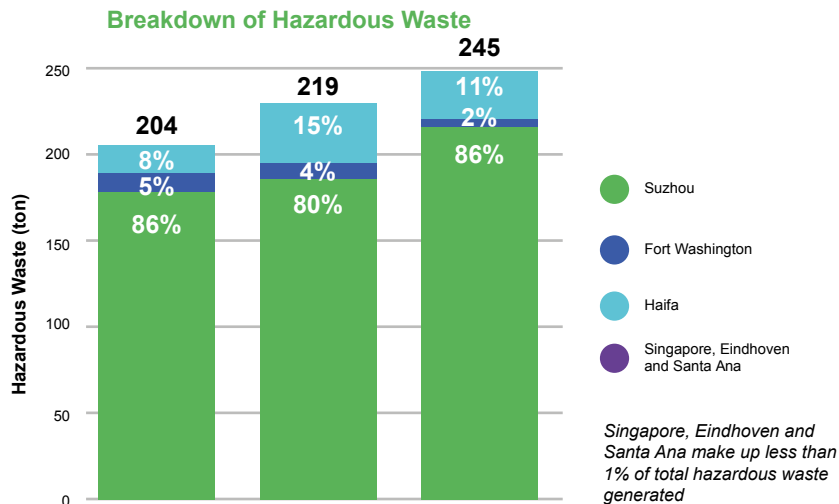
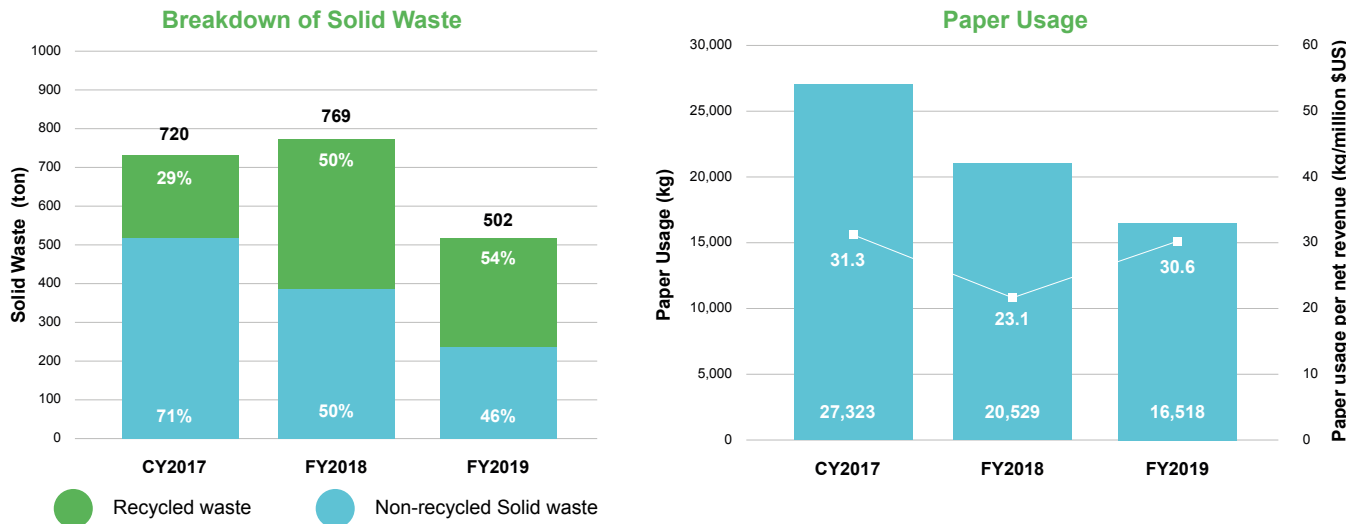


Figure 28: Charts showing K&S monitoring of Solid Waste, Paper Usage and Hazardous Waste

## Responsible Waste Disposal

Each of the six sites have put in place waste recycling initiatives which includes upcycling packaging materials to create decorative pieces. Subsequently, these recycled materials are also sent for further recycling.

At Suzhou, where many chemicals are used in the manufacturing process, waste chemicals are carefully treated before discharge. One of the initiatives implemented was to redirect acids used for products cleaning into the on-site waste water treatment facility. The waste acids then undergo pH treatment and can be reused for cleaning. In addition, the large volume of waste water generated from manufacturing is being used to flush toilets.





# CORPORATE SOCIAL RESPONSIBILITY

K&S' CR policy outlines its commitment to build and maintain strong relations with communities through philanthropic activities and volunteerism. In FY2019, K&S held more than 30 community activities with over 1,900 volunteer hours across six sites. In addition, a total of USD \$439,000 went into community

investment, apart from various fundraising drives and campaigns. Moving forward, K&S will make a conscious effort in tracking metrics such as employee hours clocked, and funds raised. This would allow for better resource planning and have anchor CSR programs across the sites.



## Fort Washington

K&S partnered with GVF to promote sustainable transportation and infrastructure in the region.

K&S donated \$1,200 for groceries and 130 gifts of clothing and toys to fulfil wishes of seven families.



## Netherlands

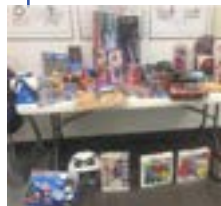
K&S presented Christmas gifts from customers, suppliers and employees to disabled youth association and helpless seniors in Sint-Isabella.



## Suzhou

Employees participated in the blood donation drive and donated 14,400 ml of blood to the local hospitals.

More than 150 employees participated in the Charity Bazaar. The event collected 10,711 RMB and successfully funded 4th K&S "Love" school library in Yunnan Province, China.



## Santa Ana

K&S proudly participated in the Spark of Love Toy Drive that has been running for the past 25 years. This year, K&S collected toys for 40 underprivileged children and teens.



## Israel

20 K&S employees volunteered with the Nature Protection Society and cleared 200 kg trash in the Carmel Forest.

**"It is good to know we can do something good, for me this is small effort, but to the world it may have big impact."**

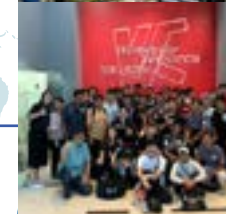
*- Nelson Mandela*



## Singapore

Over 80 students and staff from Temasek Polytechnic were invited to K&S' manufacturing facility. Employees shared an overview of the company and technologies K&S were developing.

To nurture the next batch of engineers, K&S awards potential undergraduates with interest in the semiconductor industry with an opportunity to join and grow their career with K&S.



In FY2019, K&S presented the Singapore-Industry Scholarship (SgIS) to an undergraduate at a local university.

# GRI CONTENT INDEX

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